

METALLIC

EXPANSION JOINT

RELIABLE SOLUTION FOR STRUCTURAL MOVEMENT



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Solar & Boiler Industry

For solar energy systems and boilers, metal hoses are used to

- ▼ Connect individual solar panels
- ▼ Accommodate thermal expansions
- ▼ Water supply
- ▼ Flexible connections to auxiliary devices such as accumulators or gas lines inside the device



Aviation & Aerospace

- ▼ Fuel lines
- ▼ Protects from high & low temperature and strong vibrations
- ▼ Flexible hose lines for engine control
- ▼ Protection of cables
- ▼ Use in cryogenic environments in rockets and satellites.



Food Industry

- ▼ Transfers drinking water, milk, juices, alcohol, oils, and other food-grade liquids.
- ▼ Connects gas lines and transports steam for food processing.
- ▼ Handles hot water and chemical sanitizers for cleaning.



Gas Production

- ▼ Transporting industrial and medical gases under high pressure.
- ▼ Transporting all liquefied gases at extremely low temperatures.
- ▼ Used in drilling rigs, pipelines, and refineries.
- ▼ Used in gas bottles and cylinder filling systems.



Energy Sector

- ▼ Used in high-pressure steam lines, natural gas transport, and nuclear cooling systems.
- ▼ Used for LNG transfer, hydrogen storage, and solar thermal applications.
- ▼ Handles high-temperature exhaust, geothermal systems, and waste heat recovery.



Vacuum Technology

- ▼ Highest vacuum performance for UHV systems and accelerators.
- ▼ Good vacuum performance in high vacuum pumping systems.
- ▼ Flexible, vibration-absorbing for roughing pump lines.
- ▼ Braided for pressure support in foreline connections.



Railways

- ▼ Entire cooling and exhaust gas system
- ▼ Absorbing mechanical vibrations
- ▼ Ventilation system for switch gases in high speed train
- ▼ Compensating for thermal expansion
- ▼ Cooling and air conditioning systems of locomotives
- ▼ Protects sensitive controls and electrical cables



Automotive Industry

- Metal flexible hoses are used in automotive exhaust systems to
- ▼ Absorb vibrations
 - ▼ Reduce noise
 - ▼ Compensate for thermal expansion
 - ▼ Also used as filler neck and fuel line



Power Generation

- ▼ Steam & combustion turbine systems
- ▼ Cooling turbine blades
- ▼ Fuel atomizer lines
- ▼ Gas transport lines
- ▼ Inert gas lines
- ▼ Fuel oil burner connections



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Cryogenic Systems

- ▼ Transporting Nitrogen
- ▼ Transporting Ammonia
- ▼ Transporting Liquid oxygen
- ▼ Transporting Hydrogen & Helium and other cryogenic fluids.



HVAC Systems

- ▼ Connect pumps & adapts thermal expansion
- ▼ Isolate vibrations in refrigeration units and compressors
- ▼ Employed in high-rise buildings to handle the movement caused by seismic or thermal forces



Marine & Offshore

- ▼ Exhaust systems
- ▼ Cooling water systems
- ▼ Fuel lines
- ▼ Lubricants lines
- ▼ FPSO & SPM lines
- ▼ Offloading & transfer of fluids



Refineries

- ▼ Connecting catalytic cracking units
- ▼ Oil and gas burners
- ▼ Water lines in gas engine cooling systems
- ▼ Steam injection
- ▼ Hydrocarbon drain lines
- ▼ Fuel oil burner connections



Chemical Plants

- ▼ Connecting weigh scales
- ▼ Facilitating the loading and unloading of tank trucks
- ▼ Steam lines
- ▼ Transporting highly corrosive media



Steel Plants

- ▼ High-temperature lubrication
- ▼ Water cooling lines
- ▼ Oxygen and water lancing
- ▼ Argon purging lines
- ▼ PCI coal injection
- ▼ Tuyere and stove cooling



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OPERATING CONDITIONS

TEMP	850c
PRESSURE	30 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Bellows (2-Ply)	SUS316
2	ANSI 150# Flange	Carbon Steel
3	Tie Rods	ANSI-1020
4	Grommet	Neoprene
5	Nuts	ANSI-1020

