

ALVY

ALIGNER SOLUTIONS



www.alvyalignersolutions.com

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HERALDING EMERGING TECHNOLOGIES FOR DIGITIZING LABORATORIES



AUTOMATED THERMOFORMING MACHINE

AY101



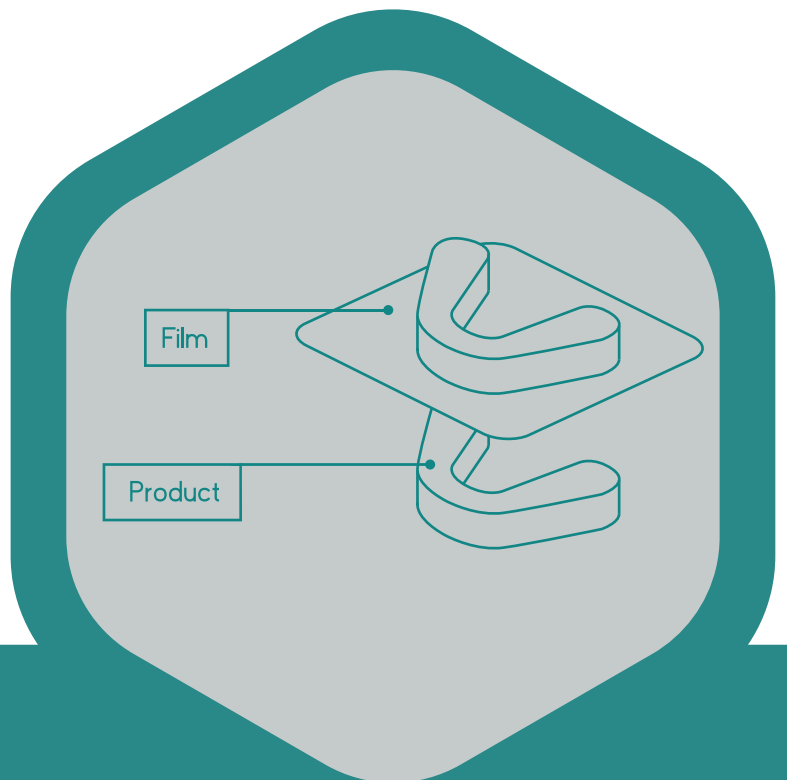
DENTAL ALIGNERS

Fully automatic vacuum and pressure thermoforming machines for dental aligners with in-feed for 3D models.

OPERATION

Dental Alvy thermoforming machines integrates all operations for dental aligners manufacturing, from forming process through film roll, thermoformed square plate individually cut and ejection.

- 1 Moulding
- 2 In Feed Carousel for 3D models
- 3 Punching station
- 4 Ejection station



PRODUCTS



FEATURES

- Conceived to automate all production processes for dental aligners manufacturing.
- Simple feeding table with automatic movement (AY101).
- Easy control through PLC and touch screen and recipe control.
- Guillotine cutting process (AY101).
- Accurate control of film heating process by zones that allows using different materials and thickness.
- Pneumatic driven film transport.
- Possibility to add features like vision systems, laser makers and trimming units.
- Separate power supply converter cable to power up the machine worldwide.
- Concealed (though visible) whole roll as well as film to prevent the atmospheric effects (such as Humidity) on the exposed film.
- Special inclusion of Humidity controller inside the roll unwinding chamber.
- Effortless & effective maintenance through 'Easy-to-reach' technology through the inclusion of the transparency and possibility to reach up to each element.
- Safe to Handle and Operate with the help of automated protection coverings connected with PLC

Technical information	AY101
Production Capacity	360units (Per Hour)
Forming film roll diameter (max.)	500 mm
Forming film thickness (max.)	1.5 mm
Forming film width (max)	101 mm
Forming area (max.)	100 x 200 mm
Forming height above film line (max.)	30 mm
Forming tables driven by	Pneumatic
Trimming tables driven by	Pneumatic
Total installed power	4 kw
Power supply	110v (1-Φ) + G 50Hz
Stacker driven by	Pneumatical
Forming pressure	8 bars
Heating power	3 kW
Approximate weight	540 kg
Height	1680 mm
Frame width (with infeed carousel)	1100 mm
Length	2880 mm

Functions:

The ALV Dental thermoforming machines integrates all the operations starting from roll of film to the thermoforming of aligner followed by cutting of individual thermoformed plate.

MULTIFLEX PRO

ALIGNER & RETAINER SHEET



DESCRIPTION OF THE PRODUCT

High-quality PETG thermoforming sheets that are precisely designed for orthodontic appliances. Available in varying dimensions, these sheets are ingeniously engineered to maintain rigidity without cracking. Although sturdy, they provide maximum patient comfort due to their soft feel. Exclusively preferred for fabricating aligners, retainers, and splints.

