

	Cover Sheet	Vendor Document No.			
	BRAHMAPUTRA CRACKER AND POLYMER LTD.	OSI2010002.0.408.0210.4.00			
	Page	1+22	Rev.	0	

GA for Metallic Flexible

REVIEW CODE	1	2	3
समीक्षा कोड	1	2	3
Signature & Name	[Signature]		
हस्ताक्षर एवं नाम	[Signature]		
Date/दिनांक	17/02/11		
V. P. No.	6907/2008		
वी.पी.नं.	6907/2008		

03					
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01					
00	First Issue	Flexican	NA	NA	21-Jan-11
Rev.	Description	Prepared	Checked	Approved	Date

DESIGN DATA

DESIGN CODE	E.J.M.A. 8th Edition with 2003 Errata
BRAND NAME	"Mexican"
EXPANSION JOINT SR.NO./TAG NO.	01/EJ-01
TYPE	AXIAL
SIZE NB	MM 500
QUANTITY	No. 1
DESIGN PRESSURE	Kg/cm ² g 10/FULL VACUUM
TEST PRESSURE	Kg/cm ² g 130
DESIGN TEMPERATURE	°C 50 (COMP./EXP.)
AXIAL MOVEMENT	mm -
LATERAL MOVEMENT	mm 65
AXIAL SPRINGRATE	Kg/mm -
LATERAL SPRINGRATE	Kg/mm -
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	117-NV-425 TO ROTARY 117-YT-425
INSPECTION BY	100% CLIENT
RADIOGRAPHY	FOR SR. NO. : 1

BELLOWS DETAIL

ΦA	INSIDE DIMENSION	MM 508
ΦB	O/S DIMENSION AT CONV.	MM 567
LB	ACTIVE LENGTH OVER CONV.	MM 175
N	TOTAL NO. OF CONVOLUTION	7
L	MFG. FREE LENGTH	MM 360
	INSTALLED LENGTH	MM 360
	PITCH/DEPTH	MM 25/27

ITEM

SR NO.	ITEM	SIZE	MATERIAL	QTY
9	LUG	30 THK	SA240 Gr.304	8
8	LIMIT ROD	Ø28 x (545 Lg) A	EN8	4
7	FLANGE (FIM)	AS PER ANSI B16.5 150# (SOFT) A	SA240 Gr.304	2
6	PIPE END-2	3 IHK	SA240 Gr.304	1
5	PIPE END-1	3 THK	SA240 Gr.304	1
4	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
3	COLLAR-2	1.6 THK	SA240 Gr.304	1
2	COLLAR-1	1.6 THK x 25 WIDE	SA240 Gr.304	1
1	BELLOWS	0.6 THK x 4 PLY	SA240 Gr.304	1

BILL OF MATERIAL

ENQ. NO.: BY E-MAIL Dated : 22.11.2010

IDEAL PVT. LTD.
283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (Noida)

PROJECT :

CLIENT REF. DRG. NO. :	DRN BY M.D.P. M.D.P. P.H.P. P.H.P. P.H.P.	DATE : 04.12.10	TITLE :
CHD BY P.H.P. P.H.P. P.H.P. P.H.P.	DATE : 04.12.10	EXPANSION BELLOWS	
APP BY J.M.P. J.M.P. J.M.P. J.M.P.	DATE : 04.12.10	DRG NO. :	F5530
A3	SCALE : NTS		

REVISIONS

REVISED AS PER YOUR E-MAIL Dated : 18.01.11	DATE	DESCRIPTION
REVISED AS PER YOUR E-MAIL Dated : 11.01.11	DATE	DESCRIPTION
REVISED AS PER YOUR E-MAIL Dated : 31.12.10	DATE	DESCRIPTION
REVISED AS PER YOUR E-MAIL Dated : 20.12.10	DATE	DESCRIPTION

NOTES :

- VACUUM TEST (10.97 Kg/cm²g FOR 30 MINUTES.
- TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g.
- TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.
- SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION
- ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

UP TO 3 MM

3 MM TO 12 MM

1.5

60°

L/S WELD JOINT

(100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING)

BACK CHIP TO SOUND METAL & REWELD

IF IN DOUBT PLEASE ASK		7		6		5		4		3		2		1	
DESIGN DATA DESIGN CODE: E.J.M.A. 8th Edition with 2003 Errata BRAND NAME: "flexican" EXPANSION JOINT SR.NO./TAC NO. AXIAL TYPE SIZE NB: MM 500 QUANTITY: No. 1 DESIGN PRESSURE: Kg/cm²g 4.4/FULL VACCUUM TEST PRESSURE: Kg/cm²g 1.30 DESIGN TEMPERATURE: °C 50 (COMP./EXP.) AXIAL MOVEMENT: mm 19 AXIAL SPRINGRATE: Kg/mm 19 RATED DESIGN CYCLE LIFE: ABOVE 10000 LOCATION: INLET TO SECONDARY DEG ASSESS 117-W-430 INSPECTION BY: C/INT RADIOGRAPHY: 100% FOR SR. NO.: 1															
BELLOWS DETAIL ØA INSIDE DIMENSION: MM 508 ØB O/S DIMENSION AT CONV.: MM 558 Lb ACTIVE LENGTH OVER CONV.: MM 220 N TOTAL NO. OF CONVOLUTION: 10 L MFC. FREE LENGTH: MM 400 INSTALLED LENGTH: MM 400															
FLANGE (FIM) AS PFR ANSI B16.5 150# (SOFT) PIPE END-1: 3 THK PIPE END-2: 3 THK COLLAR-1: 1.6 THK x 25 WIDE BELLOWS: 0.5 IHK x 2 PLY ITEM: SIZE SER. NO.: MATERIAL QTY															
ENQ. NO.: BY C-MAIL Dated: 22.11.2010 FFS FLEXICAN BELLOWS & HOSES PVT. LTD. 283, GIDC Makarpura, BARODA-390010 CLIENT: COPERION IDEAL PVT. LIMITED, (NOIDA)															
PROJECT: CLIENT REF. DRG. NO.: DRN BY M.D.P. M.D.P. 04.12.10 CHD BY P.H.P. P.H.P. 04.12.10 APP BY J.M.P. J.M.P. 04.12.10 SCALE: NTS A3 STATUS: QTY. QUOTATION AS SHOWN: SH. NO. REV. 2/23 04															
IF L/S WELD JOINT (100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING) UP TO 3 MM 3 MM TO 12 MM 60° 1.5 L BACK CHIP TO SOUND METAL & REWELD															
NOTES: 1) L/S WELD JOINT (100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING) 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION 3) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.															
IF L/S WELD JOINT (100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING) UP TO 3 MM 3 MM TO 12 MM 60° 1.5 L BACK CHIP TO SOUND METAL & REWELD															

1/18/2011 1:45:10 PM

IF IN DOUBT PLEASE ASK		3		2		4		5		6		7		8	
DESIGN DATA		E.J.M.A. 8th Edition with 2003 Errata													
BRAND NAME		"flexican"													
EXPANSION JOINT SR.NO./TAG NO.		04/EJ-04													
TYPE		AXIAL													
SIZE NB		MM		500											
QUANTITY		No.		1											
DESIGN PRESSURE		Kg/cm ² g		4.4/FULL VACUUM											
TEST PRESSURE		Kg/cm ² g		REFER NOTE NO. : 3											
DESIGN TEMPERATURE		°C		130											
AXIAL MOVEMENT		mm		50 (COMP./EXP.)											
LATERAL MOVEMENT		mm		19											
AXIAL SPRINGRATE		Kg/mm		19											
LATERAL SPRINGRATE		Kg/mm		19											
RATED DESIGN CYCLE LIFE				ABOVE 10000											
LOCATION				GRAVITY LINE FROM BYPASS DIVER VALVE 117-DN-431 TO DIV ENTERED GRAVITY LINE											
INSPECTION BY		CLIENT													
RADIOGRAPHY		100%													
FOR SR. NO. : 1															
BELLOWS DETAIL															
ØA INSIDE DIMENSION		MM		508											
ØB O/S DIMENSION AT CONV.		MM		558											
L ₅ ACTIVE LENGTH OVER CONV.		MM		220											
N TOTAL NO. OF CONVOLUTION				10											
L MFG. FREE LENGTH		MM		400											
INSTALLED LENGTH		MM		400											
PITCH/DEPTH		MM		22/24											
9 LUG		30 THK		SA240 Gr.304		4									
8 LIMIT ROD		Ø24 x 570 Lg. A		ENB		2									
7 FLANGE (FIM)		AS PER ANSI B16.5 150# (SOFT) A		SA240 Gr.304		2									
6 PIPE END-1		3 THK		SA240 Gr.304		1									
5 PIPE END-1		3 THK		SA240 Gr.304		1									
4 INNER SLEEVE		1.2 THK		SA240 Gr.304		1									
3 COLLAR-2		1.6 THK		SA240 Gr.304		1									
2 COLLAR-1		1.6 THK x 25 WIDE		SA240 Gr.304		1									
1 BELLOWS		0.5 THK x 2 PLY		SA240 Gr.304		1									
SR. NO.		ITEM		SIZE		MATERIAL		QTY							
E		BILL OF MATERIAL													
ENQ. NO. : BY E-MAIL		Dated : 22.11.2010													
FLEXICAN BELLOWS & HOSES PVT. LTD.															
203, GIDC Matarpura, BARODA-390010															
CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)															
PROJECT :															
CLIENT REF. DRG. NO. :															
DRN BY M.D.P. H.P.M.P.		04.12.10		TITLE :											
CID BY P.I.P. P.I.P.		04.12.10		EXPANSION TYPE AXIAL											
CID BY P.I.P. P.I.P.		04.12.10		EXPANSION BELLOWS											
APP BY J.M.P. J.M.P.		04.12.10		DRG. NO. :		F5530									
SCALE : NTS		A3		3											
DATE		DESCRIPTION		REV											
04 18.01.11		DESIGNED AS PER YOUR E-MAIL Dated : 14.01.2011		M.D.P. D.P.P. H.P.M.P.											
03 11.01.11		REVISED AS PER YOUR E-MAIL Dated : 23.12.2010		M.D.P. D.P.P. H.P.M.P.											
02 31.12.10		REVISED AS PER YOUR E-MAIL Dated : 23.12.2010		M.D.P. D.P.P. H.P.M.P.											
01 20.12.10		REVISED AS PER YOUR E-MAIL Dated : 18.12.2010		M.D.P. D.P.P. H.P.M.P.											
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03 11.01.11		REVISED AS PER YOUR E													

IF IN DOUBT PLEASE ASK

7

6

5

4

3

2

1/18/2011 1:45:53

DESIGN DATA

DESIGN CODE

E.J.M.A. 8th Edition with 2003 Errata

BRAND NAME

"flexican"

EXPANSION JOINT SR.NO./TAG NO.

05/EJ 05

TYPE

AXIAL

SIZE NB

MM

QUANTITY

No.

DESIGN PRESSURE

Kg/cm²g

TEST PRESSURE

Kg/cm²g

DESIGN TEMPERATURE

°C

AXIAL MOVEMENT

mm

LATERAL MOVEMENT

mm

AXIAL SPRINGRATE

Kg/mm

LATERAL SPRINGRATE

Kg/mm

RATED DESIGN CYCLE LIFE

ABOVE 10000

LOCATION

SWAMP WE PUMP HOUSE
SUPERIOR VALVE 117-10A
117-3T-460

INSPECTION BY

CLIENT

RADIOGRAPHY

100%

FOR SR. NO. : 1

BELLOWS DETAIL

ØA INSIDE DIMENSION

MM

ØB O/S DIMENSION AT CONV.

MM

Lb ACTIVE LENGTH OVER CONV.

MM

N TOTAL NO. OF CONVOLUTION

11

I MFG. FREE LENGTH

MM

INSTALLED LENGTH

MM

PITCH/DEPTH

MM

7 LUG

30 THK

SA240 Gr.304

6

6 LIMIT ROD

Ø24 x f600 Lg

EN8

3

5 FLANGE (FIM)

AS PER ANSI B16.5

SA240 Gr.304

2

4 PIPE END

3 THK

SA240 Gr.304

2

3 INNER SLICVE

1.6 THK

SA240 Gr.304

2

2 COLLAR

1.6 THK x 25 WIDE

SA240 Gr.304

1

1 BFLIOWS

0.5 THK x 2 PLY

SA240 Gr.304

1

SR. NO.

