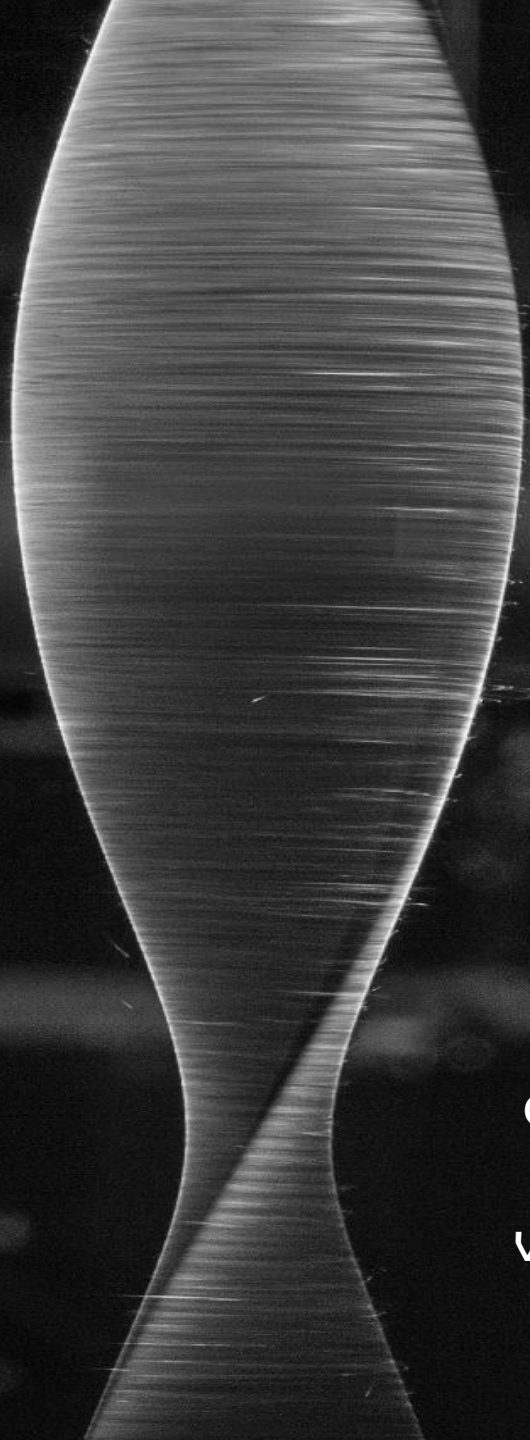
TWISTECHNOLOGY

NEW DEVELOPMENTS IN MULTI-BALLOON TWISTING APPLIED TO DELICATE FIBERS



EUROCORD &
CORDAGE INSTITUTE
JOINT CONVENTION

Vienna, June 15th, 2022

MIQUEL MOIX

✓ Twisting delicate fibers

Well below 6,000 Dtex.

✓ More efficiently

More output per spindle.
Lower power consumption / output ratio.

✓ With the multi-balloon technology with EMB

Twisthole technology enhanced with the EMB (Electronic Moving Bar) system.

Twisting with conventional methods
RING TWISTING – MONO-BALLOON

Specific balloon shape desired

↑ *to control*

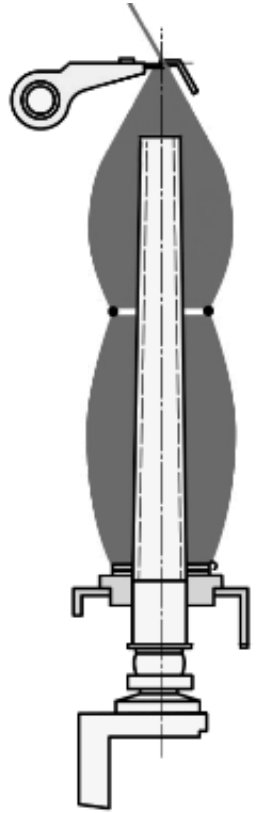
Traveller weight
(+ control ring)

