

Type WRN
Type WRK

Designation

The designation consists of two parts:
1. the series, defined by 3 letters
2. the nominal size, defined by 10 digits

Example:

Type WRN: HYDRA single hinge angular expansion joint with weld ends
Type WRK: HYDRA gimbal hinge angular expansion joint with weld ends

Standard version/materials:

multi-ply bellows: 1.4541
weld ends up to DN 300: P 235GH (1.0345), from DN 350: P 265GH (1.0425)
operating temperature: up to 400°C

Designation (example):

W	R	N	1	0	.	0	1	5	0	.	2	4	0	.	0
Type			Nominal pressure (PN10)			Nominal diameter (DN150)			Movement absorption, nominal ($2\alpha = \pm 12 = 24^\circ$)			Inner sleeve (0 = ohne, 1 = mit)			

Order text to Pressure Equipment Directive 97/23/EC

Please state the following with your order:

- for standard versions -> order number
- for different materials -> designation -> details of materials

According to the Pressure Equipment Directive 97/23/EC, the following information is required for testing and documentation:

Type of pressure equipment according to Art. 1:

- vessel volume V [l]

- piping – nominal size DN

Medium property according to Art. 9:

- group 1 – dangerous
- group 2 – all other fluids

State of medium:

- gaseous or liquid, if pD > 0.5 bar
- liquid, if pD < 0.5 bar

Design data:

max. allowable pressure PS [bar]

max./min. allowable temperature TS [°C]

test pressure PT [bar]

Optional:

category _____

Note: Tell us the dimensions that deviate from the standard dimensions and we can match the expansion joint to your specification.

Angular expansion joint with weld ends

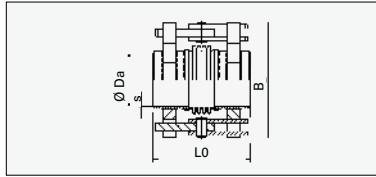
Single hinge version
Gimbal hinge version

Type WRN 02... Type WRK 02... PN 2.5

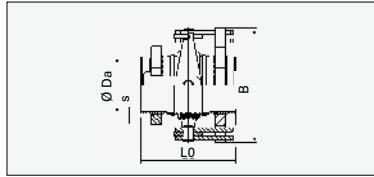
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 02... Type WRK 02... PN 2.5



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 02 ... WRK 02 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
400	10	...0400.100	441744	441436	290	32	49
400	20	...0400.200	441745	441437	350	35	52
400	28	...0400.280	441746	441438	410	37	54
450	10	...0450.099	441747	441439	290	37	58
450	19	...0450.190	441748	441440	355	41	61
450	26	...0450.260	441749	441441	420	43	64
500	11	...0500.110	441750	441442	320	44	71
500	20	...0500.200	441751	441443	385	48	75
500	30	...0500.300	441752	441444	475	53	80
600	10	...0600.100	441753	441445	345	64	104
600	22	...0600.220	441754	441446	450	70	110
600	29	...0600.290	441755	441447	550	76	116
700	9	...0700.091	441756	441448	395	92	165
700	17	...0700.170	441757	441449	475	99	172
700	25	...0700.250	441758	441450	615	110	184
800	8	...0800.084	441759	441451	440	126	229
800	18	...0800.180	441760	441452	555	136	239
800	26	...0800.260	441761	441453	670	156	261
900	7	...0900.074	441762	441454	445	146	279
900	14	...0900.140	441763	441455	530	155	288
900	20	...0900.200	441764	441456	680	169	303
1000	8	...1000.077	441765	441457	495	191	362
1000	14	...1000.140	441766	441458	590	200	372
1000	22	...1000.220	441767	441459	725	226	399

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
595	406.4	6.0	14	124	2.6
595	406.4	6.0	14	62	5.2
595	406.4	6.0	14	41	7.7
655	457.0	6.0	18	149	3.5
655	457.0	6.0	18	74	6.9
655	457.0	6.0	18	49	10.0
715	508.0	6.0	22	175	4.5
715	508.0	6.0	22	88	9.0
715	508.0	6.0	22	53	15.0
815	610.0	6.0	32	243	7.2
815	610.0	6.0	32	104	17.0
815	610.0	6.0	32	66	25.0
970	711.0	6.0	78	316	11.0
970	711.0	6.0	78	157	21.0
970	711.0	6.0	78	85	36.0
1080	813.0	6.0	100	408	14.0
1080	813.0	6.0	100	174	32.0
1080	813.0	6.0	100	169	50.0
1200	914.0	6.0	128	527	19.0
1200	914.0	6.0	128	264	37.0
1200	914.0	6.0	128	143	64.0
1310	1016.0	6.0	157	656	24.0
1310	1016.0	6.0	157	328	48.0
1310	1016.0	6.0	157	302	81.0

Angular expansion joint with weld ends

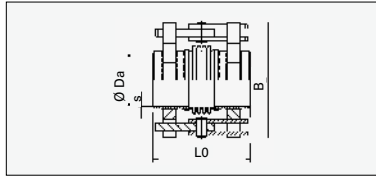
Single hinge version
Gimbal hinge version

Type WRN 02... Type WRK 02... PN 2.5

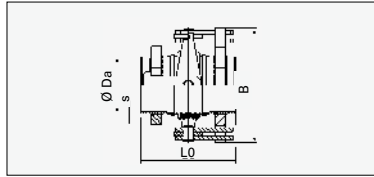
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 02... Type WRK 02... PN 2.5



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 02 ... WRK 02 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
1200	7	... 1200.065	441768	441460	535	284	593
1200	12	... 1200.120	441769	441461	630	302	612
1200	18	... 1200.180	441770	441462	755	326	637
1400	4	... 1400.040	441771		565	396	
1400	8	... 1400.077	441772	441463	680	416	858
1400	12	... 1400.120	441773	441464	850	469	913
1600	4	... 1600.035	441774		565	519	
1600	7	... 1600.068	441775	441465	680	545	1231
1600	11	... 1600.110	441776	441466	835	580	1268
1800	3	... 1800.031	441777		565	570	
1800	6	... 1800.061	441778		680	598	
1800	10	... 1800.095	441779	441467	835	636	1516
2000	3	... 2000.028	441780		615	773	
2000	6	... 2000.055	441781		730	802	
2000	9	... 2000.086	441782	441468	885	843	1936