ITEM

SIZE

MATERIAL

QTY

BILL OF MATERIAL

ENQ. NO.: BY E-MAIL Dated : 22.11.2010

SA240 FLEXICAN BELLOWS & HOSES PVT. LTD.

283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT :

CLIENT REF. DRG. NO. :

DRN BY M.D.P.

M.D.P.

04.12.10

TITLE :

CIRCULAR TYPE AXIAL

CHD BY P.H.P.

P.H.P.

04.12.10

EXPANSION BELLOWS

APP BY J.M.P.

J.M.P.

04.12.10

DRG NO. :

F5530

A3 SCALE :

NTS

REVISED AS PER YOUR E-MAIL Dated : 14.01.2011

REVISED AS PER YOUR E-MAIL Dated : 11.01.11

REVISED AS PER YOUR E-MAIL Dated : 31.12.10

REVISED AS PER YOUR E-MAIL Dated : 20.12.10

DESCRIPTION

DATE

REV

5 FIM

7

6

5

4

3

2

1

98.5 (typ)

410

610

692

584

30 THK

Ø28

R406.5

260

LUG

FLOW

N

FIM- FREE ISSUE MATERIAL

4) VACUUM TEST (-10.97 Kg/cm²g FOR 30 MINUTES.

3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE- BELOW 1 Kg/cm²g. TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.

2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION

1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES :

UP TO 3 MM

3 MM TO 12 MM

60°

1.5

L/S WELD JOINT

BACK CHIP TO SOUND METAL & REWELD.

IF IN DOUBT PLEASE ASK

7

6

5

4

3

2

1/18/2011 1:45:53

DESIGN DATA

DESIGN CODE

E.J.M.A. 8th Edition with 2003 Errata

BRAND NAME

"flexican"

EXPANSION JOINT SR.NO./TAG NO.

05/EJ 05

TYPE

AXIAL

SIZE NB

MM

QUANTITY

No.

DESIGN PRESSURE

Kg/cm²g

TEST PRESSURE

Kg/cm²g

DESIGN TEMPERATURE

°C

AXIAL MOVEMENT

mm

LATERAL MOVEMENT

mm

AXIAL SPRINGRATE

Kg/mm

LATERAL SPRINGRATE

Kg/mm

RATED DESIGN CYCLE LIFE

ABOVE 10000

LOCATION

SWAMP WE PUMP HOUSE
SUPERIOR VALVE 117-10A
117-3T-460

INSPECTION BY

CLIENT

RADIOGRAPHY

100%

FOR SR. NO. : 1

BELLOWS DETAIL

ØA INSIDE DIMENSION

MM

ØB O/S DIMENSION AT CONV.

MM

Lb ACTIVE LENGTH OVER CONV.

MM

N TOTAL NO. OF CONVOLUTION

11

I MFG. FREE LENGTH

MM

INSTALLED LENGTH

MM

PITCH/DEPTH

MM

7 LUG

30 THK

SA240 Gr.304

6

6 LIMIT ROD

Ø24 x f600 Lg

EN8

3

5 FLANGE (FIM)

AS PER ANSI B16.5

SA240 Gr.304

2

4 PIPE END

3 THK

SA240 Gr.304

2

3 INNER SLICVE

1.6 THK

SA240 Gr.304

2

2 COLLAR

1.6 THK x 25 WIDE

SA240 Gr.304

1

1 BFLIOWS

0.5 THK x 2 PLY

SA240 Gr.304

1

SR. NO.

ITEM

SIZE

MATERIAL

QTY

BILL OF MATERIAL

ENQ. NO.: BY E-MAIL Dated : 22.11.2010

SA240 FLEXICAN BELLOWS & HOSES PVT. LTD.

283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT :

CLIENT REF. DRG. NO. :

DRN BY M.D.P.

M.D.P.

04.12.10

TITLE :

CIRCULAR TYPE AXIAL

CHD BY P.H.P.

P.H.P.

04.12.10

EXPANSION BELLOWS

APP BY J.M.P.

J.M.P.

04.12.10

DRG NO. :

F5530

A3 SCALE :

NTS

REVISED AS PER YOUR E-MAIL Dated : 14.01.2011

REVISED AS PER YOUR E-MAIL Dated : 11.01.11

REVISED AS PER YOUR E-MAIL Dated : 31.12.10

REVISED AS PER YOUR E-MAIL Dated : 20.12.10

DESCRIPTION

DATE

REV

5 FIM

7

6

5

4

3

2

1

98.5 (typ)