↓

Adds extra winding tension on the system

↓

Limits max. RPM



New Twisthole system + EMB
RING TWISTING – MULTI-BALLOON

Balanced, self harmonically-controlled multi-balloon

↑

Reduced Traveller weight
(~~control ring~~)

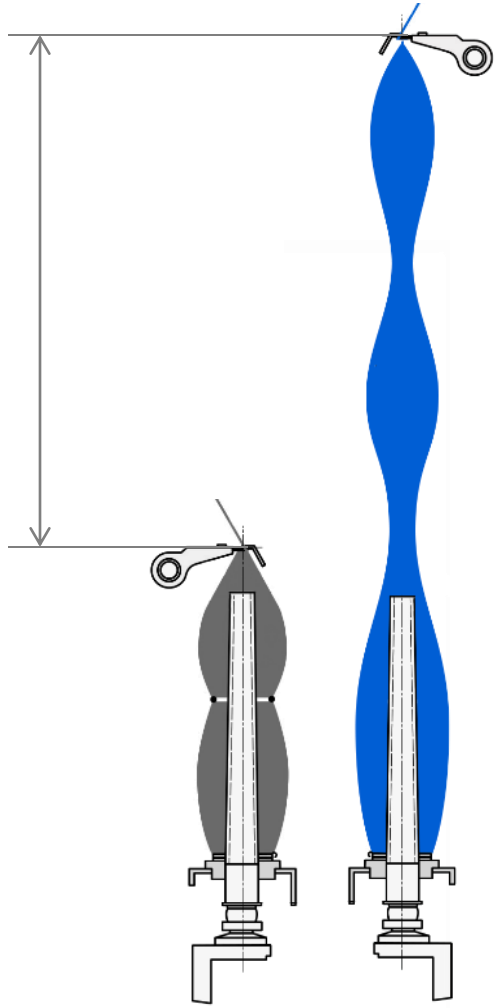
↓

Adds minimal winding tension on the system

↓

Higher max. RPM

1000 – 2000* mm
*(*The higher the better)*



ADVANTAGES OF MULTI-BALLOON SYSTEM + EMB

- ✓ Increasing production up to 50%:

  Due to lower working tension in traveler, we can spin much faster in most cases with lower deniers.

