



prochind MONOLITHIC INSULATING JOINTS FOR MAINLINES AND SERVICE PIPELINES

FAP, owner of the PROCHIND™ trade mark, is specialized in the manufacturing of monolithic insulating joints with the mission to continue the tradition of the very **PROCHIND®** monolithic insulating joint, for mainlines and service pipeline which have always been noted for reliability and quality.

PROCHIND® monolithic insulating joints are manufactured for:

- GAS-PIPELINES
- WATERWORKS
- OIL PIPELINES
- INDUSTRIAL PLANTS

PROCHIND's insulating joint, has a mechanical resistance which offer any water tightness **warranty** under high pressures and traction stress.

PROCHIND's mainline insulating joints, are usually manufactured for the following pressures: **10, 16, 25, 64 and 100 Kg/cm²** and in the various diameters with dimensions up to 1400 mm (according to the catalogue).

FAP is also able to manufacture joints for any **dimensions and pressure** in accordance to all the specific customer's requests.

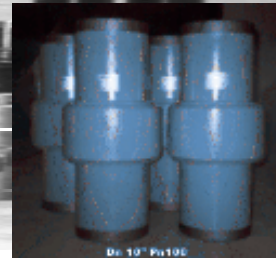
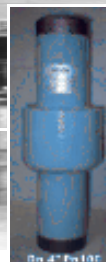


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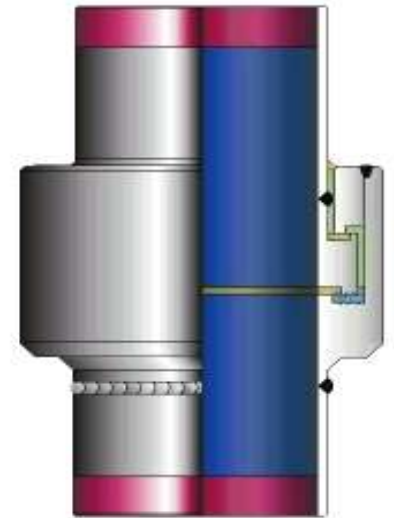
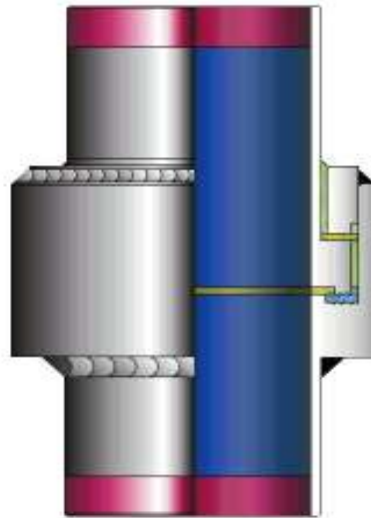
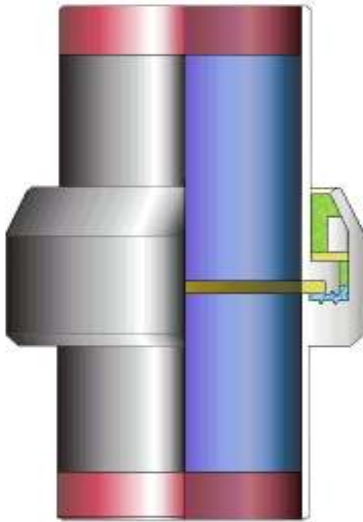




>> GENERAL TECHNICAL FEATURES



prochind INSULATING JOINTS



NP	"Fillet weld type A"	"Fillet weld type B"	"Butt weld"
25	from 3" to 12"	from 14" to 100"	from 1/2" to 100"
64	from 1/2" to 4"	from 5" to 12"	from 1/2" to 60"
100	from 1/2" to 4"	from 5" to 12"	from 1/2" to 56"

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PROCHIND™ insulating joints are manufactured by FAP for any type and for any pressure and they are:

- **Assembled and tested directly by FAP**, so to offer to the customer the complete warranty.
- **Monolithic i.e.:** the metal components sizing, the position of the sealing gasket and its compression during the assembly, are such that they give an excellent electrical resistance on the joints, even in presence of fluids. The electrical insulation between the metallic surfaces, is obtained thanks to:
 - ⇒ **Rigid rings** composed by insulating material with high mechanical characteristics;
 - ⇒ **Special sealing gasket** with an high electric insulation;
 - ⇒ **Fluid resin** (usually epoxy) that fill up all the internal empty spaces forming a very high mechanical and electric resistance.
- **Total electrical resistance**, thanks to the high dielectric characteristics of the insulating materials and the coating of the internal surfaces through epoxy paint suitable for the conveyance of gas, hydrocarbons and drinkable water.
- **Anti tracking**, because all the contiguous metal surfaces, are perfectly insulated such to make almost impossible the creation of electrical discharges between them and their external profile under the tensions for which they are guaranteed.
- Produced in conformity with **UNI-CIG 10284** (PN10) and **UNI-CIG 10285**.
- Marked PROCHIND™ because FAP Co. Ltd is the owner of the Trade Mark.

PROCHIND™
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of property of FAP S.r.l.



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>> MANUFACTURING CHARACTERISTICS



prochind INSULATING JOINTS

MATERIALI

Carbon steel pipes in accordance with API 5L Gr. B, UNI 7088, ASTM, DIN and BS.

Pipe sections Welded construction out of rings from heavy thickness rolled plates, laminated of forged rings, in accordance with UNI 7746, ASTM A 105, DIN and MSS-SP44.

Sealing gaskets Nitrile, Fluoride and silicone elastomers in accordance with ASTM D-2000.

Insulating materials Epoxy-glass laminates or epoxy-glass prefabrications in accordance with ASTM D-709 group IV type G11;
Polycarbonates;
Cold-cured epoxy resins.

Coatings Internal surfaces by epoxy resins (fusion bonded epoxy);
Exyernal surfaces by epoxy primers, epoxy paints and special high build coatings.

WELDING AND NON DESTRUCTIVE TESTS

The metal components that make up the so-called "standards" joints, are joined together by means of "fillet welds".

If requested, the fillet weld seams, may be checked by non destructive tests using dye penetrants and magnetoscopic inspections.

With different preparation "butt weld" can be used. In this case inspections by x-rays ultrasounds can be carried out.

All welding processes are in accordance with ASME VIII and IX and are covered by relevant qualifi-

STD TESTS - All the joints manufactured by FAP, are guaranteed for the following minimal values:

- Hydrostatic test pressure equal to 1,5 times the Nominal Pressure (NP)
 - Dielectric test (in air on dry joint):
 - Electrical resistance: 5 Mohm minimum - tension 1000 V c.c.
 - Resistance to applied tension (without discharge): 3000 V - 50 Hz for 1 minute.
- > Additional tests are performed according to customer's requirement.

LABELLING

- Manufacturer name and logo (PROCHIND™ is a registered Trade Mark of FAP s.r.l.)
- nominal diameter
- nominal thickness
- pipe quality
- max working pressure
- quality control traceability number
- max working temperature
- UNI-CIG reference

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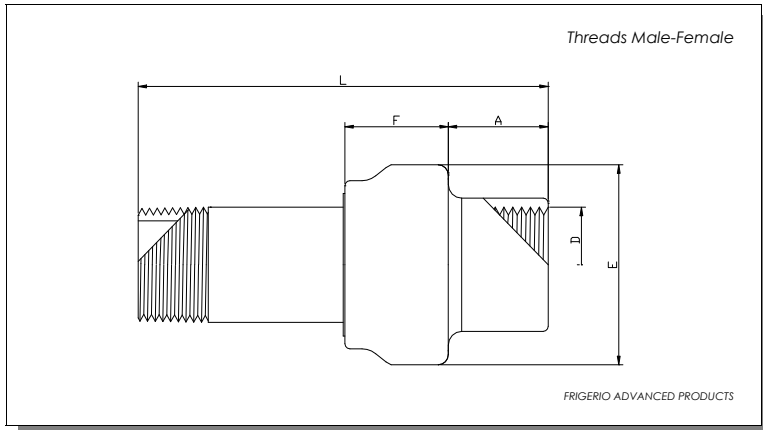