410

610

692

584

30 THK

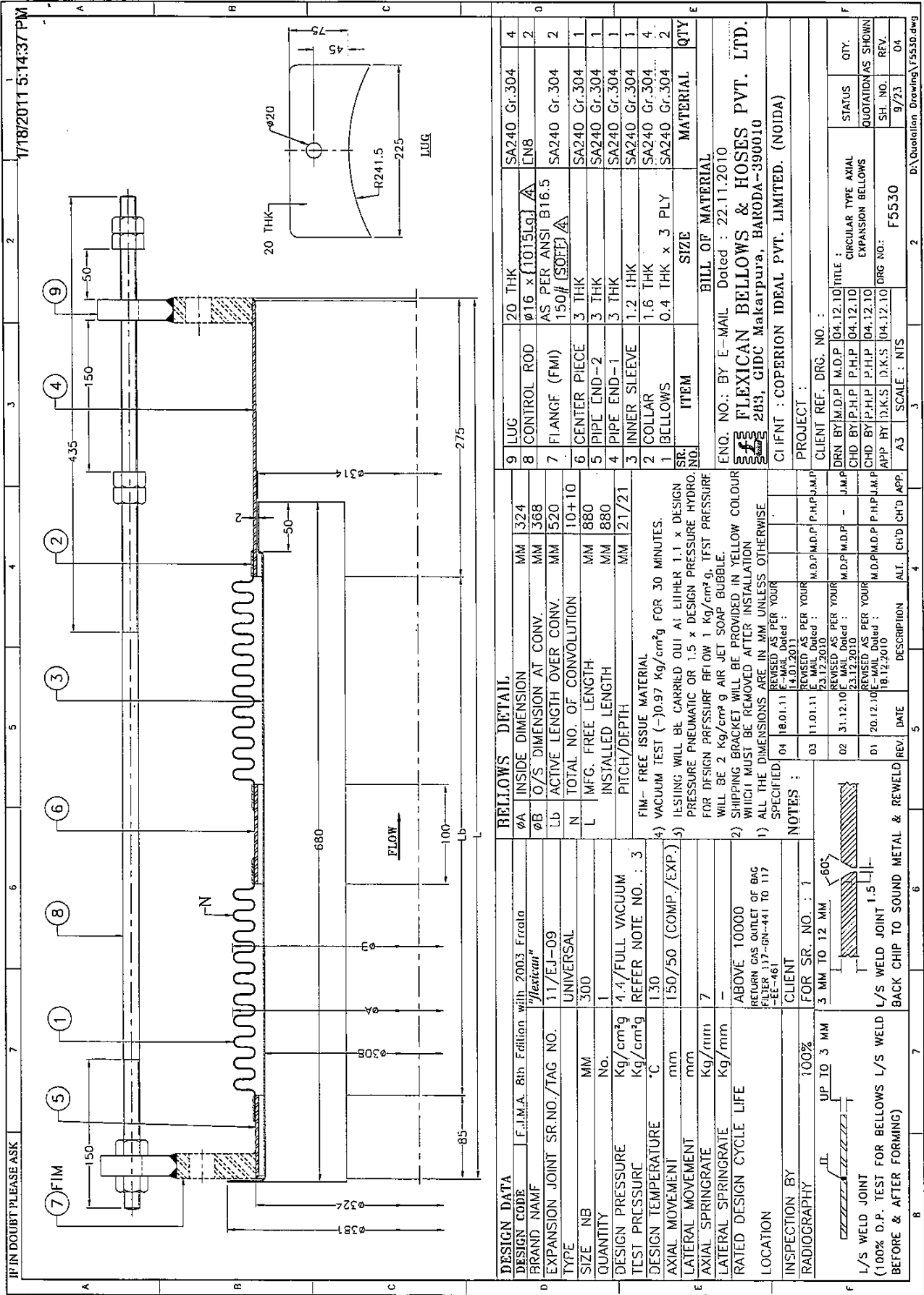
Ø28

R406.5

260

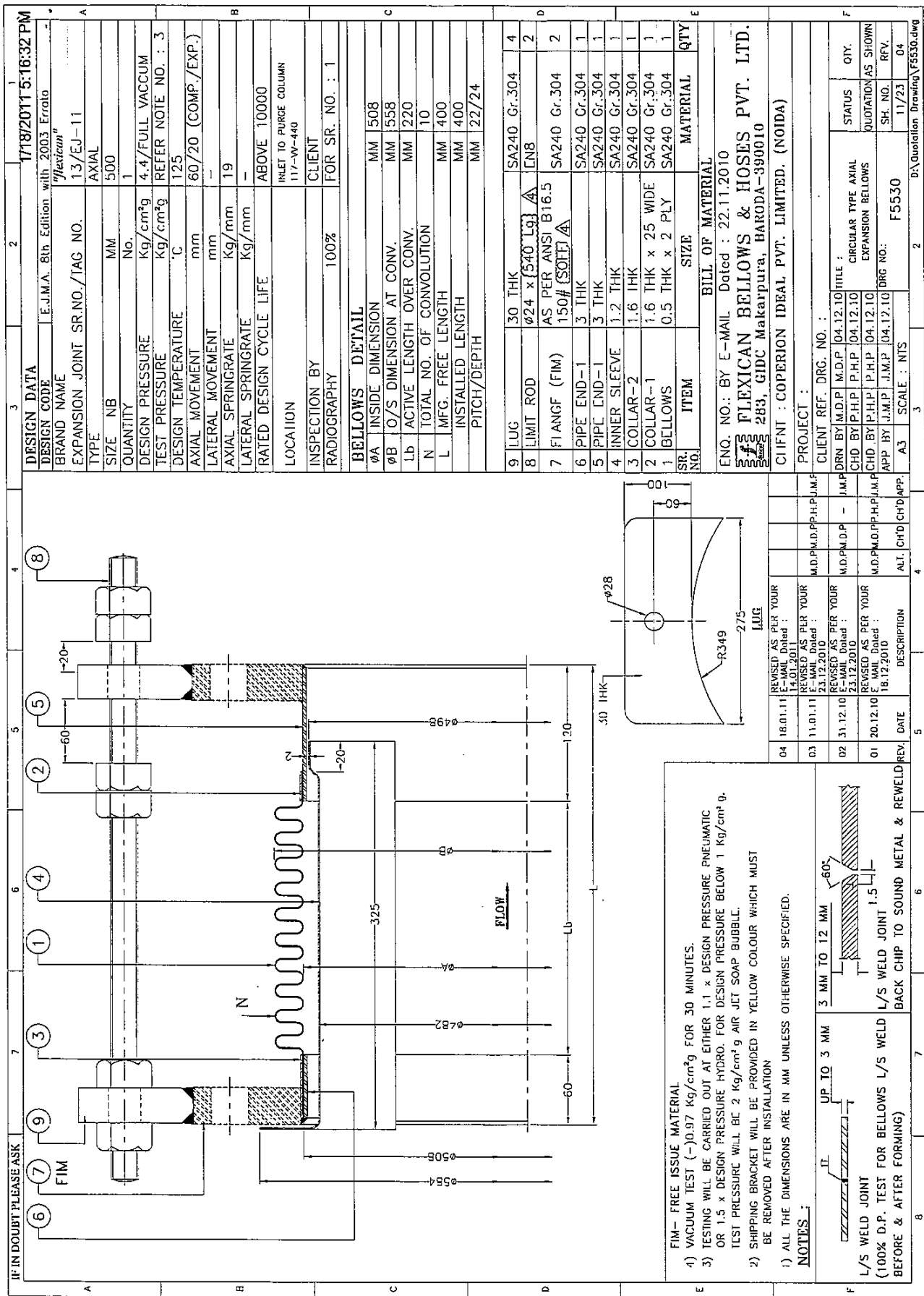
LUG

8	7	6	5	4	3	2	2	D:\Quotation Drawing\F5530.dwg
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DESIGN DATA		BELLOWS DETAIL		BILL OF MATERIAL	
DESIGN CODE	F.I.M.A. 8th Edition with 2003 Errata	ØA	INSIDE DIMENSION	MM	324
BRAND NAME	"flexican"	ØB	O/S DIMENSION AT CONV.	MM	368
EXPANSION JOINT SR.NO./TAG NO.	11/EJ-09	LB	ACTIVE LENGTH OVER CONV.	MM	520
TYPE	UNIVERSAL	N	TOTAL NO. OF CONVOLUTION		10+10
SIZE	MM	L	MFG. FREE LENGTH	MM	880
QUANTITY	No.		INSTALLED LENGTH	MM	880
DESIGN PRESSURE	Kg/cm ²		PITCH/DEPTH	MM	21/21
TEST PRESSURE	Kg/cm ²				
DESIGN TEMPERATURE	°C				
AXIAL MOVEMENT	mm				
LATERAL MOVEMENT	mm				
AXIAL SPRINGRATE	Kg/mm				
LATERAL SPRINGRATE	Kg/mm				
RATED DESIGN CYCLE LIFE					
LOCATION					
INSPECTION BY	100%				
RADIOGRAPHY					
	UP TO 3 MM				
	3 MM TO 12 MM				
	12 MM TO 605				
	605 TO 1500				
	1500 TO 3000				
	3000 TO 6000				
	6000 TO 12000				
	12000 TO 24000				
	24000 TO 48000				
	48000 TO 96000				
	96000 TO 192000				
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IF IN DOUBT PLEASE ASK		7		6		5		4		3		2		1	
DESIGN DATA DESIGN CODE: E.J.M.A. 8th Edition with 2003 Errata BRAND NAME: "Flexican" EXPANSION JOINT SR.NO./TAG NO.: 12/EJ-10 TYPE: AXIAL SIZE NB: 500 QUANTITY: 1 DESIGN PRESSURE: 4.4/FULL VACUUM TEST PRESSURE: Kg/cm² DESIGN TEMPERATURE: °C AXIAL MOVEMENT: mm LATERAL MOVEMENT: mm LATERAL SPRINGRATE: Kg/mm RATED DESIGN CYCLE LIFE: ABOVE 10000 LOCATION: OUTLET OF CONVERTING FILTER 117-GH-441 TO ROTARY VALVE 117-YF 441 INSPECTION BY: CLIENT RADIOGRAPHY: 100% FOR SR. NO.: 1 17/8/2011 5:15:34 PM															
9 LUG 8 LIMIT ROD 7 FLANGF (FIM) 6 PIPE END-1 5 PIPE END-1 4 INNER SLEEVE 3 COLLAR-2 2 COLLAR-1 1 BELLOWS 30 THK Ø24 x {5/0 Lg} A AS PER ANSI B16.5 150# (SOFT) A 3 THK 3 THK 1.2 THK 1.6 IHK 1.6 THK x 25 WIDE 0.5 THK x 2 PLY SA240 Gr.304 EN8 SA240 Gr.304 SA240 Gr.304 SA240 Gr.304 SA240 Gr.304 SA240 Gr.304 SA240 Gr.304 SA240 Gr.304 4 2 2 1 1 1 1 1 1															
SR. NO. ITEM SIZE MATERIAL QTY BILL OF MATERIAL															
ENQ. NO.: BY E-MAIL Dated : 22.11.2010 5/5 FLEXICAN BELLOWS & HOSES PVT. LTD. 283, GIDC Makarpura, BARODA-390010 CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)															
PROJECT : CLIENT REF. DRG. NO. : DRN BY M.D.P. M.D.P. 04.12.10 CHD BY P.H.P. P.H.P. 04.12.10 APP BY J.M.P. J.M.P. 04.12.10 A3 SCALE : NTS DRG. NO.: F5530 SH. NO. 10/23 REV. 04 Da\Order Drawing\04-.dwg															
REVISED AS PER YOUR 14.01.2011 REVISION AS PER YOUR 11.01.11 REVISED AS PER YOUR 31.12.10 REVISED AS PER YOUR 20.12.10 REVISED AS PER YOUR 18.12.10 DESCRIPTION DATE REV															
UP TO 3 MM 3 MM TO 12 MM 60° L/S WELD JOINT (100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING) BACK CHIP TO SOUND METAL & REWELD															
NOTES : 1) VACUUM TEST (-)0.97 Kg/cm²g FOR 30 MINUTES. 2) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g, TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE. 3) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.															



IF IN DOUBT PLEASE ASK

17/08/2011 5:17:25 PM

1 2 3 4 5 6 7 8 9

DESIGN DATA

DESIGN CODE E.J.M.A. 8th Edition with 2003 Errata

BRAND NAME "flexican"

EXPANSION JOINT SR.NO./TAG NO. 14/EJ-12

TYPE AXIAL

SIZE NB MM 500

QUANTITY No. 1

DESIGN PRESSURE Kg/cm²g 4.4/FULL VACUUM

TEST PRESSURE Kg/cm²g 120

DESIGN TEMPERATURE °C 70/20 (COMP./EXP.)

AXIAL MOVEMENT mm -

LATERAL MOVEMENT mm 19

AXIAL SPRINGRATE Kg/mm -

LATERAL SPRINGRATE Kg/mm -

RATED DESIGN CYCLE LIFE ABOVE 10000

LOCATION GRAVITY LINE FROM RECIRCULA TION NO. 10000

INSPECTION BY 100% CLIENT

RADIOGRAPHY FOR SR. NO. : 1

BELLOWS DETAIL

ØA INSIDE DIMENSION MM 508

ØB O/S DIMENSION AT CONV. MM 558

Lb ACTIVE LENGTH OVER CONV. MM 230

N TOTAL NO. OF CONVOLUTION 10

L MFG. FREE LENGTH MM 400

INSTALLED LENGTH MM 400

PITCH/DEPTH MM 23/24

9 LUG 30 THK SA240 Gr.304 4

8 LIMIT ROD Ø24 x {540 Lg} EN8 2

7 FLANGE (FIM) AS PER ANSI B16.5 150# (SOFT) SA240 Gr.304 2

6 PIPE END-1 3 THK SA240 Gr.304 1

5 PIPE END-1 3 THK SA240 Gr.304 1

4 INNER SLEEVE 1.2 THK SA240 Gr.304 1

3 COLLAR-2 1.6 THK SA240 Gr.304 1

2 COLLAR-1 1.6 THK x 25 WIDE SA240 Gr.304 1

1 BELLOWS 0.5 THK x 2 PLY SA240 Gr.304 1

SR NO. ITEM SIZE MATERIAL QTY

BILL OF MATERIAL

ENQ. NO.: BY E-MAIL Dated : 22.11.2010.

283 FLEXICAN BELLOWS & HOSES PVT. LTD.

283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT :

CLIENT REF. DRG. NO. :

DRN BY:M.D.P M.D.P 04.12.10 TITLE : CIRCULAR TYPE AXIAL

CHD BY:P.H.P P.H.P 04.12.10 EXPANSION BELLOWS

APP BY :J.M.P J.M.P 04.12.10 DRG NO.: F5530

SCALE : NTS

A3

REV DATE DESCRIPTION

04 18.01.11 REVISED AS PER YOUR E-MAIL Dated : 14.01.2011

03 11.01.11 REVISED AS PER YOUR E-MAIL Dated : 23.12.2010

02 31.12.10 REVISED AS PER YOUR E-MAIL Dated : 23.12.2010

01 20.12.10 REVISED AS PER YOUR E-MAIL Dated : 18.12.2010

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02 31.12.10 REVISED AS PER YOUR E-MAIL Dated : 23.12.2010

01 20.12.10 REVISED AS PER YOUR E-MAIL Dated : 18.12.2010

REV DATE DESCRIPTION

04 18.01.11 REVISED AS PER YOUR E-MAIL Dated : 14.01.2011

03 11.01.11 REVISED AS PER YOUR E-MAIL Dated : 23.12.2010

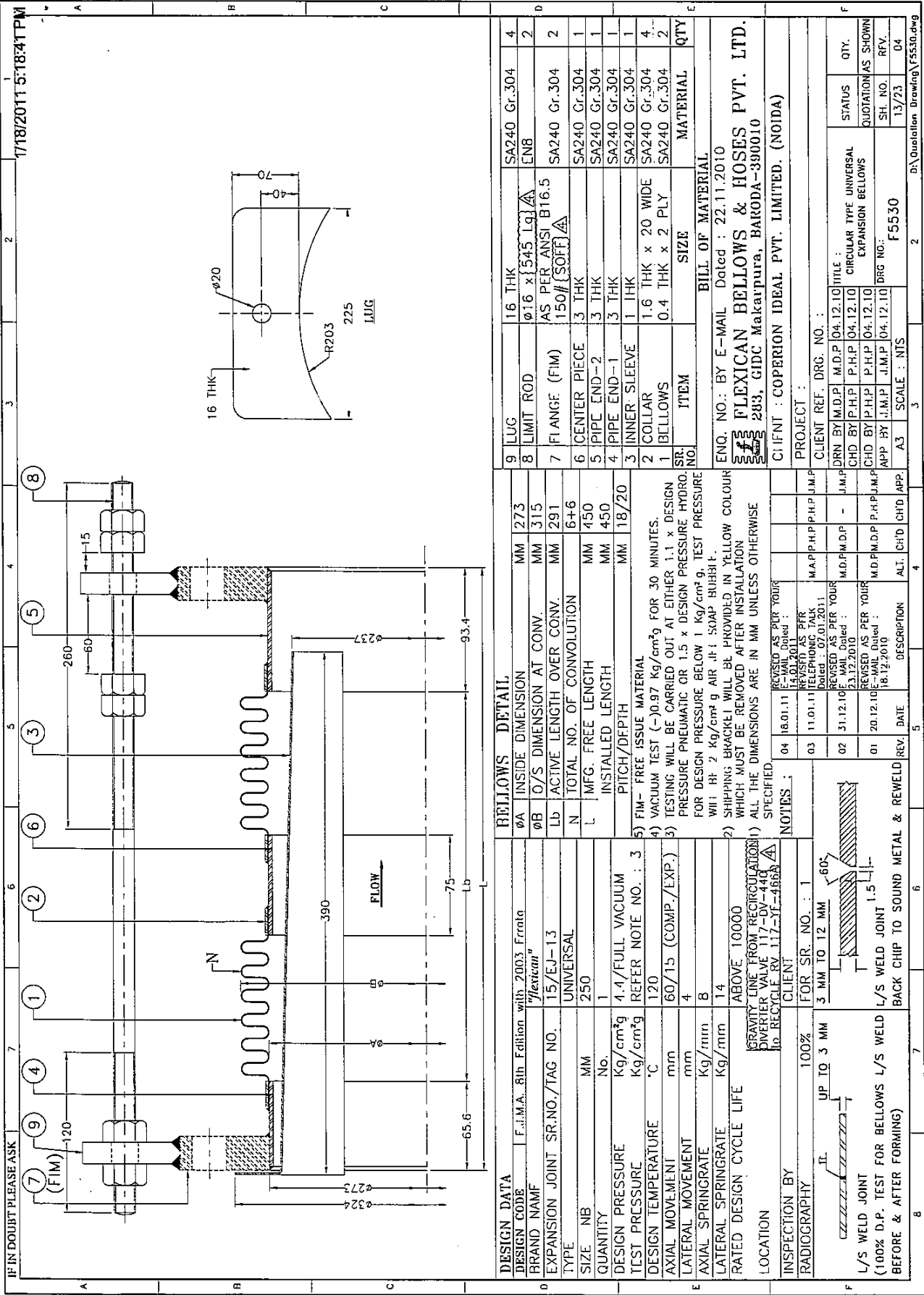
02 31.12.10 REVISED AS PER YOUR E-MAIL Dated : 23.12.2010

01 20.12.10 REVISED AS PER YOUR E-MAIL Dated : 18.12.2010

REV DATE DESCRIPTION

04 18.01.11 REVISED AS PER YOUR E-MAIL Dated : 14.01.2011

03 11.01.11 REVISED AS PER



BELLOWS DETAIL

DESIGN CODE	F.I.M.A. 8th Edition with 2003 Errata
BRAND NAME	"flexican"
EXPANSION JOINT SR.NO./TAG NO.	15/EJ-13
TYPE	UNIVERSAL
SIZE NB	250
QUANTITY	1
DESIGN PRESSURE	4.4/FULL VACUUM
TEST PRESSURE	Kg/cm ² g
DESIGN TEMPERATURE	°C
AXIAL MOVEMENT	mm
LATERAL MOVEMENT	mm
AXIAL SPRINGRATE	Kg/mm
LATERAL SPRINGRATE	Kg/mm
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	GRAVITY LINE FROM RECIRCULATION DIVERTER VALVE 117-DV-440
INSPECTION BY	CLIENT
RADIOGRAPHY	100%
UP TO 3 MM	FOR SR. NO. : 1
3 MM TO 12 MM	
12 MM TO 25 MM	
25 MM TO 50 MM	
50 MM TO 100 MM	
100 MM TO 200 MM	
200 MM TO 300 MM	
300 MM TO 400 MM	
400 MM TO 500 MM	
500 MM TO 600 MM	
600 MM TO 700 MM	
700 MM TO 800 MM	
800 MM TO 900 MM	
900 MM TO 1000 MM	

