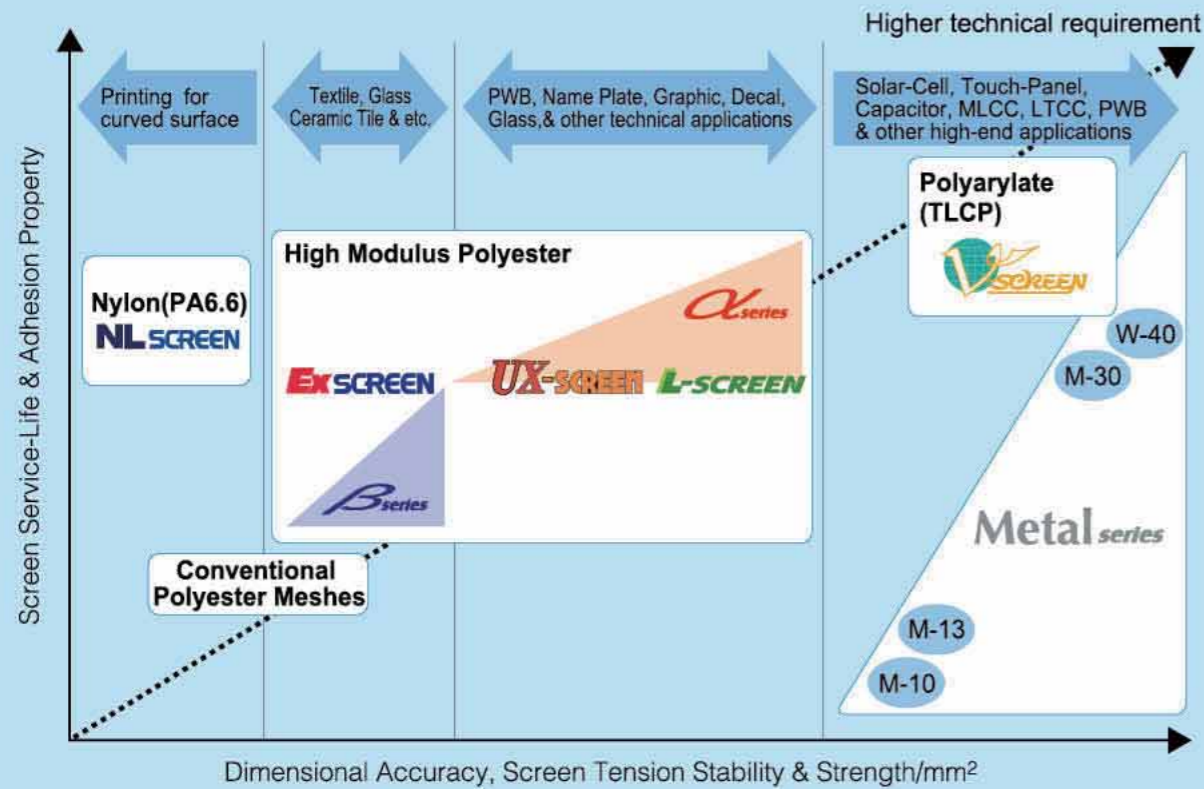


## Products Portfolio & Suitable Applications



## Precision Screen Printing Meshes PRODUCT GUIDE



### NBC Meshtec inc.

2-50-3 Toyoda, Hino, Tokyo 191-0053, Japan  
 TEL 81-42-582-2413  
 FAX 81-42-584-1374  
 E-mail: info@nbc-jp.com  
 http://www.nbc-jp.com/eng/

### DYNAMESH® (U.S.A)

512 Kingsland Drive  
 Batavia, IL 60510, USA  
 TEL 1-630-293-5454  
 FAX 1-630-293-5647  
 http://www.dynamesh.com

### NBC(SHANGHAI) MESH CO.,LTD(China)

Room 203, 1178-2Floors, Beidi road, shanghai 200335 China  
 TEL 86-21-5216-1177  
 FAX 86-21-5216-1277



Registered Number JQA-0748  
 Standard ISO 9001:2008  
 Registered Factory NBC Meshtec inc.



Registered Number JQA-EM2546  
 Standard ISO 14001:2004  
 Registered Factory NBC Meshtec inc.

# NBC Group Global Network



# Comparison of technical features

Products	Material	Tensile Strength	Dimensional Stability	Adhesion with Emulsion	Anti-Static Capability	Color Availability	Suitable Applications	
V-Screen	TLCP (Thermotropic Liquid Crystal Polyarylate)	2100N/mm <sup>2</sup>	Top Level Long Run Press	Good	N/A	Beige	Solar Cell, MLCC, LTCC, PWB, LCD, TSP & etc.	
Metal series	M-10	SUS 304	1000N/mm <sup>2</sup>	Top Level	Good	Effective for Press	Metallic	Solar Cell, PWB, Capacitor, HIC, Bottle, Hotmelt Ink, & etc.
	M-13	SUS 304	1300N/mm <sup>2</sup>	Top Level	Good	Effective for Press	Metallic	Solar Cell, Capacitor, HIC, PWB & etc.
	M-30	Super SUS	3000N/mm <sup>2</sup>	Top Level	Good	Effective for Press	Metallic	Solar Cell, MLCC, LTCC, HIC & etc.
	W-40	Tungsten	4000N/mm <sup>2</sup>	Top Level	Good	Effective for Press	Metallic	Solar Cell, MLCC, LTCC, HIC & etc.
	HDM	SUS 304	1000N/mm <sup>2</sup>	Top Level	Good	Effective for Press	Metallic	Thick-Film, Ceramic Decal & etc.
α series	L-Screen	Conjugated High Modulus Polyester	850N/mm <sup>2</sup>	Excellent	Excellent	Effective till Degreasing	White Amber Lemon	PWB, Graphic, DVD, Name Plate, Decal, Glass, Bottles, Textile & etc.
	UX Screen	Super High Modulus Polyester	790N/mm <sup>2</sup>	Excellent	Excellent	Effective till Degreasing	White Amber Lemon	
	EX Screen	High Modulus Polyester	600N/mm <sup>2</sup> or higher	Excellent	Excellent	Effective till Degreasing	White Amber Lemon	
AS Screen	High Modulus Polyester	600N/mm <sup>2</sup> or higher	Excellent	Excellent	Effective for Press	White Amber Lemon	Plastic Substrate	
CATEX	L-Screen	Conjugated High Modulus Polyester	850N/mm <sup>2</sup>	Good	Good	Effective till Degreasing	White Amber Lemon	Graphic & Clear Coat
	UX Screen	Super High Modulus Polyester	790N/mm <sup>2</sup>	Good	Good	Effective till Degreasing	White Amber Lemon	Graphic & Clear Coat
	EX Screen	High Modulus Polyester	600N/mm <sup>2</sup> or higher	Good	Good	Effective till Degreasing	White Amber Lemon	Graphic & Clear Coat
β series	EX Screen	High Modulus Polyester	600N/mm <sup>2</sup> or higher	Good	Good	N/A	White Amber Lemon	Textile, Garments, Glass, Ceramic Tile, & etc.
NL Screen	Nylon (PA 6.6)	450N/mm <sup>2</sup> or higher	Unsuitable	Excellent	N/A	White Amber	Bottle, Container & Curved Surface	

## Contents

- NBC Group Global Network P1
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  - Polyarylate hybrid meshes for the most advanced screen-printing applications
- METAL series P5-6
  - Metallic wire meshes for industrial screen printing applications
- α series P7-13
  - High modulus polyester monofilament mesh for high quality screen printing applications
- AS SCREEN P14
  - Anti-Static resin coated high modulus (High modulus polyester mesh)
- CATEX P14
  - One-Side Calendered high modulus polyester monofilament mesh
- β series P15
  - High modulus polyester monofilament mesh for general screen printing applications
- NL SCREEN P16
  - Nylon monofilament screen printing mesh
- NBC semiautomatic stretching equipment P17-18



Head Office, Tokyo Japan

CNK Inc. Nagasaki Factory

NBC Metalmesh Inc.

CNK Inc. Head Office

- Yamanashi Tsuru Factory
- Head Office Eastern Branch Office
- Western Branch Office
- Shizuoka Kikugawa Factory
- NBC Hinet Inc.

## Screen Printing Mesh Production Site



Yamanashi Tsuru Factory



Shizuoka Kikugawa Factory



NBC(Shanghai) Mesh Co.,Ltd



Dynamesh Inc. Chicago USA



NBC Metalmesh Inc.



