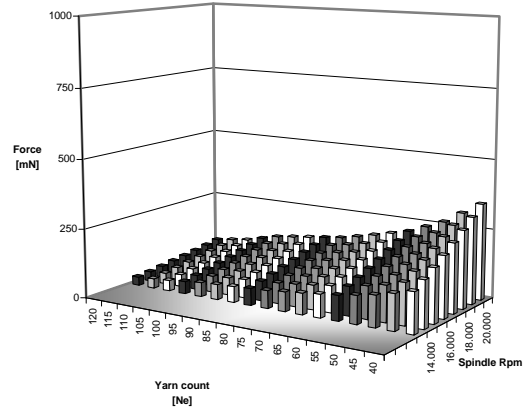


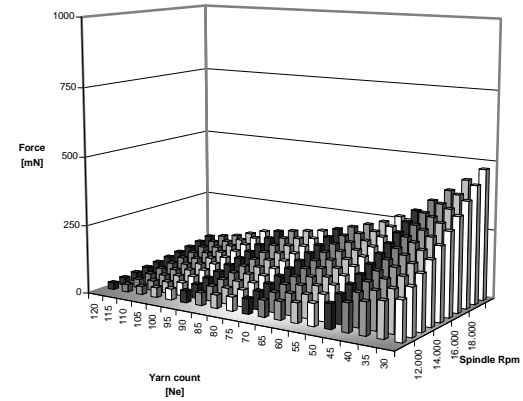
BORGOSIESIA'S RING TYPES SUGGESTIONS TO CUSTOMERS

INTRODUCTION: All the following calculations have been done with the purpose to help the customer in choosing the right type of rings suitable for the spinning conditions adopted. The variable that is helping us in the choice of the ring is the centrifugal force of the traveller applied to the ring internal flange surface, during the spinning process. The higher is the traveller weight, the higher is the spindle R.p.m. and the higher is the ring i.d., the bigger this force will be and the more stress will be applied to the ring.

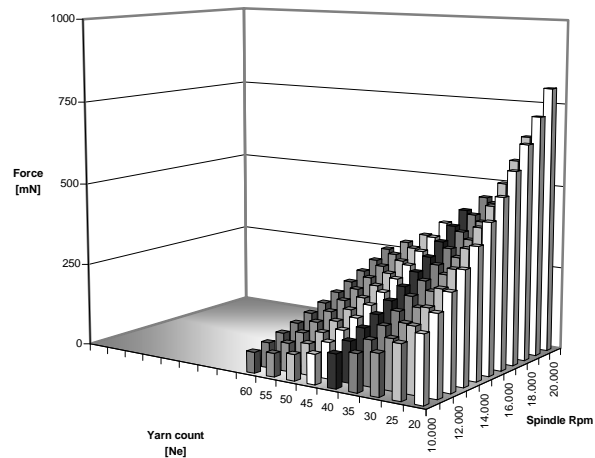
Centrifugal force on ring i.d. 36 mm. (fine counts)



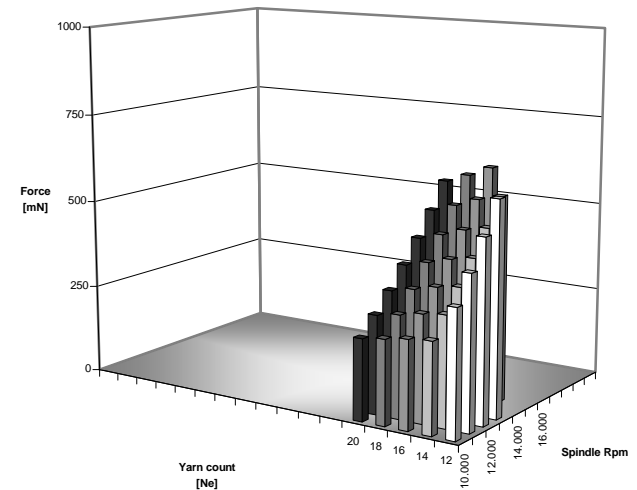
Centrifugal force on ring i.d. 40 mm. (medium-fine counts)



Centrifugal force on ring i.d. 42 mm. (medium counts)



Centrifugal force on ring i.d. 48 mm. (coarse counts)



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BORGOSESIA'S RING TYPES SUGGESTIONS TO CUSTOMERS

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**Ring dia.
[mm]**

36

Spindle RPM	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
Speed [m/s]	18,85	20,73	22,62	24,50	26,39	28,27	30,16	32,04	33,93	35,81	37,70

Yarn count [Ne] **Traveller weight [mg]**

6	250
8	210
10	170
12	132
14	95
16	92,5
18	88,5
20	85
25	69
30	53
35	48
40	43
45	38
50	33
55	29,7
60	26,5
65	24,5
70	22,5
75	20,7
80	19
85	18
90	17
95	16
100	15
105	13,1
110	11,2
115	10,1
120	9

RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.

