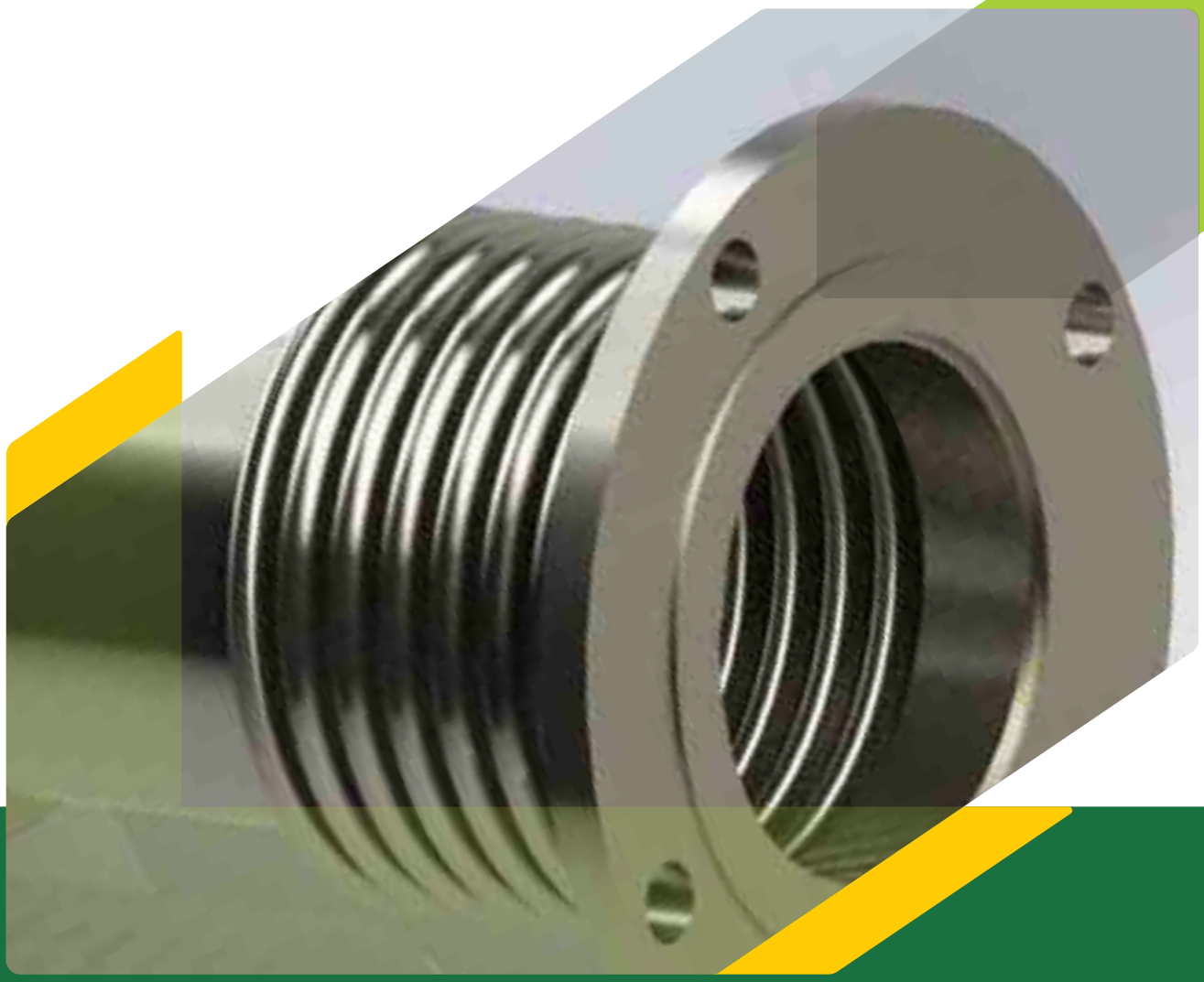
Manufacturers of Metallic and
Non Metallic Expansion Joints,
Compensators & Hoses



ATHULYA

**ATHULYA BELLOWS &
ENGINEERING PVT. LTD**
Since 1999

www.athulyabellow.com

Preforming Higher Benchmarks

www.athulyabellow.com

Athulya Bellows & Engineering Private Limited today stand as a symbol for dynamism and innovation transformation. A self driven company by values, knowledge and relationships these values are reflected through our leadership of out managing director, mr. Alpesh shah.

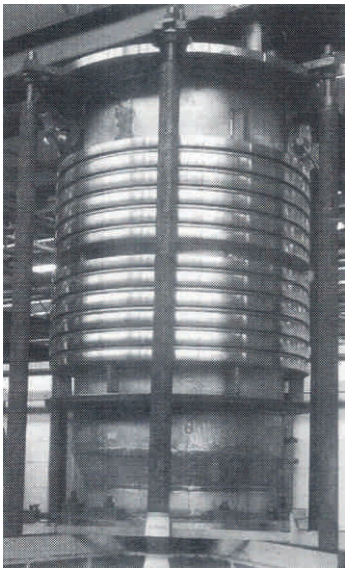
The company has its expertise in the field of manufacturing metallic expansion bellows joints / compensators & corrugated hoses with advanced technology and upholding its highest world class quality standard and creating benchmarks of excellence globally

Athulya bellows & engineering private limited, our strategy is to build around our vision & core values. We strongly believe that the growth of an organization is our vision to grow in an escalating competitive market, to an large extent, be our commitment towards our values, and our integral part of our employees who have become partners in the long journey we have also build strong relationship with our national & international customers, by adopting various strategies for making them more competitive in markets of asia, middle east, europe & africa

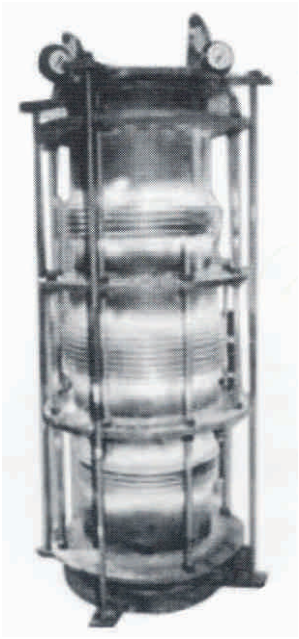
Our success story we enjoy today is our primary focus towards new vertical of industries, Armed with an attitude of our consistent quality, persistent innovation & professional Excellence

Managing Director

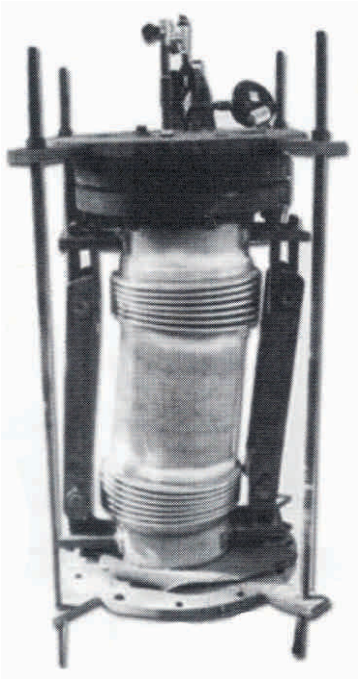
Manufacturing Solutions in quality Control Methods & we adhere to.... see how our bellows are filtered for quality



TIED UNIVERSAL BELLOW



INLINE PRESSURE BALANCED BELLOW



HINGED TYPE UNIVERSAL BELLOW IN PRESSURE TEST IN LATERAL POSITION

(I) Raw material identification by mechanical / chemical analysis by approved laboratory.

(ii) Surface defects/well integrity checks by liquid penetrant examination before & after cold work.

(iii) Radiography examination for welded components if required.

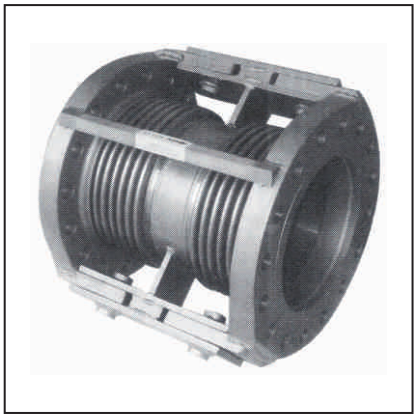
(iv) Magnetic particle & ultrasonic test by approved third party agency.

(v) Air Jet (Pneumatic / Hydro) Pressure testing for leakages of components & assembly.

(vi) Helium leak test by approved agency for cryogenic application bellows.

(vii) Dimensional verification of components/assembly.

(viii) Performance valuation cum destructive (type) tests like cycle life, squirm, yield rupture, Axial spring rate, lateral spring rate etc..



bonding with sources for quality bellows we use.....