NBC Meshtec Inc. Liaison Office Europe

PT. NBC Indonesia

## Overseas Network

## Production process for synthetic screen printing mesh

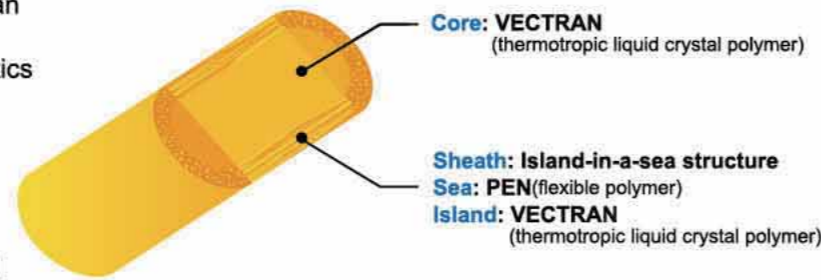




## Polyarylate hybrid meshes for the most advanced screen printing applications

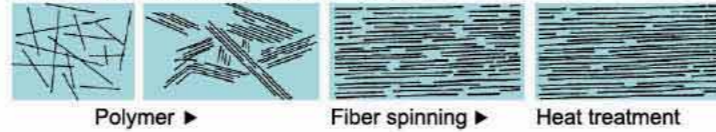
### Material: Hybrid super fiber VECRY

V-SCREEN is woven with VECRY, an innovative hybrid super fiber with unique construction and characteristics as shown in the figure below.



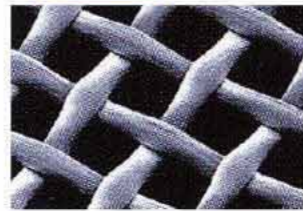
VECRY is thermotropic liquid crystal polymer which is crystallized at certain temperature and stabilized after the spinning process, as illustrated in the schematic diagram. This is the secret behind the excellent physical properties of V-SCREEN and its performance.

Schematic diagram of VECRY polymer

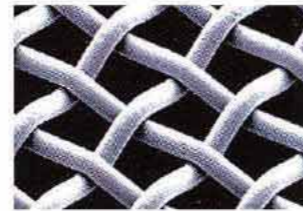


### Smooth surface

Super fine thread and smooth mesh surface helps to achieve proper emulsion Rz value which is one of the key factors for highest possible resolution.



Stainless Steel Wire Mesh



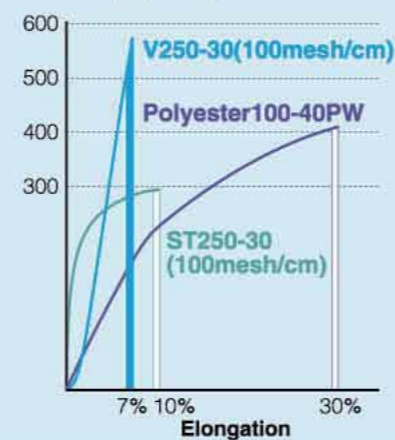
### Superior physical property

V-SCREEN has twice higher tensile strength than that of standard stainless steel wire mesh. V-SCREEN can be stretched up to high screen tension when necessary and it enables you to minimize off-contact distance and squeegee pressure for dimensional accuracy.

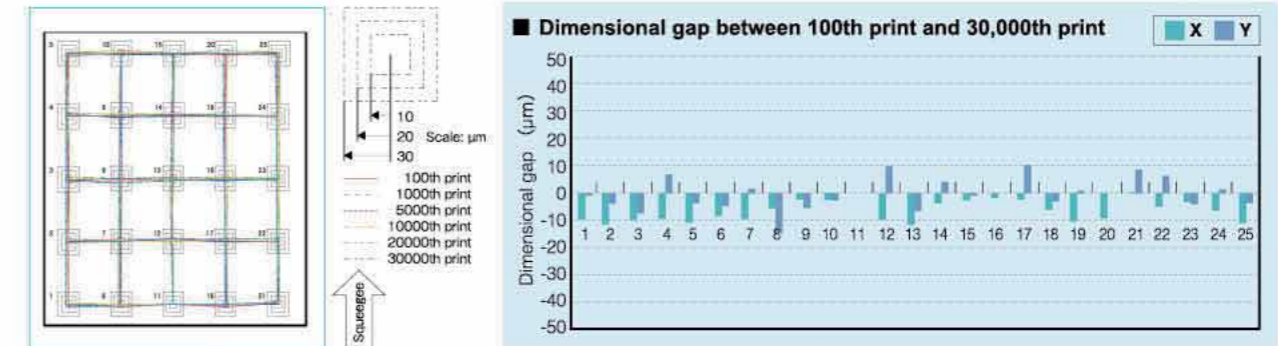


Tensile strength test method in accordance with JIS 1096-1990

Tensile Strength(N/5cm)



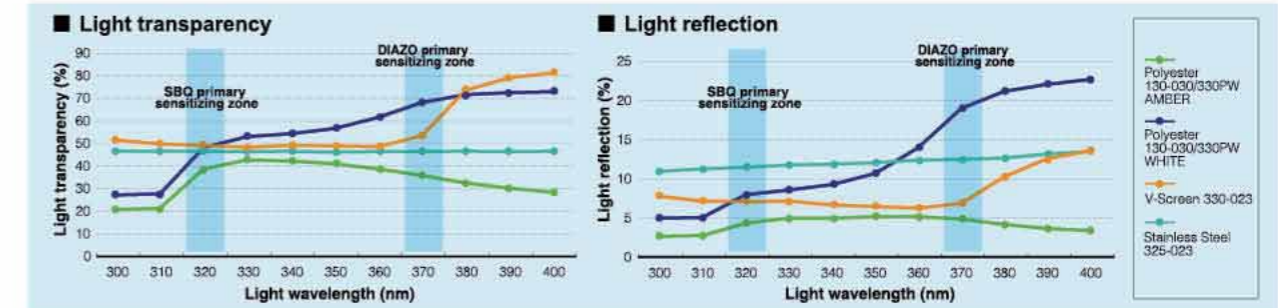
### Excellent performance in dimensional accuracy proved by 30,000 prints test



Printing Parameter		Printing Parameter		Screen Parameter	
Printer: LS-15GX	Clearance: 2.0mm	Type of Squeegee: Micro-Squeegee	Squeegee Shore: 70 shores	Frame Size: 320mm x 320mm	Frame Type: Aluminum Cast Frame
Squeegee Pressure: 30N=1.6kgf/cm2 (Newton / 170mm)	Down Stop: 0.3mm	Squeegee Angle: 70 degrees	Squeegee Length: 170mm	Mesh Type: V330-23	Tension: 32 N/cm
		Squeegee Speed: 200mm/sec		Stretching Angle: 30 degrees	EOM: 15 µm

### High performance in exposure process

V-SCREEN has higher light transparency and lower light reflection compared with stainless steel wire mesh shown in the below diagrams. This light spectrum analysis proves easier set-up of exposure time for fine screen resolution.



### Specifications

V-SCREEN can be woven with extremely fine thread, maximizing the open area, while minimizing thread interference and enhancing the paste/ink transition. (Making it excellent for high viscosity paste)

Mesh Code	Mesh Count		Weaving	Thread Diameter	Mesh Thickness	Mesh Opening	Open Area	Theoretical Ink Volume	
	/cm	/inch						µm	cm <sup>2</sup> /m <sup>2</sup>
V 380-023	150	380	1:1 PW	23	43±3µm	44	43	18.5	
V 330-023	130	330	1:1 PW	23	43±3µm	54	49	21.1	
V 300-030	118	300	1:1 PW	30	53±3µm	55	42	22.2	
V 280-030	110	280	1:1 PW	30	53±3µm	61	45	23.8	
V 250-030	98	250	1:1 PW	30	53±3µm	72	50	26.4	
V 220-036	87	220	1:1 PW	36	64±3µm	79	47	30.2	
V 160-045	63	160	1:1 PW	45	76±3µm	114	51	39.1	
V 100-070	39	100	1:1 PW	70	119±3µm	184	52	62.4	
V 50-100	20	50	1:1 PW	100	175±3µm	408	65	112.9	

Remark: The above catalogue value may be changed for quality improvement without notice.