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Ring dia.	38										
[mm]											

Spindle RPM	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
Speed [m/s]	19,90	21,89	23,88	25,87	27,86	29,85	31,83	33,82	35,81	37,80	39,79

Yarn count	Traveller weight										
[Ne]	[mg]										

6	250
8	210
10	170
12	132
14	95
16	92,5
18	88,5
20	85
25	69
30	53
35	48
40	43
45	38
50	33
55	29,7
60	26,5
65	24,5
70	22,5
75	20,7
80	19
85	18
90	17
95	16
100	15
105	13,1
110	11,2
115	10,1
120	9

RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.

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Ring dia.
[mm]

42

Spindle RPM
Speed [m/s]

10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
21,99	24,19	26,39	28,59	30,79	32,99	35,19	37,38	39,58	41,78	43,98

Yarn count [Ne] Traveller weight [mg]

6	250												
8	210												
10	170												
12	132												
14	95												
16	92,5												
18	88,5												
20	85	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
25	69	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
30	53	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
35	48	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
40	43	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
45	38	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
50	33	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
55	29,7	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK
60	26,5	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO
65	24,5												
70	22,5												
75	20,7												
80	19												
85	18												
90	17												
95	16												
100	15												
105	13,1												
110	11,2												
115	10,1												
120	9												

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.

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BORGOSIESIA'S RING TYPES SUGGESTIONS TO CUSTOMERS

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Ring dia.
[mm]

45

Spindle RPM
Speed [m/s]

10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
23,56	25,92	28,27	30,63	32,99	35,34	37,70	40,06	42,41	44,77	47,12

Yarn count [Ne] Traveller weight [mg]

6	250																				
8	210																				
10	170																				
12	132	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
14	95	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
16	92,5	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
18	88,5	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
20	85	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
25	69	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
30	53	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
35	48	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
40	43	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
45	38																				
50	33																				
55	29,7																				
60	26,5																				
65	24,5																				
70	22,5																				
75	20,7																				
80	19																				
85	18																				
90	17																				
95	16																				
100	15																				
105	13,1																				
110	11,2																				
115	10,1																				
120	9																				

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.

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Ring dia.
[mm]

48

Spindle RPM
Speed [m/s]

10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
25,13	27,65	30,16	32,67	35,19	37,70	40,21	42,73	45,24	47,75	50,27

Yarn count [Ne] Traveller weight [mg]

6	250								
8	210								
10	170								
12	132	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK				
14	95	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK		
16	92,5	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	
18	88,5	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	
20	85	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	
25	69	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	
30	53	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	
35	48	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	STEELHAWK	
40	43	RZD PRO	RZD PRO	RZD PRO	RZD PRO	RZD PRO	STEELHAWK	STEELHAWK	
45	38								
50	33								
55	29,7								
60	26,5								
65	24,5								
70	22,5								
75	20,7								
80	19								
85	18								
90	17								
95	16								
100	15								
105	13,1								
110	11,2								
115	10,1								
120	9								

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.

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BORGOSIESIA'S RING TYPES SUGGESTIONS TO CUSTOMERS

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Ring dia.
[mm] **50**

Spindle RPM	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000
Speed [m/s]	26,18	28,80	31,42	34,03	36,65	39,27	41,89	44,51	47,12	49,74	52,36

Yarn count **Traveller weight**
[Ne] [mg]

6	250	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
8	210	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
10	170	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
12	132	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK	STEELHAWK
14	95					
16	92,5					
18	88,5					
20	85					
25	69					
30	53					
35	48					
40	43					
45	38					
50	33					
55	29,7					
60	26,5					
65	24,5					
70	22,5					
75	20,7					
80	19					
85	18					
90	17					
95	16					
100	15					
105	13,1					
110	11,2					
115	10,1					
120	9					

The purpose of this table is to give a GENERAL suggestion on the type of ring finish to suggest to the customer. These calculations have been done based on the assumptions of the following spinning parameters: fiber 100% cotton, tube height 200 mm, knitting twist, traveller life of 7 days minimum, % of traveller burnt after traveller change less than 5%.