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
1540	1220.0	8.0	295	1391	34.0
1540	1220.0	8.0	295	695	68.0
1540	1220.0	8.0	295	418	110.0
1740	1420.0	8.0	397	3286	56.0
1740	1420.0	8.0	397	1641	111.0
1740	1420.0	8.0	397	1522	191.0
1995	1620.0	8.0	643	4670	73.0
1995	1620.0	8.0	643	2332	144.0
1995	1620.0	8.0	643	1402	237.0
2185	1820.0	8.0	808	6393	91.0
2185	1820.0	8.0	808	3193	181.0
2185	1820.0	8.0	808	1919	298.0
2425	2020.0	8.0	992	8556	112.0
2425	2020.0	8.0	992	4278	223.0
2425	2020.0	8.0	992	2567	367.0

Angular expansion joint with weld ends

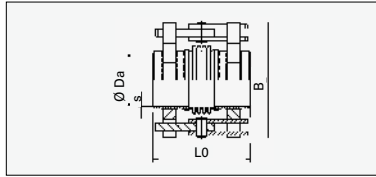
Single hinge version
Gimbal hinge version

Type WRN 06...
Type WRK 06...
PN 6

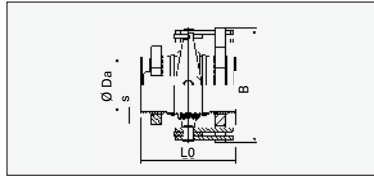
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 06...
Type WRK 06...
PN 6



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	WRN 06 ... WRK 06 ...	WRN	WRK	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
50	18	.0050.180.0	441798	441471	210	4.9	7.7
50	28	.0050.280.0	441799	441472	225	5.4	9.0
50	37	.0050.370.0	441800	441473	240	5.4	9.0
65	17	.0065.170.0	441801	441474	210	5.8	9.5
65	27	.0065.270.0	441802	441475	225	6.2	10
65	39	.0065.390.0	441803	441476	250	6.3	10
80	17	.0080.170.0	441804	441477	210	6.4	10
80	27	.0080.270.0	441805	441478	230	6.9	11
80	38	.0080.380.0	441806	441479	260	7.2	11
100	17	.0100.170.0	441807	441480	215	7.8	12
100	27	.0100.270.0	441808	441481	235	8.4	13
100	38	.0100.380.0	441809	441482	265	8.8	14
125	19	.0125.190.0	441810	441483	235	8.9	14
125	30	.0125.300.0	441811	441484	260	9.3	15
125	39	.0125.390.0	441812	441485	285	9.5	15
150	15	.0150.150.0	441813	441486	240	11	17
150	27	.0150.270.0	441814	441487	280	12	18
150	36	.0150.360.0	441815	441488	320	12	18
200	14	.0200.140.0	441816	441489	270	20	31
200	29	.0200.290.0	441817	441490	330	21	32
200	40	.0200.400.0	441818	441491	390	24	35
250	14	.0250.140.0	441819	441492	275	27	43
250	22	.0250.220.0	441820	441493	310	28	44
250	32	.0250.320.0	441821	441494	365	30	46

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.5	2.7	—
195	60.3	4.0	0.5	1.6	0.1
195	60.3	4.0	0.5	1.1	0.1
215	76.1	4.0	0.7	3.9	0.1
215	76.1	4.0	0.7	2.3	0.1
215	76.1	4.0	0.7	1.4	0.1
230	88.9	4.0	0.9	5	0.1
230	88.9	4.0	0.9	3	0.1
230	88.9	4.0	0.9	1.9	0.2
265	114.3	4.0	1.4	7.3	0.1
265	114.3	4.0	1.4	4.4	0.2
265	114.3	4.0	1.4	2.7	0.3
285	139.7	4.0	1.9	9.9	0.2
285	139.7	4.0	1.9	5.9	0.3
285	139.7	4.0	1.9	4.2	0.5
325	168.3	4.5	2.6	20	0.3
325	168.3	4.5	2.6	9.9	0.6
325	168.3	4.5	2.6	6.6	0.9
385	219.1	6.3	4.3	32	0.6
385	219.1	6.3	4.3	13	1.3
385	219.1	6.3	4.3	16	2.0
445	273.0	7.1	6.6	80	1.0
445	273.0	7.1	6.6	48	1.7
445	273.0	7.1	6.6	30	2.7

Angular expansion joint with weld ends

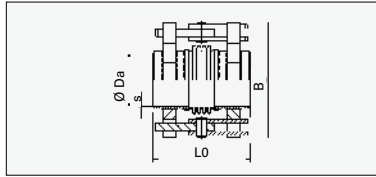
Single hinge version
Gimbal hinge version

Type WRN 06...
Type WRK 06...
PN 6

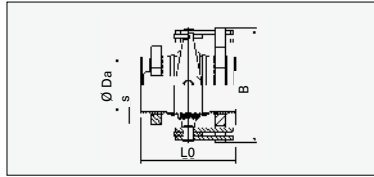
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 06...
Type WRK 06...
PN 6



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 06 ... WRK 06 ...	WRN		WRK	WRN
DN	2α _N	–	–	–	L ₀	G	G
–	degree	–	–	–	mm	kg	kg
300	15	.0300.150.0	441822	441495	285	38	55
300	23	.0300.230.0	441823	441496	325	40	57
300	34	.0300.340.0	441824	441497	385	43	60
350	13	.0350.130.0	441825	441498	330	46	74
350	25	.0350.250.0	441826	441499	390	49	78
350	34	.0350.340.0	441827	441500	460	55	84
400	10	.0400.100.0	441828	441501	350	60	98
400	19	.0400.190.0	441829	441502	415	65	103
400	27	.0400.270.0	441830	441503	500	71	110
450	10	.0450.098.0	441831	441504	355	68	117
450	18	.0450.180.0	441832	441505	420	74	122
450	24	.0450.240.0	441833	441506	490	79	128
500	10	.0500.100.0	441834	441507	385	88	151
500	17	.0500.170.0	441835	441508	435	93	157
500	26	.0500.260.0	441836	441509	530	103	167
600	10	.0600.100.0	441837	441510	435	136	254
600	16	.0600.160.0	441838	441511	490	144	262
600	25	.0600.250.0	441839	441512	600	160	279
700	9	.0700.091.0	441840	–	475	195	–
700	17	.0700.170.0	441841	441513	555	209	374
700	24	.0700.240.0	441842	441514	655	238	404
800	8	.0800.084.0	441843	–	490	233	–
800	16	.0800.160.0	441844	441515	590	255	478
800	23	.0800.230.0	441845	441516	720	284	509

max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
495	323.9	8.0	9.2	106	1.6
495	323.9	8.0	9.2	64	2.7
495	323.9	8.0	9.2	40	4.2
580	355.6	6.0	20.0	130	2.0
580	355.6	6.0	20.0	65	4.0
580	355.6	6.0	20.0	53	6.2
640	406.4	6.0	26.0	186	2.8
640	406.4	6.0	26.0	93	5.5
640	406.4	6.0	26.0	56	8.8
700	457.0	6.0	33.0	229	3.7
700	457.0	6.0	33.0	114	7.2
700	457.0	6.0	33.0	76	10.0
750	508.0	6.0	40.0	362	4.9
750	508.0	6.0	40.0	218	8.2
750	508.0	6.0	40.0	121	14.0
900	610.0	6.0	77.0	509	7.8
900	610.0	6.0	77.0	306	13.0
900	610.0	6.0	77.0	170	22.0
1010	711.0	8.0	103.0	656	11.0
1010	711.0	8.0	103.0	328	21.0
1010	711.0	8.0	103.0	346	33.0
1120	813.0	8.0	134.0	1343	16.0
1120	813.0	8.0	134.0	671	32.0
1120	813.0	8.0	134.0	403	52.0