# Metal series

## Metallic wire meshes for precision industrial screen printing applications

All of NBC's metal meshes are woven with a special screen printing grade of precision metal wires, giving greater tensile strength, lower elongation and quality consistency to fulfill all technical demands of screen printing applications in electronics and photovoltaic markets.

We are proud to introduce 5 ranges of precision metal wire meshes such as below:-

### M-10 (Standard Stainless Steel Wire Mesh)

M-10 is NBC's standard stainless steel wire mesh produced with rigorous quality control. It is widely used for many sophisticated screen printing applications such as Printed Circuit Board, Membrane Switch, Solar Cells, Ceramic Packages, Capacitors and so forth. The reliable quality and print repeatability are well recognized by those markets.

### M-13 (Upgraded Stainless Steel Wire Mesh)

M-13 is upgraded NBC stainless steel wire mesh which is woven with 30% stronger stainless steel wire compared with standard stainless steel wire. The extra tensile strength of M-13 achieves higher screen tension and optimizes printing parameters for further improvement of dimensional accuracy, and prolongs screen service life.

### M-30 (Super Stainless Steel Wire Mesh)

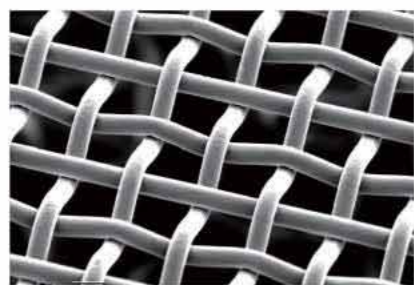
M-30 has exceptionally low elongation and large mesh open area. It is woven with super stainless steel wire with 3 times stronger tensile strength than that of standard stainless steel wire. It minimizes mesh interference to print image while ensuring excellent paste transition; making it suitable for challenging applications utilizing high viscosity paste, such as Solar Cell, MLCC, LTCC and so forth.

### W-40 (Tungsten Wire Mesh, Next Generation)

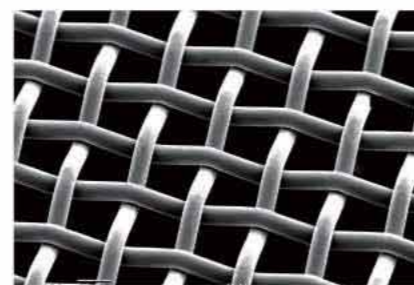
W-40 is the next generation of wire meshes woven with tungsten wire which has even greater physical stability and print repeatability than the above super stainless steel wire mesh. Comparison of tensile strength per sq.mm is shown in the chart next page above.

### HDM (Heavy Deposit Mesh)

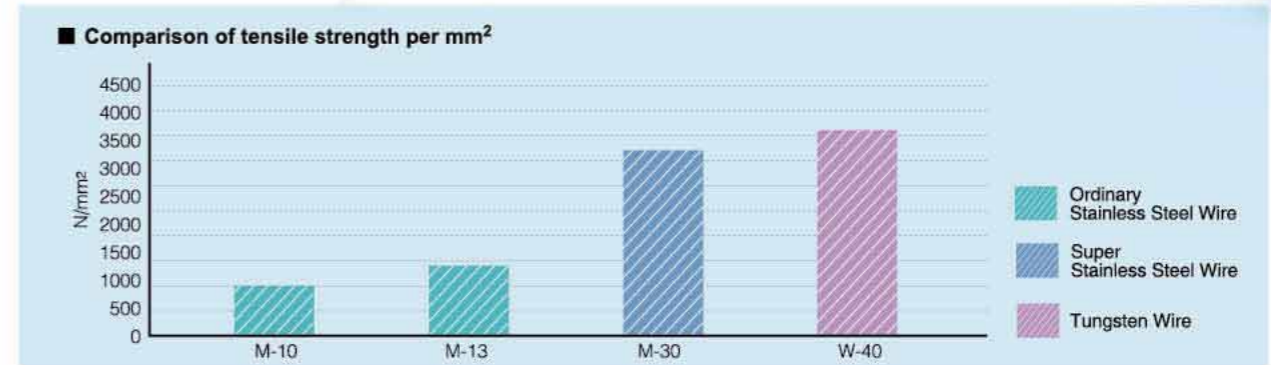
HDM is developed for specific screen-printing applications that require a heavy ink deposit. The below magnifying photo shows unique structure of HDM compared with standard wire mesh.



HDM 250-30



M-10-250-030



### M-10

Mesh Code	Mesh Count		Wire Diameter		Mesh Opening	Open Area	Theoretical Ink Volume	Normal	Specification of Mesh Thickness (µm)			Availability		
	/cm	/inch	µm	inch					Thickness of Calendered Mesh			100cm 40"	122cm 48"	152cm 60"
									Standard	Heavy	S.Heavy			
M10 500-016	197	500	16	.0006	35	47	16	33±2	25±2	20±2	18±2			
M10 500-019	197	500	19	.0007	32	39	16	41±2	30±2	25±2	22±2	RS	CS	
M10 400-019	157	400	19	.0007	45	49	19	39±2	28±2	25±2	22±2	RS	RS	
M10 400-023	157	400	23	.0009	41	41	22	55±2	40±2	35±2	30±2	RS	RS	CS
M10 325-023	128	325	23	.0009	55	50	25	50±2	38±2	31±2	28±2			
M10 325-024	128	325	24	.0009	54	48	24	50±2	37±2	31±2	28±2			
M10 325-028	128	325	28	.0011	50	41	26	64±2	46±2	42±2	35±2	RS	RS	
M10 325-030	128	325	30	.0012	48	38	26	68±2	55±2	50±2	45±2		RS	CS
M10 300-030	118	300	30	.0012	55	42	28	68±2	52±2	46±2	40±2		RS	
M10 250-030	98	250	30	.0012	72	50	30	60±2	45±2	40±2	35±2	RS	RS	RS
M10 200-040	79	200	40	.0016	87	47	38	80±2	63±2	56±2	50±2	RS	RS	RS
M10 180-050	71	180	50	.0020	91	42	42	100±3				RS	RS	
M10 165-045	65	165	45	.0018	109	50	45	90±2				CS	CS	
M10 150-060	59	150	60	.0024	109	42	50	120±3				CS	CS	CS
M10 150-065	59	150	65	.0026	104	38	49	130±3				CS	CS	CS
M10 120-080	47	120	80	.0031	132	39	62	160±3				CS	CS	
M10 100-100	39	100	100	.0039	154	37	74	200±6				CS	CS	

### M-12 & M-13

Mesh Code	Mesh Count		Wire Diameter		Mesh Opening	Open Area	Theoretical Ink Volume	Normal	Specification of Mesh Thickness (µm)			Availability		
	/cm	/inch	µm	inch					Thickness of Calendered Mesh			100cm 40"	122cm 48"	152cm 60"
									Standard	Heavy	S.Heavy			
M13 640-015	252	640	15	.0006	25	39	14	35±2	25±2	21±2	18±2	RS	CS	
M13 500-016	197	500	16	.0006	35	47	17	36±2	25±2	20±2	18±2	RS	CS	
M13 500-019	197	500	19	.0007	32	39	16	41±2	30±2	25±2	22±2	CS	CS	
M13 400-019	157	400	19	.0007	45	49	19	39±2	28±2	25±2	22±2	RS	RS	
M13 400-023	157	400	23	.0009	41	41	22	55±2	40±2	35±2	30±2	CS	CS	
M12 400-023	157	400	23	.0009	41	41	22	55±2	40±2	35±2	30±2	RS	RS	
M12 325-023	128	325	23	.0009	55	50	25	50±2	38±2	31±2	28±2	RS	RS	

### M-30

Mesh Code	Mesh Count		Wire Diameter		Mesh Opening	Open Area	Theoretical Ink Volume	Normal	Specification of Mesh Thickness (µm)			Availability		
	/cm	/inch	µm	inch					Thickness of Calendered Mesh			100cm 40"	122cm 48"	152cm 60"
									Standard	Heavy	S.Heavy			
M30 360-016	142	360	16	.0006	55	60	22	36±2	26±2	22±2	18±2	CS	RS	
M30 325-016	128	325	16	.0006	62	63	22	35±2	26±2	22±2	18±2	CS	RS	
M30 290-020	114	290	20	.0008	68	60	27	45±2	*)	30±2	25±2	CS	RS	