MECHANICAL PROPERTIES

Extremely versatile and optimized to treat several cases in adults and teens.

A unique fusion of flexibility and hardness improves wear time and ensures consistent sustained forces to bring about rapid results.

Unbeatable optical clarity makes it almost invisible.

Protective peel away layers on both sides of the sheet safeguards the clarity from scratches during fabrication.

Extended shelf life of 3 years without opening the vacuum-sealed package.

No leaching of toxic compounds like BPA and brilliant stain resistance.

TECHNICAL DETAILS

Material stiffness is the ability to generate forces for effective tooth movement. Stiffness is also responsible for imparting retentive qualities to the aligner. Flexibility allows easy wearing and removal of the appliance without distortion or tooth movement. Alvy Multiflex Pro sheets demonstrate an ideal balance of stiffness and flexibility.

The stress-strain curve identified a favourable combination of these two properties called tensile modulus of elasticity of approximately 2610 MPa, tested as per ASTM D638:2014.

TRANSPARENCY

The PETG material has an upper hand when compared to conventional materials with respect to clarity. It outshines the visibility test with a 93% light transmission rate, to provide enhanced aesthetics.

APPLICATIONS

ALIGNERS

Multiflex Pro sheets are specifically indicated for aligner fabrication. The material exhibits consistent forces that can bring about tooth movement upto 0.25mm per aligner in 1 to 2 weeks under expert supervision.

ORTHODONTIC RETAINER

A good blend of mechanical properties impart sufficient crack resistance which is a prerequisite for long term retainers. High degree of transparency and stain resistance add to excellent patient acceptance.

SURGICAL SPLINTS

Multiflex Pro sheets can also be used to make high quality surgical splints as they bind well to different types of light and heat cured acrylics. Due to zero curing shrinkage, the splints are extremely stable.

ALIGNERS



ORTHODONTIC RETAINER



SURGICAL SPLINTS



DIMENSIONS

Thickness	Size	Shape	Qty. Per Packet	Qty. Per Box
0.5 mm	120 mm/ 125 mm	Round / Square	10	50
0.8 mm	120 mm/ 125 mm	Round / Square	10	50
1.02 mm	120 mm/ 125 mm	Round / Square	10	50
1.05 mm	120 mm/ 125 mm	Round / Square	10	50
2.00 mm	120 mm/ 125 mm	Round / Square	10	50

MACHINE COMPATIBILITY

Multiflex sheets are compatible with the following
THERMOFORMING
units with the recommended settings

	0.020" (0.5mm)	0.030" (0.762mm)	0.040" (1.020mm)	0.060" (1.5mm)	0.080" (2.0mm)
BioSTAR MiniSTAR / MiniSTAR S	Code 103	Code 113	Code 123	Code 143	Code 193
Dreve Druformat Scan	Heating - 0:55 Cooling - 1:20	Heating - 1:05 Cooling - 1:30	Heating - 1:10 Cooling - 1:40	Heating - 1:30 Cooling - 2:00	Heating - 2:00 Cooling - 2:20

MiniSTAR / BioSTAR are trademarks of Scheu Dental Technology.
Druformat Scan is a trademark of Dreve Dentamid.

MULTIFLEX MAX RETAINER SHEET



DESCRIPTION OF THE PRODUCT

Alvy Multiflex Max sheets are perfect to boost the quality of your orthodontic appliances. They can achieve the ideal point of plasticizing when heated in thermoforming units to fabricate world-class retainers. Moreover, the incorporation of polyurethane material makes them rigid enough to become unbreakable without compromising its elasticity. The high-performance elastic layer on the inner walls of the orthodontic appliances guarantees maximum patient comfort.

KEY PROPERTIES OF THE MATERIAL

Rigidity-

This thermoplastic elastomer is tough and optimizes tear resistance, impact strength, stress, retention, and durability. Standardized tests as per ASTM D638:2014 have demonstrated our sheets to bring rapid orthodontic tooth movements under uni-directional forces. It is also resistant to friction and abrasion.

Elasticity-

Uniquely designed sheets can simultaneously achieve comfort along with material toughness. The blend of polymer chains with uniaxially oriented amorphous material results in a non-specific structure that is rigid as well as flexible. Alvy Multiflex Max sheets have a very high tensile modulus of 1872MPa that resists deformation even after multiple episodes of wear and removal. Our sheets offer maximum comfort during tooth transposition, bite correction, and retention for splint therapies.