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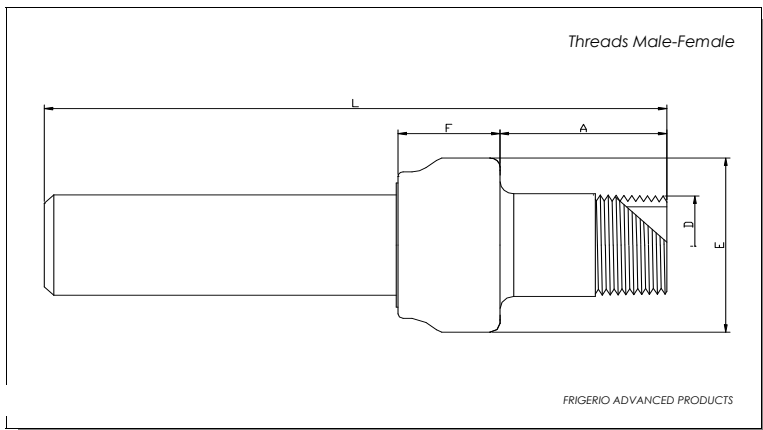
>> SERVICE JOINTS' TECHNICAL FEATURES



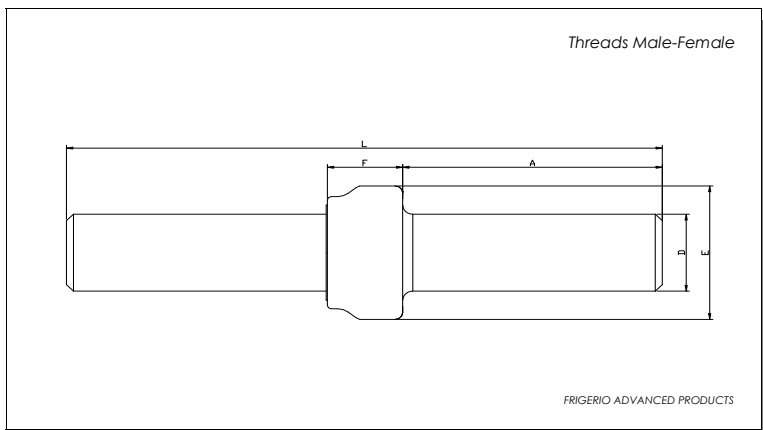
WATER-GAS NP 10 BAR



ND (inches)	D	NP 10 M/F				
		A	F	E	L	Kg
15 (1/2)	21,3	26	28	47	100	0,4
20 (3/4)	26,7	27	31	52	110	0,5
25 (1)	33,4	30	31	58	123	0,7
32 (1 1/4)	42,2	32	33	70	135	1,0
40 (1 1/2)	48,3	32	36	75	145	1,2
50 (2)	60,3	36	39	90	150	1,7
65 (2 1/2)	76,1	40	54	114	171	3,0
80 (3)	88,9	44	65	127	200	4,0
100 (4)	114,3	55	65	152	220	6,5



ND (inches)	D	NP 10 M/S				
		A	F	E	L	Kg
15 (1/2)	21,3	35	27	47	156	0,4
20 (3/4)	26,7	41	31	52	167	0,6
25 (1)	33,4	50	31	58	184	0,8
32 (1 1/4)	42,2	51	34	70	194	1,3
40 (1 1/2)	48,3	56	36	75	211	1,5
50 (2)	60,3	62	39	90	227	1,9
65 (2 1/2)	76,1	63	54	114	256	3,8
80 (3)	88,9	72	65	127	300	5,0
100 (4)	114,3	102	65	155	330	7,5



ND (inches)	D	NP 10 S/S				
		A	F	E	L	Kg
15 (1/2)	21,3	94	27	47	210	0,5
20 (3/4)	26,7	95	31	52	225	0,7
25 (1)	33,4	104	31	58	240	1,0
32 (1 1/4)	42,2	110	34	70	270	1,5
40 (1 1/2)	48,3	119	36	75	280	1,7
50 (2)	60,3	126	39	90	290	2,3
65 (2 1/2)	76,1	139	54	114	330	4,5
80 (3)	88,9	172	65	127	400	6,0

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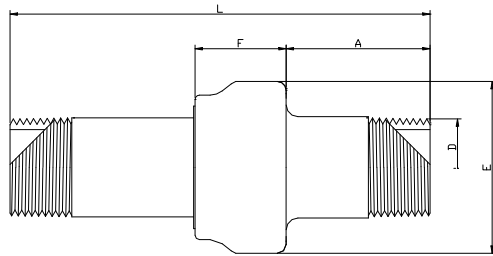
>> SERVICE JOINTS' TECHNICAL FEATURES



