

Bondstrand® Double O-Ring Expansion Couplings

Characteristics

The double O-ring expansion coupling is developed to be used in Quick-Lock® and Taper/Taper adhesive bonded pipe systems subject to expansion.

Double O-ring expansion couplings are used on board ships to replace conventional steel mechanical couplings. Double O-ring expansion couplings do not require corrosion protection or maintenance.

Description

The double O-ring expansion coupling allows a maximum longitudinal movement of +20/-20 mm. The expansion coupling is configured with female ends for easy joining. Prior to application, please ensure suitability of the expansion coupling with respect to working pressure of the pipe system as well as compatibility with service conditions,, the compatibility of the O-ring.

O-rings are standard available in:

- Nitrile Butadiene Rubber (NBR).
- Ethylene Propylene Rubber (EPDM).
- Other material available on request.

Please refer to the Bondstrand Corrosion Guide for resistance of the O-ring to chemical media.

Mechanical locking of the restraint side of the coupling is performed by inserting a nylon locking key. Complete description for assembly of mechanical joints is described in the Bondstrand Key-Lock Assembly Instructions. Installation of Double O-ring bell and spigot and Double O-ring expansion coupling is outlined in the Bondstrand expansion coupling assembly instructions.

Joining of Quick-Lock female ends of the adaptor to the pipe or fittings is described in the Bondstrand Quick-Lock Assembly Instructions. Joining of Taper female ends of the adaptor to the pipe or fittings is described in the Bondstrand Taper/Taper Assembly Instructions.

For details, please refer to the following Bondstrand literature:

- Bondstrand Corrosion Guide
- Key-Lock Assembly Instructions
- Quick-Lock Assembly Instructions
- Taper/Taper Assembly Instructions
- Expansion coupling Assembly Instructions

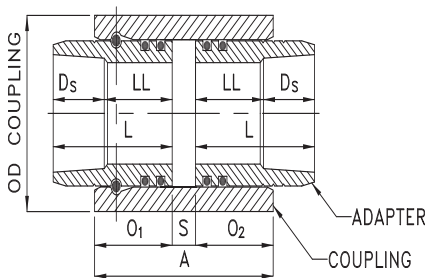
Joining Systems



Double O-Ring expansion coupling

Double O-Ring Expansion Coupling Quick-Lock

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral Quick-Lock (2-6 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral Quick-Lock (2-6 inch) socket end on other side.



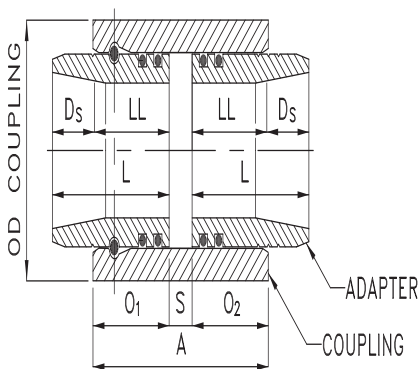
Quick-Lock - 16 bar

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
50	2	46	85	131	222	91	81	50	98
80	3	46	85	131	222	91	81	50	127
100	4	46	85	131	222	91	81	50	167
125	5	57	102	159	264	112	102	50	197
150	6	57	105	162	270	115	105	50	226

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

Double O-Ring Expansion Coupling Taper/Taper marine

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral marine Taper (8-40 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral marine Taper/Taper (8-40 inch) socket end on other side.



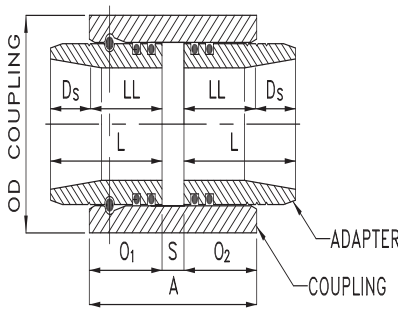
Taper/Taper - Marine

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
200	8	65	138	203	337	149	138	50	309
250	10	80	148	228	356	158	148	50	386
300	12	95	190	285	410	185	175	50	422
350	14	100	185	285	430	195	185	50	435
400	16	110	210	320	450	205	195	50	489
450	18	114	193	307	416	188	178	50	527
500	20	127	201	328	433	197	186	50	578
600	24	178	224	402	479	220	210	50	690
700	28	178	265	443	560	260	250	50	811
750	30	178	272	450	574	267	257	50	866
800	32	178	307	485	644	302	292	50	927
900	36	203	362	565	754	357	347	50	1041
1000	40	410	355	765	740	350	340	50	1116

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

**Double O-Ring
Expansion Coupling
Taper/Taper 10 bar**

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral Taper/Taper (2-40 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral Taper/Taper (2-40 inch) socket end on other side.



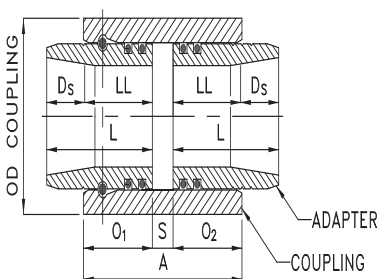
Taper/Taper - 10 bar

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
50	2	50	85	135	222	91	81	50	98
80	3	50	85	135	222	91	81	50	127
100	4	50	85	135	222	91	81	50	167
150	6	50	105	155	270	115	105	50	226
200	8	80	138	218	337	149	138	50	309
250	10	80	148	228	356	158	148	50	386
300	12	80	190	270	410	185	175	50	422
350	14	80	185	265	430	195	185	50	435
400	16	110	210	320	450	205	195	50	489
450	18	110	193	303	416	188	178	50	527
500	20	110	201	311	433	197	186	50	578
600	24	110	224	334	479	220	210	50	690
700	28	140	265	405	560	260	250	50	811
750	30	140	272	412	574	267	257	50	866
800	32	170	307	477	644	302	292	50	927
900	36	200	362	562	754	357	347	50	1041
1000	40	200	355	555	740	350	340	50	1116

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

**Double O-Ring
Expansion Coupling
Taper/Taper 12 bar**

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral Taper/Taper (2-40 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral Taper/Taper (2-40 inch) socket end on other side.