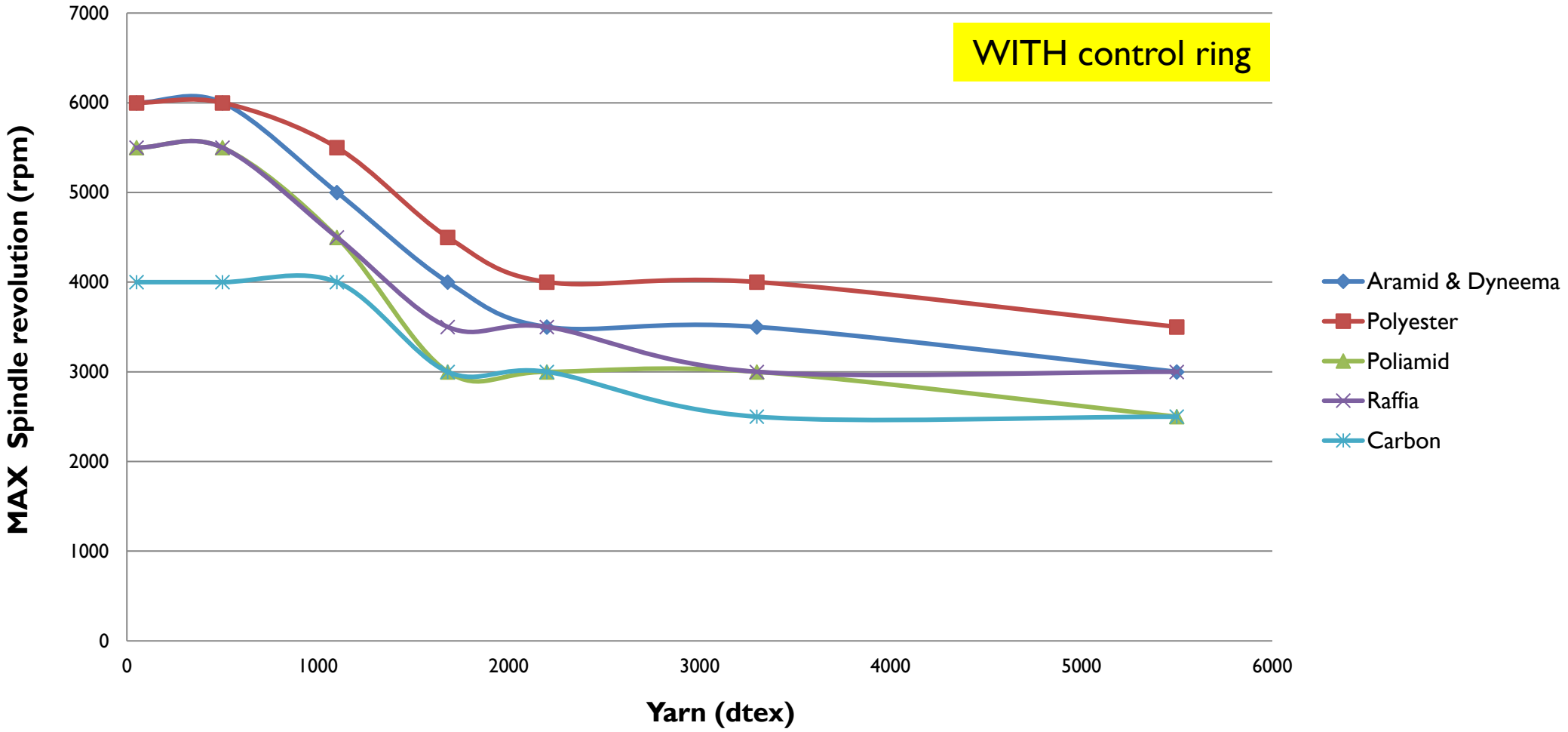
- ✓ Reduction of energy consumption above 20%:

  Even if absolute consumption is higher (faster spinning), the consumption/output ratio is considerably lower.