Angular expansion joint with weld ends

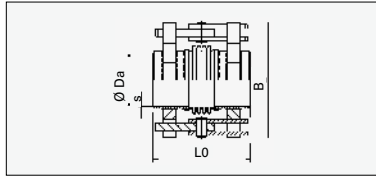
Single hinge version
Gimbal hinge version

Type WRN 06... Type WRK 06... PN 6

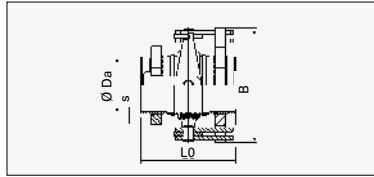
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 06... Type WRK 06... PN 6



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	WRN 06 ... WRK 06 ...	WRN	WRK	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
900	7	.0900.074.0	441846	—	580	375	—
900	14	.0900.140.0	441847	441517	680	403	755
900	20	.0900.200.0	441848	441518	810	440	794
1000	7	.1000.070.0	441849	—	590	420	—
1000	13	.1000.130.0	441850	441519	695	451	888
1000	19	.1000.190.0	441851	441520	835	493	931
1200	6	.1200.062.0	441852	—	640	592	—
1200	12	.1200.120.0	441853	441521	745	628	1270
1200	17	.1200.170.0	441854	441522	885	675	1320
1400	4	.1400.039.0	441855	—	620	741	—
1400	8	.1400.075.0	441856	—	740	778	—
1400	11	.1400.110.0	441857	441523	900	827	1851
1600	3	.1600.033.0	441858	—	720	1090	—
1600	6	.1600.063.0	441859	—	840	1138	—
1600	9	.1600.093.0	441860	441524	1000	1201	2737
1800	3	.1800.029.0	441861	—	720	1207	—
1800	6	.1800.056.0	441862	—	840	1258	—
1800	9	.1800.085.0	441863	—	1000	1325	—
2000	3	.2000.027.0	441864	—	820	1844	—
2000	5	.2000.051.0	441865	—	940	1912	—
2000	8	.2000.078.0	441866	—	1100	2004	—

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
1285	914.0	8.0	214.0	1737	21.0
1285	914.0	8.0	214.0	868	41.0
1285	914.0	8.0	214.0	521	66.0
1395	1016.0	8.0	262.0	2173	27.0
1395	1016.0	8.0	262.0	1087	53.0
1395	1016.0	8.0	262.0	652	85.0
1615	1220.0	10.0	368.0	3106	38.0
1615	1220.0	10.0	368.0	1553	74.0
1615	1220.0	10.0	368.0	932	120.0
1840	1420.0	10.0	662.0	5074	58.0
1840	1420.0	10.0	662.0	2537	115.0
1840	1420.0	10.0	662.0	1522	186.0
2080	1620.0	10.0	1072.0	7556	75.0
2080	1620.0	10.0	1072.0	3778	149.0
2080	1620.0	10.0	1072.0	2268	242.0
2280	1820.0	10.0	1347.0	10424	94.0
2280	1820.0	10.0	1347.0	5212	187.0
2280	1820.0	10.0	1347.0	3127	305.0
2575	2020.0	10.0	2067.0	13926	116.0
2575	2020.0	10.0	2067.0	6958	230.0
2575	2020.0	10.0	2067.0	4179	376.0

Angular expansion joint with weld ends

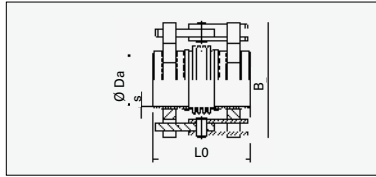
Single hinge version
Gimbal hinge version

Type WRN 10...
Type WRK 10...
PN 10

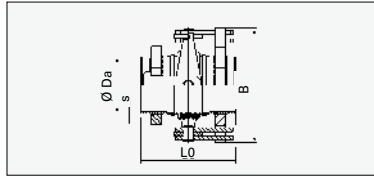
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 10...
Type WRK 10...
PN 10



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 10 ... WRK 10 ...	WRN		WRK	WRN
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
50	17	.0050.170.0	441867	441525	210	4.9	7,7
50	27	.0050.270.0	441868	441526	225	5.4	9,0
50	37	.0050.370.0	441869	441527	250	5.5	9,1
65	16	.0065.160.0	441870	441528	210	5.8	9,5
65	29	.0065.290.0	441871	441529	235	6.3	10
65	37	.0065.370.0	441872	441530	260	6.7	11
80	16	.0080.160.0	441873	441531	215	6.5	11
80	25	.0080.250.0	441874	441532	235	7	11
80	36	.0080.360.0	441875	441533	265	7.4	12
100	17	.0100.170.0	441876	441534	215	8	13
100	26	.0100.260.0	441877	441535	240	8.6	14
100	36	.0100.360.0	441878	441536	275	9.1	14
125	16	.0125.160.0	441879	441537	260	11.3	17
125	25	.0125.250.0	441880	441538	285	11.7	17
125	32	.0125.320.0	441881	441539	315	12	18
150	15	.0150.150.0	441882	441540	260	14	22
150	27	.0150.270.0	441883	441541	305	16	23
150	36	.0150.360.0	441884	441542	350	17	25
200	14	.0200.140.0	441885	441543	270	24	37
200	26	.0200.260.0	441886	441544	320	26	39
200	35	.0200.350.0	441887	441545	370	28	42
250	14	.0250.140.0	441888	441546	295	41	68
250	21	.0250.210.0	441889	441547	330	43	70
250	30	.0250.300.0	441890	441548	390	47	74