REV	DATE	DESCRIPTION	ALT	CHD	APP
04	18.01.11	REVISED AS PER YOUR REQUEST			
03	11.01.11	REVISED AS PER YOUR REQUEST			
02	31.12.10	REVISED AS PER YOUR REQUEST			
01	20.12.10	REVISED AS PER YOUR REQUEST			

ØA	INSIDE DIMENSION	MM	273
ØB	O/S DIMENSION AT CONV.	MM	315
Lb	ACTIVE LENGTH OVER CONV.	MM	291
N	TOTAL NO. OF CONVOLUTION	MM	6+6
L	MFG. FREE LENGTH	MM	450
	INSTALLED LENGTH	MM	450
	PITCH/DEPTH	MM	18/20
5) FIM - FREE ISSUE MATERIAL 4) VACUUM TEST (-0.97 Kg/cm ² g FOR 30 MINUTES. 3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. WILL BE 2 Kg/cm ² g AIR IF SOAP BUBBLE TEST. 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED			

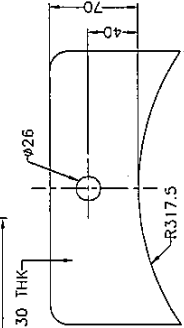
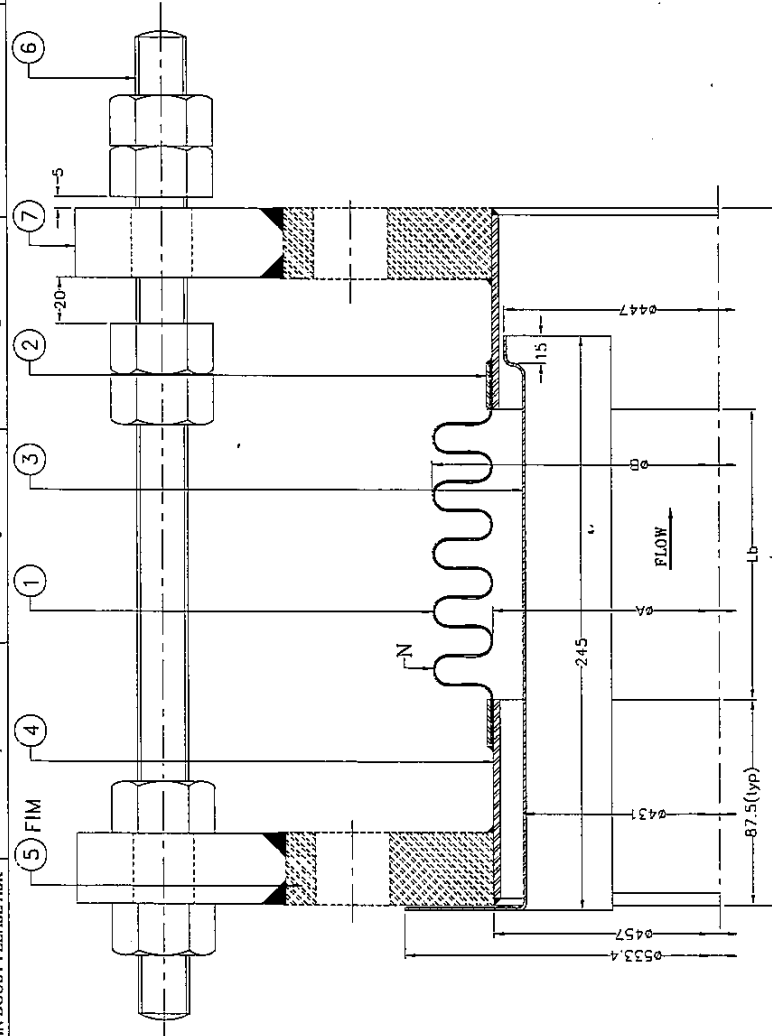
DRN BY	M.D.P	M.D.P	04.12.10	TITLE :
CHD BY	P.H.P	P.H.P	04.12.10	CIRCULAR TYPE UNIVERSAL EXPANSION BELLOWS
APP BY	J.M.P	J.M.P	04.12.10	DRG NO. :
				F5530
				SCALE : NTS
				3
				2
				PA\Question Drawing\F5530.dwg

9	LUG	16 THK	SA240 Gr.304	4
8	LIMIT ROD	Ø16 x {545 Lg} A	EN8	2
7	FLANGE (FIM)	AS PER ANSI B16.5 150# {SOFF} A	SA240 Gr.304	2
6	CENTER PIECE	3 THK	SA240 Gr.304	1
5	PIPE END-2	3 THK	SA240 Gr.304	1
4	PIPE END-1	3 THK	SA240 Gr.304	1
3	INNER SLEEVE	1 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 20 WIDE	SA240 Gr.304	4
1	BELLOWS	0.4 THK x 2 PLY	SA240 Gr.304	2
SR. NO.	ITEM	SIZE	MATERIAL	QTY

ENQ. NO. :	BY E-MAIL	Dated : 22.11.2010
FOR FLEXICAN BELLOWS & HOSES PVT. LTD.		
283, GIDC Makarpura, BARODA-390010		
CLIENT : COPERION IDEAL PVT. LIMITED. (Noida)		
PROJECT :		
CLIENT REF. DRG. NO. :		
DRN BY	M.D.P	M.D.P 04.12.10
CHD BY	P.H.P	P.H.P 04.12.10
APP BY	J.M.P	J.M.P 04.12.10

ENQ. NO. :	BY E-MAIL	Dated : 22.11.2010
FOR FLEXICAN BELLOWS & HOSES PVT. LTD.		
283, GIDC Makarpura, BARODA-390010		

IF IN DOUBT PLEASE ASK



- 5) FIM - FREE ISSUE MATERIAL
- 4) VACUUM TEST ($\sim 10^{-9}$ kg/cm²g) FOR 30 MINUTES.
- 3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 X DESIGN PRESSURE PNEUMATIC OR 1.5 X DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm² g, TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.
- 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION
- 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED

NOTES :

REV.	DATE	DESCRIPTION
01	20.12.10	RECEIVED AS PER YOUR E-MAIL Dated : 18.12.2010
02	31.12.10	RECEIVED AS PER YOUR E-MAIL Dated : 23.12.2010
03	11.01.11	RECEIVED AS PER TELEPHONIC TALK Dated : 07.01.2011
04	18.01.11	RECEIVED AS PER E-MAIL Dated : 14.01.2011

	M.A.P.H.P.H.P.U.M.			
	M.D.P.M.D.P -	J.M.		
	M.D.P.M.D.P.H.P.U.M.			
	ALT. CH'D CH'D APP			

DESIGN DATA	E.J.M.A. 8th Edition with 2003 Errata
DESIGN CODE	"Nlexcam"
BRAND NAME	
EXPANSION JOINT SR.NO./TAG NO.	17/EJ 15
TYPE	AXIAL
SIZE NB	450
QUANTITY	1
DESIGN PRESSURE	4.4/FULL VACUUM
TEST PRESSURE	Kg/cm ² g
DESIGN TEMPERATURE	REFER NOTE NO. : 3
AXIAL MOVEMENT	120 °C
AXIAL SPRINGRATE	20/5 (COMP./EXP.)
RATED DESIGN CYCLE LIFE	31
LOCATION	ABOVE 10000
INSPECTION BY	GRAVITY LINE FROM RECYCLE INFRIR
RADIOGRAPHY	VALVE 117 DV 465 TO RECYCLE
	ROTARY VALVE 117-YF-466B
	CLIENT
	FOR SR. NO. : 1

BELLWOS DETAIL		
ØA	INSIDE DIMENSION	MM 457
ØB	O/S DIMENSION AT CONV.	MM 509
Lb	ACTIVE LENGTH OVER CONV.	MM 125
N	TOTAL NO. OF CONVOLUTION	5
L	MFG. FREE LENGTH	MM 300
	INSTALLED LENGTH	MM 300
	PITCH/DEPTH	MM 25/25

SR.	ITEM	SIZE	MATERIAL	QTY
7	LUG	16 THK	SA240 Gr.304	4
6	LIMIT ROD	Ø16 x 420 LG. Δ	EN8	2
5	FLANGE (FIM)	AS PER ANSI B16.5 150# (SOFT) Δ	SA240 Gr.304	2
4	PIPE END	3 THK	SA240 Gr.304	2
3	INNER SIFFVE	1 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 20 WIDE	SA240 Gr.304	2
1	BELLOWS	0.5 THK x 2 PLY	SA240 Gr.304	1

NO.	BILL OF MATERIAL
ENQ. NO.:	BY E-MAIL Dated : 22.11.2010

FLEXICAN BELLOWS & HOSES PVT. LTD.
283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT :					
CLIENT REF.		DRG. NO. :			
DNR BY M.D.P.	M.D.P.	04.12.10	TITLE :		
CUD BY P.I.P.	P.I.P.	04.12.10	CIRCULAR TYPE AXIAL	STATUS	QTY.
CHD BY P.I.P.	P.I.P.	04.12.10	EXPANSION BELLOWS	QUOTATION AS SHOWN	
APP BY D.K.S.	J.M.P.	04.12.10	DRG NO.:	SII. NO.	REV.
A3	SCALE :	NTS	F5530	15/23	04
			2	D:\Quotation Drawing\F5530.dwg	

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IF IN DOUBT PLEASE ASK		7		6		5		4		3		2		1	
		DESIGN DATA		E.J.M.A. 8th Edition with 2003 Errata		17/8/2011 5:30:30 PM									
		BRAND NAME		E.J.M.A.		EXPANSION JOINT SR.NO./TAG NO.		25/EJ-19							
		TYPE		AXIAL											
		SIZE NB		MM		No.		400							
		QUANTITY		Kg/cm ²		Kg/cm ²		2							
		DESIGN PRESSURE		Kg/cm ²		Kg/cm ²		2.04/FULL VACCUUM							
		TEST PRESSURE		Kg/cm ²		Kg/cm ²		100							
		DESIGN TEMPERATURE		°C		mm		TO (COMP./EXP.)							
		AXIAL MOVEMENT		mm		kg/mm		7							
		AXIAL SPRINGRATE		kg/mm		kg/mm		ABOVE 10000							
		RATED DESIGN CYCLE LIFE		LIFE		LIFE		INLET OF RECEIVER HOPPER							
		LOCATION		117-TH 891A/B FROM 117-GN		117-TH 891A/B FROM 117-GN		-891A/B							
		INSPECTION BY		CI/NT		100%		FOR SR. NO. : 1							
		RADIOGRAPHY		100%											
		BELLOWS DETAIL													
		ØA INSIDE DIMENSION		MM		406									
		ØB O/S DIMENSION AT CONV.		MM		457									
		Lb ACTIVE LENGTH OVER CONV.		MM		220									
		N TOTAL NO. OF CONVOOLUTION		10											
		L MFG. FREE LENGTH		MM		340									
		INSTALLED LENGTH		MM		340									
		PITCH/DEPTH		MM		22/25									
		7 LUG		20 THK		SA240 Gr.304		4							
		6 LIMIT ROD		Ø16 x [430 Lg.] A		EN8		2							
		5 FLANGE (FIM)		AS PER ANSI B16.5 150# [SOFF] A		SA240 Gr.304		2							
		4 PIPE END		3 THK		SA240 Gr.304		2							
		3 INNER SLEEVE		1.2 THK		SA240 Gr.304		1							
		2 COLLAR		1.6 THK		SA240 Gr.304		2							
		1 BELLOWS		0.5 THK x 1 PLY		SA240 Gr.304		1							
		SR. NO.		ITEM		SIZE		MATERIAL		QTY					
						BILL OF MATERIAL									
		ENQ. NO. :		BY E-MAIL		Dated : 22.11.2010									
		FLEXICAN BELLOWS & HOSES PVT. LTD.		283, GDC Makarpura, BARODA-390010											
		CLIENT :		COPIERON IDEAL PVT. LIMITED. (NOIDA)											
		PROJECT :													
		CLIENT REF. DRG. NO. :													
		DRN BY/M.D.P.		M.D.P.		04.12.10		TITLE :							
		CHD BY/P.H.P.		P.H.P.		04.12.10		CIRCULAR TYPE AXIAL							
		APP BY/D.K.S.		J.M.P.		04.12.10		EXPANSION BELLOWS							
		ALT. CHD CHD APP.						DRG NO. :							
		A3		SCALE :		NIS		F5530							
		REVISED AS PER YOUR		DATE		DESCRIPTION									
		04		18.01.11		E-MAIL DATED :									
		03		11.01.11		TELEPHONE TALK									