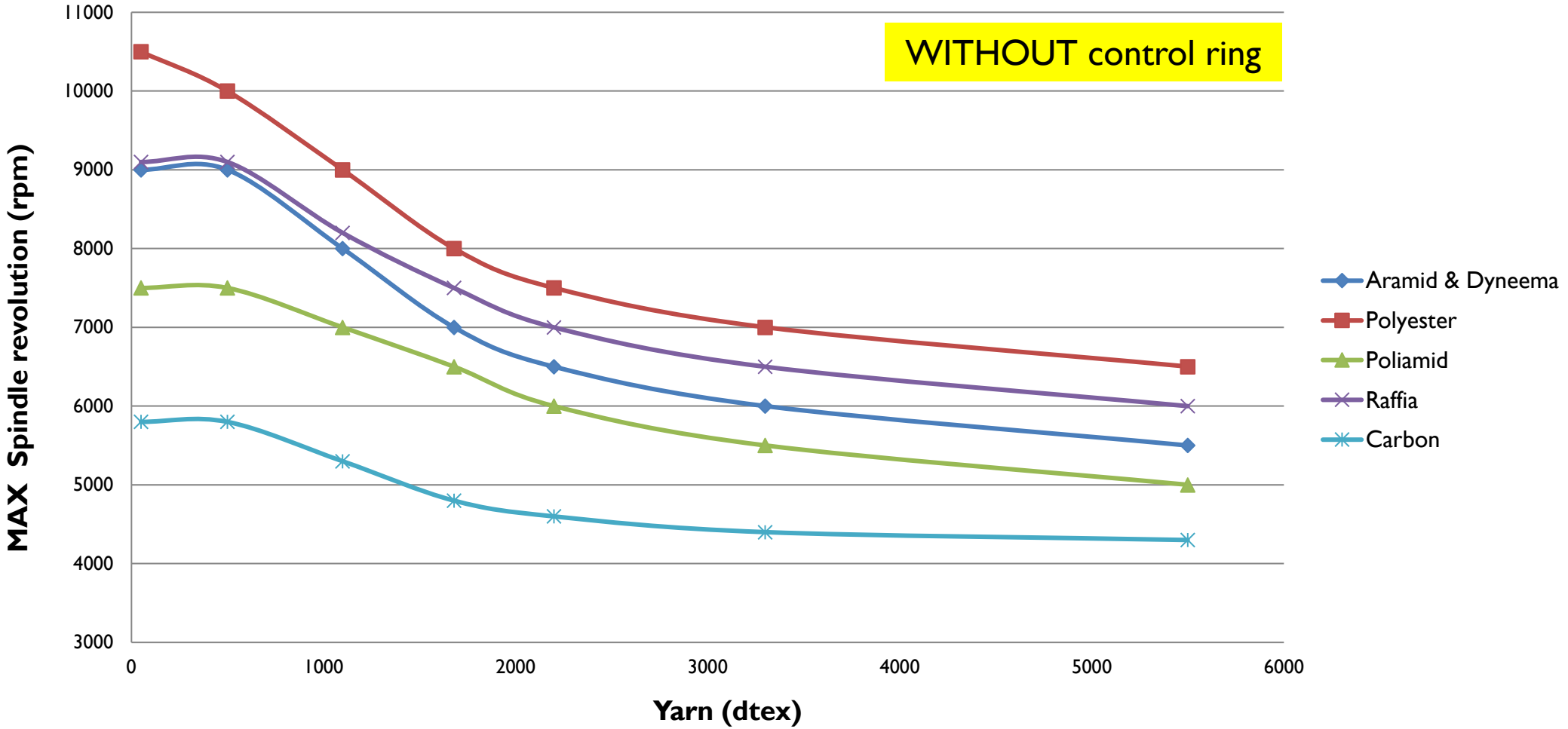
- ✓ More control with the EMB:

  Regulation of guide yarn with different configuration parameters for a more balanced control of balloons, customized yarn-by-yarn.