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.5	2.7	—
195	60.3	4.0	0.5	1.6	0.1
195	60.3	4.0	0.5	1	0.1
215	76.1	4.0	0.7	3.9	0.1
215	76.1	4.0	0.7	1.9	0.1
215	76.1	4.0	0.7	2.3	0.2
230	88.9	4.0	0.9	7.6	0.1
230	88.9	4.0	0.9	4.6	0.1
230	88.9	4.0	0.9	2.8	0.2
265	114.3	4.0	1.4	11	0.1
265	114.3	4.0	1.4	6.7	0.2
265	114.3	4.0	1.4	4.2	0.4
285	139.7	4.0	1.8	15	0.2
285	139.7	4.0	1.8	8.8	0.4
285	139.7	4.0	1.8	6.2	0.5
325	168.3	4.5	2.6	35	0.3
325	168.3	4.5	2.6	18	0.7
325	168.3	4.5	2.6	12	1.0
385	219.1	6.3	4.3	55	0.6
385	219.1	6.3	4.3	27	1.2
385	219.1	6.3	4.3	22	1.8
480	273.0	7.1	12.0	80	1.0
480	273.0	7.1	12.0	48	1.7
480	273.0	7.1	12.0	36	2.8

Angular expansion joint with weld ends

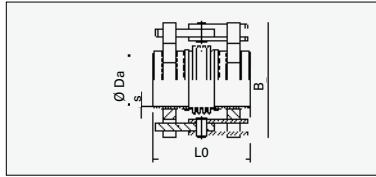
Single hinge version
Gimbal hinge version

Type WRN 10... Type WRK 10... PN 10

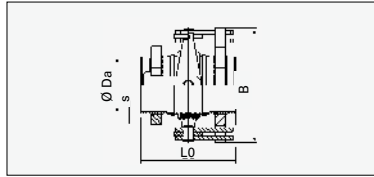
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 10... Type WRK 10... PN 10



Type WRN



Type WRK

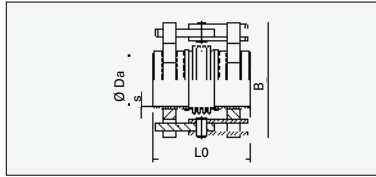
Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 10 ... WRK 10 ...	WRN		WRK	WRN
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
300	15	.0300.150.0	441891	441549	330	58	90
300	23	.0300.230.0	441892	441550	370	61	93
300	29	.0300.290.0	441893	441551	410	63	95
350	13	.0350.130.0	441894	441552	350	53	90
350	21	.0350.210.0	441895	441553	395	56	93
350	26	.0350.260.0	441896	441554	435	59	96
400	9	.0400.094.0	441897	441555	355	71	122
400	18	.0400.180.0	441898	441556	430	79	130
400	26	.0400.260.0	441899	441557	520	90	141
450	10	.0450.097.0	441900	441558	420	131	217
450	16	.0450.160.0	441901	441559	470	139	225
450	23	.0450.230.0	441902	441560	545	150	237
500	10	.0500.100.0	441903	441561	470	150	254
500	16	.0500.160.0	441904	441562	525	158	263
500	24	.0500.240.0	441905	441563	605	171	277
600	9	.0600.094.0	441906	—	475	180	—
600	15	.0600.150.0	441907	441564	535	190	342
600	23	.0600.230.0	441908	441565	645	211	364
700	9	.0700.086.0	441909	—	525	288	—
700	16	.0700.160.0	441910	441566	620	316	574
700	22	.0700.220.0	441911	441567	715	344	603
800	8	.0800.084.0	441912	—	585	350	—
800	15	.0800.150.0	441913	441568	685	383	722
800	22	.0800.220.0	441914	441569	820	425	766

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
540	323.9	8.0	17.0	129	1.7
540	323.9	8.0	17.0	77	2.8
540	323.9	8.0	17.0	55	3.8
580	355.6	6.0	20.0	158	2.1
580	355.6	6.0	20.0	95	3.5
580	355.6	6.0	20.0	67	4.8
640	406.4	6.0	26.0	408	3.1
640	406.4	6.0	26.0	204	6.0
640	406.4	6.0	26.0	123	9.8
740	457.0	8.0	44.0	502	4.0
740	457.0	8.0	44.0	301	6.6
740	457.0	8.0	44.0	188	10.0
790	508.0	8.0	54.0	572	5.3
790	508.0	8.0	54.0	344	8.8
790	508.0	8.0	54.0	215	14.0
900	610.0	8.0	77.0	784	8.1
900	610.0	8.0	77.0	471	13.0
900	610.0	8.0	77.0	261	23.0
1065	711.0	8.0	129.0	1507	12.0
1065	711.0	8.0	129.0	753	24.0
1065	711.0	8.0	129.0	502	35.0
1165	813.0	10.0	167.0	1867	17.0
1165	813.0	10.0	167.0	933	33.0
1165	813.0	10.0	167.0	560	52.0

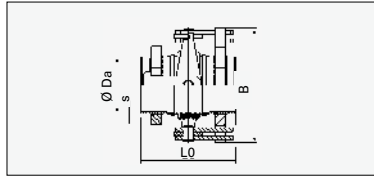
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 10... Type WRK 10... PN 10



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 10 ... WRK 10 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
900	7	.0900.074.0	441915	—	635	467	—
900	14	.0900.140.0	441916	441570	735	502	958
900	20	.0900.200.0	441917	441571	870	549	1006
1000	6	.1000.057.0	441918	—	745	689	—
1000	11	.1000.110.0	441919	441572	850	736	1403
1000	16	.1000.160.0	441920	441573	995	801	1471
1200	6	.1200.059.0	441921	—	750	885	—
1200	11	.1200.110.0	441922	—	860	942	—
1200	15	.1200.150.0	441923	441574	965	1000	2064
1400	4	.1400.037.0	441924	—	825	1389	—
1400	7	.1400.069.0	441925	—	950	1458	—
1400	10	.1400.099.0	441926	441575	1115	1551	3384

Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 10... Type WRK 10... PN 10

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
1315	914.0	10.0	214.0	2413	21.0
1315	914.0	10.0	214.0	1206	42.0
1315	914.0	10.0	214.0	724	67.0
1450	1016.0	10.0	352.0	3997	28.0
1450	1016.0	10.0	352.0	1997	55.0
1450	1016.0	10.0	352.0	1199	89.0
1680	1220.0	10.0	613.0	4525	40.0
1680	1220.0	10.0	613.0	2262	78.0
1680	1220.0	10.0	613.0	1508	114.0
1975	1420.0	10.0	1034.0	7380	60.0
1975	1420.0	10.0	1034.0	3690	118.0
1975	1420.0	10.0	1034.0	2214	190.0