### W-40

Mesh Code	Mesh Count		Wire Diameter		Mesh Opening	Open Area	Theoretical Ink Volume	Normal	Specification of Mesh Thickness (µm)			Availability		
	/cm	/inch	µm	inch					Thickness of Calendered Mesh			100cm 40"	122cm 48"	152cm 60"
									Standard	Heavy	S.Heavy			
W40 325-016	128	325	16	.0006	62	63	23	36±2	26±2	22±2	*)	RS		
W40 290-020	114	290	20	.0008	68	60	27	46±2	*)	30±2	*)		RS	
W40 250-020	98	250	20	.0008	82	65	29	45±2	*)	30±2	*)	RS	RS	

### HDM (Heavy Deposit Mesh)

Mesh Code	Mesh Count		Wire Diameter		Mesh Opening	Open Area	Theoretical Ink Volume	Mesh Thickness	Availability			
	/cm	/inch	µm	inch					100cm 40"	122cm 48"	152cm 60"	
HDM 325-028	128	325	28	.0011	50	41	31	76±2		CS		
HDM 250-030	98	250	30	.0012	72	50	40	81±2		CS		
HDM 200-040	79	200	40	.0016	87	47	51	108±2		CS		

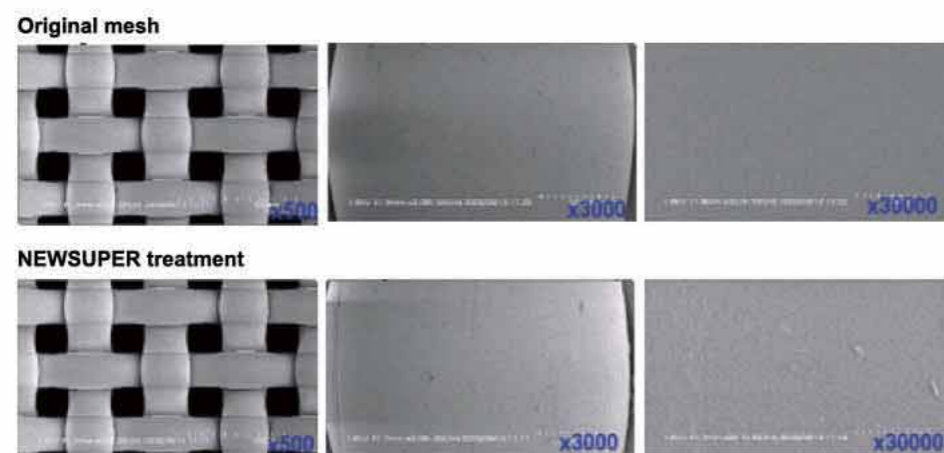
RS : Regular Stock Item  
CS : Coming Soon  
\*) : Produced Upon Request

● Most calendered thickness can be customized. Please ask us for the detail.  
● The above catalogue values may change without notice.

### High modulus polyester monofilament mesh for high quality screen printing applications

#### αseries NEWSUPER treatment

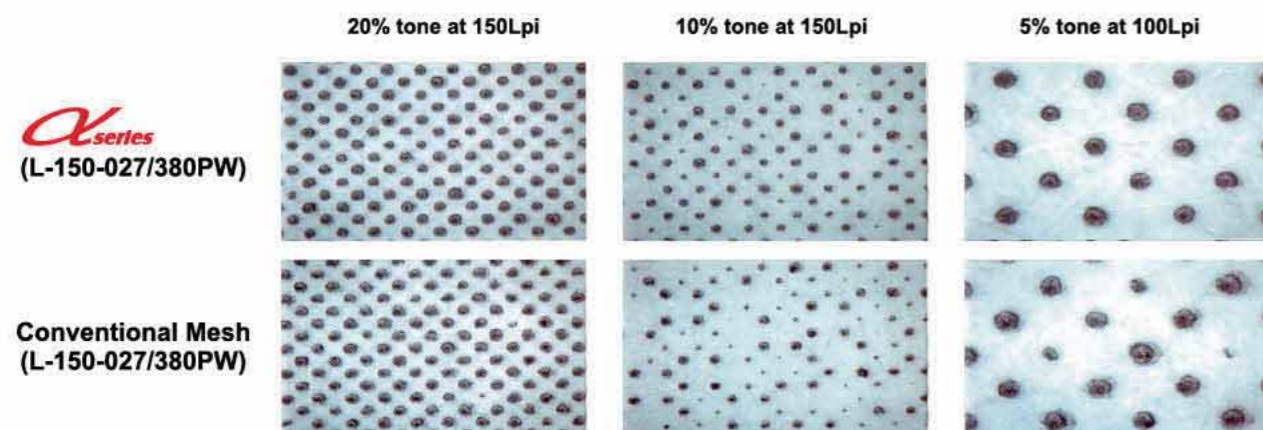
NEWSUPER treatment is a combination of NBC's unique chemical and atmosphere plasma treatment (Corona treatment) which modifies the surface properties as well as the structure at the submicron level, as in the SEM photo below.



#### αseries Benefits of NEWSUPER treatment

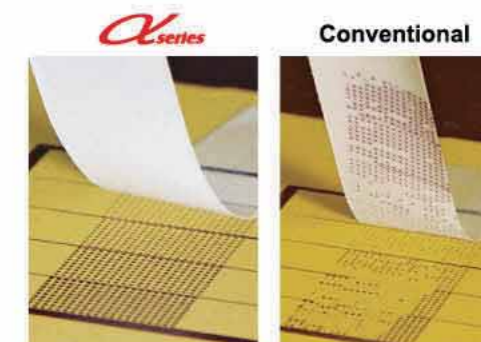
##### 1. Smoother paste/ink transition

Modified mesh surface in the submicron level reduces the contact area to paste/ink particles and improves paste/ink transition through the mesh and it optimizes print resolution, making it ideal for halftone and fine line printing.



##### 2. Extended screen service life

Modified mesh surface with NEWSUPER treatment holds emulsion/capillary film tight and it prolongs screen service life particularly in long run prints or printing with abrasive paste. Adhesion property of mesh is proved by comparison test with self-adhesive tape such as below photos.

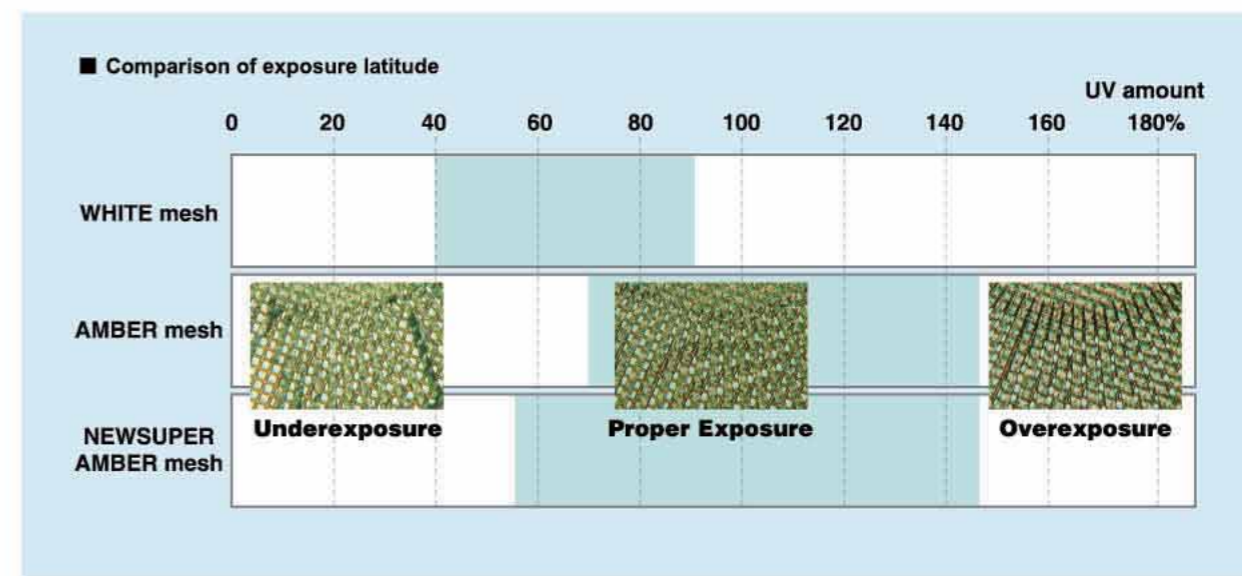


Test Parameter
Mesh type: L-Screen 150-030/380PW
Emulsion: Dual-Cure
EOM: 10 μm
Dot size: 0.3mm, 0.4mm and 0.5mm square dot
Number of dots: 200 each
The above dots are peeled-off by self-adhesive tape.
The number of dots remaining on the mesh are counted.