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IF IN DOUBT PLEASE ASK

DESIGN DATA

DESIGN CODE	E.J.M.A. 8th Edition with 2003 Errata
BRAND NAME	"Flexican"
EXPANSION JOINT SR.NO./TAG NO.	27/EJ-21
TYPE NB	AXIAL
SIZE NB	MM 450
QUANTITY	No. 2
DESIGN PRESSURE	Kg/cm ² g 0.5/FULL VACUUM
TEST PRESSURE	Kg/cm ² g REFER NOTE NO. : 3
DESIGN TEMPERATURE	°C 100
AXIAL MOVEMENT	mm 50 (COMP./EXP.)
AXIAL SPRINGRATE	Kg/mm 7
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	CLEAN AIR LINE FROM ELUTRIATOR TO CYCLONE
INSPECTION BY	CLIENT
RADIOGRAPHY	100%
	FOR SR. NO. : 1

BELLOWS DETAIL

ØA INSIDE DIMENSION	MM 457
ØB O/S DIMENSION AT CONV.	MM 506
Lb ACTIVE LENGTH OVER CONV.	MM 168
N TOTAL NO. OF CONVOLUTION	7
L MFG. FREE LENGTH	MM 340
INSTALLED LENGTH	MM 340
PITCH/DDEPTH	MM 24/24

BILL OF MATERIAL

S/N	ITEM	SIZE	MATERIAL	QTY
9	LUG	12 THK	SA240 Gr.304	4
8	LIMIT ROD	Ø16 x {460 Lg.} Δ	[EN8]	2
7	FLANGE (FIM)	AS PER ANSI B16.5 150# {SOFF} Δ	SA240 Gr.304	2
6	PIPE END-2	3 THK	SA240 Gr.304	1
5	PIPE END-1	3 THK	SA240 Gr.304	1
4	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
3	COLLAR-2	1.6 THK	SA240 Gr.304	1
2	COLLAR-1	1.6 THK x 25 WIDE	SA240 Gr.304	1
1	BELLOWS	0.4 THK x 1 PLY	SA240 Gr.304	1

ENO. NO.: BY E-MAIL Dated : 22.11.2010
FLEXICAN BELLOWS & HOSES PVT. LTD.
283, GIDC Makarpura, BARODA-390010
CLIENT : COPERION IDEAL PVT. LIMITED. (NORDA)

PROJECT :

CLIENT REF. DRG. NO. :	
DRN BY/M.D.P.	M.D.P. [04.12.10] TITLE : CIRCULAR TYPE AXIAL EXPANSION BELLOWS
CHD BY/P.H.P.	P.H.P. [04.12.10]
APP BY/D.K.S.	J.M.P. [04.12.10] DRG NO. : F5530
A3	SCALE : NTS
3	

REVISIONS

REV	DATE	DESCRIPTION
04	18.01.11	REVISOR'S PER YOUR E-MAIL Dated : 14.01.2011
03	11.01.11	REVISED AS PER YOUR E-MAIL Dated : 07.01.2011
02	31.12.10	REVISED AS PER YOUR E-MAIL Dated : 21.12.2010
01	20.12.10	REVISED AS PER YOUR E-MAIL Dated : 18.12.2010

NOTES :

- 5) FIM- FREE ISSUE MATERIAL
- 4) VACUUM TEST (-0.97 Kg/cm²g FOR 30 MINUTES.
- 3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g.
- 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION
- 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

L/S WELD JOINT
(100% D.P. TEST FOR BELLOWS L/S WELD BEFORE & AFTER FORMING)
UP TO 3 MM
3 MM TO 12 MM
L/S WELD JOINT
BACK CHIP TO SOUND METAL & REWELD BEFORE & AFTER FORMING

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IF IN DOUBT PLEASE ASK

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DESIGN DATA

DESIGN CODE E.J.M.A. 8th Edition with 2003 Errata

BRAND NAME flexican®

EXPANSION JOINT SR.NO./TAG NO. 28/EJ-22

TYPE AXIAL

SIZE NB MM 100

QUANTITY No. 5

DESIGN PRESSURE Kg/cm²g 0.5/FULL VACUUM

TEST PRESSURE Kg/cm²g REFER NOTE NO. : 3

DESIGN TEMPERATURE °C 100

AXIAL MOVEMENT mm 65/15 (COMP./EXP.)

AXIAL SPRINGRATE Kg/mm 3

RATED DESIGN CYCLE LIFE ABOVE 10000

LOCATION VENT LINE OF ROTARY VALVE 117-YF-880A-D, 117-YF-881

INSPECTION BY CLIENT

RADIOGRAPHY 100% FOR SR. NO. : 1

BELLOWS DETAIL

ØA INSIDE DIMENSION MM 114

ØB O/S DIMENSION AT CONV. MM 151

Lb ACTIVE LENGTH OVER CONV. MM 150

N TOTAL NO. OF CONVOLUTION 10

L MFG. FREE LENGTH MM 300

INSTALLED LENGTH MM 300

PITCH/DEPTH MM 15/18

8 LUG 12 THK SA240 Gr.304 4

7 LIMIT ROD Ø16 x 395 Lg. 2 EN8 2

6 FLANGE (FIM) AS PER ANSI B16.5 150# (SOFF) SA240 Gr.304 2

5 PIPE END-2 3 THK SA240 Gr.304 1

4 PIPE END-1 3 THK SA240 Gr.304 1

3 INNER SLEEVE 1 IHK SA240 Gr.304 1

2 COLLAR 1.6 THK x 20 WIDE SA240 Gr.304 2

1 BELLOWS 0.3 THK x 2 PLY SA240 Gr.304 1

SR. NO. ITEM SIZE MATERIAL QTY

BILL OF MATERIAL

ENQ. NO.: BY E-MAIL Dated : 22.11.2010

FLEXICAN BELLOWS & HOSES PVT. LTD.

283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT :

CLIENT REF. DRG. NO. :

DRN BY/M.D.P. M.D.P. 04.12.10 TITLE :

CHD BY/P.H.P. P.H.P. 04.12.10 EXPANSION BELLOWS

CHD BY/P.H.P. P.H.P. 04.12.10 DRG NO. :

APP BY/D.K.S. J.M.P. 04.12.10

A3 SCALE : NIS

F5530

STATUS QTY.

QUOTATION AS SHOWN

SH. NO. REV.

22/23 04

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REVISED AS PER YOUR

E-MAIL Dated :

04 18.01.11

03 11.01.11 TELEPHONIC TALK

02 31.12.10 E-MAIL Dated :

01 20.12.10 E-MAIL Dated :

DESCRIPTION

DATE

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GA DRAWING OF METALLIC FLEXIBLES

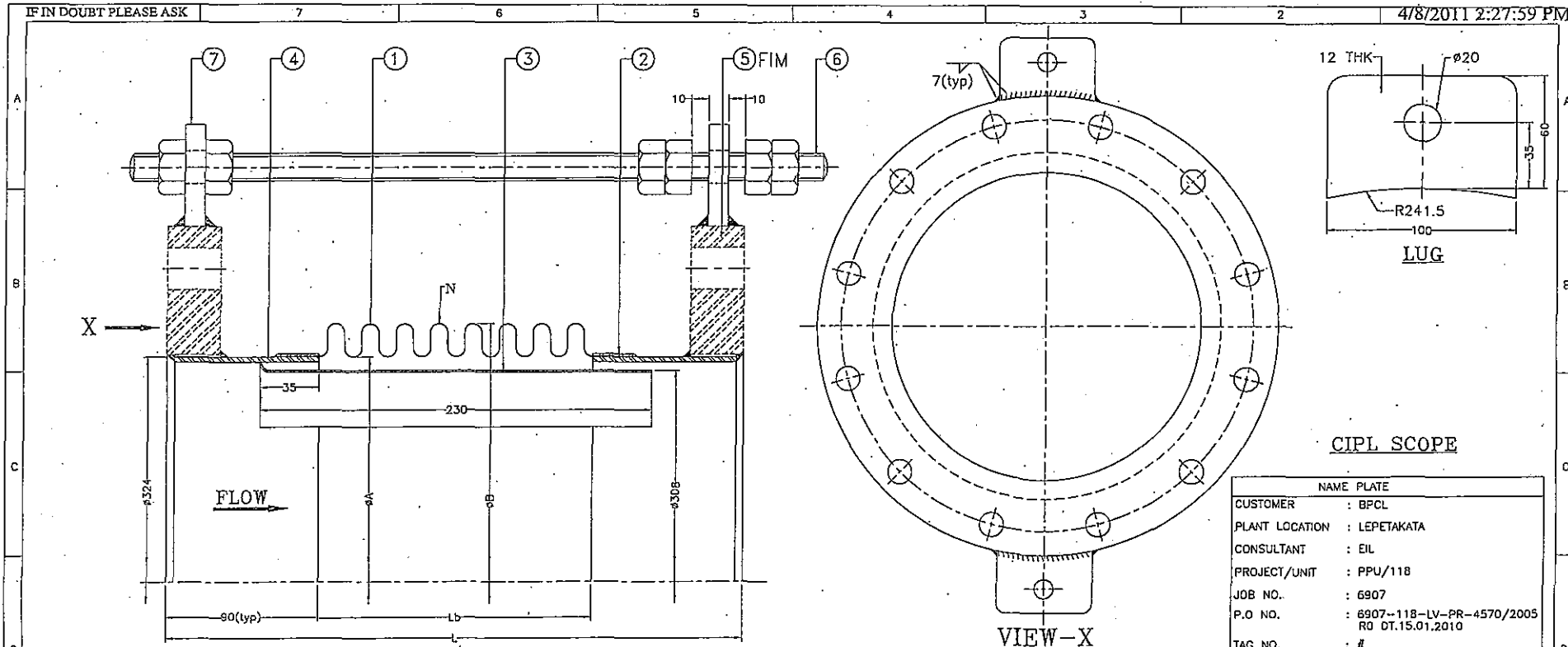
PROJECT	BPCP-60 KTA PP Plant	System	118-LZ-350 / 118-LZ-700
JOB NO.	6907	Service	Expansion Joint
CLIENT	BCPL	Quantity	As per Attachment
LOCATION	Lepatkata, Assam	TAG NO	As per Attachment

GA DRAWING OF METALLIC FLEXIBLES ATTACHED : 1 + 6 PAGES

2	Revision	05.07.2011	Flexican	Flexican	RL	
1	Revision	09.04.2011	Flexican	Flexican	RL	
0	Issued for review	28.01.2011	Flexican	Flexican	RL	OSI2010001.0.408.0183.4
Rev	Description	Date	Prepared	Checked by	Issued by	Doc. No.