Angular expansion joint with weld ends

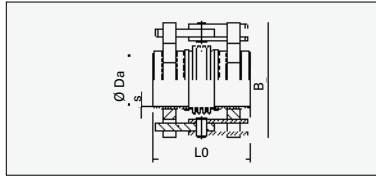
Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16

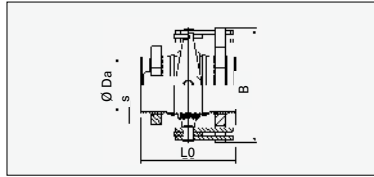
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	WRN 16 ... WRK 16 ...	WRN	WRK	L ₀	G	G
–	degree	–	–	–	mm	kg	kg
50	16	.0050.160.0	441927	441576	210	5	7,8
50	25	.0050.250.0	441928	441577	225	5.5	9,1
50	34	.0050.340.0	441929	441578	250	5.6	9,2
65	16	.0065.160.0	441930	441579	210	5.8	9,5
65	25	.0065.250.0	441931	441580	230	6.4	11
65	34	.0065.340.0	441932	441581	265	7.1	11
80	14	.0080.140.0	441933	441582	235	8.7	13
80	23	.0080.230.0	441934	441583	260	8.9	13
80	32	.0080.320.0	441935	441584	295	9.5	14
100	15	.0100.150.0	441936	441585	240	10.6	16
100	24	.0100.240.0	441937	441586	265	11.2	16
100	33	.0100.330.0	441938	441587	305	11.7	17
125	15	.0125.150.0	441939	441588	260	11.6	18
125	24	.0125.240.0	441940	441589	285	12.2	19
125	33	.0125.330.0	441941	441590	335	13.5	20
150	14	.0150.140.0	441942	441591	260	17	27
150	22	.0150.220.0	441943	441592	290	18	27
150	31	.0150.310.0	441944	441593	345	20	30
200	14	.0200.140.0	441945	441594	315	39	62
200	22	.0200.220.0	441946	441595	350	41	65
200	31	.0200.310.0	441947	441596	405	44	68
250	9	.0250.091.0	441948	441597	320	48	76
250	16	.0250.160.0	441949	441598	375	51	79
250	23	.0250.230.0	441950	441599	430	57	86

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.4	4.2	–
195	60.3	4.0	0.4	2.5	0.1
195	60.3	4.0	0.4	1.6	0.1
215	76.1	4.0	0.7	6	0.1
215	76.1	4.0	0.7	3.6	0.1
215	76.1	4.0	0.7	4	0.2
230	88.9	4.0	0.9	13	0.1
230	88.9	4.0	0.9	8	0.2
230	88.9	4.0	0.9	5	0.2
265	114.3	4.0	1.4	19	0.2
265	114.3	4.0	1.4	12	0.3
265	114.3	4.0	1.4	7.3	0.4
285	139.7	4.0	1.8	25	0.2
285	139.7	4.0	1.8	15	0.4
285	139.7	4.0	1.8	11	0.6
325	168.3	4.5	2.6	35	0.3
325	168.3	4.5	2.6	21	0.6
325	168.3	4.5	2.6	16	0.9
420	219.1	6.3	7.8	91	0.7
420	219.1	6.3	7.8	55	1.1
420	219.1	6.3	7.8	34	1.7
480	273.0	7.1	12.0	142	1.1
480	273.0	7.1	12.0	71	2.2
480	273.0	7.1	12.0	61	3.2

Angular expansion joint with weld ends

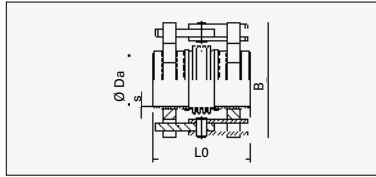
Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16

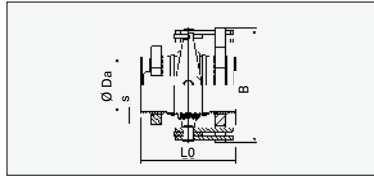
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16



Type WRN



Type WRK

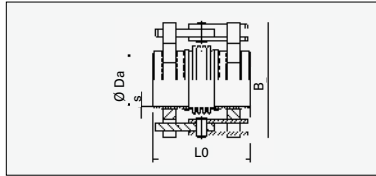
Nominal diameter	Nominal angular movement absorption	Type WRN 16 ... WRK 16 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
300	10	.0300.096.0	441951	441600	350	67	107
300	15	.0300.150.0	441952	441601	390	71	111
300	22	.0300.220.0	441953	441602	470	78	118
350	9	.0350.088.0	441954	441603	410	101	164
350	14	.0350.140.0	441955	441604	450	106	169
350	20	.0350.200.0	441956	441605	530	116	179
400	9	.0400.093.0	441957	—	425	119	—
400	15	.0400.150.0	441958	441606	475	128	211
400	23	.0400.230.0	441959	441607	575	145	230
450	9	.0450.090.0	441960	—	425	134	—
450	14	.0450.140.0	441961	441608	475	144	250
450	22	.0450.220.0	441962	441609	575	163	271
500	10	.0500.099.0	441963	—	475	173	—
500	16	.0500.160.0	441964	441610	530	184	317
500	22	.0500.220.0	441965	441611	610	200	333
600	6	.0600.063.0	441966	—	520	255	—
600	12	.0600.120.0	441967	441612	610	279	515
600	16	.0600.160.0	441968	441613	695	303	540
700	6	.0700.063.0	441969	—	570	354	—
700	12	.0700.120.0	441970	—	665	383	—
700	16	.0700.160.0	441971	441614	755	412	743
800	6	.0800.060.0	441972	—	630	521	—
800	11	.0800.110.0	441973	—	725	557	—
800	15	.0800.150.0	441974	441615	820	595	1106

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
540	323.9	8.0	17.0	231	1.7
540	323.9	8.0	17.0	139	2.8
540	323.9	8.0	17.0	77	4.8
620	355.6	8.0	27.0	278	2.1
620	355.6	8.0	27.0	167	3.4
620	355.6	8.0	27.0	92	5.8
680	406.4	8.0	35.0	582	3.3
680	406.4	8.0	35.0	349	5.5
680	406.4	8.0	35.0	194	9.6
740	457.0	8.0	44.0	706	4.2
740	457.0	8.0	44.0	424	6.9
740	457.0	8.0	44.0	235	12.0
790	508.0	8.0	54.0	801	5.5
790	508.0	8.0	54.0	480	9.1
790	508.0	8.0	54.0	300	14.0
945	610.0	8.0	96.0	1684	8.4
945	610.0	8.0	96.0	842	17.0
945	610.0	8.0	96.0	561	24.0
1085	711.0	10.0	129.0	2056	12.0
1085	711.0	10.0	129.0	1028	23.0
1085	711.0	10.0	129.0	685	34.0
1220	813.0	10.0	223.0	2767	16.0
1220	813.0	10.0	223.0	1384	31.0
1220	813.0	10.0	223.0	921	45.0