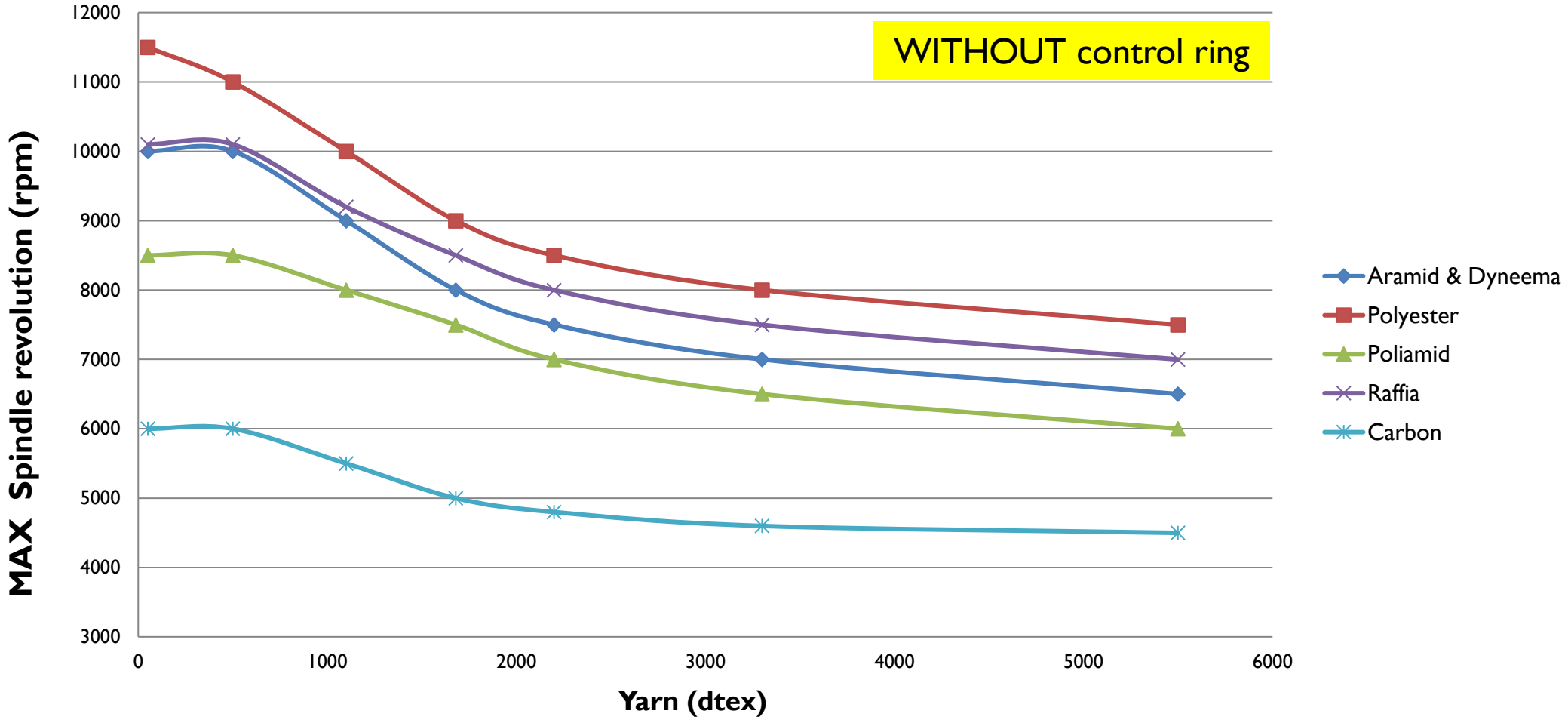
MONO-BALLOON TECHNOLOGY (216 RING)



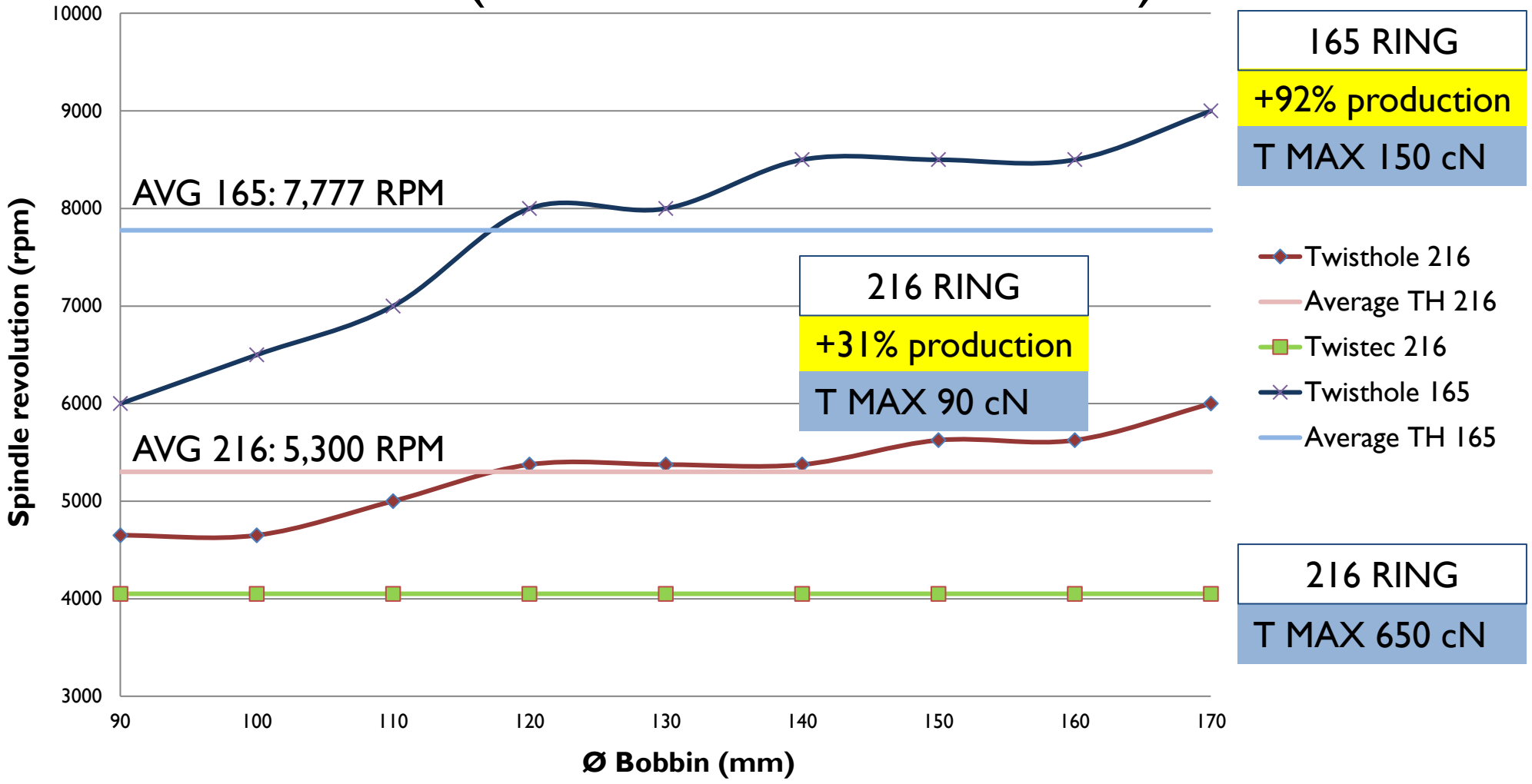
MULTI-BALLOON TECHNOLOGY (216 RING)



