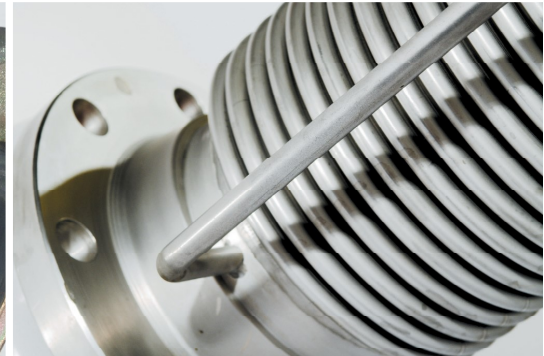
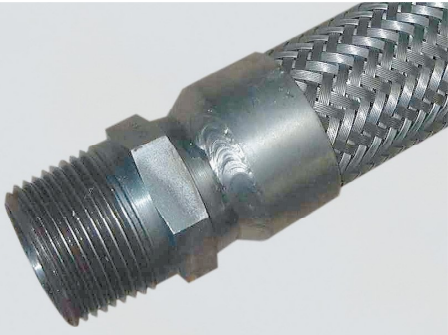


Teddington Engineered Solutions



Expansion Joints

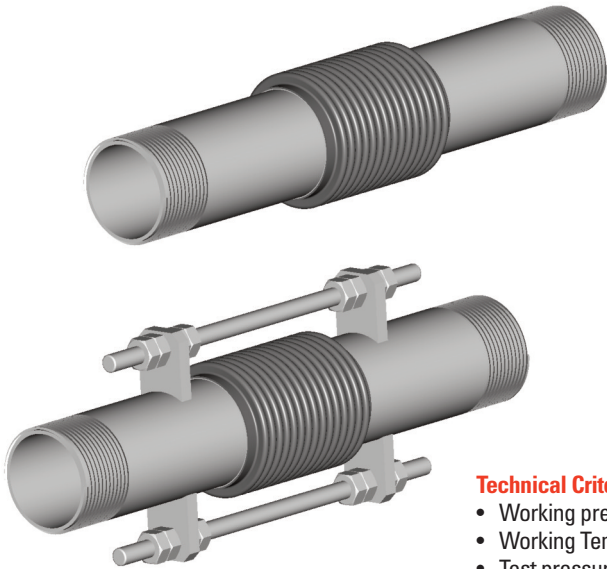
Product Catalogue



Precision Engineering

METALLIC EXPANSION JOINTS

Axial Unit with Threaded Pipe Type: AR16-TP



Nominal Size	Movement		Overall Supplied Length	Effective Area	Axial Spring	Type Number
	+/-	Total				
mm	mm	mm	L (mm)	cm ²	(N/mm)	
15	17.5	35	546	38	154	AR16-TP
	35	70	694	38	77	AR16-TP
20	17.5	35	546	38	154	AR16-TP
	35	70	694	38	77	AR16-TP
25	17.5	35	546	38	154	AR16-TP
	35	70	694	38	77	AR16-TP
32	17.5	35	546	38	154	AR16-TP
	35	70	694	38	77	AR16-TP
40	17.5	35	546	38	154	AR16-TP
	35	70	694	38	77	AR16-TP
50	17.5	35	248	38	154	AR16-TP
	35	70	396	38	77	AR16-TP

Technical Criteria

- Working pressure 16 bar gauge maximum.
- Working Temperature 300°C maximum.
- Test pressure 24 bar gauge.

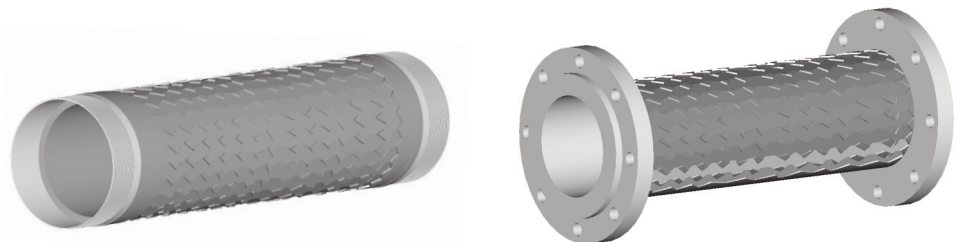
Construction

- Bellows Stainless Steel Type 321.
- Internal Sleeves Stainless Steel Type 321.
- End fittings British Standard Parallel, Taper Thread, Grooved End or Welded Ends.

STAINLESS STEEL FLEXIBLE HOSES

T-FLEX Single Braided Hose*

A single layer of Stainless Steel braid prevents the elongation of the convoluted hose and increases the working pressures that the hose can accommodate.



Technical Criteria

- Working pressure ranges from 7 bar to 167 bar.
- Test pressure ranges from 11 bar to 251 bar.