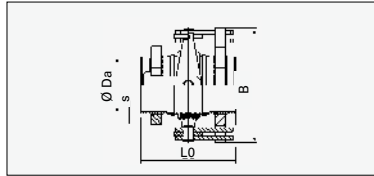
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 16 ... WRK 16 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
900	6	.0900.060.0	441975	—	735	786	—
900	11	.0900.110.0	441976	441616	835	841	1591
900	16	.0900.160.0	441977	441617	970	913	1666
1000	6	.1000.057.0	441978	—	755	880	—
1000	9	.1000.091.0	441979	—	830	925	—
1000	14	.1000.140.0	441980	441618	980	1015	1957

Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 16... Type WRK 16... PN 16

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
1380	914.0	10.0	358.0	3981	21.0
1380	914.0	10.0	358.0	1991	42.0
1380	914.0	10.0	358.0	1194	68.0
1490	1016.0	10.0	440.0	5631	29.0
1490	1016.0	10.0	440.0	3379	49.0
1490	1016.0	10.0	440.0	1877	85.0

Angular expansion joint with weld ends

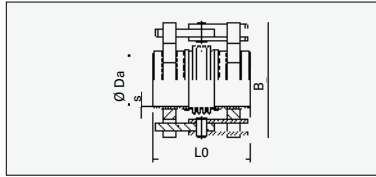
Single hinge version
Gimbal hinge version

Type WRN 25... Type WRK 25... PN 25

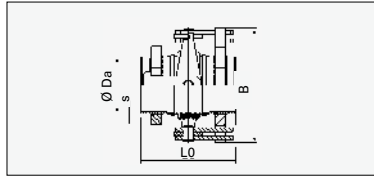
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 25... Type WRK 25... PN 25



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 25 ... WRK 25 ...	WRN		WRK	WRN
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
50	14	.0050.140.0	441981	441619	210	6.1	8.9
50	22	.0050.220.0	441982	441620	230	6.6	10.3
50	30	.0050.300.0	441983	441621	260	7.1	10.6
65	15	.0065.150.0	441984	441622	235	7.4	11.1
65	23	.0065.230.0	441985	441623	255	8	12
65	29	.0065.290.0	441986	441624	275	8.4	12
80	14	.0080.140.0	441987	441625	235	8.8	13
80	22	.0080.220.0	441988	441626	260	9.1	14
80	28	.0080.280.0	441989	441627	285	9.6	14
100	14	.0100.140.0	441990	441628	240	12.6	19
100	22	.0100.220.0	441991	441629	265	13.2	19
100	27	.0100.270.0	441992	441630	290	13.6	20
125	14	.0125.140.0	441993	441631	265	14.3	23
125	22	.0125.220.0	441994	441632	295	15	24
125	27	.0125.270.0	441995	441633	325	16	24
150	13	.0150.130.0	441996	441634	305	29	49
150	20	.0150.200.0	441997	441635	335	31	50
150	27	.0150.270.0	441998	441636	385	33	53
200	9	.0200.091.0	441999	441637	335	44	66
200	16	.0200.160.0	442000	441638	390	47	70
200	22	.0200.220.0	442001	441639	440	52	75
250	9	.0250.090.0	442002	441640	340	55	88
250	14	.0250.140.0	442003	441641	380	58	91
250	20	.0250.200.0	442004	441642	440	63	96

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.4	7.5	—
195	60.3	4.0	0.4	4.5	0.1
195	60.3	4.0	0.4	2.8	0.1
215	76.1	4.0	0.7	11	0.1
215	76.1	4.0	0.7	6.4	0.1
215	76.1	4.0	0.7	4.6	0.2
230	88.9	4.0	0.9	17	0.1
230	88.9	4.0	0.9	10	0.2
230	88.9	4.0	0.9	7.1	0.2
265	114.3	4.0	1.4	24	0.2
265	114.3	4.0	1.4	14	0.3
265	114.3	4.0	1.4	10	0.3
285	139.7	4.0	1.8	42	0.3
285	139.7	4.0	1.8	26	0.4
285	139.7	4.0	1.8	18	0.6
360	168.3	4.5	4.7	60	0.4
360	168.3	4.5	4.7	36	0.6
360	168.3	4.5	4.7	22	0.9
420	219.1	6.3	7.8	130	0.7
420	219.1	6.3	7.8	65	1.4
420	219.1	6.3	7.8	55	2.0
480	273.0	7.1	12.0	234	1.2
480	273.0	7.1	12.0	141	1.9
480	273.0	7.1	12.0	88	3.0

Angular expansion joint with weld ends

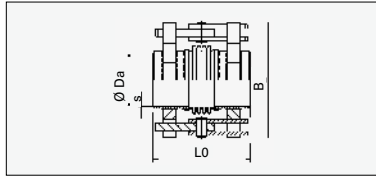
Single hinge version
Gimbal hinge version

Type WRN 25... Type WRK 25... PN 25

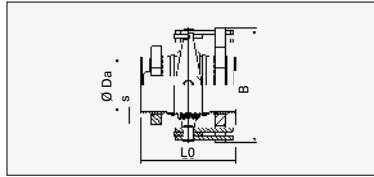
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 25... Type WRK 25... PN 25



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 25 ... WRK 25 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
300	9	.0300.087.0	442005	441643	410	105	168
300	14	.0300.140.0	442006	441644	455	110	173
300	18	.0300.180.0	442007	441645	520	118	181
350	9	.0350.088.0	442008	—	455	120	—
350	14	.0350.140.0	442009	441646	505	127	204
350	20	.0350.200.0	442010	441647	600	142	219
400	6	.0400.062.0	442011	—	460	138	—
400	12	.0400.120.0	442012	441648	535	151	255
400	16	.0400.160.0	442013	441649	605	164	268
450	6	.0450.063.0	442014	—	505	215	—
450	12	.0450.120.0	442015	441650	580	232	396
450	16	.0450.160.0	442016	441651	655	249	415
500	6	.0500.062.0	442017	—	525	248	—
500	10	.0500.100.0	442018	441652	585	265	467
500	16	.0500.160.0	442019	441653	705	299	502
600	6	.0600.063.0	442020	—	585	414	—
600	10	.0600.100.0	442021	—	645	438	—
600	15	.0600.150.0	442022	441654	770	484	829
700	6	.0700.059.0	442023	—	735	625	—
700	9	.0700.093.0	442024	—	800	655	—
700	14	.0700.140.0	442025	441655	930	716	1255

