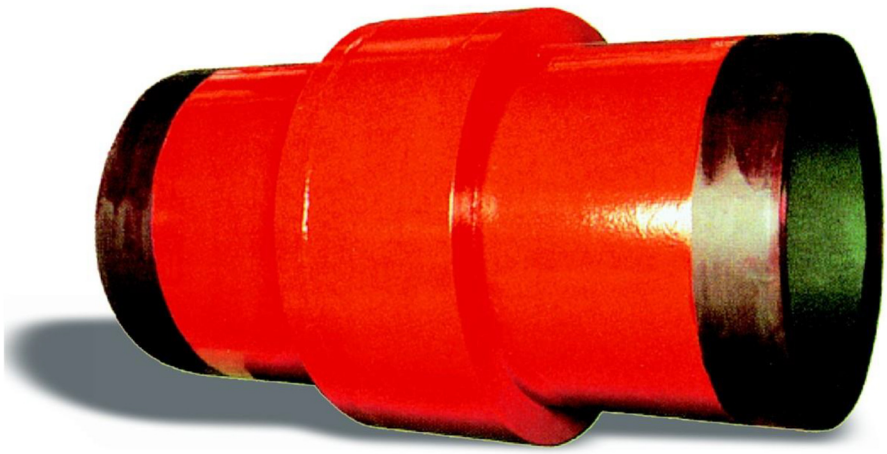
Insulating Joint IK



Insulating joint IK

Monoblock insulating joints
- are boltless, rigid pipeline components, factory-welded and ready for installation
- a design which has proven successful throughout the world even for highest requirements
- maintenance-free
- Suitable for underground installation without the need for special precautions or for above ground installation
- absolutely no impairment due to external influences

Mechanical properties
- the excellent mechanical properties are achieved by a rigid design of statically favorable form, using thermo-setting plastics free from cold flow as insulating materials
- the welded unit provides a safe and reliable connection even over extremely long period of operation without the risk of the secured and locked unit loosening or separating
- countless tests, prototype tests and empirical data gained during the course of many years of practical operation confirm the soundness and correctness of the complete welded design

Electrical properties
- the dimensioning and practical arrangement of the insulating sections within the overall design in addition to technical production factors, in conjunction with insulation materials of a suitable quality, result in the ideal overall electrical behavior of the insulating joints
- large external insulating lenght, thus eliminating the possibility of sparkover
- very good dielectric strenght, substantially greater than is the case with conventional insulating flanges
- the average electrical resistance, measured at 1000 VDC, exceeds 40 Mohm
- a decisive factor in safe operating behavior, however, is linearity between the voltage applied and the resestive leakage current

Calculation
- in accordance with German standards such as EN 12007-3, EN 1594, TRBF, ASME code and other international standards, or in accordance with specific requirements
- if no other regulations are made, the RMA-company standards are valid. It´s calculated on the basis of AD 2000 and for the strenght characteristics of the design the working pressure, resp. The maximum test pressure is decisive
- additional forces such as bending moments and tensile forces etc. must be specified by the customer
- basically, all components of forces and force values occuring can be taken into consideration during design calculation
- a uniform assessment, valid simultaneously for all applications and requirements is not possible in pratice

Scope of manufacture
- unrestricted, i.e. extending beyond the data and tables given
- the numerical values specified in the brochure are based upon assumed standard versions
- deviations and matching to specific operating conditions may be implemented at any time

Scope of application
- suitable for flow media such as mineral oil, crude oil, kerosine, gasoline, propane, butane, natural gas, coal gas, ethylene, nitrogen and drinking water etc.
- media such as sour gas and oxygen necessitate special materials and design bases
- please always specify the medium and operating conditions
- standard versions up to maximum +80°C constant temperature
- special versions for district heating pipeline up to +150°C

Materials
- pipes e.g. in accordance with EN, API, ASTM-A and other standards
- seamless rings made of plate material or of forged quality, depending upon requirements and design calculations
- seals of aging-resistant material, e.g. buna N, viton, EPDM and insulating materials made of tried and tested materials with application-specific properties

External coating
- unless otherwise specified, we apply PUR (Polyurethane) acc. to EN 10290 as a standard
- other types of coating are possible according to agreement and purpose
  Examples: bitumen primer and others

Internal lining
- as per standard without lining
- virtually all types of lining can be applied upon agreement, depending upon intended purpose
- electrically conductive media and deposits require an appropriate internal lining