WATER-GAS NP 10 BAR



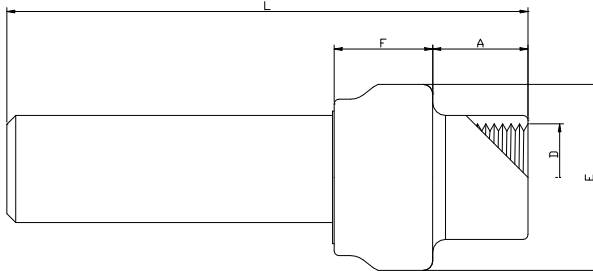
Threads Male-Male



FRIGERIO ADVANCED PRODUCTS

ND (inches)	D	NP 10 M/M				
		A	F	E	L	Kg
15 (1/2)	21,3	35	28	47	100	0,5
20 (3/4)	26,7	41	31	52	124	1,2
25 (1)	33,4	50	31	58	145	1,4
32 (1 1/4)	42,2	51	33	70	154	1,7
40 (1 1/2)	48,3	56	36	75	169	2,0
50 (2)	60,3	62	39	90	176	3,0
65 (2 1/2)	76,1	63	54	114	192	4,5
80 (3)	88,9	72	65	127	233	6
100 (4)	114,3	102	65	152	264	9,0

Threads Female-Female



FRIGERIO ADVANCED PRODUCTS

ND (inches)	D	NP 10 F/S				
		A	F	E	L	Kg
15 (1/2)	21,3	26	28	47	148	0,5
20 (3/4)	26,7	27	31	52	153	1,2
25 (1)	33,4	30	31	58	165	1,4
32 (1 1/4)	42,2	32	33	70	175	1,7
40 (1 1/2)	48,3	32	36	75	187	2,0
50 (2)	60,3	36	39	90	200	3,0
65 (2 1/2)	76,1	40	54	114	233	4,5
80 (3)	88,9	44	65	127	280	6
100 (4)	114,3	55	65	152	280	9,0

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TECHNICAL SHEDULE

- Max working poessure _____: 10 Bar
- Max working temperature _____: 70° C
- Dielectric resistance in dry air _____: 3000 V
- Dielectric resistance test _____: 5 Mhom at 1 kV cc
- Pressione di collaudo _____: 15 Bar
- Gas Threads _____: UNI ISO 7/1
- Gaskets _____: NBR ASTM D-2000
- According to _____: UNI-CIG 10284

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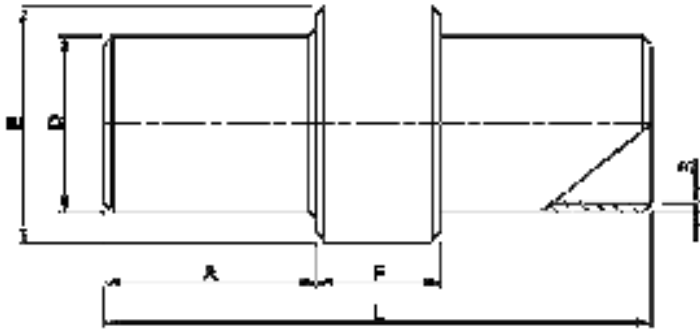


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>> MAINLINE JOINTS' TECHNICAL FEATURES



WATER-GAS NP 16-25



TECHNICAL DATAS

- Max working pressure_____: 25 Bar
- Max working temperature_____: 70° C
- Electrical insulating resistance__: 5 Mhom a 1000 V cc
- Dielectric resistance in dry air__: 3000 V
- Tests pressure_____: 38 Bar