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
580	323.9	8.0	22.0	309	1.8
580	323.9	8.0	22.0	185	2.9
580	323.9	8.0	22.0	116	4.5
620	355.6	8.0	27.0	488	2.4
620	355.6	8.0	27.0	293	3.9
620	355.6	8.0	27.0	162	6.7
680	406.4	8.0	35.0	949	3.2
680	406.4	8.0	35.0	474	6.3
680	406.4	8.0	35.0	316	9.2
785	457.0	8.0	54.0	1228	4.2
785	457.0	8.0	54.0	614	8.2
785	457.0	8.0	54.0	409	12.0
845	508.0	8.0	67.0	1896	6.0
845	508.0	8.0	67.0	1137	9.9
845	508.0	8.0	67.0	632	17.0
1000	610.0	10.0	128.0	2419	9.1
1000	610.0	10.0	128.0	1451	15.0
1000	610.0	10.0	128.0	806	26.0
1150	711.0	10.0	215.0	3209	13.0
1150	711.0	10.0	215.0	1926	21.0
1150	711.0	10.0	215.0	1070	36.0

Angular expansion joint with weld ends

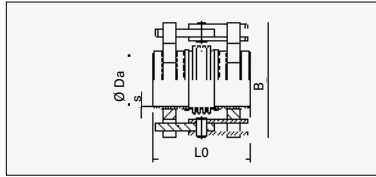
Single hinge version
Gimbal hinge version

Type WRN 40... Type WRK 40... PN 40

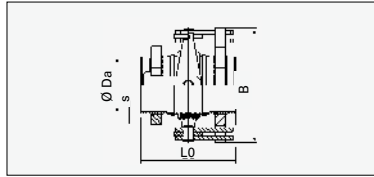
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 40... Type WRK 40... PN 40



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 40 ... WRK 40 ...	WRN		WRK	WRN
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
50	14	.0050.140.0	442026	441656	235	6.4	9.2
50	21	.0050.210.0	442027	441657	255	6.9	10.6
50	25	.0050.250.0	442028	441658	275	7.3	10.8
65	12	.0065.120.0	442029	441659	235	8	12.2
65	19	.0065.190.0	442030	441660	260	8.4	13
65	26	.0065.260.0	442031	441661	295	9.1	13
80	13	.0080.130.0	442032	441662	240	10.4	16
80	20	.0080.200.0	442033	441663	265	11	16
80	24	.0080.240.0	442034	441664	290	11.4	16
100	8	.0100.077.0	442035	441665	240	12.4	20
100	12	.0100.120.0	442036	441666	265	12.9	21
100	17	.0100.170.0	442037	441667	315	14.3	22
125	9	.0125.086.0	442038	441668	305	25.4	43
125	13	.0125.130.0	442039	441669	335	26.9	44
125	17	.0125.170.0	442040	441670	365	28.3	46
150	8	.0150.086.0	442041	441671	325	33	50
150	13	.0150.130.0	442042	441672	355	34	52
150	17	.0150.170.0	442043	441673	385	36	54
200	8	.0200.077.0	442044	441674	340	53	82
200	12	.0200.120.0	442045	441675	380	57	85
200	17	.0200.170.0	442046	441676	440	61	90
250	8	.0250.078.0	442047	—	405	90	—
250	12	.0250.120.0	442048	441677	445	95	151
250	17	.0250.170.0	442049	441678	505	103	159

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.5	9.4	—
195	60.3	4.0	0.5	5.7	0.1
195	60.3	4.0	0.5	4	0.1
215	76.1	4.0	0.7	19	0.1
215	76.1	4.0	0.7	11	0.1
215	76.1	4.0	0.7	7.1	0.2
230	88.9	4.0	0.9	24	0.1
230	88.9	4.0	0.9	14	0.2
230	88.9	4.0	0.9	10	0.2
265	114.3	4.0	1.3	35	0.2
265	114.3	4.0	1.3	21	0.3
265	114.3	4.0	1.3	19	0.4
330	139.7	4.0	3.3	72	0.3
330	139.7	4.0	3.3	43	0.4
330	139.7	4.0	3.3	31	0.6
360	168.3	4.5	4.7	92	0.4
360	168.3	4.5	4.7	55	0.6
360	168.3	4.5	4.7	40	0.8
420	219.1	6.3	7.8	273	0.8
420	219.1	6.3	7.8	164	1.3
420	219.1	6.3	7.8	102	2.0
520	273.0	7.1	16.0	363	1.2
520	273.0	7.1	16.0	218	2.0
520	273.0	7.1	16.0	136	3.1

Angular expansion joint with weld ends

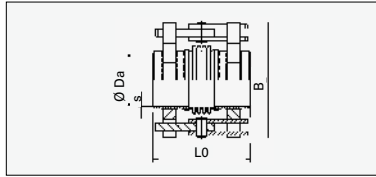
Single hinge version
Gimbal hinge version

Type WRN 40... Type WRK 40... PN 40

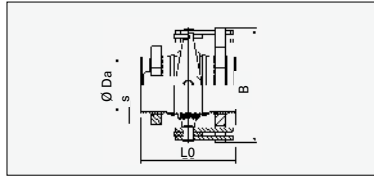
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 40... Type WRK 40... PN 40



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 40 ... WRK 40 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	—	—	—	L ₀	G	G
—	degree	—	—	—	mm	kg	kg
300	6	.0300.058.0	442050	—	415	122	—
300	9	.0300.092.0	442051	441679	460	129	208
300	14	.0300.140.0	442052	441680	550	142	221
350	6	.0350.061.0	442053	—	495	173	—
350	10	.0350.097.0	442054	441681	545	181	307
350	14	.0350.140.0	442055	441682	640	200	327
400	6	.0400.061.0	442056	—	505	203	—
400	10	.0400.097.0	442057	—	560	214	—
400	14	.0400.140.0	442058	441683	665	238	396
450	6	.0450.058.0	442059	—	520	263	—
450	9	.0450.093.0	442060	—	575	279	—
450	13	.0450.130.0	442061	441684	665	300	509
500	4	.0500.044.0	442062	—	615	384	—
500	7	.0500.070.0	442063	—	675	400	—
500	11	.0500.110.0	442064	441685	785	436	739