IF IN DOUBT PLEASE ASK

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DESIGN DATA

DESIGN CODE: E.J.M.A. 8th Edition with 2003 Errata

BRAND NAME		"flexican"
EXPANSION JOINT SR. NO. / TAG. NO. #		01/118-WS-8405/8408
TYPE		AXIAL
SIZE NB	MM	300
QUANTITY	Nos.	2
DESIGN PRESSURE	Kg/cm ² g	0.51
TEST PRESSURE	Kg/cm ² g	REFER NOTE. NO. : 3
DESIGN TEMPERATURE	°C	90
AXIAL MOVEMENT	mm	(±)10
LATERAL MOVEMENT	mm	00
ANGULAR MOVEMENT	Deg.	00
AXIAL SPRING RATE	Kg/mm	3.24
LATERAL SPRING RATE	Kg/mm	(NOT APPLICABLE)
ANGULAR SPRING RATE	Kg-M/Deg.	(NOT APPLICABLE)
LATERAL OFFSET		NO
RATED DESIGN CYCLE LIFE		ABOVE 10000
LOCATION		AT BAGGING SILO 118-TI
INSPECTION BY		TPI
RADIOGRAPHY	100%	FOR SR. No. : 1 & 4

BELLOWS DETAIL

ØA	INSIDE DIMENSION	MM	324
ØB	O/S DIMENSION AT CONVOLUTION	MM	365
Lb	ACTIVE LENGTH OVER CONVOLUTION	MM	160
N	TOTAL NO. OF CONVOLUTION		8
L	MFG. FREE LENGTH	MM	340
	INSTALLED LENGTH	MM	340
	PITCH/DEPTH		20/20

★ FIM - FREE ISSUE MATERIAL

- 6) PQR, WQR & WPS ARE ATTACHED.
 7) ALL TOLERANCE AS PER EJMA STD.
 8) 100% DP AT WELD SEAM.
 5) 100% RADIOGRAPHY IN LONG SEAM & CIRCUMFERENCE WELD.
 4) PMI TEST TO BE DONE FOR SS/ALLOY STEEL.
 3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g, TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.
 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION.
 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES:

* ANNEALED

SR. NO.	ITEM	SIZE	MATERIAL	QTY
7	LUG	12 THK	SA240 Gr.304	4
6	CONTROL ROD/NUT	Ø16 x 410 Lg./M16	EN8/IS1367 CL.4.0	2
5	FLANGE (FIM)★	AS PER ANSI B16.5 ASA 150# STD SOFF	SA240 Gr.304	2
4	END PIPE	3 THK	SA240 Gr.304	2
3	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 25 WIDE	SA240 Gr.304	2
1	BELLOWS	0.3 THK x 1 PLY	SA240 Gr.304	1

BILL OF MATERIAL

P.O. NO.: GNUOX001028 Dated : 07.01.2011

FLEXICAN BELLOWS & HOSES PVT. LTD.
283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT : BPCL, LEPETAKATA

CLIENT REF. DRG. NO. :

DRN BY G.R.P.	G.R.P.	13.01.11	TITLE :		STATUS	QTY.
CHD BY M.D.P.	M.D.P.	13.01.11	CIRCULAR TYPE AXIAL		ORDER	AS SHOWN
CHD BY P.H.P.	P.H.P.	13.01.11	EXPANSION BELLOWS		SH. NO.	REV.
APP BY J.M.P.	J.M.P.	13.01.11	DRG NO.:	OA-3086/F5470	1/6	02

SCALE : NTS

D:\Order Drawing\OA-3086.dwg

UP TO 3 MM

3 MM TO 12 MM

L/S WELD JOINT
(100% D.P. TEST FOR BELLOWS L/S WELD
BEFORE & AFTER FORMING)

L/S WELD JOINT BACK CHIP TO SOUND METAL & REWELD

REV. DATE DESCRIPTION 'ALT. CH'D' CH'D APP.
01 06.04.11 E-MAIL Dated :
04.04.2011

REV.

DATE

DESCRIPTION

'ALT.

CH'D

CH'D

APP.

A3

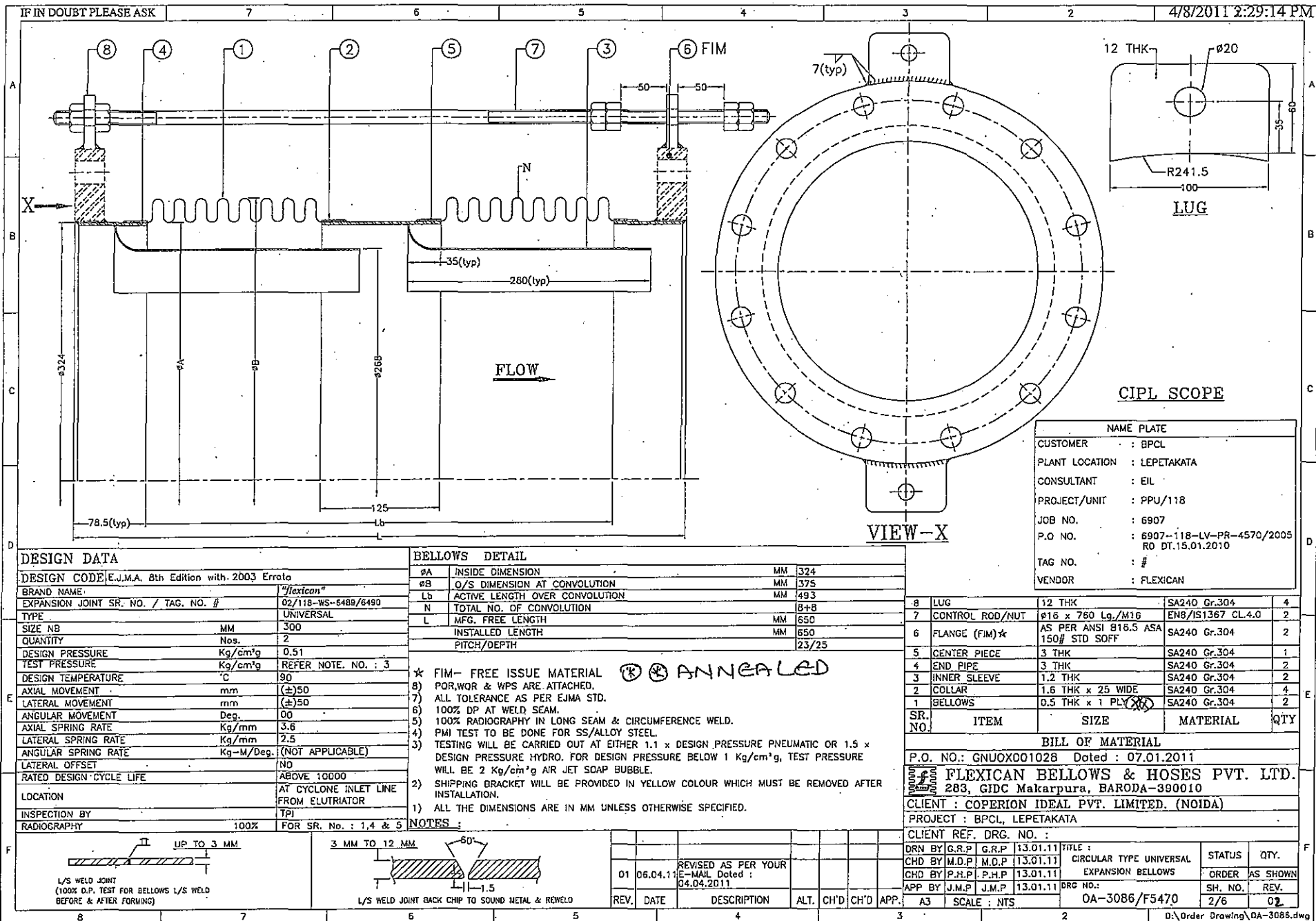
SCALE

NTS

OA-3086/F5470

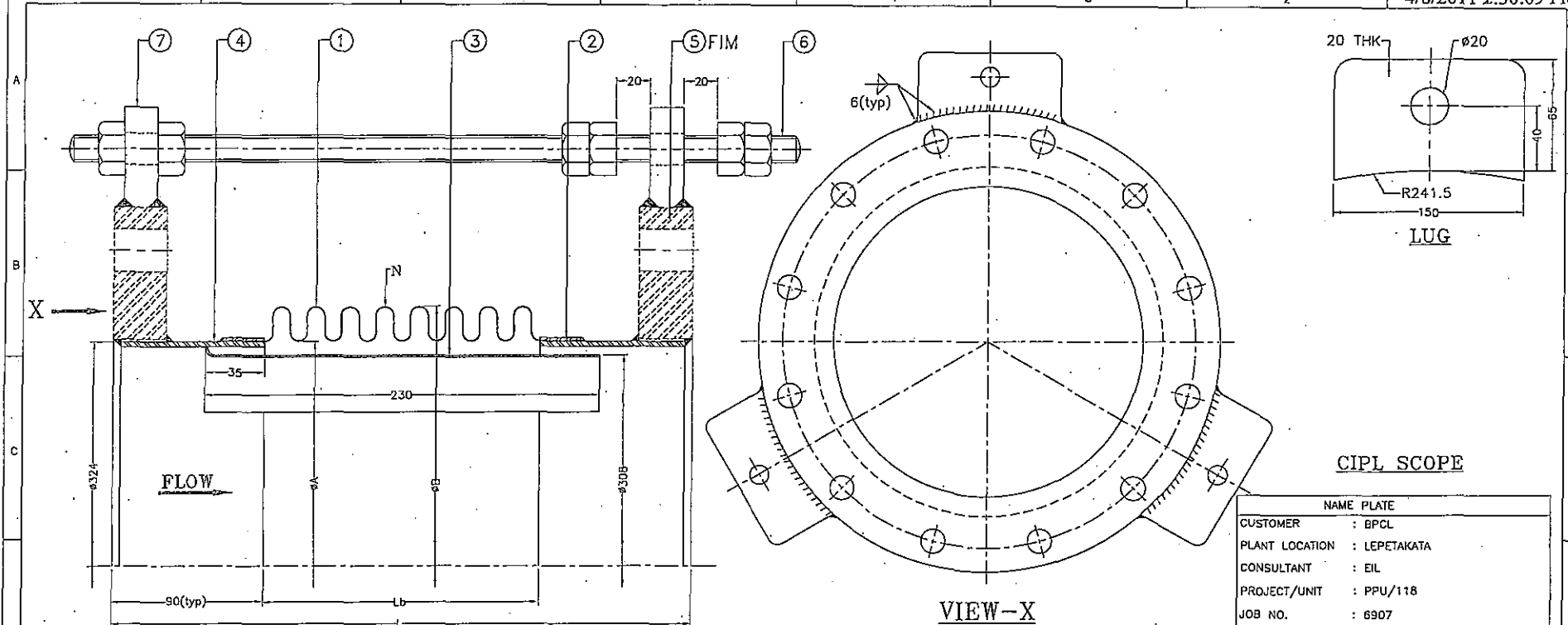
1/6

02



IF IN DOUBT PLEASE ASK

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CIPL SCOPE

NAME PLATE	
CUSTOMER	: BPCL
PLANT LOCATION	: LEPETAKATA
CONSULTANT	: EIL
PROJECT/UNIT	: PPU/118
JOB NO.	: 6907
P.O. NO.	: 6907-118-LV-PR-4570/2005
VENDOR	: RO DT.15.01.2010
TAG NO.	: #
	: FLEXICAN

DESIGN DATA

DESIGN CODE	E.J.M.A. 8th Edition with 2003 Errata
BRAND NAME	"flexican"
EXPANSION JOINT SR. NO. / TAG. NO. #	03,04&05/118-WS-4302/4403/4402
TYPE	AXIAL
SIZE NB	MM 300
QUANTITY	Nos. 1+1+1
DESIGN PRESSURE	Kg/cm ² g 6.12
TEST PRESSURE	Kg/cm ² g REFER NOTE. NO. : 3
DESIGN TEMPERATURE	°C 120
AXIAL MOVEMENT	mm (±)20
LATERAL MOVEMENT	mm 00
ANGULAR MOVEMENT	Deg. 00
AXIAL SPRING RATE	Kg/mm 25.87
LATERAL SPRING RATE	Kg/mm (NOT APPLICABLE)
ANGULAR SPRING RATE	Kg-M/Deg. (NOT APPLICABLE)
LATERAL OFFSET	NO
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	ABOVE ROTARY VALVE 118-YF-330, BELOW ROTARY VALVE 118-YF-331 & ABOVE ROTARY VALVE 118-YF-332
INSPECTION BY	TPI
RADIOGRAPHY	100% FOR SR. No. : 1 & 4

BELLWS DETAIL

#A	INSIDE DIMENSION	MM	324
#B	O/S DIMENSION AT CONVOLUTION	MM	366
Lb	ACTIVE LENGTH OVER CONVOLUTION	MM	180
N	TOTAL NO. OF CONVOLUTION		8
L	MFG. FREE LENGTH	MM	340
	INSTALLED LENGTH	MM	340
	PITCH/DEPTH		20/20

★ FIM- FREE ISSUE MATERIAL

8) POR, WQR & WPS ARE ATTACHED.

7) ALL TOLERANCE AS PER EJMA STD.

6) 100% DP AT WELD SEAM.

5) 100% RADIOGRAPHY IN LONG SEAM & CIRCUMFERENCE WELD.

4) PMI TEST TO BE DONE FOR SS/ALLOY STEEL.

3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g. TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.

2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION.