(A)	Shearing machine (0.1 mm to 4 mm x 150 mm width	....2 Nos.
(B)	Lathe Machine	....6 Nos.
(C)	Rectifier For welding Jobs	....20 Nos.
(D)	Thyristor Controlled TIG Welding Set	....7 Nos.
(E)	Bellow forming machine (Size : 32NB to 100 NB, 125NB to 2000NB, 200NB to 6000NB)	....8 Nos.
(F)	Testing Fixtures	....6 Nos.
(G)	Cycle Life Fixtures	....2 Nos.
(H)	Welding Fixtures	....9 Nos.
(I)	Drilling Machine	....5 Nos.
(J)	Rolling Machine	....2 Nos.
(K)	Oven	....1 Nos.
(L)	Air Compressor	....3 Nos.
(M)	Hydraulic Press	....2 Nos.

OUR QUALITY POLICY

About this Policy

In operating as a successful business, we are committed to carrying out all our business activities in a sustainable manner by pursuing continuous improvement in all aspects of our business. As part of our commitment to continuous improvement, customer focus and compliance with regulatory and statutory requirements, the company's Quality program is based on the following principles that identify, manage and evaluate our key business activities, and reduce process, people, health and safety risk.

Planning

1. Include quality and continuous improvement considerations in all our decision making.
2. Provide adequate support and resources for people at all levels to fulfil their responsibilities.
3. Implement quality systems, standards & processes to enable all activities to be carried out in A sustainablemanner.
4. Conduct regular reviews of the company's performance and implement improvements as required.
5. Continuously improve the company's quality performance.
6. Continuously improve the company's quality system.

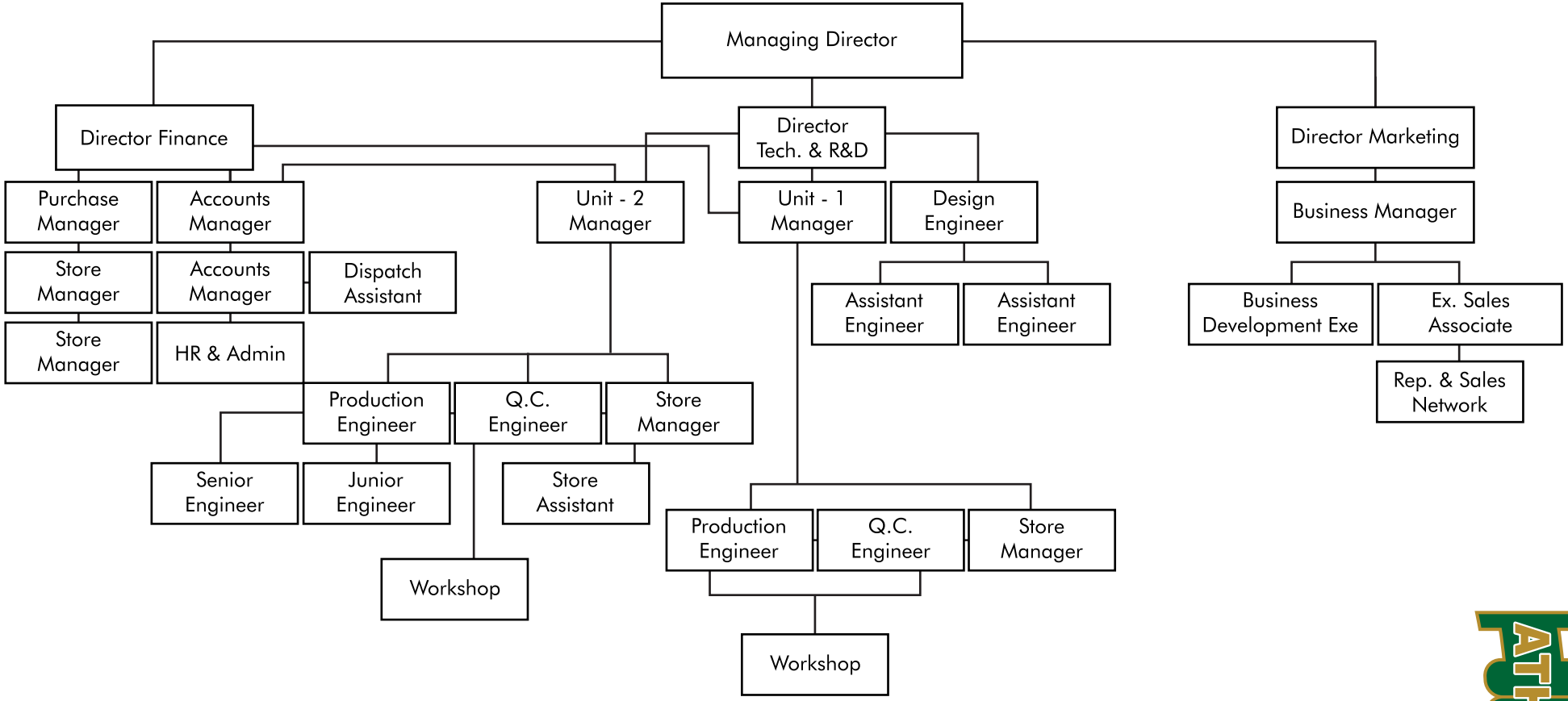
Practices

1. Meet quality standards in the company's key activities.
2. Assess the quality impacts of the company's activities.
3. Plan, design, and complete all activities in a way that reduces or eliminates risks & hazards.
4. Ensure compliance with quality standards, applicable legislation, regulations and codes of practice.

People

1. Appoint capable and experienced people to carry out work with a quality focus that aligns with ABEPL'S Quality System and the requirements of this policy
2. Provide opportunities for our people to develop the appropriate knowledge, skills and behaviors to ensure that every activity or task is carried out with the utmost respect for quality.
3. Specify the need for contractors to carry out their work in accordance with ABEPL'S Quality System and the requirements of this policy and monitor compliance.
4. Communicate with relevant key stakeholders about the company's performance and critical activities

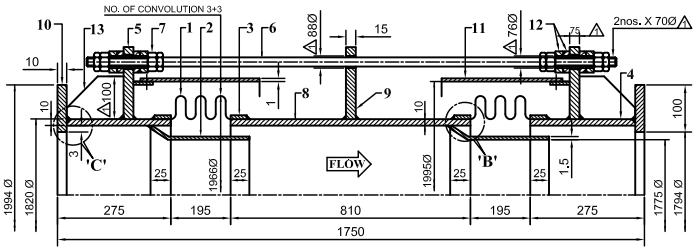
brief layout how we are arranged....

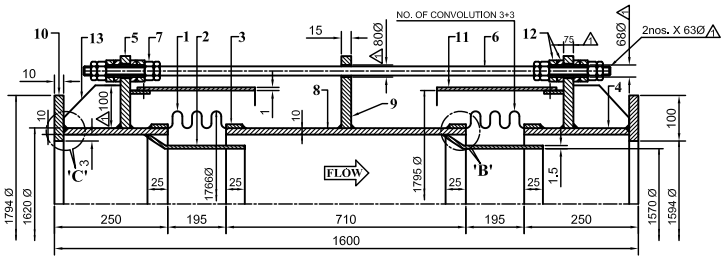


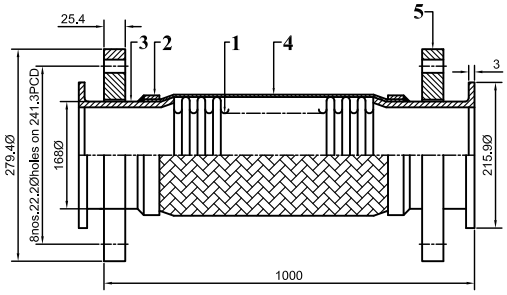
We do not format quality We simply make it.