Tests / Inspections
- according to the agreed requirements, usually:
- a strenght and tightness test with water
- an electrical breakdown test with 5000 V/1 minute, AC, 50 Hz (both before and after the hydrostatic pressure test)
- an electrical resistance test, standard 500 V. In special cases 1000 V DC
- checking the material certificates
- evaluation of the destructive and non-destructive tests
- dimensional checks
- depending upon the basis of the order, the tests are conducted either by our quality assurance department, by an official acceptance testing agency, by the customer himself or by an acceptance testing company authorized by the customer

Qualifications for insulating joints
- component testing in accordance with German regulations (VDTÜV data sheet insulating joints 100)
- stress tests and bending tests
- multifunctional prototype tests in all ranges and other quality assurance tests
- technical modifications reserved

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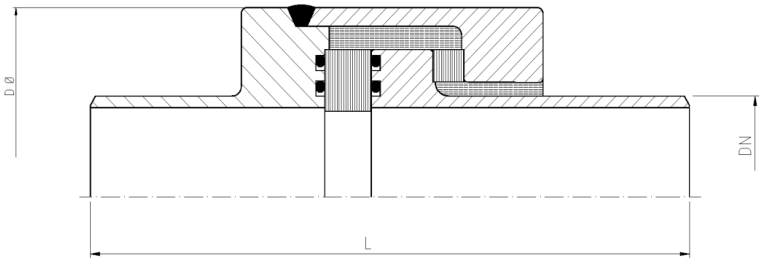
PIPELINE EQUIPMENT

RMA-monoblock-insulating joints

DIN-standard version up to PN 100 or ANSI 600

Other sizes and pressure ratings on request



Dimensions and Weight table

Size		PN 10, 16			PN 25			PN 40			PN 70			PN 100		
DN		Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight
mm	inch	L mm	DØ mm	kg	L mm	DØ mm	kg	L mm	DØ mm	kg	L mm	DØ mm	kg	L mm	DØ mm	kg
25	1”	-see Type ET -Type IK on request			500	115	7	500	115	7	500	115	7	500	115	7
40	1½”				500	115	7,5	500	115	7,5	500	115	7,5	500	115	7,5
50	2”				700	140	11	700	140	11	700	140	11	700	140	11
65	2½”				700	160	16	700	160	16	700	160	16	700	160	16
80	3”				700	160	17	700	160	17	700	160	17	700	160	17
100	4”				700	194	29	700	194	29	700	194	29	700	194	29
125	5”				700	220	35	700	220	35	700	220	35	700	220	35
150	6”				700	273	45	700	273	45	700	273	45	700	273	45
200	8”				700	324	68	700	324	68	700	324	72	700	324	72
250	10”	700	356	49	700	570	80	700	370	80	700	380	105	700	384	115
300	12”	700	419	65	700	425	115	700	425	115	700	425	130	700	434	173
350	14”	700	446	76	700	450	120	700	425	120	700	454	135	700	476	190
400	16”	700	500	100	700	505	130	700	510	155	700	510	180	1000	527	250
450	18”	700	550	120	700	560	145	700	560	178	700	570	230	1000	586	340
500	20”	700	620	146	700	612	170	700	612	205	1000	625	295	1000	645	415
600	24”	1000	710	215	1000	716	265	1000	716	315	1200	733	475	1200	770	645
700	28”	1000	823	281	1000	816	345	1000	822	410	1200	850	630	1500	886	970
800	32”	1000	920	352	1200	918	460	1200	928	540	1500	968	940	1500	1005	1295
900	36”	1200	1032	480	1200	1023	550	1200	1033	670	1500	1076	1140	1500	1115	1670
1000	40”	1200	1127	516	1200	1128	660	1200	1144	870	1500	1190	1295	1500	1200	2040
1050	42”	1200	1180	570	1200	1180	700	1200	1194	910	1500	1240	1540	1800	1287	2470
1100	44”	1500	1235	690	1500	1230	860	1500	1244	1075	1500	1294	1740	1800	1340	2650
1200	48”	1500	1340	880	1500	1338	980	1500	1366	1400	1500	1416	2250	1800	1474	3450

Larger nominal diameters and pressure ratings on request
The above data refer to insulating joints designed and in accordance with AD 2000
Calculation and design in accordance withEN 12007-3 (up to 16 bar) and EN 1594 (over 16 bar), including TRBF 301, or on the basis of other requirements covered by the above groups
Safety factor S = 1,8 (F = 0,55)
Testing pressure, standard = 1,5 times nominel pressure or operating pressure
Electrical test, standard 5000 V/1 minute (50 Hz), AC
Electrical resistance test, standard 500 V, DC
Please specify pipe connection dimensions and connection material when inquiring or ordering
Other versions and design data available on request
Beside the general design in accordance with AD 2000, ASME code or other standards can also be taken as a basis, depending on the requirements for welding or testing