1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES :

ANN EALGD

7	LUG	20 THK	SA240 Gr.304	6
6	CONTROL ROD/NUT	Ø16 x 430 Lg./M16	EN8/IS1367 CL.4.0	3
5	FLANGE (FIM)★	AS PER ANSI B16.5 ASA 150# STD SOFF	SA240 Gr.304	2
4	END PIPE	3 THK	SA240 Gr.304	2
3	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 25 WIDE	SA240 Gr.304	2
1	BELLOWS	0.5 THK x 2 PLY	SA240 Gr.304	1

BILL OF MATERIAL

P.O. NO.: GNUOX001028 Dated : 07.01.2011

FLEXICAN BELLWS & HOSES PVT. LTD.
283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT : BPCL, LEPETAKATA

CLIENT REF. DRG. NO. :

DRN BY	G.R.P	G.R.P	13.01.11	TITLE :		STATUS	QTY.
CHD BY	M.D.P	M.D.P	13.01.11	CIRCULAR TYPE AXIAL		ORDER	AS SHOWN
CHD BY	P.H.P	P.H.P	13.01.11	EXPANSION BELLWS		SH. NO.	REV.
APP BY	J.M.P	J.M.P	13.01.11	DRG NO.:	OA-3086/F5470	3/6	02
SCALE	NTS						

UP TO 3 MM

L/S WELD JOINT
(100% D.P. TEST FOR BELLWS L/S WELD BEFORE & AFTER FORMING)

3 MM TO 12 MM

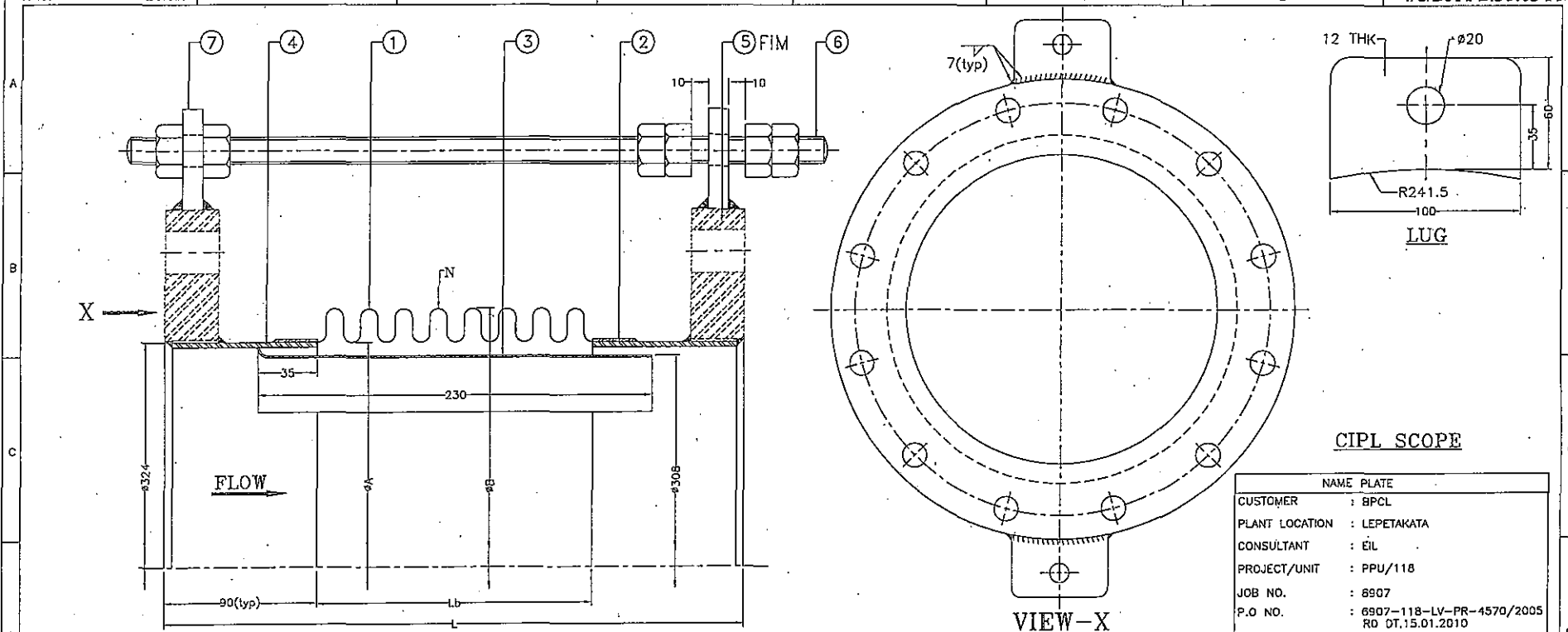
L/S WELD JOINT BACK CHIP TO SOUND METAL & REWELD

REV.	DATE	DESCRIPTION	ALT.	CH'D	CH'D	APP.
01	06.04.11	REVISED AS PER YOUR E-MAIL Dated : 04.04.2011				

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IF IN DOUBT PLEASE ASK

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CIPL SCOPE

NAME PLATE	
CUSTOMER	: BPCL
PLANT LOCATION	: LEPETAKATA
CONSULTANT	: EIL
PROJECT/UNIT	: PPU/118
JOB NO.	: 8907
P.O. NO.	: 6907-118-LV-PR-4570/2005 RD OT.15.01.2010
TAG NO.	: #
VENDOR	: FLEXICAN

DESIGN DATA

DESIGN CODE	E.J.M.A. 8th Edition with 2003 Errata
BRAND NAME	"Flexican"
EXPANSION JOINT SR. NO. / TAG. NO. #	06/118-WS-4506/4508
TYPE	AXIAL
SIZE NB	MM 300
QUANTITY	Nos. 2
DESIGN PRESSURE	Kg/cm ² g 0.51
TEST PRESSURE	Kg/cm ² g REFER NOTE. NO. : 3
DESIGN TEMPERATURE	°C 90
AXIAL MOVEMENT	mm (±)10
LATERAL MOVEMENT	mm 00
ANGULAR MOVEMENT	Deg. 00
AXIAL SPRING RATE	Kg/mm 3.24
LATERAL SPRING RATE	Kg/mm (NOT APPLICABLE)
ANGULAR SPRING RATE	Kg-M/Deg. (NOT APPLICABLE)
LATERAL OFFSET	NO
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	AT INLET OF GRAVITY DIVERTER VALVE 118-XV-4503/4513
INSPECTION BY	TPI
RADIOGRAPHY	100% FOR SR. No. : 1 & 4

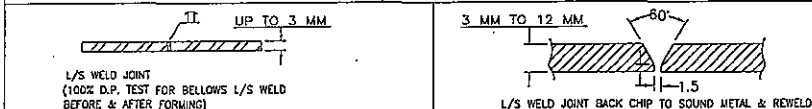
BELLWS DETAIL

aA	INSIDE DIMENSION	MM	324
aB	O/S DIMENSION AT CONVOLUTION	MM	365
Lb	ACTIVE LENGTH OVER CONVOLUTION	MM	160
N	TOTAL NO. OF CONVOLUTION		8
L	MFG. FREE LENGTH	MM	340
	INSTALLED LENGTH	MM	340
	PITCH/DEPTH		20/20

★ FIM- FREE ISSUE MATERIAL Ⓢ Ⓢ ANNEALED

- 8) PQR, WPS & WPS ARE ATTACHED.
- 7) ALL TOLERANCE AS PER EJMA STD.
- 6) 100% DP AT WELD SEAM.
- 5) 100% RADIOGRAPHY IN LONG SEAM & CIRCUMFERENCE WELD.
- 4) PMI TEST TO BE DONE FOR SS/ALLOY STEEL.
- 3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g, TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.
- 2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION.
- 1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES :



REV.	DATE	DESCRIPTION	ALT.	CH'D	CH'D	APP.
01	06.04.11	REVISED AS PER YOUR E-MAIL Dated : 04.04.2011				

SR. NO.	ITEM	SIZE	MATERIAL	QTY
7	LUG	12 THK	SA240 Gr.304	4
6	CONTROL ROD/NUT	16 x 420 Lg./M16	EN8/IS1367 CL.4.0	2
5	FLANGE (FIM)★	AS PER ANSI B16.5 ASA 150# STD SOFF	SA240 Gr.304	2
4	END PIPE	3 THK	SA240 Gr.304	2
3	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 25 WIDE	SA240 Gr.304	2
1	BELLWS	0.3 THK x 1 PLY Ⓢ Ⓢ	SA240 Gr.304	1

BILL OF MATERIAL

P.O. NO.: GNUOX001028 Dated : 07.01.2011

FLEXICAN BELLWS & HOSES PVT. LTD.
283, GIDC Makarpura, BARODA-390010

CLIENT : COPIERION IDEAL PVT. LIMITED. (NOIDA)

PROJECT : BPCL, LEPETAKATA

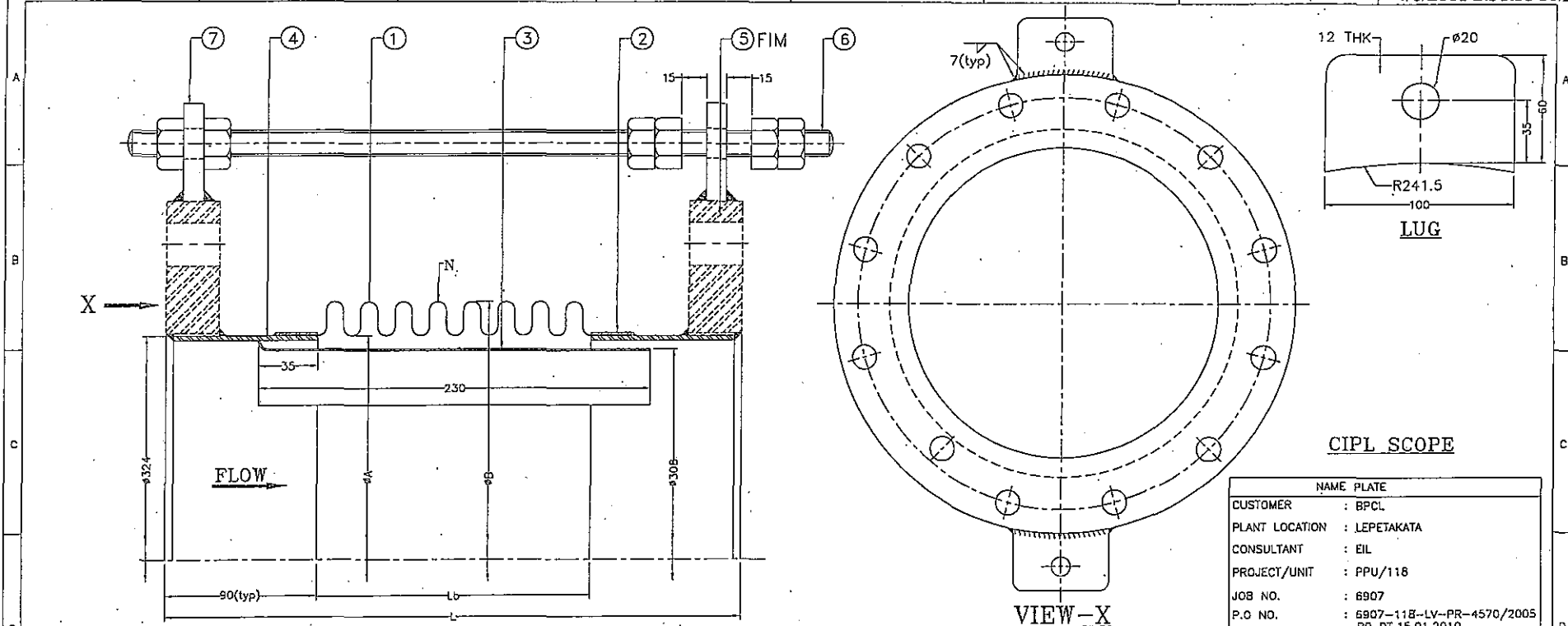
CLIENT REF. DRG. NO. :

DRN BY	G.R.P	G.R.P	13.01.11	TITLE :	STATUS	QTY.
CHD BY	M.D.P	M.D.P	13.01.11	CIRCULAR TYPE AXIAL	ORDER	AS SHOWN
CHD BY	P.H.P	P.H.P	13.01.11	EXPANSION BELLWS	SH. NO.	REV.
APP BY	J.M.P	J.M.P	13.01.11	DRG NO.:	4/6	02
A3	SCALE : NTS			OA-3086/F5470		