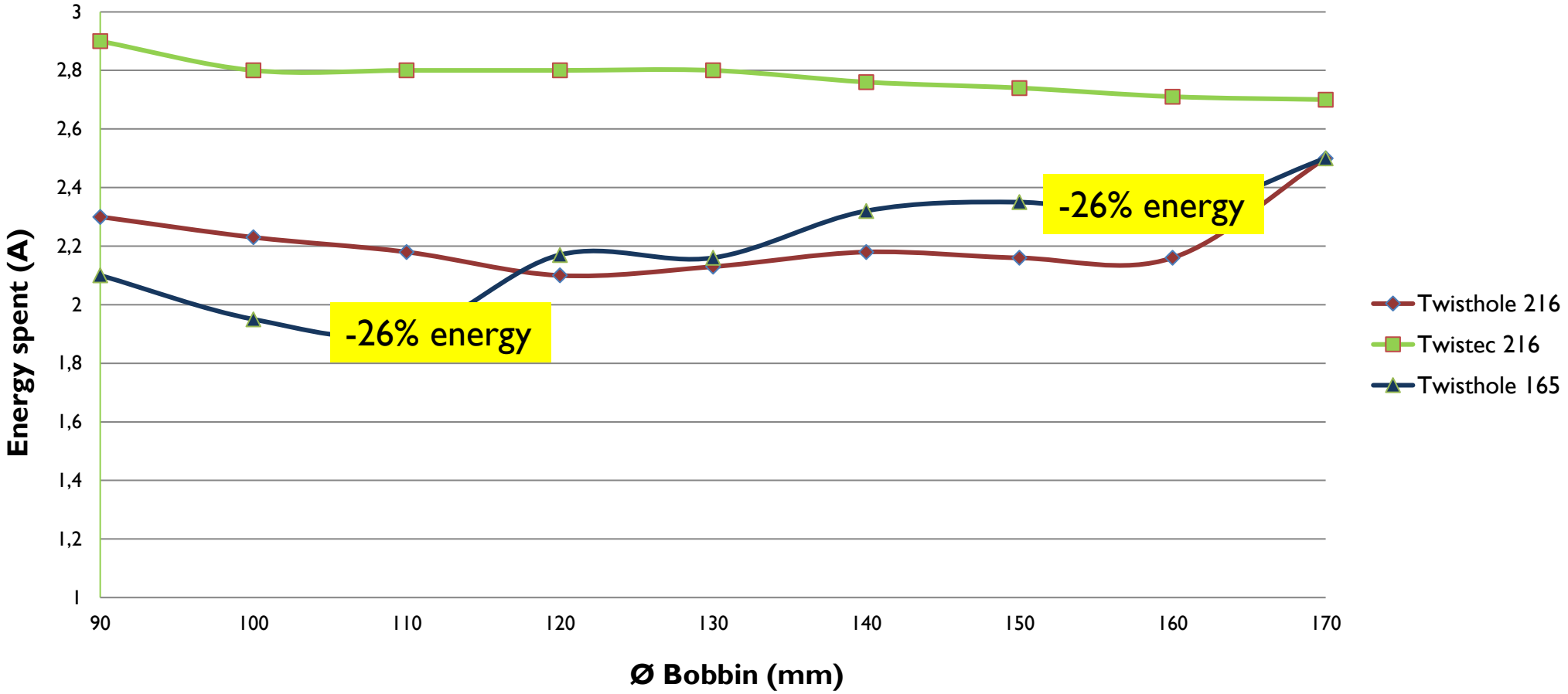
MULTI-BALLOON TECHNOLOGY (165 RING)



