



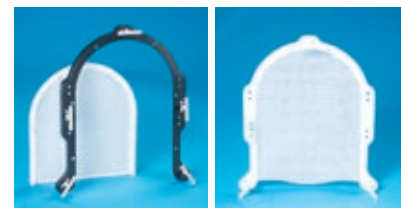
Guide to Thermoplastics for Enhanced Positioning & Immobilization

Thermoplastics Overview

The use of low temperature thermoplastics has become a daily routine for many professionals in radiotherapy centers all over the world. CIVCO provides an extensive line of high quality thermoplastics. This guide is designed to make choosing and ordering thermoplastics a quick and easy process.

CIVCO's Thermoplastic masks are available with the following options:

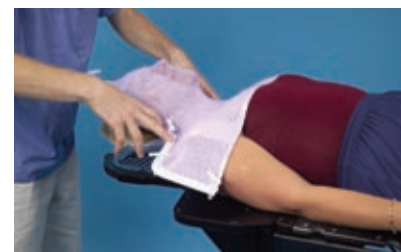
- **Reloadable or Disposable frame** - The reloadable frame offers a more economical option while the disposable frame is more efficient and convenient. Posicast Thermoplastics are available with reloadable carbon fiber or disposable L-profiles.
- **Standard Perforated or IMRT Reinforced Thermoplastics™** - Standard perforated thermoplastics are the industry standard and work well for most treatments. IMRT Reinforced Thermoplastics feature a combination of perforated and solid thermoplastic to provide rigidity.
- **Posicast® Thermoplastics are available in standard Posicast, Posicast-Plus or Posicast-Lite materials.** Posicast material has a soft polyurethane coating on both sides. Posicast-Plus has a soft polyurethane coating on one side and a smooth spray coating on the other. Posicast-Lite has a smooth spray coating on both sides. These are available in Multiperfo or Microperfo materials.
- **Head-only or Head, Neck & Shoulders Thermoplastics**
- **Standard Thermoplastic material or ZENTEC™ Soft-Drape Thermoplastics** - ZENTEC material combines rigidity with a smooth, easy-forming process. The soft-drape effect results in a high-contouring mask.
- **Continuous frame design or three- and five-point masks** - Uni-frame® and Type-S™ masks offer a continuous frame design to increase stability and to make it easy for one person to form the mask. Posicast masks are offered in three and five point styles allowing a more custom fit to the head.
- **Variety of lengths and thicknesses**



Reloadable vs. Disposable frame



Microperfo vs. Multiperfo Thermoplastics



ZENTEC Soft-Drape Thermoplastic

Baseplate Compatibility



Type-S Thermoplastics are compatible with the Type-S Extension, Type-S Overlay, Type-S Mastercouch® Module and Fixator Shoulder Suppression System. The Variable Axis Baseplate can only be used with Type-S head-only masks.



Posicast Thermoplastics are compatible with the Posifix® -1 & -2 baseplates, Posifix IMRT Baseplates and the Head & Neck Mastercouch Module. Posifix-4 & -5 baseplates and the Positilt™ are compatible with two or three point Posicast Thermoplastics.



Uni-frame Thermoplastics are compatible with all standard Uni-frame Baseplates, including tilting baseplates. They are not compatible with the Lateral Baseplate.

If you are not sure what type of baseplate you own contact your account representative and they will help you find the right thermoplastic solution for your needs!

Perforation Styles

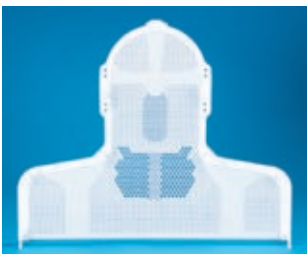
See page 5 for head-only perforation styles