Construction

- Hose Stainless Steel Type 321.
- Braid Stainless Steel Type 304 and 316.
- End Fittings can be supplied in the form of flanges, screwed connectors or tube ends.

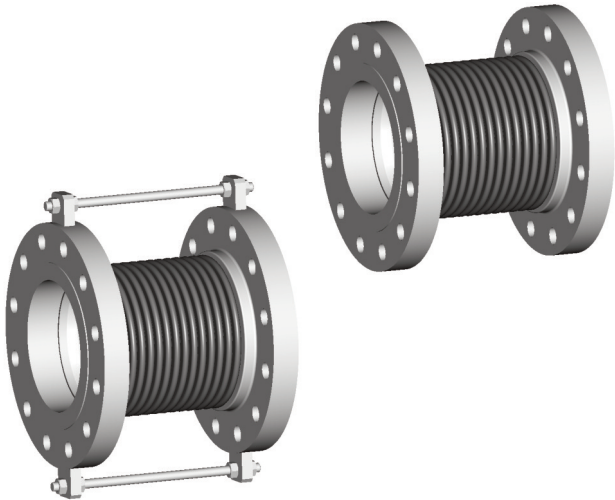
Notes

1. Working pressures are quoted for fluid temperatures at 20°C. Higher fluid temperatures will result in a lower working pressure. These modified working pressures can be calculated.
2. To avoid distortion of the convoluted form of the hose, the maximum test pressures quoted must not be exceeded.
3. T-FLEX Hose is normally supplied in Stainless Steel Type 321 S31. Braid is normally supplied in Stainless Steel Type 304. All of the braid is also available in Stainless Steel Type 316.
4. T-FLEX Hose can also be supplied in double braid.
5. For unit sizes or operating conditions outside of the range specified above, please email sales@tes.uk.com.

Nominal Size	Maximum Working Pressure	Maximum Test Pressure	Maximum Bend Radius Dynamic	Type Number
mm	bar	bar	mm	
6	167	251	110	T-FLEX 6
8	136	204	130	T-FLEX 8
10	100	150	150	T-FLEX 10
12	74	111	165	T-FLEX 12
16	70	105	195	T-FLEX 16
20	65	98	200	T-FLEX 20
25	50	75	200	T-FLEX 25
32	39	59	250	T-FLEX 32
40	35	53	250	T-FLEX 40
50	30	45	350	T-FLEX 50
65	26	39	410	T-FLEX 65
80	22	33	450	T-FLEX 80
100	21.5	32	560	T-FLEX 100
125	11.5	17	711	T-FLEX 125
150	11.2	17	864	T-FLEX 150
200	7	11	1067	T-FLEX 200
250	9.6	14	1753	T-FLEX 250
300	12.07	18	1880	T-FLEX 300

METALLIC EXPANSION JOINTS

Axial Unit with Flanges Type: AR16-25



Nominal Size	Movement		Overall Supplied Length		Effective Area	Axial Spring	Type Number
	+/-	Total	BS EN 1092-1:	BS1560: ASA300			
mm	mm	mm	L (mm)	L (mm)	cm ²	(N/mm)	
65	22.5	45	180	192	55	176	AR16-25
80	25	50	190	210	76	202	AR16-25
100	25	50	205	220	126	198	AR16-25
125	25	50	245	255	190	236	AR16-25
150	25	50	245	260	259	402	AR16-25
200	25	50	215	250	423	253	AR16-25
250	25	50	220	260	647	315	AR16-25
300	25	50	225	280	947	866	AR16-25
350	25	50	250	290	1111	878	AR16-25
400	25	50	265	300	1432	1000	AR16-25
450	25	50	285	325	1840	1057	AR16-25
500	25	50	295	335	2246	1172	AR16-25
600	25	50	310	360	3181	1400	AR16-25

Technical Criteria

- Working pressure 16 bar gauge maximum.
- Working Temperature 300°C maximum.
- Test pressure 24 bar gauge.

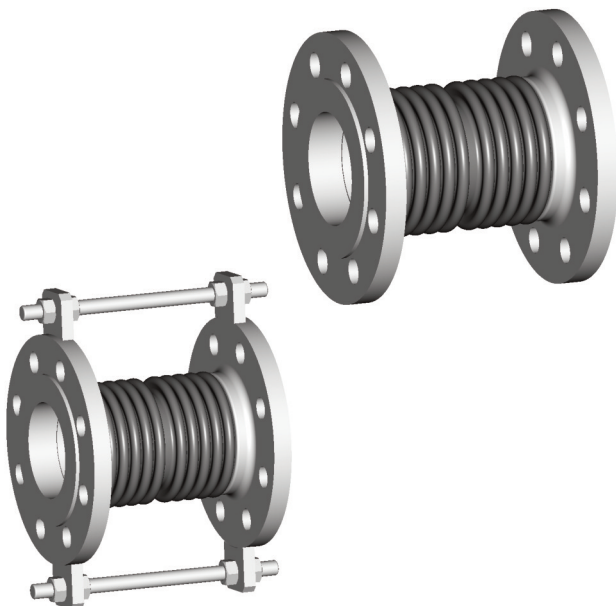
Construction

- Bellows Stainless Steel Type 321.
- Internal Sleeves Stainless Steel Type 321.
- End fittings BS EN 1092-1 : PN16 or BS1560 : ASA300.
- Optional limit stops carbon steel.