##### 3. Extended exposure latitude

NEWSUPER treatment not only offers improved adhesion of emulsion/capillary films; it also extends the limit of exposure latitude (underexposure), particularly effective for fine detail and use with CTS systems. The below diagram shows the comparison of exposure latitude of three different types.

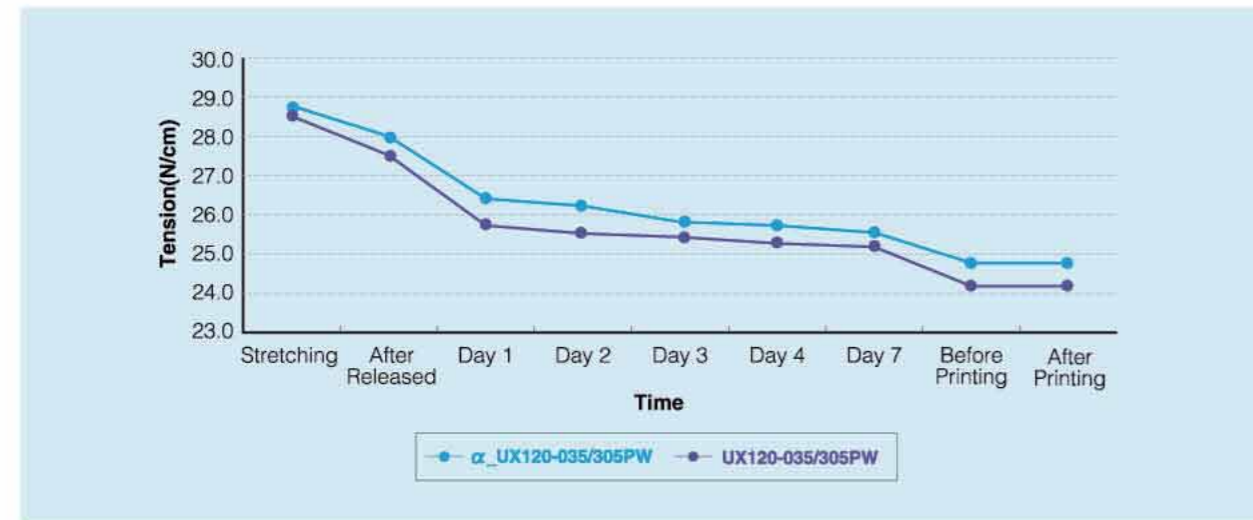
Screen Parameter
Mesh: UX 110-035/280PW
Mesh Thickness: 50μm
Emulsion: Dual-Cure
EOM: 12μm
Exposure Unit: Metal halide 3KW with Fresnel lens
Illuminance: 7.0mW/cm <sup>2</sup>
Distance to screen: 90cm distance from light bulb



## **α series** Optimized physical property

### 1. Minimized screen tension loss

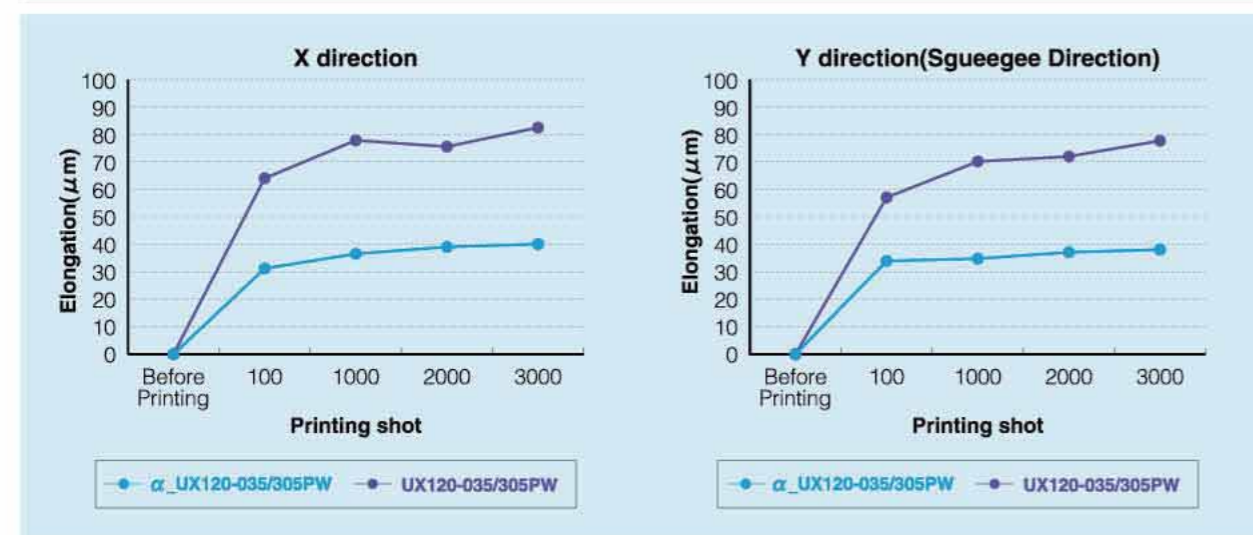
α series of NBC high modulus polyester mesh is further improved by optimized heat-setting process and rigorous quality control system to minimize screen tension loss after stretching and printing process. The below diagram shows the comparison data in tension loss between α series and original mesh.



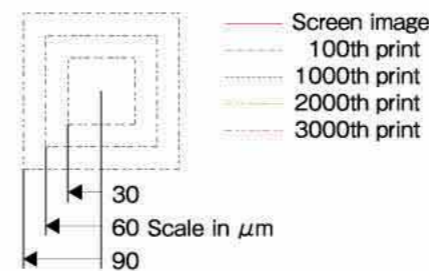
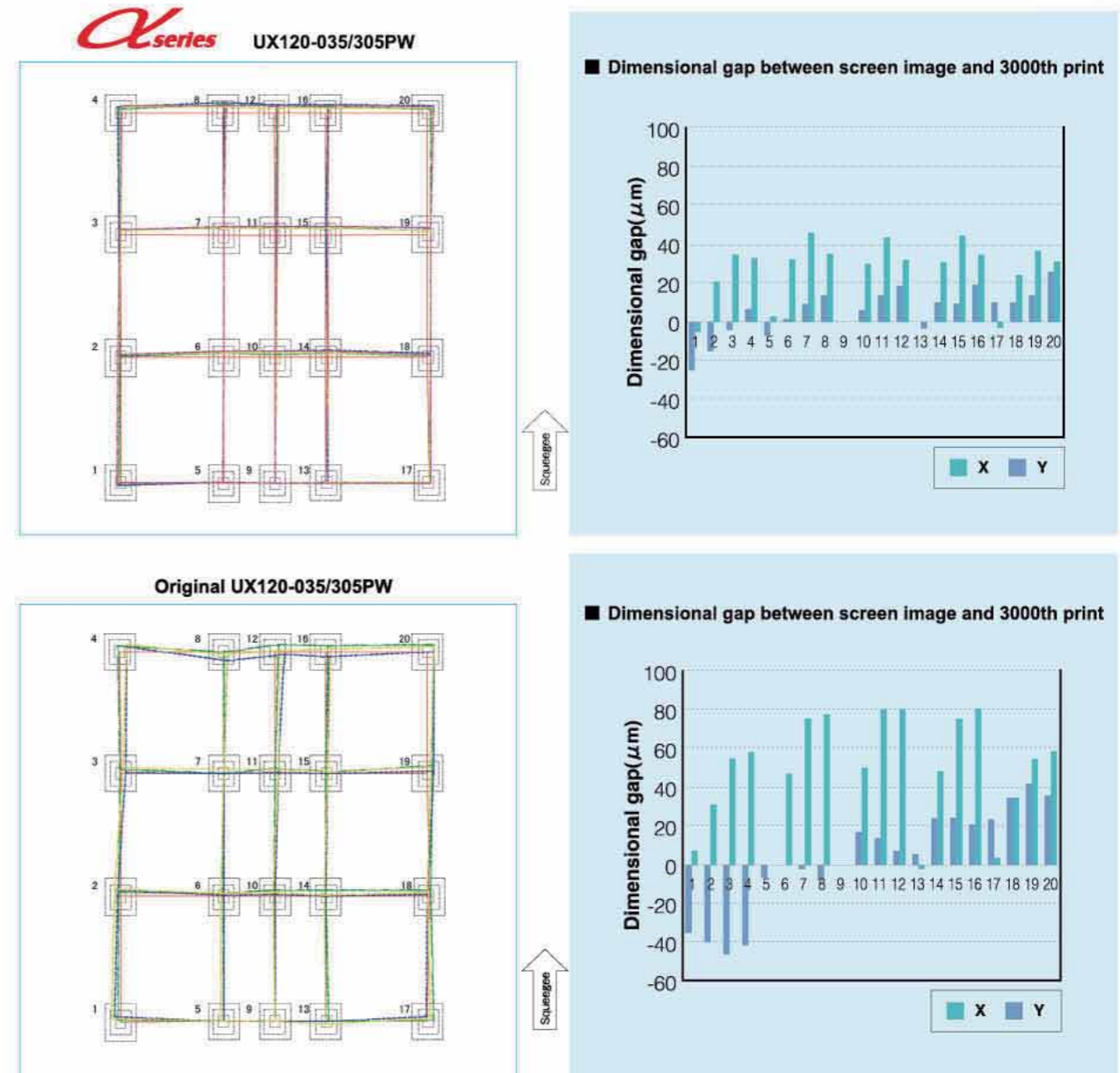
### 2. Further improved dimensional accuracy