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
580	323.9	8.0	22.0	738	1.9
580	323.9	8.0	22.0	443	3.1
580	323.9	8.0	22.0	246	5.4
675	355.6	8.0	33.0	801	2.4
675	355.6	8.0	33.0	481	3.9
675	355.6	8.0	33.0	267	6.7
725	406.4	10.0	43.0	1139	3.5
725	406.4	10.0	43.0	684	5.7
725	406.4	10.0	43.0	380	9.8
815	457.0	10.0	55.0	1750	4.7
815	457.0	10.0	55.0	1050	7.7
815	457.0	10.0	55.0	656	12.0
890	508.0	10.0	90.0	2705	5.8
890	508.0	10.0	90.0	1623	9.5
890	508.0	10.0	90.0	902	17.0

Angular expansion joint with weld ends

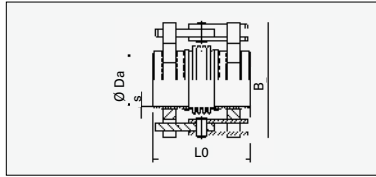
Single hinge version
Gimbal hinge version

Type WRN 63...
Type WRK 63...
PN 63

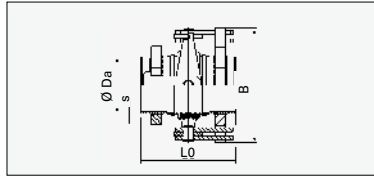
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 63...
Type WRK 63...
PN 63



Type WRN



Type WRK

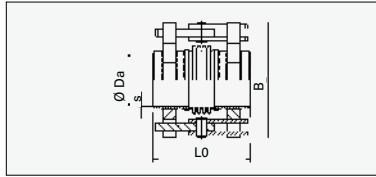
Nominal diameter	Nominal angular movement absorption	Type	Order No. standard version		Overall length	Weight approx.	
			WRN 63 ... WRK 63 ...	WRN		WRK	WRN
DN	2α _N	–	–	–	L ₀	G	G
–	degree	–	–	–	mm	kg	kg
50	9	.0050.089.0	442065	441686	235	7.7	11.0
50	13	.0050.130.0	442066	441687	255	7.8	11.0
50	16	.0050.160.0	442067	441688	275	8.2	11.0
65	9	.0065.086.0	442068	441689	235	9.1	13.0
65	13	.0065.130.0	442069	441690	260	9.6	14
65	17	.0065.170.0	442070	441691	295	10	14
80	8	.0080.082.0	442071	441692	255	11.8	17
80	13	.0080.130.0	442072	441693	280	12.4	17
80	16	.0080.160.0	442073	441694	305	12.7	18
100	7	.0100.066.0	442074	441695	285	25	39
100	10	.0100.100.0	442075	441696	310	26.3	40
100	14	.0100.140.0	442076	441697	350	27.9	42
125	8	.0125.084.0	442077	441698	330	30.9	44
125	11	.0125.110.0	442078	441699	345	31.3	45
125	16	.0125.160.0	442079	441700	395	34.3	48
150	7	.0150.071.0	442080	441701	360	43	60
150	11	.0150.110.0	442081	441702	395	45	63
150	14	.0150.140.0	442082	441703	430	47	65
200	5	.0200.053.0	442083	441704	405	86	126
200	10	.0200.099.0	442084	441705	465	93	133
200	13	.0200.130.0	442085	441706	525	100	140
250	5	.0250.051.0	442086	–	490	160	–
250	8	.0250.081.0	442087	441707	535	168	250
250	12	.0250.120.0	442088	441708	625	184	266

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
195	60.3	4.0	0.4	13	–
195	60.3	4.0	0.4	8	0.1
195	60.3	4.0	0.4	5.7	0.1
215	76.1	4.0	0.7	25	0.1
215	76.1	4.0	0.7	15	0.1
215	76.1	4.0	0.7	9.5	0.2
230	88.9	4.0	0.9	34	0.1
230	88.9	4.0	0.9	20	0.2
230	88.9	4.0	0.9	14	0.2
300	114.3	5.0	2.4	84	0.2
300	114.3	5.0	2.4	50	0.3
300	114.3	5.0	2.4	31	0.4
330	139.7	6.3	3.3	94	0.3
330	139.7	6.3	3.3	70	0.4
330	139.7	6.3	3.3	40	0.6
360	168.3	6.3	4.7	200	0.4
360	168.3	6.3	4.7	120	0.7
360	168.3	6.3	4.7	86	1.0
460	219.1	8.0	10.0	486	0.8
460	219.1	8.0	10.0	243	1.6
460	219.1	8.0	10.0	162	2.3
575	273.0	10.0	20.0	810	1.4
575	273.0	10.0	20.0	486	2.3
575	273.0	10.0	20.0	270	3.9

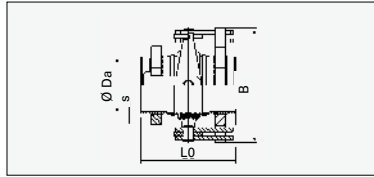
Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 63... Type WRK 63... PN 63



Type WRN



Type WRK

Nominal diameter	Nominal angular movement absorption	Type WRN 63 ... WRK 63 ...	Order No. standard version		Overall length	Weight approx.	
			WRN	WRK		WRN	WRK
DN	2α _N	–	–	–	L ₀	G	G
–	degree	–	–	–	mm	kg	kg
300	5	.0300.053.0	442089	–	500	185	–
300	8	.0300.082.0	442090	441709	550	194	303
300	11	.0300.110.0	442091	441710	625	208	317
350	5	.0350.052.0	442092	–	570	239	–
350	10	.0350.097.0	442093	441711	655	260	399
350	13	.0350.130.0	442094	441712	740	280	419
400	4	.0400.039.0	442095	–	555	332	–
400	7	.0400.072.0	442096	–	635	353	–
400	10	.0400.099.0	442097	441713	740	385	602

Angular expansion joint with weld ends

Single hinge version
Gimbal hinge version

Type WRN 63... Type WRK 63... PN 63

Max. width approx.	Weld ends		Adjusting moment rate		
	outside-diameter	wall thickness	c _r	c _α	c _p
B	Da	s	c _r	c _α	c _p
mm	mm	mm	Nm/bar	Nm/degree	Nm/degree bar
625	323.9	11.0	28.0	1015	2.1
625	323.9	11.0	28.0	609	3.4
625	323.9	11.0	28.0	381	5.2
695	355.6	12.0	34.0	1758	2.9
695	355.6	12.0	34.0	879	5.7
695	355.6	12.0	34.0	586	8.3
780	406.4	15.0	58.0	2261	3.5
780	406.4	15.0	58.0	1130	6.8
780	406.4	15.0	58.0	1000	11.0