ND (inches)	D	NP 16-25 bar—ANSI 150					
		S	A	F	E	L	Kg
15 (1/2)	21,3	3,2	101	49	43	250	0,5
20 (3/4)	26,7	3,9	102	46	67	250	1,2
25 (1)	33,4	3,4	105	46	67	250	1,4
32 (1 1/4)	42,2	3,7	123	50	76	300	1,7
40 (1 1/2)	48,3	3,7	120	55	83	300	2,0
50 (2)	60,3	3,9	144	56	95	350	3,0
65 (2 1/2)	76,1	4,5	142	62	114	350	4,5
80 (3)	88,9	3,6	168	65	127	400	6
100 (4)	114,3	4	172	65	155	400	9,0
125 (5)	141,3	4,8	216	75	193	500	14,7
150 (6)	168,3	5,6	214	83	229	500	20,0
200 (8)	219,1	6,4	205	100	273	500	31,0
250 (10)	273	6,4	299	115	340	700	57,0
300 (12)	323,8	7,1	310	130	398	700	75,0
350 (14)	355,6	7,9	420	180	459	1000	149,0
400 (16)	406,4	7,9	420	190	510	1000	166,0
450 (18)	457,2	7,9	345	210	552	900	191,0
500 (20)	508	7,9	500	212	602	1200	224,0
550 (22)	558,8	7,9	386	228	660	1200	247,0
600 (24)	606,9	7,9	485	225	734	1200	310,0
650 (26)	660,4	7,9	376	248	762	1000	340,0
700 (28)	711,2	7,9	416	268	822	1100	410,0
750 (30)	762	8	416	268	872	1100	435
800 (32)	812,8	10	400	300	932	1100	575
850 (34)	863,6	10	400	300	984	1100	635
900 (36)	914,4	10	440	320	1032	1200	690
950 (38)	965,2	12	440	320	1082	1200	790
1000 (40)	1016	12	425	350	1154	1200	985
1050 (42)	1066,8	12	425	350	1206	1200	1040
1200 (48)	1219,2	12	510	380	1375	1400	1340
1400 (56)	1422,4	12	747	405	1576	1900	1870

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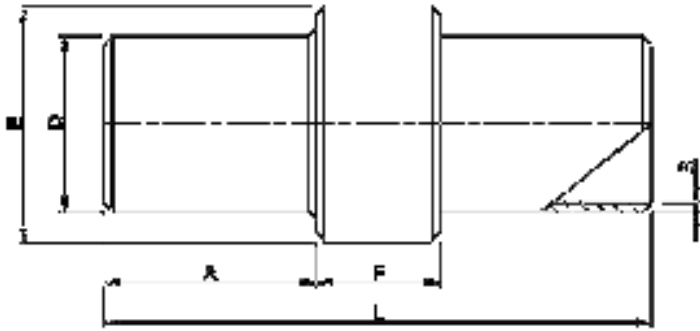


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>> MAINLINE JOINTS' TECHNICAL FEATURES



WATER-GAS NP 64



TECHNICAL DATAS

- Max working pressure_____: 64 Bar
- Max working temperature_____: 70° C
- Electrical insulating resistance__: 5 Mhom a 1000 V cc
- Dielectric resistance in dry air__: 3000 V
- Tests pressure_____: 96 Bar



ND (inches) D	NP 40/64 – ANSI 300/400						
	S	A	F	E	L	Kg	
15 (1/2)	21,3	3,2	95	60	60	250	1,4
20 (3/4)	26,7	3,2	95	60	65	250	1,6
25 (1)	33,4	3,4	95	60	75	250	2,0
32 (1 ¼)	42,2	3,6	113	70	82	300	2,8
40 (1 ½)	48,3	3,7	110	80	95	300	4,0
50 (2)	60,3	3,9	129	92	108	350	6,0
65 (2 ½)	76,1	4,5	124	102	127	350	8,5
80 (3)	88,9	5,5	200	100	152	500	14,0
100 (4)	114,3	6,0	192	115	178	500	20,0
125 (5)	141,3	6,5	230	140	203	600	29,0
150 (6)	168,3	7,1	222	156	244	600	42,0
200 (8)	219,1	8,2	215	170	299	600	63,0
250 (10)	273	9,3	305	190	368	800	108,0
300 (12)	323,8	9,5	295	210	420	800	153,0
350 (14)	355,6	9,5	388	224	472	1000	189,0
400 (16)	406,4	9,5	380	240	526	1000	248,0
450 (18)	457,2	9,5	370	260	580	1000	300,0
500 (20)	508	9,5	465	270	636	1200	370,0
550 (22)	558,8	12,7	460	280	692	1200	505,0
600 (24)	606,9	12,7	450	300	750	1200	580,0
650 (26)	660,4	14,3	445	310	808	1200	688,0
700 (28)	711,2	14,3	490	320	866	1300	799,0
750 (30)	762	17,5	485	330	910	1300	931,0
800 (32)	812,8	19,0	475	350	970	1300	1071,0
850 (34)	863,6	19,0	470	360	1020	1300	1171,0
900 (36)	914,4	20,6	510	380	1080	1400	1391,0
950 (38)	965,2	22,2	505	390	1130	1400	1573,0
1000 (40)	1016	23,8	495	410	1190	1400	1766,0
1050 (42)	1066,8	25	490	420	1266	1400	2079,0
1200 (48)	1219,2	25	665	470	1430	1800	3000
1400 (56)	1422,4	25	995	510	1645	2500	4150