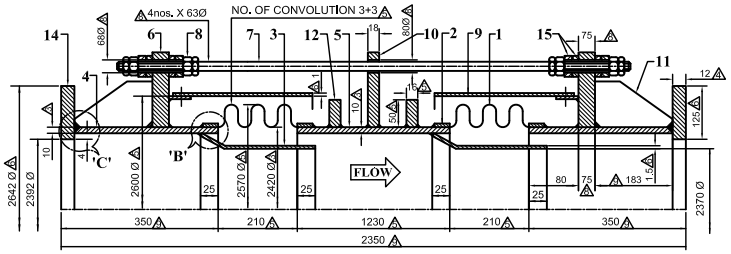
Introducing our Q.A. plan for a typical circular bellow

Bellow General Arrangement Drawings









QUALITY PLAN FOR EXPANSION BELLOW

R : REVIEW
W : WITNESS
H : HOLD

CLIENT. : -
P. O. NO. : -
JOB NO. : 246/12-13
INSP. BY. : IRS/ATHULIYA
Q.A.P. NO. : ABPL/028/12-13 REV - 1

-
-
W - Witness

Date - 29.03.2013

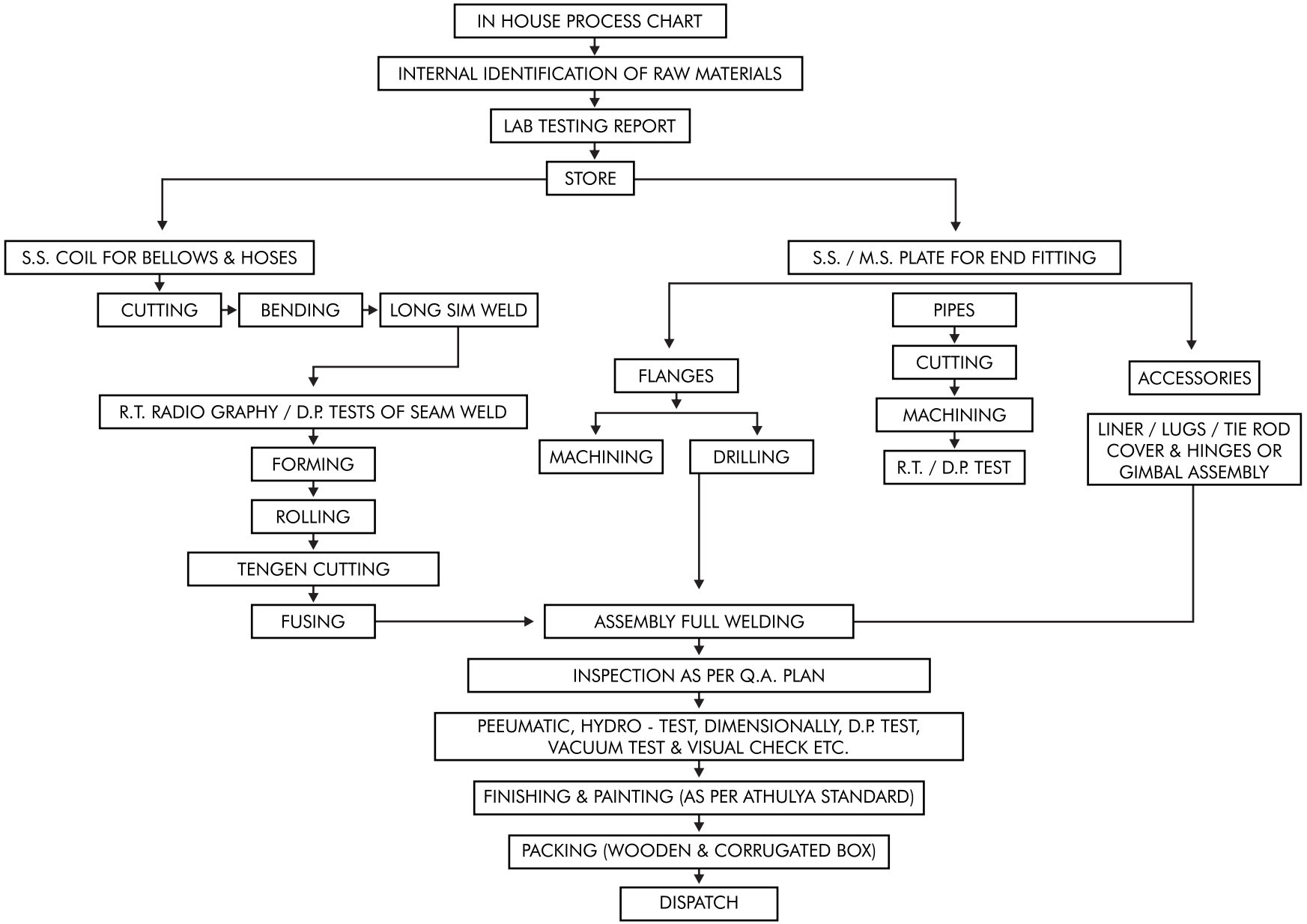
-
R - Review

Drg. No. ABPL / 552 / 12-13 Rev-5
Project - Relaice PBR - 111

COMPONENT & OPERATION	CHARACTER - ISTICS	CLASSI - FICATION	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	FORMATS OF RECORD	ACCEPT - ANCE NORM	MFG.	CLIENT	REMARKS
A) Identification & Control of Materials A. 1 Bellow elements. A. 2 End Pipe	Material Identification as per T.C. / C.T.C.	Major Major	Visual Mechanical & Chemical Analysis	100%	ASME SEC. II EJMA	Inspector's Log Book TC / CTC	ASME SEC II EJMA	W W	R R	
B) In Process Inspection B. 1 Longitudinal Seam Welding (Bellows) B.2 Forming of Bellows element	Weld Quality Dimensional Conformity	Major Major	D.P. TEST D.P. TEST	100% 100%	ASME SEC. V VI & IX APPD. DWG.	DP Test Reports	ASME SEC. V VI & IX APPD. DWG.	W W	R R	
C) Final Inspection C. 1 Dimension C. 2 Air Jet Test / Hydro Test / Pneumatic Tesr C. 3 Painting / Packing C. 4 Mfg's Record Book Review C.5 Release of Supplement	Document Review	Major Major Major Major	Visual Visual Visual Visual	100% 100% 100% 100%	Appd. Dwg. Appd. Dwg. Appd. Dwg. Project Specification	Dimensional Report Inspector's Log Book Inspector's MRB Standard Format	Approved Drg- / as per Specification P.O. / Approved Drawing Project Specification	W W W R	W R R R R H	

LEGEND - R - Review, H - Hold, MRB - Manufacturer Record Book, TC - Test Certificate, CTC - Check Test Certificate D.P. - Dyepenetrant Testing

Annexure - VI Manufacturing Process Chart



Bellow Installation Guide

The following recommendations are included to avoid the most common errors that occur during installation When in doubt about an installation procedure, contact the manufacturer for clarification before attempting to install the expansion joint.

DO'S

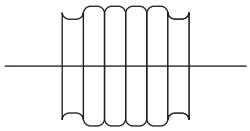
1. Inspect for damage during shipments such as dents, broken hardware, water marks on carton etc.
2. Store in clean, dry area where it will not be exposed to heavy traffic or damaging environment
3. Use only designated lifting lugs when provided
4. Make the piping system fie the expansion joint. By stretching, compressing or offsetting the joint to fix the piping the expansion joint may be over stressed when the system is in service
5. Leave one flange loose on the adjacent piping when possible, until the expansion joint has been fitted into position, make necessary adjustments of this loose flange before welding
6. Install the joint with the arrow pointing in the direction of the flow
7. Install single van stone liners pointing in the direction of the flow. Be sure also to install a gasket between a van stone liner and flange.
8. In case of telescoping liner, install the smallest ID. Liner pointing in the direction of the flow
9. Remove all shipping devices after the installation is complete and before any pressure test of the fully installed system.
10. Remove any foreign material that may have become lodged between the convolutions.
11. Refer to the proper guide spacing and anchoring

DON'TS

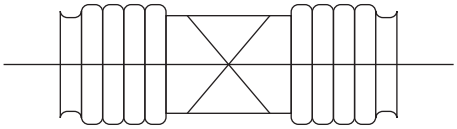
1. Drop or strike expansion joint
2. Remove the shipping bars until the installation is complete
3. Remove any moisture-absorbing desiccant bags or protective coatings until ready for installation
4. Use hanger lugs or shipping bars as lifting lugs
5. Use chains or any lifting device directly on the bellows or bellows cover
6. Allow weld spatter to hit unprotected bellows
7. Use cleaning agents which contain chlorides
8. Force or rotate one end of an expansion joint for alignment of bolt holes. Bellows are not ordinarily capable of absorbing torsion.
9. Hydrostatic pressure test or evacuate the system before proper installation of all guides & anchors
10. Use shipping bars to restrain the pressure thrust during testing
11. Use pipe hangers as guides
12. Exceed the manufacturers rated test pressure of the expansion joint
13. Remove expansion joint hardware, Le, tie rod, hinge pins/plates, gimbal pins/plates. If interference exists with piping components, consult with the expansion joint manufacturer regarding possible solutions.

Caution:
The manufacturer's warranty may be void if improper installation procedures have been used.