The diagrams show the comparison data of dimensional gap between the screen image (300mm × 300mm) and printing result, proving that the dimensional accuracy of α UX120-035/305PW is significantly improved and consistent for long run printing.

Dimensional gap change from 100th print to 1500th print



Dimensional gap between screen image and 3000th print

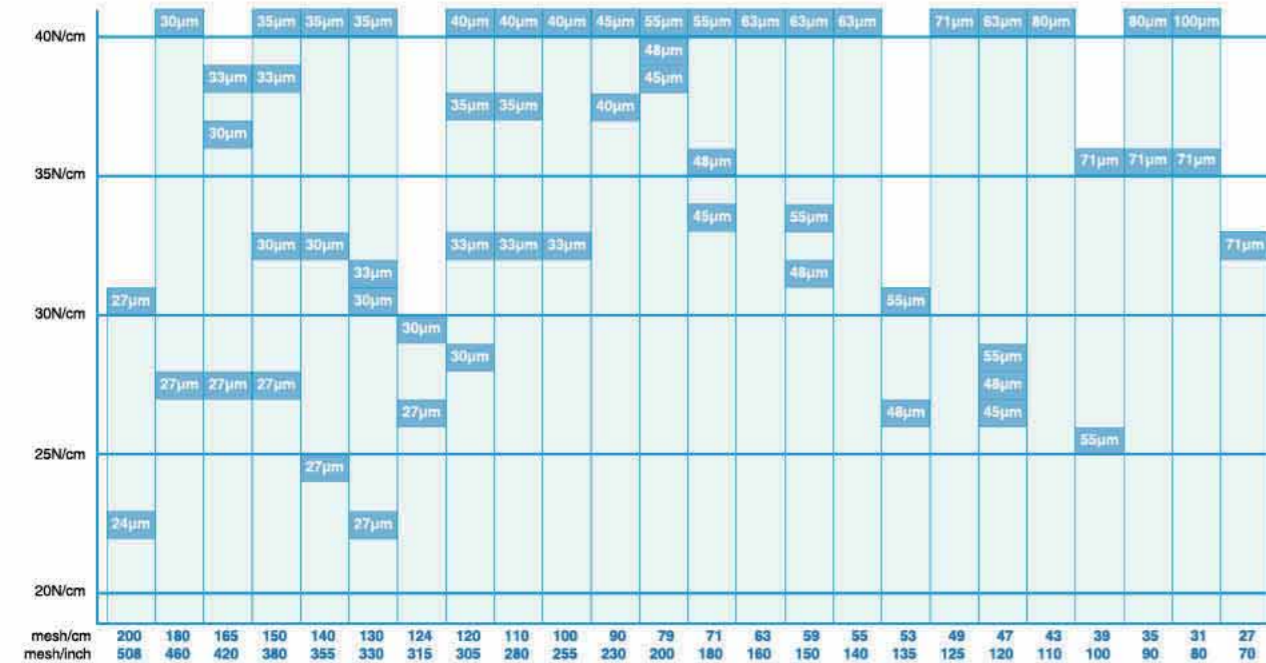


Printing Parameter	Screen Parameter
Printer: Flat Bed (Micro Tech MT1000 TVC)	Frame Size: 860mm × 860mm
Clearance: 3.8mm	Frame Type: Aluminum Tubular Frame
Squeegee Pressure: 42N per 380mm	Mesh Type: UX120-035/305PW
Type of Squeegee: Micro-Squeegee	Tension: 24.2 N/cm before press
Squeegee Shore: 70 shores	Stretching Angle: 15 degrees
Squeegee Angle: 70 degrees	EOM: 10 μm
Squeegee Length: 380mm	
Squeegee Speed: 150mm/sec	



## Highest stretching tension of *α* series

Highest stretching tension value of NBC *α* series polyester monofilament meshes.



Remark: The above screen tension values are calculated from breaking tension in 1000mmx1000mm sized mechanical stretching devices and they are measured by NBC tension meter. NBC takes no responsibility for accidental damage to the mesh or improper stretching operation.

## Top quality guaranteed

Every roll of NBC polyester mesh is supplied with an inspection tag. While flaws are kept to a minimum by careful quality control, any flaw found under our thorough inspection is clearly marked to prevent it being stretched into your image area. Thickness and mesh count are precisely controlled and documented on the tag – critical information for setting your production standards. You will keep your presses running and save time spent troubleshooting.

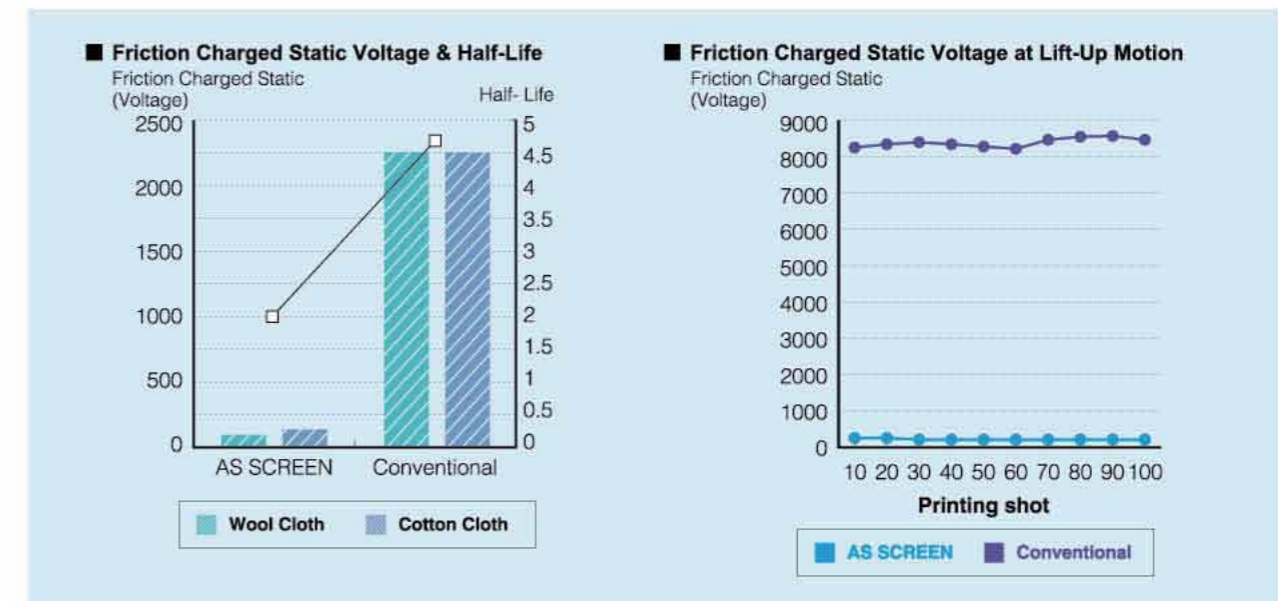
(In case you were wondering, NBC compensates for flaws by adding one half meter of mesh to the end of the roll free of charge for each flaw\*...now that's value.)