Optical Clarity-

A highly non-hygroscopic material that repels oral fluids and offers the highest clarity in its class. Photographs and other visual tests identify these sheets to be more optically clear than other retainers sheets. This makes the appliances undetectable. Additionally, a protective peel-away layer on either side of the sheet screens it from fabrication scratches to maintain clarity.

Biocompatibility-

Alvy Multiflex Max sheets are free from BPA, latex, and residual monomer. They have been declared to be safe medical devices as per international standard ISO 10993-1 certification. They do not cause skin sensitivity, phytotoxicity, or irritation.

Shelf life- 03 years subject to non-opening of vacuum-packed packaging.

APPLICATIONS

Orthodontic Aligners/ Retainers-

Helping in simulating the most attentive ultra thin delicate removable aligners. They can even exist utilized to make aligners and retainers after the fulfilment of the standard orthodontic treatment with bracket and wire system or aligner therapy. It's the most reliable solution for long-term retainers due to its crack resistance, toughness, and elasticity.

Night Guards and Mouthguards-

Alvy Multiflex Max sheets provide a cushioning effect on the muscles of the jaw and the dentition. It can act as a resilient obstacle between the teeth during clenching at night thereby preventing tooth wear. It's an ideal choice for bruxers and night grinders.

Temporary Bridges in the Anterior Segment-

Helps in the easy fabrication of temporary anterior bridges where aesthetics is of prime importance. This is a novel approach that ensures maximum comfort for the patient and protects the healing site from the infiltration of food particles.

Available Forms- Round, Square, Arch and Roll Form

DIMENSIONS

Thickness	Size	Shape	Qty. Per Packet	Qty. Per Box
1.0 mm	120 mm	Round	10	50
		Square		
	125 mm	Round		
		Square		

MACHINE COMPATIBILITY

Multiflex sheets are compatible with the following
THERMOFORMING
units with the recommended settings

0.039"
(1.0mm)

BioSTAR/MiniSTAR/ MiniSTAR S	Code 123/
Dreve Druformat Scan	Heating - 1.10 Cooling - 1.40

MiniSTAR / BioSTAR are trademarks of Scheu Dental Technology.
Druformat Scan is a trademark of Dreve Dentamid.

MULTIFLEX PU+

ALIGNER & RETAINER SHEET



DESCRIPTION OF THE PRODUCT

Alvy Multiflex PU+ is a high-quality polyurethane thermoforming sheets that are specifically designed for orthodontic appliances. PU+ is one of the most versatile plastic material under our segment. The polymeric chains helps the alternating flexible and rigid segments and thus it provides excellent strength, flexibility and durability.

KEY PROPERTIES OF THE MATERIAL

Elasticity-

Uniquely designed sheets can simultaneously achieve comfort along with material toughness. The blend of polymer chains amorphous material results in a non-specific structure that is rigid as well as flexible. Alvy Multiflex PU+ sheets have a very high tensile modulus of 1872MPa that resists deformation even after multiple episodes of wear and removal. Our sheets offer maximum comfort during tooth transposition, bite correction, and retention for splint therapies.

Optical Clarity-

A highly non-hygroscopic material that repels oral fluids and offers the highest clarity in its class. Photographs and other visual tests identify these sheets to be more optically clear than other aligner sheets. This makes the appliances undetectable. Additionally, a protective peel-away layer on either side of the sheet screens it from fabrication scratches to maintain clarity