Notes

1. Installed length shown assumes total movement applied in compression.
2. For unit sizes or operating conditions outside of the range specified above, please email sales@tes.uk.com.
3. Units with limit stops can be provided if required (as illustrated).

Type: AR16-50



Nominal Size	Movement		Overall Supplied Length		Effective Area	Axial Spring	Type Number
	+/-	Total	BS EN 1092-1:	BS1560: ASA300			
mm	mm	mm	L (mm)	L (mm)	cm ²	(N/mm)	
65	35	70	285	300	55	96	AR16-50
80	50	100	320	340	76	101	AR16-50
100	50	100	335	350	126	99	AR16-50
125	50	100	405	420	190	118	AR16-50
150	50	100	380	395	259	220	AR16-50
200	50	100	305	340	423	152	AR16-50
250	50	100	310	350	647	189	AR16-50
300	50	100	335	390	947	462	AR16-50
350	50	100	360	400	1111	468	AR16-50
400	50	100	370	410	1432	533	AR16-50
450	50	100	380	420	1840	617	AR16-50
500	50	100	390	435	2246	684	AR16-50
600	50	100	410	455	3181	817	AR16-50

Technical Criteria

- Working pressure 16 bar gauge maximum.
- Working Temperature 300°C maximum.
- Test pressure 24 bar gauge.

Construction

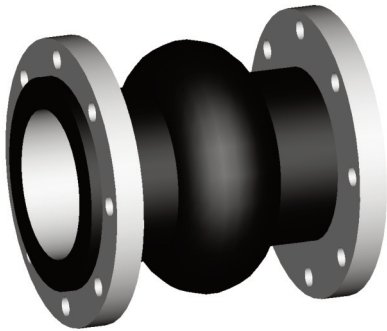
- Bellows Stainless Steel Type 321.
- Internal Sleeves Stainless Steel Type 321.
- End fittings BS EN 1092-1 : PN16 or BS1560 : ASA300.
- Optional limit stops carbon steel.

Notes

1. Installed length shown assumes total movement applied in compression.
2. For unit sizes or operating conditions outside of the range specified above, please email sales@tes.uk.com.
3. Units with limit stops can be provided if required (as illustrated).

RUBBER EXPANSION JOINTS

Single Sphere Rubber Expansion Joints with Metal Flanges



Technical Criteria

- Operating pressure 225 psi (15.5 bar).
- Burst pressure 682 psig.
- Temperature Range -15°C to +115°C.
- Vacuum Rating 750mm Hg to 500mm Hg

Construction

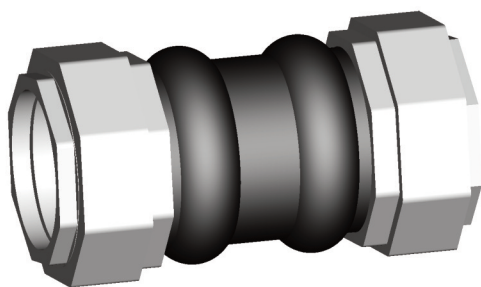
- EPDM Rubber inner tube and outer cover.
- Synthetic Rubber/Nylon Tire Cord.
- Carbon Steel Rotating Flanges.

Nominal Size	Movement				Overall Supplied Length	Type Number
	Axial Compression	Axial Elongation	Transverse Movement	Angular Deflection		
mm	mm	mm	mm	°	cm ²	
50	10	8	10	15	152	SSR-50
65	13	8	12	15	152	SSR-65
80	13	8	12	15	152	SSR-80
100	19	12	13	15	152	SSR-100
125	19	12	13	15	152	SSR-125
150	19	13	13	15	152	SSR-150
200	19	13	13	15	152	SSR-200
250	19	16	19	15	203	SSR-250
300	19	16	19	15	203	SSR-300

Notes

1. Control units should be used to avoid excessive movements from leading to the premature failure of the expansion joints if anchoring and pipe supports are not present.
2. Control units are not required if pipelines are anchored and supported near the location of the expansion joints.
3. For unit sizes or operating conditions outside of the range specified above, please email sales@tes.uk.com.