**IMRT Reinforced,
Style 27**



**IMRT Reinforced,
Style 29**



**IMRT Reinforced,
Style 27, Neck Relief**

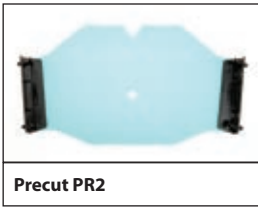


**IMRT Reinforced,
Style 29, Neck Relief**

Perforation Type	Frame Type	Mask Type	Thickness	Part Number
Standard Perforated	Disposable	Head-only	2.4mm	MT-APU-D-2.4
Standard Perforated	Disposable	Head-only	3.2mm	MT-APU-D
Standard Perforated	Reloadable	Head-only	1.6mm	MT-APUR-1.6
Standard Perforated	Reloadable	Head-only	2.4mm	MT-APUR-2.4
Standard Perforated	Reloadable	Head-only	3.2mm	MT-APUR
Standard Perforated	Disposable	Head-only - 12" long	2.4mm	MT-APUD-12-24
Standard Perforated	Disposable	Head-only - 12" long	3.2mm	MT-APUD-12-32
Standard Perforated	Reloadable	Head-only - 12" long	1.6mm	MT-APUR-12-1.6
Standard Perforated	Reloadable	Head-only - 12" long	2.4mm	MT-APUR-12-2.4
Standard Perforated	Reloadable	Head-only - 12" long	3.2mm	MT-APUR-12
Standard Perforated	Disposable	Head-only - 14" long	2.4mm	MT-APUD-14-24
Standard Perforated	Disposable	Head-only - 14" long	3.2mm	MT-APUD-14-32
Standard Perforated	Reloadable	Head-only - 14" long	1.6mm	MT-APUR-14-1.6
Standard Perforated	Reloadable	Head-only - 14" long	2.4mm	MT-APUR-14-2.4
Standard Perforated	Reloadable	Head-only - 14" long	3.2mm	MT-APUR-14
Standard Perforated	Disposable	Head, Neck & Shoulders	2.4mm	MT-APSD-2.4
Standard Perforated	Disposable	Head, Neck & Shoulders	3.2mm	MT-APSD-3.2
Standard Perforated	Reloadable	Head, Neck & Shoulders	2.4mm	MT-APS-2.4
Standard Perforated	Reloadable	Head, Neck & Shoulders	3.2mm	MT-APS-3.2
Style 18	Disposable	Head-only	2.4mm	MT-APUID-18-24
Style 18	Disposable	Head-only	3.2mm	MT-APUID-18-32
Style 18	Disposable	Head-only - 12"	3.2mm	MT-APUID-18-12-32
Style 18	Disposable	Head-only - 14"	3.2mm	MT-APUID-18-14-32
Style 18	Reloadable	Head-only	2.4mm	MT-APUIR-18-24
Style 18	Reloadable	Head-only	3.2mm	MT-APUIR-18-32
Style 20	Disposable	Head-only	2.4mm	MT-APUID-20-24
Style 20	Disposable	Head-only	3.2mm	MT-APUID-20-32
Style 20	Reloadable	Head-only	2.4mm	MT-APUIR-20-24
Style 20	Reloadable	Head-only	3.2mm	MT-APUIR-20-32
Style 22	Disposable	Head-only	3.2mm	MT-APUID-22-32
Style 22	Reloadable	Head-only	3.2mm	MT-APUIR-22-32
Style 27	Disposable	Head, Neck & Shoulders	2.4mm	MT-APSID-27-24
Style 27	Disposable	Head, Neck & Shoulders	3.2mm	MT-APSID-27-32
Style 27	Reloadable	Head, Neck & Shoulders	2.4mm	MT-APSI-27-24
Style 27	Reloadable	Head, Neck & Shoulders	3.2mm	MT-APSI-27-32
Style 29	Disposable	Head, Neck & Shoulders	2.4mm	MT-APSID-29-24
Style 29	Disposable	Head, Neck & Shoulders	3.2mm	MT-APSID-29-32
Style 29	Reloadable	Head, Neck & Shoulders	2.4mm	MT-APSI-29-24
Style 29	Reloadable	Head, Neck & Shoulders	3.2mm	MT-APSI-29-32
Style 27, Neck Relief	Disposable	Head, Neck & Shoulders	2.4mm	MT-APSID-27NR-24
Style 27, Neck Relief	Disposable	Head, Neck & Shoulders	3.2mm	MT-APSID-27NR-32
Style 27, Neck Relief	Reloadable	Head, Neck & Shoulders	2.4mm	MT-APSI-27NR-24
Style 27, Neck Relief	Reloadable	Head, Neck & Shoulders	3.2mm	MT-APSI-27NR-32
Style 29, Neck Relief	Disposable	Head, Neck & Shoulders	2.4mm	MT-APSID-29NR-24
Style 29, Neck Relief	Disposable	Head, Neck & Shoulders	3.2mm	MT-APSID-29NR-32
Style 29, Neck Relief	Reloadable	Head, Neck & Shoulders	2.4mm	MT-APSI-29NR-24
Style 29, Neck Relief	Reloadable	Head, Neck & Shoulders	3.2mm	MT-APSI-29NR-32
ZENTEC Style 18	Disposable	Head-only	2.4mm	MT-APUID-18-24-VT
ZENTEC Style 27	Disposable	Head, Neck & Shoulders	2.4mm	MT-APUID-27-24-VT