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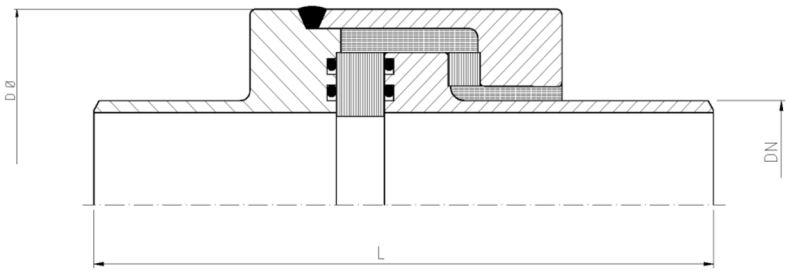
PIPELINE EQUIPMENT

RMA-monoblock-insulating joints

ASME-standard version up to ANSI Class 600

Other sizes and pressure ratings on request



Dimensions and Weight table

Size		ANSI 150			ANSI 300			ANSI 400			ANSI 600		
DN		Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight	Over-all lenght	Diameter	Weight
mm	inch	L mm	DØ mm	kg	L mm	DØ mm	kg	L mm	DØ mm	kg	L mm	DØ mm	kg
25	1”	-see Type ET -Type IK on request			500	114	7	500	114	7	500	114	7
40	1½”				500	114	7,5	500	114	7,5	500	114	7,5
50	2”				700	140	11	700	140	11	700	140	11
65	2½”				700	160	16	700	160	16	700	160	16
80	3”				700	160	17	700	160	17	700	160	17
100	4”				700	194	29	700	194	29	700	194	29
125	5”				700	220	35	700	220	35	700	220	38
150	6”				700	273	45	700	273	45	700	273	58
200	8”				700	324	74	700	324	84	700	324	86
250	10”	700	370	80	700	380	113	700	380	113	700	384	138
300	12”	700	425	115	700	425	148	700	425	148	1000	434	234
350	14”	700	450	120	700	454	150	1000	454	178	1000	476	262
400	16”	700	505	136	1000	510	205	1000	510	252	1000	527	296
450	18”	700	560	152	1000	560	252	1000	570	314	1200	586	420
500	20”	1000	612	235	1000	612	328	1200	625	383	1200	645	530
600	24”	1000	716	283	1000	722	400	1200	733	550	1200	770	750
700	28”	1000	816	355	1200	828	565	1500	850	786	1500	886	1120
800	32”	1200	918	492	1500	941	860	1500	968	1095	1800	1005	1670
900	36”	1500	1023	690	1500	1046	1085	1800	1076	1460	1800	1115	2120
1000	40”	1500	1128	815	1500	1162	1345	1800	1190	1685	1800	1222	2620
1050	42”	1800	1180	960	1800	1212	1575	2000	1240	2085	2200	1287	3230
1100	44”	1800	1230	1025	1800	1271	1685	2000	1294	2237	2200	1340	3473
1200	48”	2000	1338	1240	2000	1384	2150	2000	1416	3100	2500	1474	4730

Larger nominal diameters and pressure ratings on request
The above data refer to insulating joints designed in accordance with ASME Code Section VIII, Div. 1.
Design Factor F = 0,5, other factors are possible
Testing pressure = 1,5 times design pressure or as specified
Electrical test, standard 5000 V/1 minute (50 Hz), AC
Electrical resistance test, standard 500 V, DC
Please specify pipe connection dimensions and connection material when inquiring or ordering
Other versions, design data, calculation and design standards on request