MONO VS. MULTI-BALLOON COMPARISON (ARAMID 1680 DTEX)



ENERGY CONSUMPTION COMPARISON (ARAMID 1680 DTEX)



TECHNORA TEST RESULTS

MATERIAL	TECHNORA	
TÍTOL	4X1670 (6680)	DTEX
TORSIONS	40S	TPM

ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	125	4000	100	335	4
216x6,35	115	125	4000	100	120	6
216x6,35	115	125	5000	125	250	6
216x6,35	110	125	5000	125	360	5
216x6,35	110	125	6000	150	570	5
165x6,35	90	125	5000	125	150	7
165x6,36	90	80	5000	125	120	7
165x6,37	90	125	4000	100	200	8
165x6,38	90	125+80	6000	150	250	6
165x6,39	90	125+125	5000	125		4

ARAMID TEST RESULTS

MATERIAL	TWARON	
TÍTOL	2X1680 (3360)	DTEX
TORSIONS	40S	TPM

ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	80	4000	100	60	5
216x6,35	110	80	5000	125	120	5
216x6,35	110	80	6000	150	210	5
216x6,35	110	80	7000	175	330	5
216x6,35	110	80	8000	200	460	5
165x6,35	90	50	5000	125	75	6
165x6,36	90	50	6000	150	115	6
165x6,37	90	80	7000	175	185	6
165x6,38	90	160	8000	200	235	6
165x6,39	95	80	8000	200	170	8
165x6,37	90	80	9000	225	280	7

ARAMID TEST RESULTS

MATERIAL	TWARON	
TÍTOL	4X1680 (6720)	DTEX
TORSIONS	70Z	TPM

ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	125	3500	50	90	4
216x6,35	110	125	4200	60	300	4
216x6,35	110	125	4900	70	450	4
216x6,35	110	125	5600	80	600	4
216x6,35	110	125	6300	90	780	4
216x6,35	110	125	7000	100	990	4
165x6,35	90	125	3500	50	60	7
165x6,35	90	125	4900	70	140	7
165x6,35	90	125	5600	80	190	7
165x6,35	90	125	6300	90	280	7

VECTRAN TEST RESULTS

MATERIAL	**VECTRAN**	
TÍTOL	**5X1670 (8350)**	**DTEX**
TORSIONS	**40Z**	**TPM**

ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	125	3000	75	110	6
216x6,35	110	125	4000	100	230	6
216x6,35	110	125	5000	125	400	6
165x6,35	90	125+125	3600	90		3
165x6,35	90	125	3200	80	720	3
165x6,35	90	125	4400	110		3