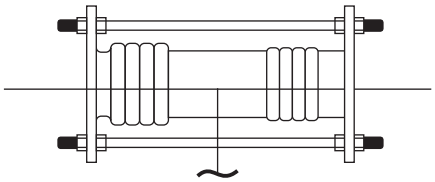
Key to Symbols used



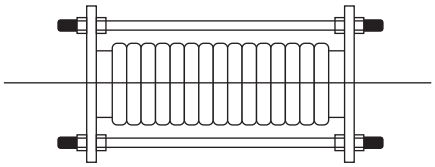
SINGLE EXPANSION JOINT



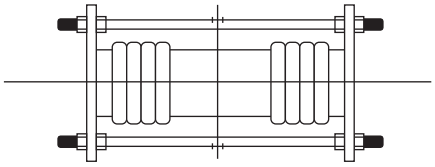
DOUBLE EXPANSION JOINT
WITH INTERMEDIATE ANCHORE



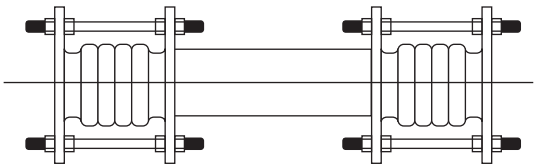
PRESSURE BALANCED EXPANSION JOINT



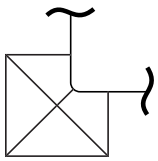
SINGLE EXPANSION JOINT WITH TIE RODS



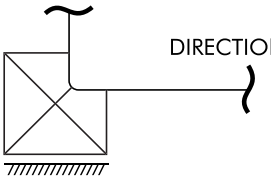
UNIVERSAL EXPANSION JOINT WITH OVARIAL TIE RODS



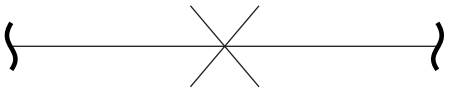
UNIVERSAL EXPANSION JOINT WITH SHORT TIE RODS



MAIN ANCHOR

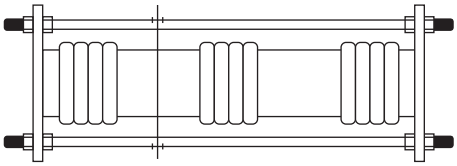


DIRECTIONAL MAIN ANCHOR

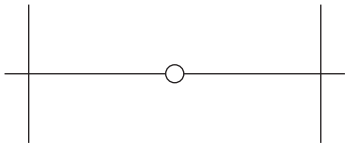


INTERMEDIATE ANCHOR

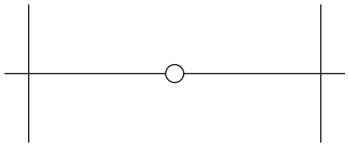
PIPE ALIGNMENT GUIDE



UNIVERSAL PRESSURE BALANCE EXPANSION ANCHOR

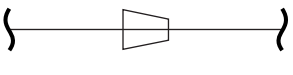


HINGED EXPANSION JOINT



GLMBAL EXPANSION JOINT

PLANAR PIPE ALIGNMENT GUIDE



PIPE REDUCER

"ATHULYA'S" Manufacturing Facilities :

Our Year of Establishment is 1999. Total Area 28000 Sq. Ft. Electric Power Connected load is 65 KW. We have in house department for Design, R&D, Production, Quality Control / Inspection and after Sales Engg Support.

Our storage covered Area is 1500 Sq. Ft, Production and Fabrication shop covered Area is 6500 Sq. Ft & Office Area is 2000 Sq. Ft.

Our fabrication shop is equipped with self developed latest machineries & technology for manufacturing of world class Metallic & Non Metallic Bellows, Expansion Joints, Flexible Hose Assemblies & Compensators.

Our Circular Bellows Size Range is 50 NB upto 8000 NB & Rectangular Bellows any Size, having Total Annual Production Capacity of 15000 Nos.

ATHULYA BELLOWS & ENGG PVT. LTD.

DESIGN CALCULATION SHEET FOR CIRCULAR BELLOWS

ATHULYA BELLOWS & ENGG. PVT. LTD.

DESIGN CALCULATION SHEET FOR CIRCULAR BELLOWS

DESIGN SR. NO.	19906	REV. : 1	DRG. NO :	ABPL/831/18-19	DATE : 11/9/19
NAME OF CLIENT	JSW STEEL LIMITED				
TYPE OF BELLOWS	UNIVERSAL BELLOW			ITEM NO : 11	
ENQUIRY NO	BY EMAIL		DATED :	17-08-2018	QTY (Nos) : 1

INPUT PARAMETERS (mm)	
SIZE OF THE EXPANSION BELLOWS (NB)	3,600.00
DESIGN PRESSURE (kg/cm²) (KG/	0.20
DESIGN TEMPERATURE (°C)	60.00
BELLOWS I.D.	3,624.00
BELLOWS O.D.	3,776.00
NO. OF CONVOLUTIONS (N)	6.00
THK OF ONE PLY	0.40
NO. OF PLIES	4.00
BELLOWS PITCH	70.00
BELLOWS DEPTH	74.40
CENTRE SPOOL PIECE	150.00

MOVEMENT (mm)	
AXIAL EXTENSION	60.00
AXIAL COMPRESSION	60.00
LATERAL DEFLECTION - Principal Dirn.	5.00
LATERAL DEFLECTION - Trans. Dirn.	0.00
ANGULAR ROTATION (Deg)	5.00

LINEAR DIMENSIONS (mm)	
ACTIVE LENGTH	420.00
OVERALL LENGTH	720.00
INSTALLATION LENGTH	675.00

STRESS CALCULATION RESULTS (PSI)	
TANG. CICUM. MEM. STRESS (S1)	981.02
COLAR. CICUM. MEM. STRESS (S'1)	982.75
BELL. CICUM. MEM. STRESS (S2)	1,999.02
BELL. MERI. MEM. STRESS (S3)	66.83
BELL. MERI. BEND. STRESS (S4)	7,410.08
BELL. MERI. MEM.DEFL. STRESS (S5)	293.63
BEL. MERI. BEND. DEFL. STRESS (S6)	138,697.68
TOTAL STRESS (St)	144,225.14

VARIABLE FACTORS	
ALLOWABLE STRESS (psi)	18,890.91
X-AXIS VAL. FOR GRAPH	0.48
Y-AXIS VAL. FOR GRAPH	0.83
VALUE FOR - Cp	0.59
VALUE FOR - Cf	1.41
VALUE FOR - Cd	1.87

MATERIAL OF CONSTRUCTION	
BELLOWS	SA240 TP304
WELD END	SA240 TP304
COLLAR RING	SA240 TP304
LINER	SA240 TP304
FLANGES	SS 304
LUGS	SS 304
TIE / LIMIT RODS	IS 1367 CL 4.6
COVER	N.A.
HINGE BAR	N.A.
HINGE PIN	N.A.

Bellows Cross Sec. Eff. Area (cm²)	107564.29
TEST PRESSURE (Kg/cm²)	0.30

BELLOWS PRESS. CAPACITY CHECKS LIMITING DESIGN PRESSURE TO	
COLUMN (Kg/cm²) - Psc	1.13
INPLANE (Kg/cm²) - Psi	0.69

LIFE CYCLE & SPRING RATES	
CYCLE LIFE (Cycle to failure)	29392

SPRING RATES	
AXIAL (kg/mm)	8.83
LATERAL (Kg/mm)	510.73
ANGULR (Kg.m / deg)	527.39

Regd. Office : B/2, Sahajanand Appt. Nr. Ward Office No. 6, Old Padra Road, Baroda - 20 (Gujarat)
Telephone : 0265 - 2344238 Fax : (91) 0265 - 2352805 E-Mail : athulyabello@satyam.net.in

Our two manufacturing unit details are as below:

UNIT I :

We manufacture Circular Bellows upto 1000 NB at our chhani Works at Vadodara.

UNIT II :

We manufacture Circular Bellows upto 6000 NB & Rectangular Bellows of any size at Makarpura Works at Vadodara

Both units are approved by many companies, third party inspection agencies & consultants.

List of Material Handling Facilities :

Over Head Cranes – 2TXI No. IT X I NO.,
10 T Z I.NO.
500 Kgs X I No. Hydro upto I 5T Capacity.

In house testing facilities :

1. Pneumatic test.
2. Hydro test.
3. Vacuum test.
4. Dye/Liquid Penetrant test.
5. Air jet leak test.
6. Type testing of bellows.
7. Spring rate test.
8. Measuring instruments with valid calibration certificates.

Out sourced testing facilities:

I. Raw materials testing.
2. Radiography test.
3. Solution annealing / heat treatment.
4. Helium test.
5. Finite Element Analysis.