Twin Sphere Rubber Expansion Joints with Threaded Ends 16 Bar and 25 Bar



Technical Criteria

- 16 Bar operating pressure 225 psig.
- 25 Bar operating pressure 360 psig.
- 16 Bar burst pressure 682 psig.
- 25 Bar burst pressure 853 psig.
- Temperature Range -15°C to +115°C.
- Vacuum Rating 650mm Hg

Construction

- EPDM Rubber inner tube and outer cover.
- Synthetic Rubber/Nylon Tire Cord.
- Malleable Iron, Ductile Iron Threaded Union Ends.

Nominal Size	Movement				Overall Supplied Length	Type Number
	Axial Compression	Axial Elongation	Transverse Movement	Angular Deflection		
mm	mm	mm	mm	°	cm ²	
12	15	10	15	20	180	TSR-12
20	15	10	15	20	180	TSR-20
25	15	10	15	25	180	TSR-25
32	15	10	15	30	245	TSR-32
40	15	10	15	30	245	TSR-40
50	15	10	15	30	255	TSR-50



EXPANSION JOINTS & CONNECTORS

DESCRIPTION

Teddington connectors prevent stresses due to expansion and contraction, isolate against the transfer of noise and vibration and compensate for misalignment.

Teddington connectors absorb the continuing movement experienced in piping systems because of varying ambient temperatures, differences in temperature of materials being handled and differences in composition. The danger of buckling or pulling apart and resulting maintenance costs are eliminated.

Teddington connectors reduce objectionable noise and vibration in piping systems connected to pumps, compressors and similar pulsating equipment. The transmission of noise and vibration tends to reduce the efficiency of adjacent equipment as well as impairing the working conditions in offices and factories.

Settlement, load stresses and wearing of parts frequently cause piping and mechanical equipment to move out of normal alignment. Teddington connectors compensate for these lateral, torsional and angular movements.

APPLICATIONS

Air Conditioning, Heating and Ventilating Systems:

Teddington connectors eliminate stresses caused by changes in temperature and piping misalignment, as well as reduce the

transmission of noise and vibration. They are used on both hot and chilled water circulation lines, suction and discharge sides of pumps and header connections.

Sewage Treatment Plants and Pollution Control:

Teddington connectors are used extensively in sewage water treatment-plants and pollution-control systems.

Control Rod Applications:

Optional control rod assemblies are designed to absorb static pressure thrust developed at the connector, thus minimizing possible failure of the connector or damage to the equipment. When used in this manner, control unit assemblies are an additional safety factor, minimizing possible failure of the expansion joint or damage to the equipment.

- Anchored Systems:** Control rod assemblies are not required in piping systems that are anchored on both sides of the connector provided piping movements are within the rated movements.
- Unanchored Systems:** Control rod assemblies are always recommended in unanchored systems and when the maximum pressure and movement exceed the rated limit.
- Spring-Mounted Equipment:** Control rod assemblies are always recommended for spring-mounted equipment when the maximum pressure and movement exceed the rated limit.

HOW TO SPECIFY

Any unit detailed in the following Data Sheets can be specified by quoting the following information in its Coded form.

UNIT TYPE	NOMINAL SIZE	TOTAL MOVEMENT	END FITTINGS	ACCESSORIES
<p>The type of unit available is indicated in the table for each.</p> <p>Example: An axial unit with threaded pipe for a working pressure of 16 bar would be specified as:</p>	<p>The nominal size of units available are shown in the first column of each Data Sheet.</p> <p>Example: Assuming pipeline being considered is 50mm nominal diameter then this would be specified as:</p>	<p>Having determined the movement to be accommodated by each unit, select the nearest appropriate movement from the range available.</p> <p>Example: Assuming 50mm Nominal diameter pipeline with a movement requirement of say 30mm then the nearest specified would be:</p>	<p>The standard end fittings available with code are shown in the construction criteria for each type of unit.</p> <p>Example: Should you require the unit with threaded ends to a British Standard Thread then this would be specified as:</p>	<p>The specified code for accessories is as follows:</p> <p>0 - no accessories required 1 - internal sleeve required. 2 - limit bars required 3 - external shroud 4 - internal sleeve, limit bars and external shroud</p> <p>Example: Should you require unit with internal sleeve, then this would be specified as:</p>
AR16-TP	50	35	404	1

The complete code would now be written as **AR16-TP / 50 / 35 / 404 / 1**

FLANGES		
Unit Type	Flange	Code
AR16-25:	PN16	16
AR16-50	ASA300	300

PIPE ENDS		
Unit Type	Pipe Ends	Code
AR16-TP	Standard Wall	403
	British Standard Thread	404
	Taper Thread	405
	Grooved End	406