OPERATING CONDITIONS

TEMP	650c
PRESSURE	30 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Bellows (2-Ply)	SUS316
2	ANSI 150# Flange	Carbon Steel
3	Tie Rods	ANSI-1020
4	Grommet	Neoprene
5	Nuts	ANSI-1020

OPERATING CONDITIONS

TEMP	450c
PRESSURE	20 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	EXPANSION JOINT	SUS316L
2	JIS 10K# Flange	SUS
3	LAP JOINT(LEFT)	SUS
4	LAP JOINT(RIGHT)	SUS
5	FLANGE	JIS10K

OPERATING CONDITIONS

TEMP	250c
PRESSURE	50 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	EXPANSION JOINT	SUS316L
2	JIS 10K# Flange	SUS
3	LAP JOINT(LEFT)	SUS
4	LAP JOINT(RIGHT)	SUS
5	FLANGE	JIS10K

OPERATING CONDITIONS

TEMP	550c
PRESSURE	40 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	EXPANSION JOINT	SUS304
2	ANSI 150# Flange	Carbon Steel
3	Tie Rods	ANSI-1020
4	Grommet	Neoprene
5	Nuts	ANSI-1020

OPERATING CONDITIONS

TEMP	250c
PRESSURE	20 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	BELLOWS	AS2 321
2	DIN PN10# Flange	CARBON STEEL
3	WELD END	CARBON STEEL
4	WELD STRIP	AS2 321
5	FLANGE	DIN PN10

EXPANSION JOINT FLANGE

OPERATING CONDITIONS

TEMP	250c
PRESSURE	20 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Below	Stainless Steel 304
2	Flange	Steel (ANSI100)
3	Tie	1/2" (DN100)
4	Length	300 mm

OPERATING CONDITIONS

TEMP	250c
PRESSURE	3 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Bellows (2-Ply)	SUS304
2	ANSI 150# Flange	Carbon Steel
3	Tie Rods	ANSI-1020
4	Grommet	Neoprene
5	Nuts	ANSI-1020

EXPANSION JOINT FLANGE

OPERATING CONDITIONS

TEMP	250c
PRESSURE	20 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Bellows	Stainless Steel 304
2	Weld Strips	Stainless Steel 304
3	Tie Rods	AS2 1020
4	Flange	Steel (JIS10K)
5	Washers	Neoprene
6	Size	8" (DN200)
7	Length	200 mm (DFT)

EXPANSION JOINT WELD END

OPERATING CONDITIONS

TEMP	250c
PRESSURE	20 Barg
APPLICATION	INDUSTRIES

LIST OF MATERIALS

ITEM	PART NAME	MATERIAL
1	Below	Stainless Steel 316L
2	Connection	Weld End
3	Size	6" (DN150)
4	Length	300 mm



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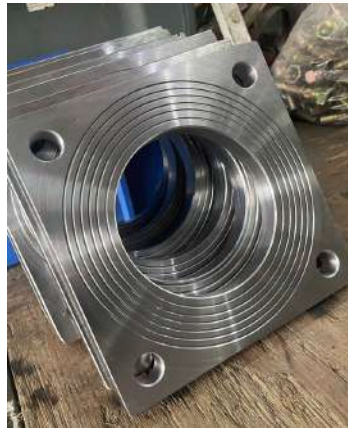
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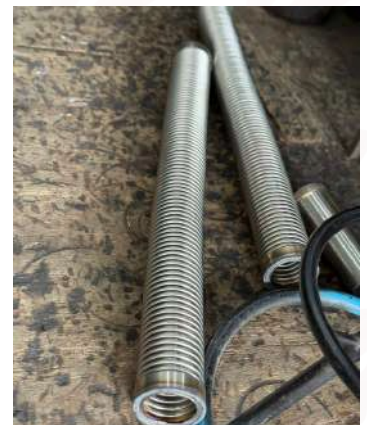
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Custom Bellows & Expansion Joint Manufacturer

Toklai Asia Co.,Ltd is your premier custom metal bellows and expansion joint manufacturer, delivering precision-engineered solutions for even the most demanding piping applications. As a leading industrial metal bellows manufacturer and pipe expansion joint supplier, we specialize in both standard and fully customized bellows, expansion joints, flex joints, and OEM components. Whether you need bespoke configurations to accommodate extreme temperature fluctuations or high-cycle fatigue resistance, our Thailand-based facility combines advanced forming techniques with rigorous quality control to ensure every assembly meets standards.



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