KEY ACHIVEMENTS OF M/S. ATHULYA BELLOWS & ENGINEERING PRIVATE LIMTED – VADODARA, GUJARAT

Sr. No.	Company Name	Purchase Order No.	P.O.Date	Our job No.	Application & Speciality
1	PRAXAIR INDIA PVT.LTD	3000020	20-08-2003	119/03-04	COLD BOX COMPRESSOR DUCT LINE 1ST TIME MEJ DEVELOPED BY ATHULYA & SUCCESSFUL JOB COMPLETION PROJECT: HINDALCO INDUSTRIES LTD
2	PRAXAIR INDIA PVT.LTD	38000293	01-09-2004	118/03-04	ON THE BASIS OF QUALITY & PAST SUPPLIED PERFORMANCE, NEW ORDER FOR MEJ AWARDED TO ATHULYA CLIENT PROJECT: TATA STEEL, JAMSHEDPUR
3	PRAXAIR INDIA PVT.LTD	38000584	25-11-2004	198/03-04	COMPRESSOR & WARM LINE IST TIME DEVELOPED IN INDIA & DEVELOPED BY ATHULYA & SUCCESSFUL JOB COMPLETION CLIENT PROJECT: TATA STEEL, JAMSHEDPUR
4	PRAXAIR INDIA PVT.LTD	38000585	25-11-2004	199/03-04	FOR LIQUID STORAGE TANKS & PIPING DEVELOPED BY ATHULYA AND SUCCESSFUL JOB COMPLETION CLIENT PROJECT: INDIAN GLYCOLS LIMITED
5	PT. CABOT. INDONESIA	1755105	23-11-2006	231/06-07	FOR COGEN PLANT TAIL GAS APPLICATION ORDER AWARDED TO ATHULYA AND SUCCESSFUL JOB COMPLETION
6	TATA CHEMICALS LIMITED	4500027682	12-05-2006	36/06-07	FABRIC CONVERTED TO METALLIC WHICH IS PERFORMING GOOD
7	ISPAT IND.LTD	5200014214	17-03-2007	380/06-07	ON THE BASIS OF QUALITY & PAST SUPPLIED PERFORMANCE NEW ORDER FOR MEJ AWARDED TO ATHULYA
8	ISPAT IND.LTD	4400021868	09-03-2007	374/06-07	BLAST FURNACE STOVE BELLOW DEVELOPED BY ATHULYA & SUCCESSFUL JOB COMPLETION
9	ESSAR OIL LIMITED	450002833	16-05-2007	38/07-08	ONLINE REPARING AT SITE & JOB EXECUTED SUCCESSFULLY
10	TATA CHEMICALS LIMITED	4210016769	28-08-2010	206/10-11	DEVELOPED, DESIGN, ENGG, MFG AND SUPPLY OF NEW BELLOW FOR CFBC BOILER COAL FEED APPLICATION.
11	RELIANCE IND.LIMITED	HZ6/7294340	07-01-2011	358/10-11	ONLINE REPARING AT SITE & JOB EXECUTED SUCCESSFULLY.
12	ISPAT IND. LIMITED	4400057473/ 9100690584	19-11-2012	193/12-13	ON THE BASIS OF QUALITY & PAST SUPPLIED PERFORMANCE NEW ORDER FOR MEJ AWARDED TO ATHULYA
13	HUMBOLOLDT WEDAG, INDIA	VARIOUS ORDERS	VARIOUS ORDERS	VARIOUS ORDERS	EXECUTED EXPORT ORDERS & GOODS MFG. FOR THE 1ST TIME IN INDIA & BEING EXPORTED TO ASAKA RAISUT OMAN, ACC JORDAN ETC. LETTER OF APPRECIATION & KUDOS RECEIVED FOR THE BEST SEAWORTHY PACKAGING.
14	THERMA & SPX USA	VARIOUS ORDERS	VARIOUS ORDERS	VARIOUS ORDERS	AFTER JV FIRST ORDER PLACED ON ATHULYA FOR DESIGN, ENGG, MFG & SUPPLY OF MEJ AND JOBS EXECUTED SUCCESSFULLY
15	GEI INDUSTRIAL SYSTEMS	VARIOUS ORDERS	VARIOUS ORDERS	VARIOUS ORDERS	DESIGN, ENGG & MFG. OF BELLOWS FOR ACC SYSTEMS RANGING FROM 50 MW TO 150 MW, FOR THE IST TIME IN INDIA MAX 4600 NB & JOBS EXECUTED SUCCESSFULLY
16	PAHARPUR COOLING TOWERS LTD.	VARIOUS ORDERS	VARIOUS ORDERS	VARIOUS ORDERS	DESIGN, ENGG & MFG. OF BELLOWS FOR ACC SYSTEMS FOR 300 MW, FOR THE 1ST TIME IN INDIA MAX 5800 NB & JOBS EXECUTED SUCCESSFULLY

GROWTH PROGRESS OF AHTULYA BELLOWS

2022-2025: to complete formalities of collaboration with German counterparts

2021-2022: acquired 4 lakh Sq. Feet land at Location Bamangam

2019-2020 enrolled our company name in approved vendor list of PDO Oman and ARAMCO

2017-2018, started operation of fabric expansion joint unit.

2014-16 We are targeting and concentrating on export growth & setting up office's worldwide & developing new client and other products

2013 Fabric Expansion Joints New Business venture & development Expansion 30000 Sq Ft at Makarpura Vadodara,Gujarat, India.

2012 Manufacturing additional activities started at Two Sheds at Makarpura. Our Sales crossed Rs.1200.00 Lakhs.

2011 Shed Construction Started at Makarpura: Our Sales crossed Rs. 1050.00 Lakhs. Expansion @12000 Sq Ft at ChhaniVadodara, Gujarat, India.

2010 New land acquisition at Brookfield Industrial Park at Chhani-Vadodara.

2009 Corporate Office started at Makarpura

2006 To 2008 Exports started from Makarpura Unit. Domestic & Export Sales crossed Rs. 10000 Lakhs

2005 Various jobs executed under TPI-BVIS, DNV SGS, LRIS etc. from our GIDC Unit-2 & Single Order received for worth Rs.25.00 Lakhs Shed Renovation Work

2004 Exports Started from Chhani & New Manufacturing Set Up & shed renovation work started at Makarpura. Procurement of Land @35000 Sq Ft for Manufacturing.

2003 Started Manufacturing of Circular Metal Bellows ranging from 1000 NB to 6000 NB at 336/41, GIDC, Makarpura, Vadod Rectangular Metal Bellows in any Shape & Size. Expansion @300 Sq. Ft at Chhani, Vadodara, Gujarat, India.

2002 New Client Acquisition, Business Development & Sales Turnover Increased by 25%. Expansion @ 1500 Sq. Ft at Chhani, Vadodara, Gujarat, India.

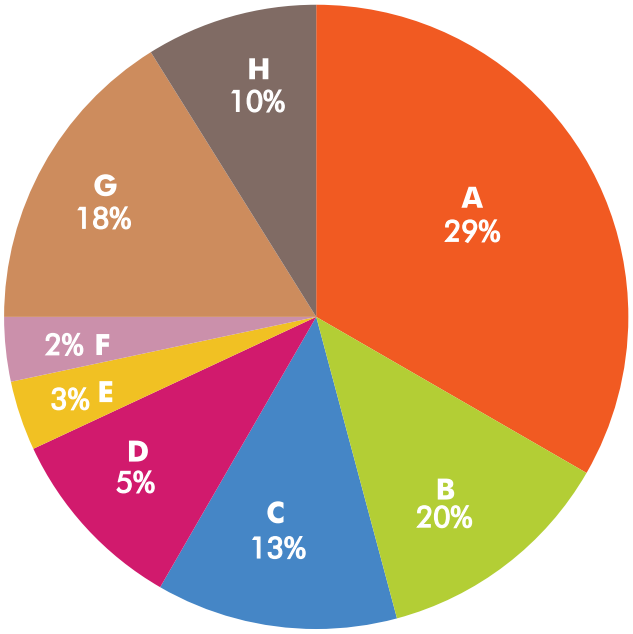
2001 Various Jobs executed under TPI-BVIS, DNV, SGS, LRIS etc. from our Chhani Unit

2000 Formation of Private Limited Company & Started Manufacturing of Circular Metal Bellows ranging upto 1000 NB Started Office at Sahjanand Appartment with 500 Sq. Ft. Area.