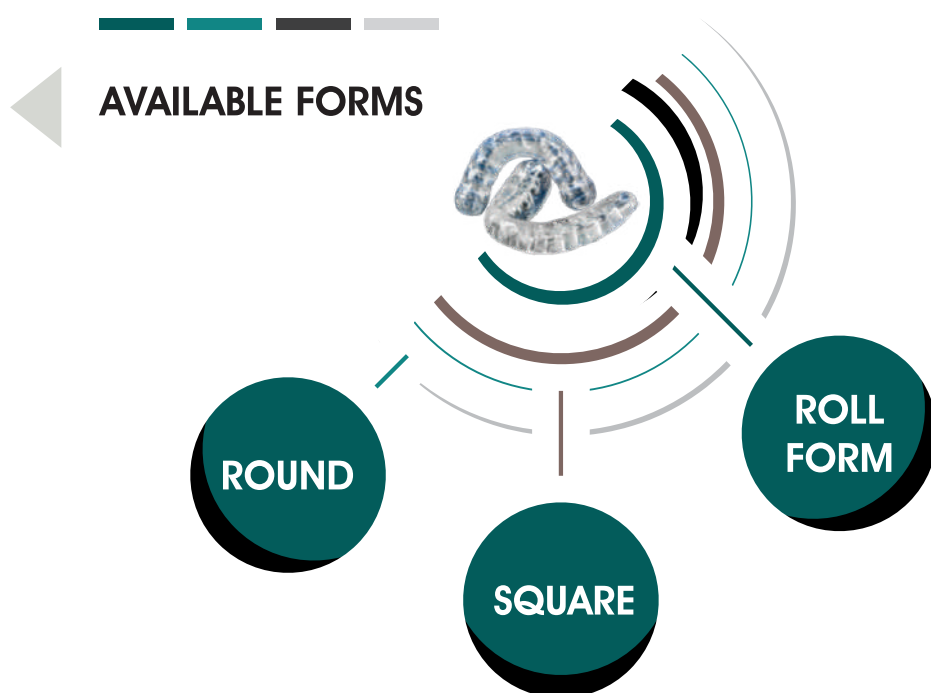
Maximum Comfort-

Pu+ sheet provides a tighter, thinner, and comfortable fit that improves wear time. Thus, it gives your patient more comfort & sustained teeth movement force.

APPLICATIONS

ORTHODONTIC ALIGNERS/ RETAINERS

Helping in simulating the most attentive ultra thin delicate removable aligners. They can even exist utilized to make aligners and retainers after the fulfilment of the standard orthodontic treatment with bracket and wire system or aligner therapy. It's the most reliable solution for long-term retainers due to its crack resistance, toughness, and elasticity.



DIMENSIONS

Thickness	Size	Shape	Qty. Per Packet	Qty. Per Box
0.8 mm	125 mm	Round	10	50

MACHINE COMPATIBILITY

Multiflex sheets are compatible with the following
THERMOFORMING
units with the recommended settings

0.030"
(0.8mm)

BioSTAR/MiniSTAR/ MiniSTAR S	Code 113/
Dreve Drufomat Scan	Heating - 1.05 Cooling - 1.30

MiniSTAR / BioSTAR are trademarks of Scheu Dental Technology.
Drufomat Scan is a trademark of Dreve Dentamid.

Note:

Given instructions are general guidelines only
as each machine is different.

Recommended pressure settings: Above 4 Bars.

Recommended temperature settings: Default

If adaptation issues occur, add or minus 5 seconds
to heating time until the optimal results are achieved.

If bubble formation occurs or the sheets form folds,
recalibrate the heating element or reduce heating
time until optimal results are achieved.

For any concerns, write to us at
info@alvyalignersolutions.com

MODEL RESIN

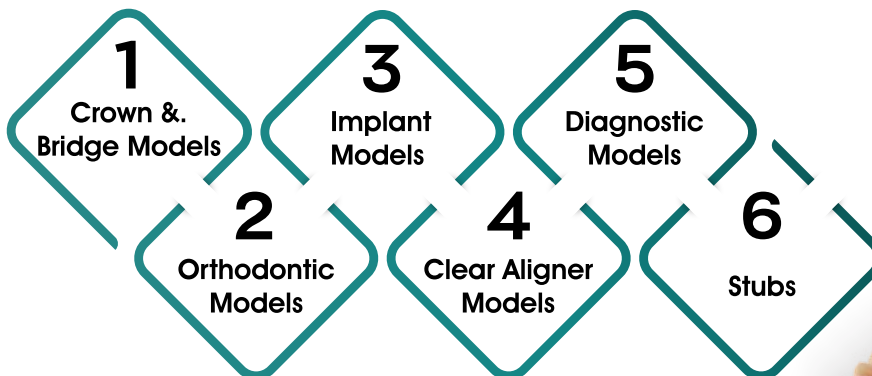
Model resins are designed with properties to manifest magnificent results concerning 3D printing. Our Model resins are especially outlined to use in dental laboratories, making production methods rapid, effortless and additional productivity.

Alvy Model Resin is a material construct on meth (acrylate) resin for DLP with 385 nm / 405 m LED & LCD structure for the production of dental models. It is a high-precision & high-accuracy resin with a smooth matte outside finish. The resin has elevated form and break firmness and is abrasion, moisture and bright resistant.

MACHINE COMPATIBILITY

All 3D printers (DLP & LCD) and their printing techniques

USES



PROPERTY	METHOD	VALUE
Colour	TM18	Beige
Flexural Modulus of Elasticity	ASTM D 790-2017	10433 kgf/cm ²
Elongation @ Break %	ASTM D 638-2014	1.71
Tensile Strength	ASTM D 638-2014	205 kgf/cm ²
Viscosity	ASTM D216-2	300 MPA
Hardness R Scale	ASTM D 785:2008	105
Izod Impact Strength, Notched	ASTM D 256 Method A:2010e1	23



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