DYNEEMA TEST RESULTS

MATERIAL	**DYNEEMA**	
TÍTOL	**4X1760 (7040)**	**DTEX**
TORSIONS	**40Z**	**TPM**

ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	125	5000	125	245	6
216x6,35	110	125	6000	150	410	6
216x6,35	115	125	5200	130	200	6
165x6,35	90	125	4000	100		6
165x6,35	90	125	5000	125	140	7
165x6,35	90	125	6000	150	220	7

PP POLYPROPILEN TEST RESULTS

MATERIAL	**POLIPROPILÈ**	
TÍTOL	**5X1100 (5500)**	**DTEX**
TORSIONS	**100S**	**TPM**

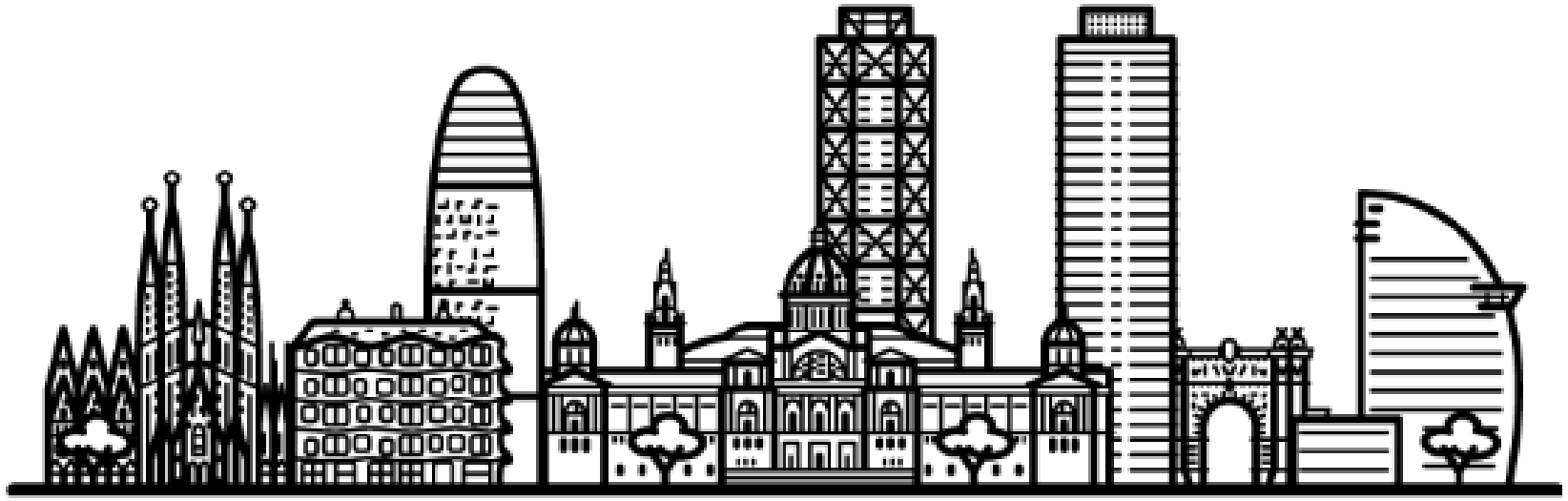
ANELL	DIÀMETRE BOBINA (MM)	CURSOR (MG)	VELOCITAT FUS (RPM)	VELOCITAT CORRONERA (M/MIN)	TENSIÓ (CN)	BALONS
216x6,35	110	125	4000	40	400	4
216x6,35	110	125	5000	50	640	4
216x6,35	110	125	6000	60	950	4
216x6,35	110	125	7000	70	1300	4
165x6,35	90	125	5500	55	120	7
165x6,36	90	125	7000	70	230	7
165x6,37	90	125	9000	90	350	7

TWISTHOLE

✓ More than 20 patents in the last 20 years:

Partnering with TWISTECHNOLOGY is supporting research.

✓ You are welcome to test your material in our facilities in Barcelona.



Thank you for your kind attention!

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