999 Metallic Expansion Bellows/joints/Compensators & Flexible Corrugated Hoses business started.

ATHULYA BELLOW SUPPLIES TO VARIOUS SECTORS

ATHULYA BELLOW SUPPLIES TO VARIOUS SECTORS



H Others 10%

G Turnkey Projects & EPC 18%

F Chemical 2%

E Shipping & Marine 3%

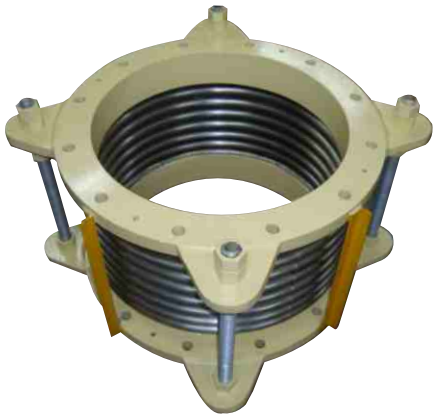
D Oil & Refinary 5%

C Steel 13%

B Cement 20%

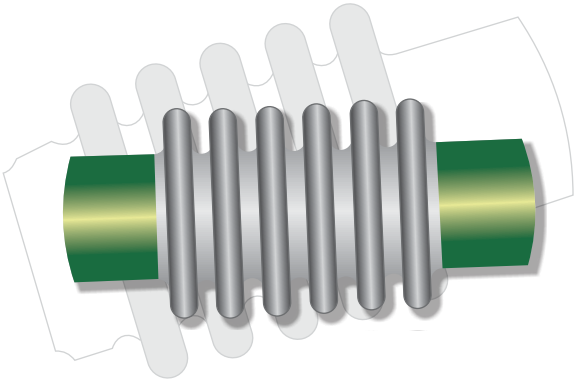
A Power 29%

Axial Joint



Single Expansion Joints have one bellow, Axial Compression and extension, lateral & angular movement can be accommodated These expansion joints can not retain the internal pressure thrust

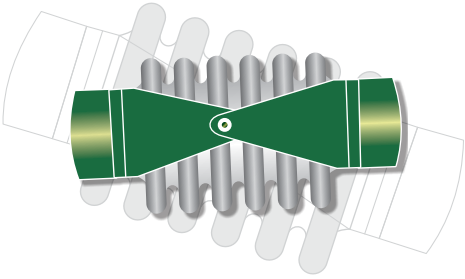
Tied Single Expansion Joints also have one bellow, expect that their length is restrained by tie rods which can accept the pressure generated thrust. When under pressure they are usually not designed to accept may axial movement, but can accept lateral movement. The two tied rod designs can accept angular deflection in a single plane.



Hinged Joint

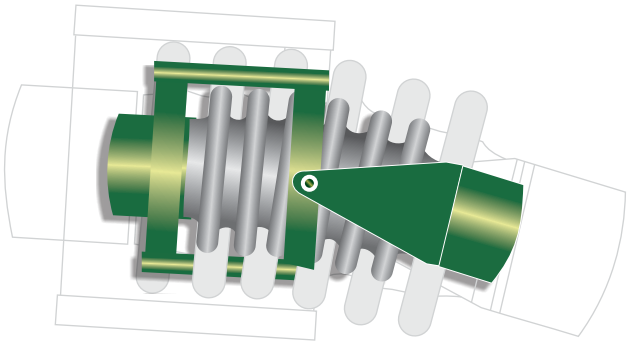
Hinged Expansion Joints have a single bellow and have their length restrained by the addition of a hinge mechanism which is strong enough to accept the pressure generated thrust but will allow angular movement in a single plane

Slotted hinge Expansion Joints are a variant of the above “Hinged” type, in that while providing for angular movement, some axial movement can be accepted because the hinge pin passes through slots in the hinge plates. When the axial movement is occurring the expansion joint is incapable of accepting the pressure thrust. The hinge structure can be designed to accept the full pressure thrust when the pin is at the limit of its travel within the slot.



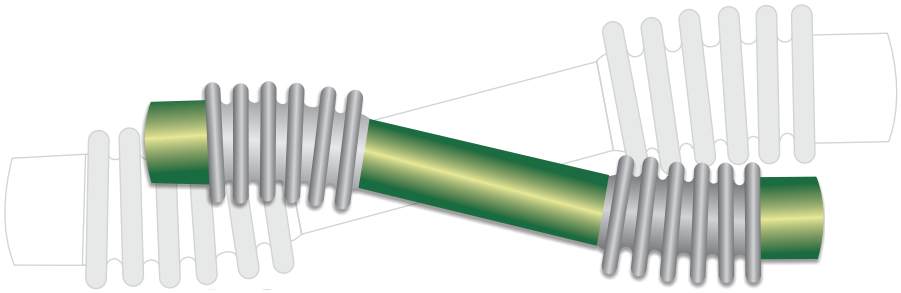
Gimbal Joint

Gimbal Expansion Joints have a single bellows and a unique pressure thrust resisting structure which permits angular movements in any plane.
The structure contains two hinge mechanisms which allows simultaneous rotation about two perpendicular axis which intersect at the center line of the bellows.



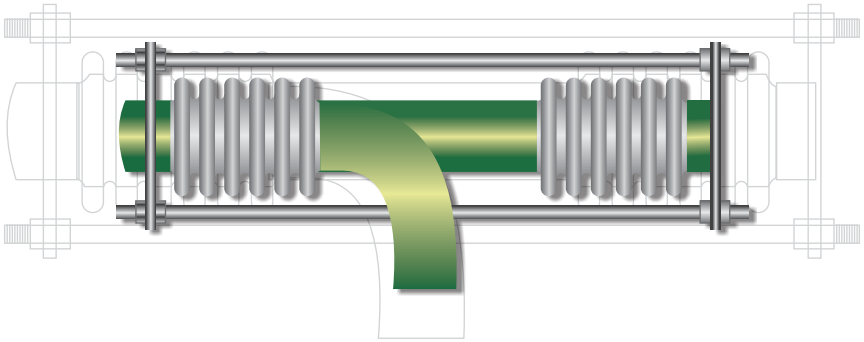
Universal Joint

Universal Joint consist of two bellows separated by a pipe spool so that large lateral movement can be accepted, in addition to axial compression and extension and angular deflections, these joints have no restrains to resist pressure thrust like the singles. For Tied Universal joint, the tie rods are provided to resist the pressure thrust, these joints cannot accept axial movements.



Pressure Balanced Joint

Pressure Balanced Expansion Joints are devices which produce no pressure thrust forces in the piping system on time main anchors. In addition to eliminating the pressure thrust, the expansion joint can accept axial compression, axial extension, lateral and angular movements. The balancing thrust is created by using a balancing bellows.



Firm Background & Details :

Name Of Organization	Athulya Bellows & Engineering Pvt. Ltd.
Organizational Structure	Private Limited company
Number of years of firm existence	25 Years
Address	336/40-41, GIDC Industrial Estate, Makarpura Vadodara – 390010
Office Phone Number	9714666576 / 9737666577
Contact Person	Mr. Alpesh Shah Director (MD)
Contact Number	9376228449
e-mail	response@athulyabellow.com
Alternative contact person	Mr. Jaydeep Raulji
Contact Number	7043136166
e-mail	sales@athulyabellow.com
Pan No	AACCA4007C
GST No	24AACCA4007C1ZJ
TAN No	BRDA00956E
Udyam Registration No	UDYAM-GJ-24-0013310

Personal Strength

- Directors and subject matter experts 03
- Qualified engineers 09
- Designing & CAD operators 04
- Accounts & Purchase 06
- Other Qualified Technicians 27
- Other manufacturing team 30

Infra structure Details :

- Unit - I At Channi Vadodara 5000 Sq Feet Work Shop for bellows from (50 MM up to 1000 MM)
- Unit – II At GIDC Vadodara 35000 Sq Feet Work Shop for bellows above (1000 MM till 6000 MM)
- Office Space 2900 Sq. Feet with well equipped with state of art infrastructure.