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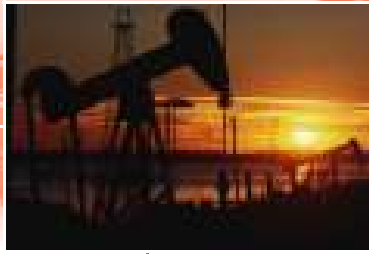
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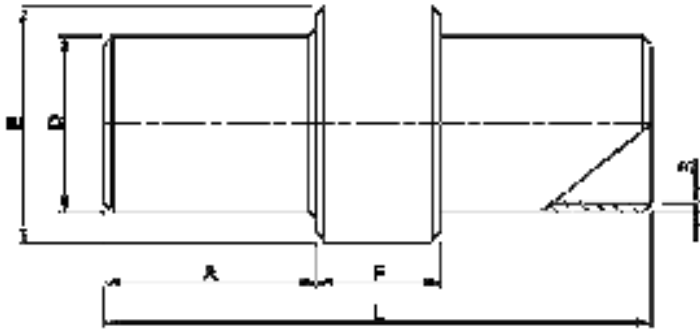
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>> MAINLINE JOINTS' TECHNICAL FEATURES



WATER-GAS NP 100



TECHNICAL DATAS

- Max working pressure_____: 100 Bar
- Max working temperature_____: 70° C
- Electrical insulating resistance__: 5 Mhom a 1000 V cc
- Dielectric resistance in dry air__: 3000 V
- Tests pressure_____: 150 Bar



ND (inches) D	NP 100 - ANSI 600						Kg
	S	A	F	E	L		
15 (1/2)	21,3	3,2	95	60	60	250	1,4
20 (3/4)	26,7	3,2	95	60	65	250	1,6
25 (1)	33,4	3,4	95	60	75	250	2,0
32 (1 1/4)	42,2	3,6	113	70	82	300	2,8
40 (1 1/2)	48,3	3,7	110	80	95	300	4,0
50 (2)	60,3	3,9	129	92	108	350	6,0
65 (2 1/2)	76,1	4,5	124	102	127	350	8,5
80 (3)	88,9	5,5	190	120	152	500	16,0
100 (4)	114,3	6,0	182	135	178	500	23,0
125 (5)	141,3	6,5	220	160	219	600	35,0
150 (6)	168,3	7,1	215	170	254	600	49,0
200 (8)	219,1	8,2	205	190	324	600	85,0
250 (10)	273	9,3	293	214	380	800	131,0
300 (12)	323,8	9,5	283	234	441	800	175,0
350 (14)	355,6	12,7	375	250	486	1000	235,0
400 (16)	406,4	12,7	365	270	540	1000	323,0
450 (18)	457,2	12,7	355	290	589	1000	394,0
500 (20)	508	12,7	450	300	652	1200	490
550 (22)	558,8	12,7	440	320	708	1200	580
600 (24)	606,9	12,7	430	340	766	1200	675
650 (26)	660,4	14,3	425	350	824	1200	795
700 (28)	711,2	14,3	470	360	882	1300	975
750 (30)	762	17,5	465	370	940	1300	1100
800 (32)	812,8	19,0	450	400	990	1300	1270
850 (34)	863,6	19,0	445	410	1050	1300	1420
900 (36)	914,4	20,6	485	430	1110	1400	1600
950 (38)	965,2	22,2	480	440	1170	1400	1850
1000 (40)	1016	23,8	470	460	1210	1400	2000
1050 (42)	1066,8	25,4	465	470	1290	1400	2500
1200 (48)	1219,2	25	620	560	1487	1800	3800
1400 (56)	1422,4	25	937	625	1710	2500	5900

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