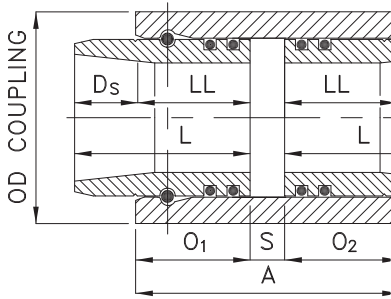
Taper/Taper - 12 bar

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
50	2	50	85	135	222	91	81	50	98
80	3	50	85	135	222	91	81	50	127
100	4	50	85	135	222	91	81	50	167
150	6	50	105	155	270	115	105	50	226
200	8	80	138	218	337	149	138	50	309
250	10	80	148	228	356	158	148	50	386
300	12	80	190	270	410	185	175	50	422
350	14	80	185	265	430	195	185	50	435
400	16	110	210	320	450	205	195	50	489
450	18	110	193	303	416	188	178	50	527
500	20	140	201	341	433	197	186	50	578
600	24	170	224	394	479	220	210	50	690
700	28	170	265	435	560	260	250	50	811
750	30	200	272	472	574	267	257	50	866
800	32	230	307	537	644	302	292	50	927
900	36	260	362	622	754	357	347	50	1041
1000	40	290	355	645	740	350	340	50	1116

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

Double O-Ring Expansion Coupling Taper/Taper 14 bar

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral Taper/Taper (2-40 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral Taper/Taper (2-40 inch) socket end on other side.



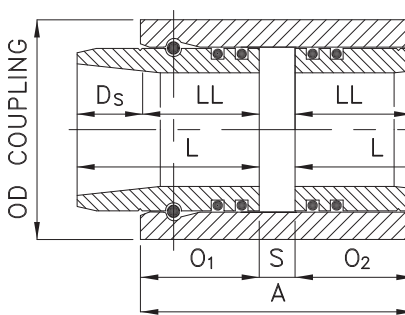
Taper/Taper - 14 bar

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
50	2	50	85	135	222	91	81	50	98
80	3	50	85	135	222	91	81	50	127
100	4	50	85	135	222	91	81	50	167
150	6	50	105	155	270	115	105	50	226
200	8	80	138	218	337	149	138	50	309
250	10	110	148	258	356	158	148	50	386
300	12	140	190	330	410	185	175	50	422
350	14	140	185	325	430	195	185	50	435
400	16	170	210	380	450	205	195	50	489
450	18	170	193	363	416	188	178	50	527
500	20	140	201	341	433	197	186	50	578
600	24	170	224	394	479	220	210	50	690
700	28	230	265	495	560	260	250	50	811
750	30	260	272	532	574	267	257	50	866
800	32	230	307	537	644	302	292	50	927
900	36	260	362	622	754	357	347	50	1041
1000	40	290	355	645	740	350	340	50	1116

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

Double O-Ring Expansion Coupling Taper/Taper 16 bar

Filament-wound Key-Lock expansion coupling with filament-wound double o-ring male Key-Lock (DOMK) adapter with integral Taper/Taper (2-40 inch) socket end one side and filament-wound double o-ring male (DOM) adapter with integral Taper/Taper (2-40 inch) socket end on other side.



Taper/Taper - 16 bar

		Ds	LL	L	A	O1	O2	S	OD coupling
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
50	2	50	85	135	222	91	81	50	98
80	3	50	85	135	222	91	81	50	127
100	4	50	85	135	222	91	81	50	167
150	6	50	105	155	270	115	105	50	226
200	8	80	138	218	337	149	138	50	309
250	10	110	148	258	356	158	148	50	386
300	12	140	190	330	410	185	175	50	422
350	14	140	185	325	430	195	185	50	435
400	16	170	210	380	450	205	195	50	489
450	18	170	193	363	416	188	178	50	527
500	20	200	201	401	433	197	186	50	578
600	24	230	224	454	479	220	210	50	690
700	28	230	265	495	560	260	250	50	811
750	30	260	272	532	574	267	257	50	866
800	32	290	307	597	644	302	292	50	927
900	36	350	362	712	754	357	347	50	1041
1000	40	320	355	675	740	350	340	50	1116

Note: Standard expansion is 40 mm (+/- 20 mm). Other expansion lengths are available on request.

Keys & O-rings

(mm)	(inch)	O-Ring (mm)	Key (mm)
50	2	7x59.7	6x305
80	3	7x88.3	6x400
100	4	7x113.7	6x483
150	6	10x161.3	8x660
200	8	10x225.0	10x840
250	10	12.5x302	12x1270
300	12	12.5x342.3	15x1270
350	14	12.5x342.3	15x1360
400	16	12.5x393.1	18x1585
450	18	15x445	15x1750
500	20	15x490	15x1930
600	24	18x580	18x2240
700	28	20x685	20x2700
750	30	20x740	20x2700
800	32	20x790	20x3065
900	36	25x890	25x3175
1000	40	26x987	20x3500

Conversions

1 psi	= 6895 Pa	= 0.07031 kg/cm ²	
1 bar	= 105Pa	= 14.5 psi	= 1.02 kg/cm ²
1 MPa	= 1 N/mm ²	= 145 psi	= 10.2 kg/cm ²
1 inch		= 25.4 mm	
1 Btu.in/ft ² h°F		= 0.1442 W/mK	
°C		= 5/9 (°F-32)	

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