PIPING EXPANSION JOINTS APPLICATION & INDUSTRIES

Power Generation
Coal Pulverizer
Boiler Penetration Seals
Boiler Feedpump-Turbine Exhaust
HRSG Piping System
Steam Turbine Crossover Pipe expansion joint
Steam Turbine to Condenser Connection
Extraction Steam Piping expansion joint
Turbine Steam Cooling System
Steam Distribution Heating System
Safety Relief Valve Vent Piping
Gas Turbine Exhaust expansion joint
Gas Turbine Rotor Air Cooling
Gas Turbine Compressor Bleed
Micro Turbine Exhaust
ACC Systems

Cement Plants
Cement Kiln Outlet
Main Kiln Outlet
Raw Mill Outlet
Clinker Cooler Outlet
Finish Mill Outlet Alkali Bypass Duct
Spray Tower Inlet Spray Tower Outlet
Cyclone Inlet
Cyclone Outlet
Separator Outlet
ID Fan Inlet
ID Fan Outlet
Precipitator Inlet
Precipitator Outlet
Heat Exchanger Inlet
Heat Exchanger Out

Steel Mills
Sinter Plant
Bustle main to connect to
copper tuyeres (inlet to furnace)
Gas Cleaning plant Dust catcher
H.P. gas Compressor outlet
Process gas relief valves
Process gas control valves in Blast Furnace
Water line of H.P. Pumps

Chemical Processing
Pumps
Scrubber Piping
Carbon Black Processing
Combustion Air Preheater (CAPS)
Caustic Media Processing
Resins Process Piping
Product Transfer Piping

Petro-Chemical / Refineriesng
FCC Regenerator Piping
CCR Piping
Energy (Heat) Recovery Train
Expander Turbine Inlet & Outlet Connections
Heat Exchangers
Others

Oil and Gas Distribution
Transmission Compressor Stations
Platform Process Systems

Fuel Cell Power Systems
Anode and Cathode Piping
Hydrogen Fuel and Exhaust Piping
Balance of Plant

OEM Engine
Diesel Engine Exhaust expansion joints
Natural Gas Engine Exhaust bellows joint
Air Inlet & Exhaust Manifold &
Component Assemblies

PIPING EXPANSION JOINTS APPLICATION & INDUSTRIES

Industrial Gases & Cryogenic Services
Air Separation Compressor
Cold Box Piping

Special Product Applications
Hazardous Material Incineration
Rocket & Jet Engine Aerothermal
Test Facility Piping expansion joints
Radioactive Waste Disposal Piping
Vacuum and Cryogenic Piping (jacketed piping)
Accelerator Test Facilities, Superconductivity
and Many Others

Pulp & Paper
Digester Piping Expansion Joints
Process Liquor Lines
Recovery Boiler Piping Expansion Joints
Power Plant Piping
Machine Drying System Piping
Evaporator Pipe Expansion joint
Feedstock Pipe Expansion joint

Ship building & Marine
Propulsion Exhaust System Piping
Bulkhead Seals
Auxiliary System Piping Expansion Joints
Cargo Vessel/Barge Product Transfer Piping

Waste Water Treatment Plants
Pump Inlet
Pump Outlet
Blower Inlet
Condenser Inlet
Condenser Outlet
Steam Piping
Water Piping

Lime Plants
Cyclone Inlet
Cyclone Outlet
Baghouse Inlet
Baghouse Outlet
Bypass Inlet
Bypass Outlet
Fan Inlet Fan Outlet

High voltage switchgear
EHV Instrument Transform

Other Industries
Sugar
Distilleries
Foundry
& Many more.....

FABRIC EXPANSION JOINTS

Functions

Fabric expansion joints are used for absorbing movements between joining connections in gas conveying ducts and pipe-lines. The movements can be caused by thermal expansion of the ducting system, wind conditions or vibrations from other system components or machines. In addition, fabric expansion joints can serve as seals & compensate for installation misalignments.

Advantages : The implementation of fabric expansion joints provides a number of advantages, which are technically and economically important:

Extremely flexible Absorbing large movements
Absorbing different movements simultaneously
Only requiring a limited building length
Lightweight
Easy to handle, store, install, repair, replace
Not transmitting noise or vibrations
Reducing the necessary strength of fix-points and supports
Not corroding
Dimensionally stable
Cost effective

Applications

Fabric expansion joints are widely used for a large number

of applications including:
Power Plants
Boiler Systems
Flue Gas Desulphurisation Systems (FGD)
Nitrogen Oxide Reduction Systems (DeNox)
Gas Turbines
Nuclear Power Plants
Incinerator Plants
Cement Industry
Filter Systems
Ventilators
Ventilation Systems
Dust Extraction Systems
Offshore Installations
Chemical Industry
Paper Industry
Limeworks
Steelworks
Industrial Furnaces
Painting & Drying Systems

Superior Over Metal Joints due to : Features Advantage / Benefits :

Flexibility : Fabric expansion joints move in any direction, axially, laterally and rotationally on X,Y and Z axes. Metal moves either laterally or axially (one way only)

Ability to take torsion : Fabric expansion joints absorb twisting movements caused by differential heating ducting.

Money Savings : Usually one fabric expansion joint replaces two metal joints. Also, metal joints are generally 100 big to be shipped in one piece and must be assembled on the job. Fabric expansion joints get to the job site complete, ready to go to work. Their light weight affords fast, easy installation. No crane is necessary for installations. Folded into a compact, lightweight package, their shipping costs are a fraction of charges for metal

Easy replacement : Lightweight fabric expansion joints are easier to handle and install.

Field Repairs : "Athulya"-experienced field service crews respond quickly to problems. Minor damage can be handled by plant maintenance crews

Noise reduction and vibration isolation : Fabric expansion joints isolate vibration and prevent sound transmission between ducting sections because metal to metal contact is eliminated.

Margin of Safety : Fabric expansion joints accommodate errors in calculated movements and construction misalignments.

Corrosion Resistant : Non-metallic fabric expansion Joints resist corrosion in critical scrubber applications.

Minimum force for movement : Dimensional changes in the metal duct work during thermal expansion & contraction are accommodated with minimum force exerted on the ducting

Superior over non-rigid joints due to :
Longer Life : Fabric expansion joints have tough, heavy multiply walled construction.

No gasket needed : Built-in fabric flanges act as gaskets. They usually require fewer bolts & make possible easier, less expensive installation.

All configurations available : Round, square, rectangular, eccentric and reducing shapes fit all requirements for industry. Usually made in flanged cross-section with maximum radius between body & flange. Flanges can be made in either direction. Also fabric expansion joints are furnished as an open end belt without flanges for Weld splicing or endless belt for special applications.

Advanced construction : "Athulya" uses advanced-design molded corners on elastomeric joints. This design gives complete integrity between the inner and outer plies of material as well as providing for a built-in flange in the corners.

Annexure - VII

OUR MOST VALUABLE CLIENTS

ASEA Brown Boveri Ltd.	Alfa Laval (India) Ltd.	Bharat Heavy Electricals Ltd.	Steel Authority Of India Litd	Praxair India Pvt. Ltd.
Aditya Birla	Grasim Industries Ltd	THYSSENKRUPP	Larsen & Toubro Ltd.	Tata Chemicals Ltd.
Rashtriya Chemicals & Fertilizers Ltd.	Jindal Steel And Power	THERMAX	Praj Industries Ltd	AM/NS INDIA
JSW DOLVI	Gujarat Electricity Board	Hindustan Aeronautics Ltd.	Walchandnagar Industries Ltd	Nava Bharat Ferro Alloys Ltd.
Krishak Bharati Co-operative Ltd.	ESSAR POWER LTD.	National Thermal Power Corporation Ltd.	Reliance Industries Ltd.	Shree Digvijay Cement Co Ltd.
NAYARA ENERGY	HINDUSTAN ZINC LTD.	IFFCO Ltd. (KALOL)	LOESCHE	JKCEMENT
SEIMENS LTD. (MUMBAI)	KHD Humboldt Wedag	N.F.L. LIMITED	JK LAKSHMI CEMENT Ltd.	UltraTech Cement

Many more.....

WE ARE APPROVED WITH THIRD PARTY LIKE...:

1) LLOYD'S 2) BVQI 3) DNV 4) SGS 5) SAIL 6) MECON 7) M. N. DASTUR CO. B) BHEL
9) KPG 10) TUV 11) PDIL 12) LINDE 13) TATA PROJECTS & MORE