## NBC additional process for extra function

Anti-Static resin coated polyester monofilament mesh

# AS SCREEN

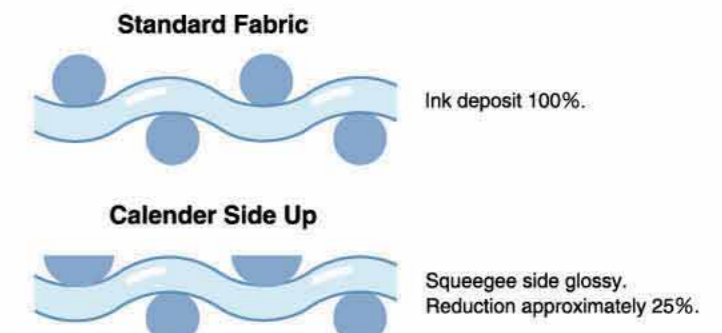
AS SCREEN is special resin coated high modulus polyester mesh which has permanent anti-static properties effective throughout the printing process. It minimizes static charge electricity and prevents pin-holes and ink splashing. Emulsion and capillary films adhere well to this mesh. AS SCREEN is available up to 160cm/63" wide upon request.



One-Side Calendered polyester monofilament mesh

# CATEX

CATEX mesh reduces your ink consumption by 20-30%. Especially designed for high production clear coating where a minimum ink deposit is a priority. CATEX can also be helpful when printing back-lighted panels where uniform ink deposit is extremely critical. CATEX mesh is available up to 240cm wide.

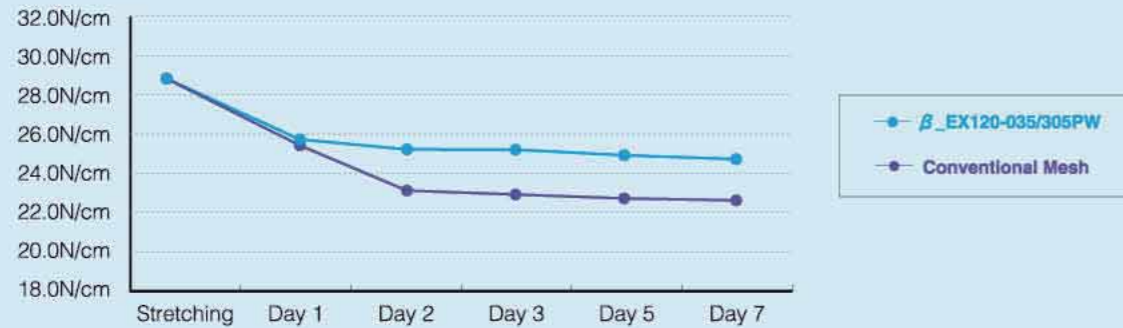




## High modulus polyester mesh for general screen printing applications

β series is classic high modulus polyester monofilament mesh which is produced under NBC high quality standard. The dimensional accuracy and tension stability are kept at high level.

■ Screen tension loss after stretching



Category	Mesh Code	Mesh Count		Weaving	Thread Diameter	Mesh Thickness			Mesh Opening	Open Area	Theoretical Ink Volume	
		Tolerance ±3%				115-155cm	165cm & wider	115-155cm			165cm & wider	
		/cm	/inch									μm
β_series	EX 120 -035/ 305 PW	120	305	1:1 PW	35	53 ±2μm	54 ±3μm	45	29	15.5	15.8	
β_series	EX 120 -040/ 305 PW	118	300	1:1 PW	40	62 ±2μm	62 ±3μm	37	19	11.8	11.8	
β_series	EX 110 -035/ 280 PW	110	280	1:1 PW	35	53 ±2μm	54 ±3μm	53	34	18.1	18.4	
β_series	EX 106 -040/ 270 PW	106	270	1:1 PW	40	60 ±2μm	61 ±3μm	49	27	16.3	16.6	
β_series	EX 100 -040/ 255 PW	100	255	1:1 PW	40	60 ±2μm	61 ±3μm	56	32	19.0	19.3	
β_series	EX 100 -048/ 255 PW	100	255	1:1 PW	48	76 ±2μm	76 ±3μm	45	20	15.5	15.5	
β_series	EX 90 -040/ 230 PW	90	230	1:1 PW	40	60 ±2μm	61 ±3μm	67	37	22.1	22.5	
β_series	EX 90 -045/ 230 PW	90	230	1:1 PW	45	68 ±2μm	69 ±3μm	60	30	20.1	20.4	
β_series	EX 90 -048/ 230 PW	88	225	1:1 PW	48	75 ±2μm	76 ±3μm	58	26	19.8	20.1	
β_series	EX 79 -045/ 200 PW	79	200	1:1 PW	45	68 ±2μm	69 ±3μm	81	41	27.7	28.1	
β_series	EX 79 -048/ 200 PW	79	200	1:1 PW	48	75 ±2μm	76 ±3μm	75	35	26.2	26.5	
β_series	EX 71 -045/ 180 PW	71	180	1:1 PW	45	70 ±2μm	72 ±3μm	95	45	31.7	32.6	
β_series	EX 71 -048/ 180 PW	71	180	1:1 PW	48	76 ±2μm	78 ±4μm	91	42	31.6	32.4	
β_series	EX 63 -048/ 160 PW	63	160	1:1 PW	48	76 ±2μm	78 ±4μm	110	48	36.5	37.5	
β_series	EX 59 -045/ 150 PW	59	150	1:1 PW	45	72 ±2μm	74 ±4μm	124	54	38.6	39.7	
β_series	EX 59 -048/ 150 PW	59	150	1:1 PW	48	76 ±2μm	78 ±4μm	120	50	38.2	39.2	
β_series	EX 53 -045/ 135 PW	53	135	1:1 PW	45	73 ±4μm	74 ±4μm	143	58	42.2	42.7	
β_series	EX 53 -048/ 135 PW	53	135	1:1 PW	48	79 ±4μm	79 ±4μm	139	55	43.1	43.1	
β_series	EX 47 -045/ 120 PW	47	120	1:1 PW	45	73 ±4μm	74 ±4μm	167	62	45.4	46.1	
β_series	EX 47 -048/ 120 PW	47	120	1:1 PW	48	80 ±4μm	80 ±4μm	163	59	47.4	47.4	

Remark: The above catalogue value may be changed for quality improvement without notice.

## Nylon Monofilament Screen Printing Mesh

NL SCREEN, nylon monofilament mesh is well-suited for printing onto curved or rigid surfaces because of its flexibility and elasticity. NL SCREEN also has reliable mechanical resistance and good emulsion adhesion, making it suitable for printing with abrasive paste or substrate.