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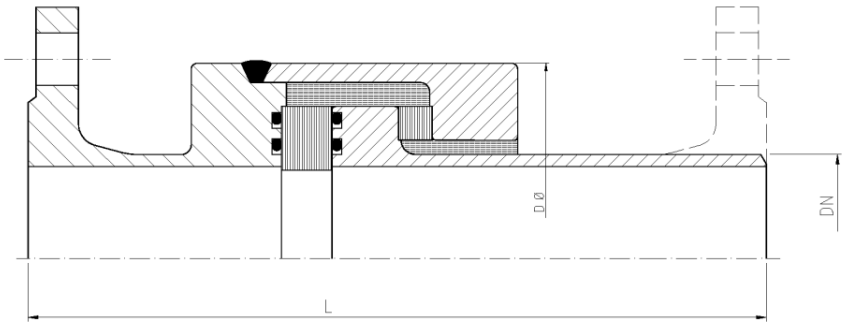
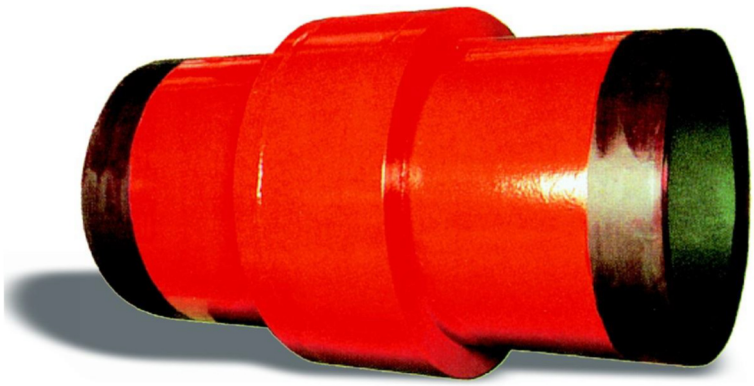
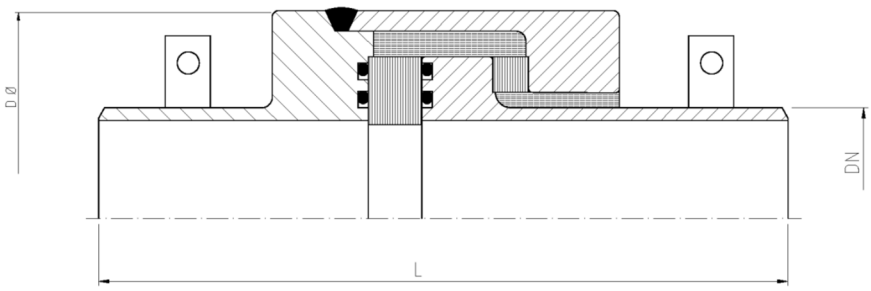
Insulating joint IK
Further versions



Insulating joint with flange connection on one or both ends.





Insulating joint with connection for ex-proof spark gaps.

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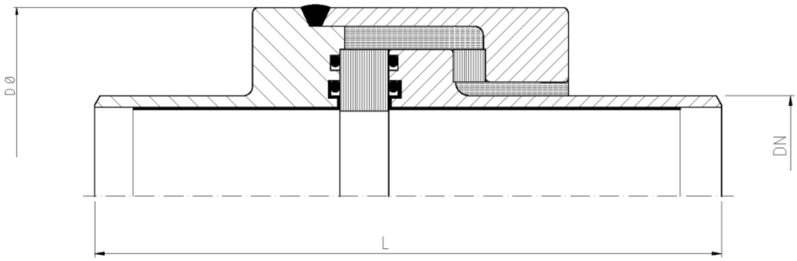
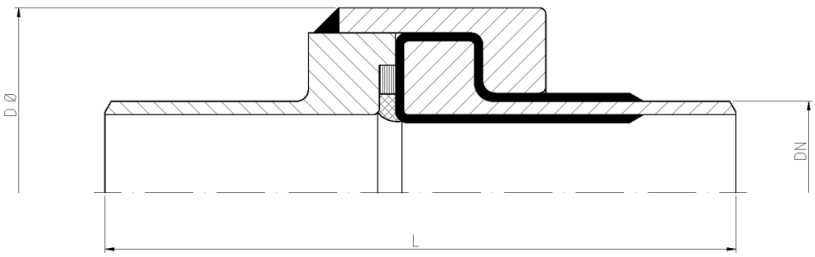
PIPELINE EQUIPMENT

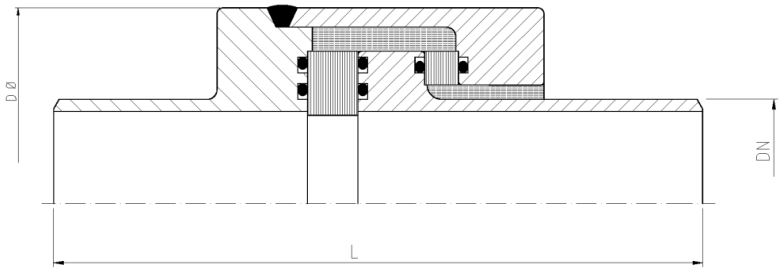
Insulating joint IK



Design with special internal lining up to the O-ring groove. For strongly electrically conductive media e.g. water, sea water, salt water etc.
Inside lining on one or two sides, depending on requirements on site.



Up to DN 300 inclusive, PN 25-100 according to EN 1594 design with lip seal, manufactured in series.



Design for highest requirements especially for large sizes and high pressure ratings

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