Rama Krishi Rasayan	
NFL Bhatinda, Allover Industries	
FOOD INDUSTRIES	
Cairo District Co-op. Milk Producers' Union Ltd.	A6278
Nestle India Ltd.	AB0567
Tumkur Dairy	
PAPER INDUSTRIES	
Coastal Paper	6346
The West Coast Paper Mill Pvt. Ltd.	A00287
J. K. Paper Mill	
PETROL PUMP MANUFACTURING INDUSTRIES	
Mercantile And Industrial Development Co. Ltd.	BA313
PHARMACEUTICAL INDUSTRIES	
Jaiswal Pharmaceuticals Ltd.	J00593
Transpek Industry Ltd.	TIL/A15246
POWER PLANTS	
Adani Power Limited Essar Power Ltd	114294
Essar Power Ltd.	8900001001
Gujarat Electricity Board	1508
GE Lighting (India) Ltd.	7201
Kasp Sales Electricals Ltd.	22149
Pondicherry Power Corporation Ltd.	VC002421
Sesa Sterlite Limited	100343
BHEL - PEM - Noida / Varanasi / Hyderabad	A089/5220/G00043
National Thermal Power Corporation Ltd.	1000568
Maithan Steel & Power Ltd.	00609
Magnus Power Pvt. Ltd.	0238
Chhatisgarh Electricity Company Ltd.	A-000365
Larsen & Toubro Ltd.	113298
Raj West Power Limited	4191
Gopala Polyplast Ltd.	GPL-V-0223
Himurja Pvt. Ltd.	HPL/A0642
Thermopads Pvt. Ltd.	A00447
REFINERIES	
Reliance Industries Ltd.	A/H1/1339
Agee Gold Refiners Ltd.	0680
I.O.C.L. - Haldia / Mathura	10257210
B.P.C.L. - Mumbai	
Essar Oil - Jamnagar	
SHIPYARD INDUSTRIES	
ABG Shipyard Ltd.	ABG1824
Bharati Shipyard Ltd.	009243
Essar Shipping Ltd.	126194
STEEL & IRON INDUSTRIES	
Nava Bharat Ferro Alloys Ltd.	000189
Ahmednagar Steels Pvt. Ltd.	AB001690
Steelco Gujarat Ltd.	A359
Maithan Steel & Power Ltd.	00609
Jindal Iron & Steels co. Ltd.	AB3170
Ispat Industries Ltd.	109912
V.S.P. Visakhapatnam	721503
SISCOL	69125
SAIL - RSP, Bokaro, Bhilai, Durgapur	1000007128
SUGAR INDUSTRIES	
Shree Ganesh Khand Udyog Sahakari Mandli Ltd.	A11248
National Heavy Engineering Co-operative Ltd.	NH/V/6587
The Indian Sugar & General Engineering Corporation	IA372
Shree Vriddheshwar S.S.K. Ltd.	A3521
Yeshwant Sahakari Sakhar Karkhana Ltd.	1184
Shree Mahadeshwara Sugar Mills Ltd.	A1661
S.S. Engineers	SSE/V/2122
Sai Sidha Sugar Equipments & Engineering Co. Pvt. L	SA589004
Chhatrapati Engineering Ltd.	CEL-V00921
TEXTILE INDUSTRIES	
Indian Rayon And Industriesd Ltd.	A/01492
Garden Silk Mills Ltd.	A747
Jeevan Jyot Industries.	15027

Annexure - **VII LIST OF CLIENTS**

CEMENT INDUSTRIES	
Neer Shree Cement	A243
Shree Digvijay Cements Co. Ltd.	AT 1501
The Associated Cement Companies Ltd.	ACC01352
Chettinad Cement Corporation Ltd	F/211446
Jaypee Raws Plant	
Ambuja Cemen	910004653
Humboldt Wedag	3000036
Mahiar Cement	A01122
Ultratech Cement	113298
Shree Cement Ltd.	ERP168
J. K. Cement	600372
J.K. Lakshmi Cement Ltd.	600327
Lafarge India Pvt. Ltd.	60019217
CHEMICAL INDUSTRIES	
Aarti Industries Ltd.	AIL9901
Ashok Organic Industries Ltd.	22364
Alembic Ltd.	102784
Avni Petrochem Ltd.	AV336
Air Control & Chemical Engineering Co. Ltd.	816192
Durgapur Chemical Ltd.	DS00985
Gujarat Alkalies & Chemicals Ltd.	816192
Hindustan Zinc Ltd.	CLZS1435
Search Chem Industries Ltd.	SC0656528
Shreeram Alkali & Chemical	103800
Tata Chemicals Ltd.	A0576S00
Vivada Chemicals Pvt. Ltd.	VA30065
Mardia Chemicals Ltd.	2200003
Hindustan Inks & Resins Ltd.	A0240
Nirma Ltd.	0204M51001
Dal-ichi Karkaria Ltd.	1263
Saurashtra Salt Works (P) Ltd.	AB0164
D.G.SET MANUFACTURER	
Greaves Ltd.	80371
Supernova Engineers Ltd.	SEL013
Wartsila Engineers	
ENGINEERING INDUSTRIES	
Alfa Laval (India) Ltd.	S0680
Carbon Everflow Ltd., Fonde	420892
Carbon Everflow Ltd. Satpur	C6A289
Hi-Tech Consultancy Service	HCA7802
Quality Machine Tools Corporation	BEL009
Praj Industries Ltd.	HA0032
Veda Engineering Pvt. Ltd.	V3354
Saturn Engineering Services	SES-035
National Engineering co.	A00964
Ferrowel Engineering Services	AB0063
Excel Engineering	EE160
Enpro Industries Pvt. Ltd.	A0043
Mechtech Process Engineers Pvt. Ltd.	Mv70433
Linde Engineering India Pvt. Ltd.	4014754
ELECTRICAL INDUSTRIES/CTPT TRANSFORMERS	
Asea Brown Boveri Ltd.	17205
Crompton Greaves Ltd., Nasik	9911
Crompton Greaves Ltd., Aurangabad	65139
Hivoltrans Electricals Pvt. Ltd.	HEL2243A
Indian Transformers Co.	ITC253
Crompton Greaves Ltd., Padra	901700
Nik-san Engineering Co.	NS25908
BHEL-Jhansi	A02090
FERTILIZERS INDUSTRIES	
IFFCO	A4634
Krishak Bharti Co-Operative Ltd.	VEO08859

Annexure - IX

EXPANSION BELLOW SPECIFICATION SHEET

1	ITEM NO./ TAG NO.			
2	NOMINAL SIZE (NB)			
3	QUANTITY (NOS.)			
4	TYPE OF EXPANSION JOINT			
5	FLUID INFORMATION			
	MEDIUM			
	VELOCITY (FT. SEC)			
6	WORKING TEMPERATURE			
7	WORKING PRESSURE (KG/CM2)			
8	DESIGN TEMPERATURE			
9	DESIGN PRESSURE (KG/CM2)			
10	TEST PRESSURE (KG/CM2)			
11	MOVEMENTS			
	AXIAL EXTENSION (MM)			
	AXIAL COMPRESSION (MM)			
	LATERAL DEFLECTION (MM)			
	ANGULAR ROTATION (DEG)			
12	DIMENSIONAL LIMITATION (DEG)			
	OVERALL LENGTH (MM)			
	OUTSIDE DIAMETER (DEG)			
	INSIDE DIAMETER (MM)			
13	INSTALLATION POSITION			
14	END CONNECTION DETAIL			
	FLANGED			
	FLANGE RATING			
	WELDABLE END			
	PIPE O.D. X THIK			
15	MATERIAL OF CONSTRUCTION			
	BELLOWS			
	LINEAR/INTERNAL SLEEVE			
	WELDABLE END			
	FLANGES			
	EXTERNAL COVER			
	TIE/LIMIT ROD			
16	SPRING RATE LIMITATIONS			
	AXIAL (KG/MM)			
	LATERAL (KG/MM)			
	ANGULAR (KG/MM)			
17	INSPECTION BY			
18	DESIGN CODE AS PER EJMA SEC.9 SEC 8 DIV-A B-31.1			

HULYA WILL FOLLOW AS PER QUALITY ASSURANCE POLICIES

* E HAVE THE DESIGN SOFTWARE FACILITY TO DESIGN THE BELLOWS AS PER EJMA

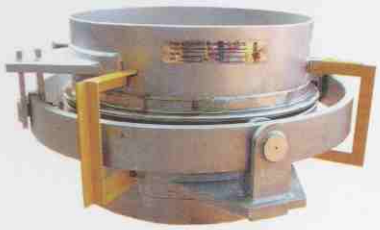
ATHULYA"S BREAK THROUGH in designing highty advanced externally pressurized guided expansion joint - unique in all forms is advantageous for squirm free large axial displacements with reverse flow safety.

- Managing Director

Certificate of Registration for ISO 9001 : 2008

RANGE OF PRODUCTS

Rectangular Bellow



Gimbal Bellow

Pressure Balanced Bellow

Universal Bellow

Reinforcement Bellow

Rectangular BellowMiter type

Hinged type Universal Bellow

Fabric Bellow

Hinged type Bellow

Fabric Bellow

Inline Pressure balanced Bellow

Axial Bellow
(for Transformer & Gas Applications)

Global but local
Elite but not Exclusive
Large but focused
Where others see
Contradiction,

we see opportunities

आत्मनिर्भर भारत

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Athulya Bellows & Engineering Pvt. Ltd

Regd. Office :
B/3, Sahajanand Apartment,
Nr. Ward Office No.6, Old Padra Road
Vadodara - 390020, Gujrat, India.

Works : Unit 1
B/14 81 - Saraswati Inds, Estate,
Opp. Chhani Octroi Naka, Chhani Road,
Vadodara - 390002, Gujrat, India.

Works : Unit 2
336 / 41, G.I.D.C., Estate, Makarpura,
Vadodara - 390010, Gujrat, India

M : +91 9376228449 | 70431 36166

E : response@athulyabellow.com
E : sales@athulyabellow.com
E : athulyabellows123@gmail.com