Mesh Code	Mesh Count		Weaving	Thread Diameter	Mesh Thickness		Mesh Opening	Open Area	Theoretical Ink Volume	
	Tolerance ±3%				115-160cm	165-230cm			115-160cm	165-230cm
	/cm	/inch								
NL 200 -030/ 508 TW	200	508	2:2 TW	30	60 ±3μm	N/A	20	16	9.6	N/A
NL 180 -030/ 460 TW	180	460	2:2 TW	30	60 ±3μm	N/A	25	21	12.4	N/A
NL 165 -030/ 420 PW	165	420	1:1 PW	30	51 ±3μm	51 ±3μm	30	25	12.8	12.8
NL 165 -035/ 420 TW	165	420	2:2 TW	35	70 ±4μm	70 ±4μm	25	17	12.2	12.2
NL 150 -030/ 380 PW	150	380	1:1 PW	30	55 ±3μm	55 ±3μm	37	30	16.8	16.8
NL 150 -035/ 380 TW	150	380	2:2 TW	35	68 ±3μm	68 ±3μm	32	23	15.5	15.5
NL 140 -030/ 355 PW	140	355	1:1 PW	30	52 ±3μm	52 ±3μm	42	34	17.7	17.7
NL 140 -035/ 355 TW	140	355	2:1 TW	35	66 ±3μm	66 ±3μm	37	26	17.4	17.4
NL 130 -030/ 330 PW	130	330	1:1 PW	30	50 ±3μm	50 ±3μm	47	37	18.6	18.6
NL 130 -035/ 330 TW	130	330	2:1 TW	35	66 ±3μm	66 ±3μm	42	30	19.6	19.6
NL 120 -030/ 305 PW	120	305	1:1 PW	30	53 ±3μm	53 ±3μm	53	41	21.6	21.6
NL 120 -035/ 305 PW	120	305	1:1 PW	35	60 ±3μm	60 ±3μm	48	33	20.1	20.1
NL 120 -043/ 305 TW	120	305	2:1 TW	43	82 ±4μm	82 ±4μm	40	23	19.0	19.0
NL 110 -038/ 280 PW	110	280	1:1 PW	38	64 ±3μm	64 ±3μm	53	34	21.7	21.7
NL 106 -035/ 270 PW	106	270	1:1 PW	35	60 ±3μm	60 ±3μm	59	39	23.6	23.6
NL 100 -043/ 255 PW	100	255	1:1 PW	43	75 ±4μm	75 ±4μm	57	32	24.4	24.4
NL 90 -043/ 230 PW	90	230	1:1 PW	43	75 ±4μm	75 ±4μm	67	37	27.8	27.8
NL 81 -061/ 206 TW	81	206	2:1 TW	61	116 ±6μm	116 ±6μm	62	25	29.5	29.5
NL 79 -050/ 200 PW	79	200	1:1 PW	50	86 ±4μm	86 ±4μm	77	37	31.6	31.6
NL 77 -061/ 196 PW	77	196	1:1 PW	61	111 ±6μm	111 ±6μm	69	28	31.3	31.3
NL 73 -061/ 185 PW	73	185	1:1 PW	61	114 ±6μm	114 ±6μm	76	31	35.1	35.1
NL 69 -050/ 175 PW	69	175	1:1 PW	50	87 ±4μm	87 ±4μm	95	43	37.3	37.3
NL 68 -070/ 173 TW	68	173	2:1 TW	70	133 ±7μm	133 ±7μm	77	27	36.5	36.5
NL 62 -070/ 157 PW	62	157	1:1 PW	70	118 ±6μm	118 ±6μm	92	32	38.1	38.1
NL 62 -080/ 157 PW	62	157	1:1 PW	80	146 ±7μm	N/A	82	26	37.4	N/A
NL 59 -061/ 150 PW	59	150	1:1 PW	61	106 ±6μm	106 ±6μm	108	41	43.3	43.3
NL 55 -070/ 140 PW	55	140	1:1 PW	70	126 ±6μm	126 ±6μm	111	38	47.4	47.4
NL 55 -080/ 140 PW	55	140	1:1 PW	80	140 ±7μm	140 ±7μm	101	31	43.6	43.6
NL 49 -070/ 125 PW	49	125	1:1 PW	70	121 ±6μm	121 ±6μm	133	43	51.9	51.9
NL 49 -080/ 125 PW	49	125	1:1 PW	80	142 ±7μm	145 ±7μm	123	37	52.1	53.2
NL 43 -070/ 110 PW	43	110	1:1 PW	70	121 ±6μm	121 ±6μm	161	49	58.8	58.8
NL 43 -080/ 110 PW	43	110	1:1 PW	80	140 ±7μm	140 ±7μm	151	43	59.8	59.8

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## VALUE MODEL Series Precision semiautomatic stretching equipment

The VALUE MODEL is a precision semiautomatic stretching device designed and manufactured by NBC to easily tension V-SCREEN to very high tension.

The VALUE MODEL stretching device was developed by NBC in response to customer demands for higher stretching tension. NBC was determined not to slightly improve tired concepts, but to create a real breakthrough in stretching technology to reinvent stretching. As a result the VALUE MODEL uses many sophisticated controls not found on conventional equipment. It also employs techniques that are counter-intuitive to traditional stretching in order to tension V-SCREEN with its extremely low elongation. The final product is a stretching device that allows anyone to stretch V-SCREEN to very high tensions with little training.



VALUE MODEL  
 SEMIAUTOMATIC  
 STRETCHING EQUIPMENT

### VALUE-MODEL Specifications

	VALUE 1150	VALUE1380	VALUE1550
Body dimension (LxWxH)	1600x1600x1000(mm)	1840x1840x1000(mm)	2000x2000x1000(mm)
Body weight (kg)	Approx. 500	Approx. 630	Approx. 780
Stretching effective area	900x900(mm)	1080x1080(mm)	1250x1250(mm)
	85 - 264V AC,	85 - 264V AC,	85 - 264V AC,
Power supply	100W or less	100W or less	100W or less
Air source	Dry air 0.7 MPa or more, Approx. 50 NL/cycle	Dry air 0.7 MPa or more, Approx. 70 NL/cycle	Dry air 0.7 MPa or more, Approx. 90 NL/cycle

## NBC proposes "new stretching technique"

Simply place a screen on the table and start stretching



Place screen on table



Press foot switch to activate corner stretching



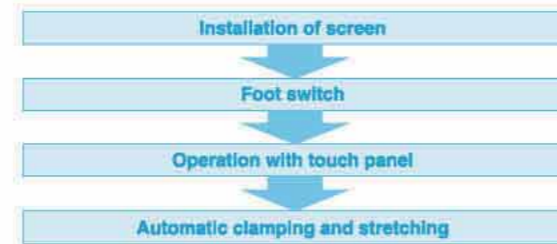
Press start on Liquid crystal touch panel



Automatic clamps grip mesh

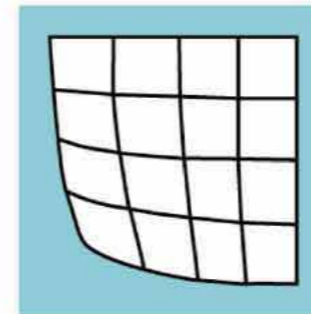


Fabric stretched to preset tension

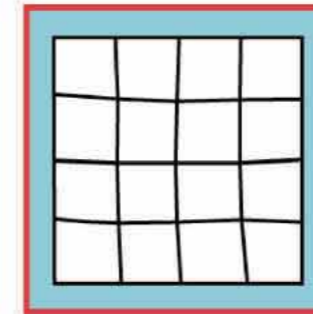


The most striking feature of the VALUE MODEL is its ease of operation. After placing the screen on the table all that is required is setting the corner clamps with the foot switch and selecting start on the liquid crystal display. The VALUE MODEL automatically clamps the fabric and stretches it to the set tension.

## Screen-mesh distortion prevented with the diagonal tensioning system

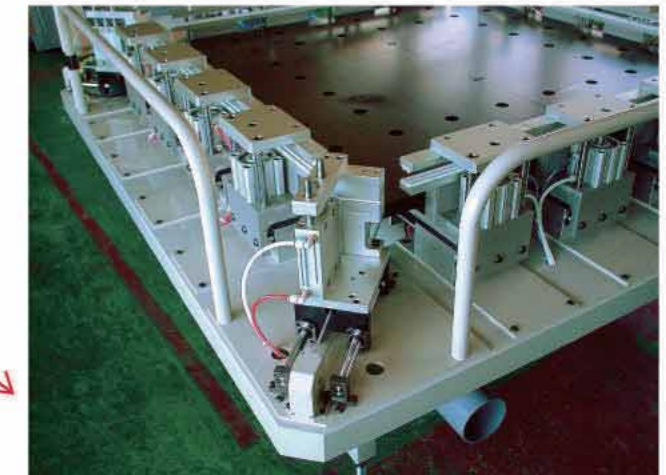


Distortion created by conventional stretching equipment



Distortion free corner stretched by VALUE-MODEL

The real ground breaking feature of the VALUE MODEL is its diagonal stretching. Adding tension in the corners is counter to the traditional wisdom of stretching because most stretching equipment adds slack in the corners to prevent tearing the mesh during stretching. The chart on the left clearly shows the distortion created in the corners by conventional stretching equipment. The chart on the right shows the uniform tensioning results in the corners achieved every time with the VALUE MODEL.



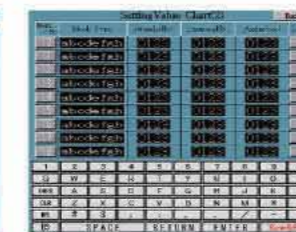
Magnified view of corner (Diagonal tension system)

## Easy to operate control panel

The easy to operate control panel allows anyone to accurately stretch screens to high tension. The programmable processor can memorize up to 1million stretching programs. Each stretching program can be customized to satisfy any customer needs using 18 parameters including diagonal stretching, overall tension and aging time. When it's time to stretch just set the screen tension desired and with one touch of the button screens are brought right up to the correct tension.



Operation screen



Specifications screen



Data entry screen



Touch panel