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IF IN DOUBT PLEASE ASK

4/8/2011 2:31:53 PM



CIPL SCOPE

NAME PLATE	
CUSTOMER	: BPCL
PLANT LOCATION	: LEPETAKATA
CONSULTANT	: EIL
PROJECT/UNIT	: PPU/118
JOB NO.	: 6907
P.O. NO.	: 6907-118-LV-PR-4570/2005 RO DT.15.01.2010
TAG NO.	: #
VENDOR	: FLEXICAN

DESIGN DATA

DESIGN CODE	E.J.M.A. 8th Edition with 2003 Errata
BRAND NAME	"flexican"
EXPANSION JOINT SR. NO. / TAG. NO. #	07&08/118-WS-4502/4504/4702
TYPE	AXIAL
SIZE NB	MM 300
QUANTITY	Nos. 3
DESIGN PRESSURE	Kg/cm ² g 0.51
TEST PRESSURE	Kg/cm ² g REFER NOTE. NO. : 3
DESIGN TEMPERATURE	°C 90
AXIAL MOVEMENT	mm (±)15
LATERAL MOVEMENT	mm 00
ANGULAR MOVEMENT	Deg. 00
AXIAL SPRING RATE	Kg/mm 3.24
LATERAL SPRING RATE	Kg/mm (NOT APPLICABLE)
ANGULAR SPRING RATE	Kg-M/Deg. (NOT APPLICABLE)
LATERAL OFFSET	NO
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	INLET OF ROTARY VALVE 118-YF-351 AX/BX & INLET OF VESSEL 118-YM-350
INSPECTION BY	ITPI
RADIOGRAPHY	100% FOR SR. No. : 1 & 4

BELLWOS DETAIL

ØA	INSIDE DIMENSION	MM	324
ØB	O/S DIMENSION AT CONVOLUTION	MM	365
Lb	ACTIVE LENGTH OVER CONVOLUTION	MM	160
N	TOTAL NO. OF CONVOLUTION		8
L	MFG. FREE LENGTH	MM	340
	INSTALLED LENGTH	MM	340
	PITCH/DEPTH		20/20

★ FIM-- FREE ISSUE MATERIAL

8) POR, WQR & WPS ARE ATTACHED.

7) ALL TOLERANCE AS PER EJMA STD.

6) 100% DP AT WELD SEAM.

5) 100% RADIOGRAPHY IN LONG SEAM & CIRCUMFERENCE WELD.

4) PMI TEST TO BE DONE FOR SS/ALLOY STEEL.

3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO. FOR DESIGN PRESSURE BELOW 1 Kg/cm²g, TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.

2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION.

1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES :

ANNEALED

UP TO 3 MM

3 MM TO 12 MM

60°

01

05.04.11

REVISED AS PER YOUR

E-MAIL Dated : 04.04.2011

REV.

DATE

DESCRIPTION

ALT.

CH'D

CH'D

APP.

A3

SCALE : NTS

2

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SR. NO.	ITEM	SIZE	MATERIAL	QTY
7	LUG	12 THK	SA240 Gr.304	4
6	CONTROL ROD/NUT	Ø16 x 410 Lg./M16	EN8/IS1367 CL.4.0	2
5	FLANGE (FIM)★	AS PER ANSI B16.5 ASA 150# STD SOFF	SA240 Gr.304	2
4	END PIPE	3 THK	SA240 Gr.304	2
3	INNER SLEEVE	1.2 THK	SA240 Gr.304	1
2	COLLAR	1.6 THK x 25 WIDE	SA240 Gr.304	2
1	BELLWOS	0.3 THK x 1 PLY	SA240 Gr.304	1

BILL OF MATERIAL

P.O. NO.: GNUOX001028 Dated : 07.01.2011

FLEXICAN BELLWOS & HOSES PVT. LTD.

283, GIDC Makarpura, BARODA-390010

CLIENT : COPERION IDEAL PVT. LIMITED. (NOIDA)

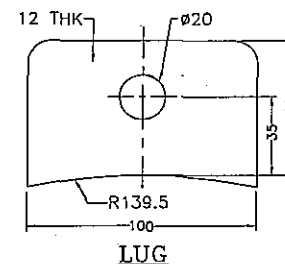
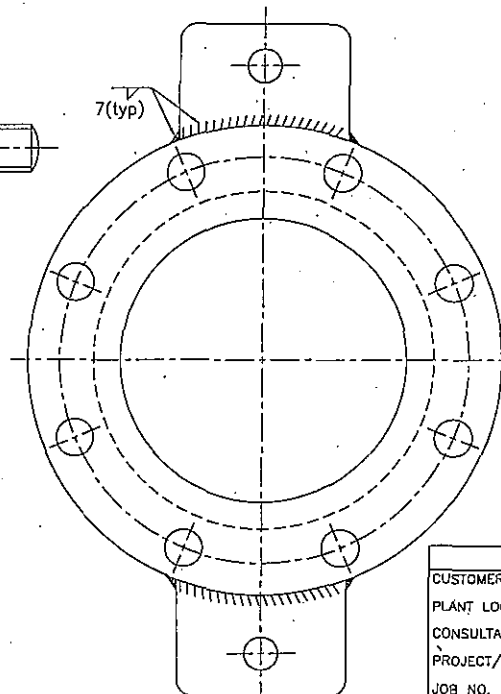
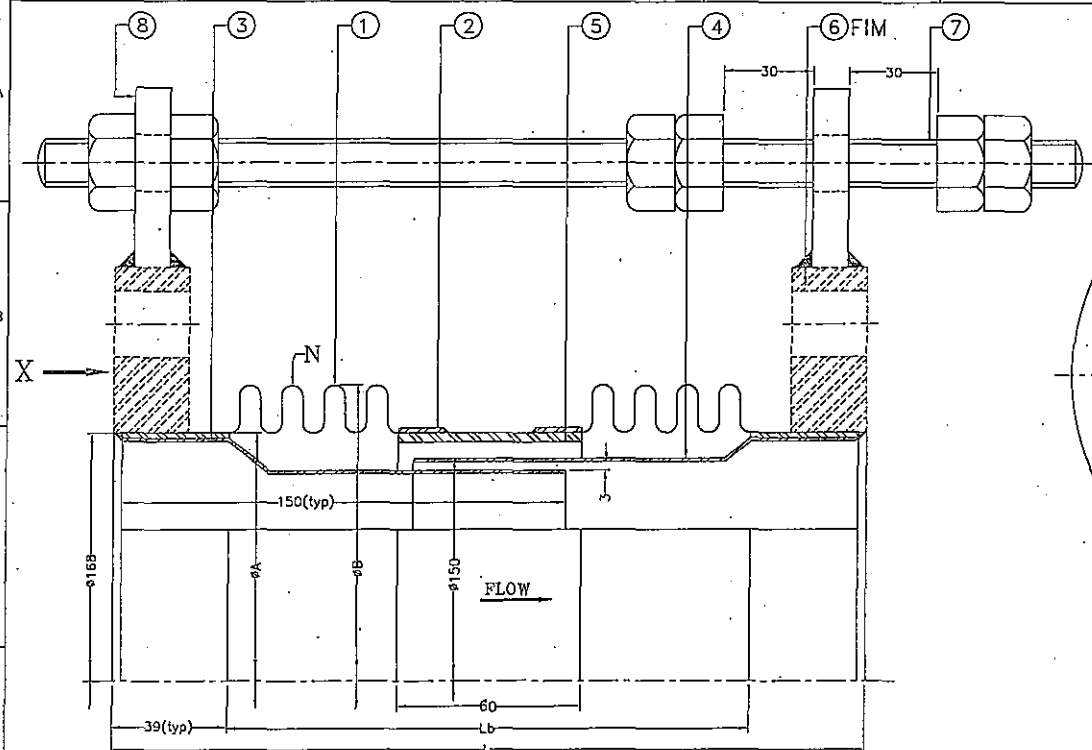
PROJECT : BPCL, LEPETAKATA

CLIENT REF. DRG. NO. :

DRN BY G.R.P	G.R.P	13.01.11	TITLE :	STATUS	QTY.
CHD BY M.D.P	M.D.P	13.01.11	CIRCULAR TYPE AXIAL	ORDER	AS SHOWN
CHD BY P.H.P	P.H.P	13.01.11	EXPANSION BELLWOS	SH. NO.	REV.
APP BY J.M.P	J.M.P	13.01.11	DRG NO.:	5/6	02
			OA-3086/F5470		

IF IN DOUBT PLEASE ASK

4/8/2011 2:32:34 PM



CIPL SCOPE

NAME PLATE	
CUSTOMER	: BPCL
PLANT LOCATION	: LEPETAKATA
CONSULTANT	: EIL
PROJECT/UNIT	: PPU/118
JOB NO.	: 6907
P.O NO.	: 6907-118-LV-PR-4570/2005 RO DT.15.01.2010
TAG NO.	: #
VENDOR	: FLEXICAN

DESIGN DATA

DESIGN CODE	E.J.M.A: 8th Edition with 2003 Errata
BRAND NAME	"Flexican"
EXPANSION JOINT SR. NO. / TAG. NO. #	09/118-WS-4505
TYPE	UNIVERSAL
SIZE NB	MM 150
QUANTITY	Nos. 1
DESIGN PRESSURE	Kg/cm ² 0.101
TEST PRESSURE	Kg/cm ² REFER NOTE. NO. : 3
DESIGN TEMPERATURE	°C 90
AXIAL MOVEMENT	mm (±)30
LATERAL MOVEMENT	mm (±)5
ANGULAR MOVEMENT	Deg. 00
AXIAL SPRING RATE	Kg/mm 3.25
LATERAL SPRING RATE	Kg/mm 5.3
ANGULAR SPRING RATE	Kg-M/Deg. (NOT APPLICABLE)
LATERAL OFFSET	NO
RATED DESIGN CYCLE LIFE	ABOVE 10000
LOCATION	INTER CONNECTION LINE BETWEEN SILOS 118-TI-351 A/B
INSPECTION BY	TPI
RADIOGRAPHY	100% FOR SR. No. : 1 & 5

BELLOWS DETAIL

9A	INSIDE DIMENSION	MM	168
9B	O/S DIMENSION AT CONVOLUTION	MM	201
Lb	ACTIVE LENGTH OVER CONVOLUTION	MM	172
N	TOTAL NO. OF CONVOLUTION		4+4
L	MFG. FREE LENGTH	MM	250
	INSTALLED LENGTH	MM	250
	PITCH/DEPTH		14/16

★ FIM - FREE ISSUE MATERIAL

8) PQR, WQR & WPS ARE ATTACHED.

7) ALL TOLERANCE AS PER EJMA STD.

6) 100% DP AT WELD SEAM.

5) 100% RADIOGRAPHY IN LONG SEAM & CIRCUMFERENCE WELD.

4) PMI TEST TO BE DONE FOR SS/ALLOY STEEL.

3) TESTING WILL BE CARRIED OUT AT EITHER 1.1 x DESIGN PRESSURE PNEUMATIC OR 1.5 x DESIGN PRESSURE HYDRO, FOR DESIGN PRESSURE BELOW 1 Kg/cm²g. TEST PRESSURE WILL BE 2 Kg/cm²g AIR JET SOAP BUBBLE.

2) SHIPPING BRACKET WILL BE PROVIDED IN YELLOW COLOUR WHICH MUST BE REMOVED AFTER INSTALLATION.

1) ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

NOTES :

ANNEALED

8	LUG	12 THK	SA240 Gr.304	4
7	CONTROL ROD/NUT	Ø16 x 350 Lg./M16	EN8/IS1367 CL.4.0	2
6	FLANGE (FIM)★	AS PER ANSI B16.5 ASA 150# STD SOFF	SA240 Gr.304	2
5	CENTER PIECE	3 THK	SA240 Gr.304	1
4	INNER SLEEVE	1.2 THK	SA240 Gr.304	2
3	COLLAR-2	1.6 THK	SA240 Gr.304	2
2	COLLAR-1	1.6 THK x 15 WIDE	SA240 Gr.304	2
1	BELLOWS	0.3 THK x 1 PLY	SA240 Gr.304	2

BILL OF MATERIAL.

SR. NO.	ITEM	SIZE	MATERIAL	QTY
---------	------	------	----------	-----

UP TO 3 MM

L/S WELD JOINT
(100% D.P. TEST FOR BELLOWS L/S WELD
BEFORE & AFTER FORMING)

3 MM TO 12 MM

L/S WELD JOINT BACK CHIP TO SOUND METAL & REWELD

01 08.04.11

REV. DATE

REVISED AS PER YOUR
E-MAIL Dated :
04.04.2011

DESCRIPTION

ALT.

CH'D

CH'D

APP.