Part Numbers for Posicast® Precuts without L-profiles

Posicast Precuts



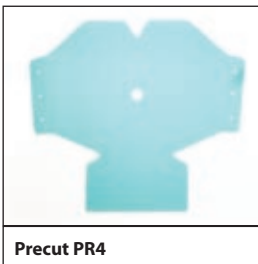
Precut PR2



Precut PR33



Precut PR3



Precut PR4



Precut PR44

Precut Type	Posicast Multiperfo	Posicast Microperfo	Posicast-Plus Microperfo	Posicast-Lite Multiperfo	Posicast-Lite Microperfo
PR2	SIN-900020	SIN-910020	SIN-920020	SIN-760020	SIN-770020
PR33	SIN-900033	SIN-910033	SIN-920033	SIN-760033	SIN-770033
PR3	SIN-900030	SIN-910030	SIN-920030	SIN-760030	SIN-770030
PR4	SIN-900040	SIN-910040	SIN-920040	SIN-760040	SIN-770040
PR44	SIN-900044	SIN-910044	SIN-920044	SIN-760044	SIN-770044
PRL	SIN-900150	SIN-910150	SIN-920150	SIN-760150	SIN-770150
PR5	SIN-900145	SIN-910145	SIN-920145	SIN-760145	SIN-770145
PR55	SIN-900055	SIN-910055	SIN-920055	SIN-760055	SIN-770055
PR2340	SIN-902340	SIN-912340	SIN-922340	SIN-762340	SIN-772840
PR2843	SIN-902843	SIN-912843	SIN-922843	SIN-762843	SIN-772843
PR3235	SIN-903235	SIN-913235	SIN-923235	SIN-763235	SIN-773235
PR3445	SIN-903445	SIN-913445	SIN-923445	SIN-763445	SIN-772435
PL4360	SIN-904360	SIN-914360	SIN-924360	SIN-764360	SIN-774360
PL4392	SIN-904392	SIN-914392	SIN-924392	SIN-764392	SIN-774392

L-profiles must be purchased for masks listed above: Set of 10 L-profiles - SIN-622510
Part numbers listed are for packages of 10 thermoplastics.

Part Numbers for Posicast Precuts with Disposable L-profiles

Precut Type	Posicast Multiperfo	Posicast Microperfo	Posicast-Plus Microperfo	Posicast-Lite Multiperfo	Posicast-Lite Microperfo
PR2	SIN-940020	SIN-950020	SIN-930020	SIN-762020	SIN-772020
PR33	SIN-940033	SIN-950033	SIN-930033	SIN-762033	SIN-772033
PR3	SIN-940030	SIN-950030	SIN-930030	SIN-762030	SIN-772030
PR44	SIN-940044	SIN-950044	SIN-930044	SIN-762044	SIN-772044
PRL	SIN-940150	SIN-950150	SIN-930150	SIN-762150	SIN-772150
PR5	SIN-940145	SIN-950145	SIN-930145	SIN-762145	SIN-772145
PR55	SIN-940055	SIN-950055	SIN-930055	SIN-762055	SIN-772055

Part numbers listed are for packages of 10 thermoplastics.



Precut PR44



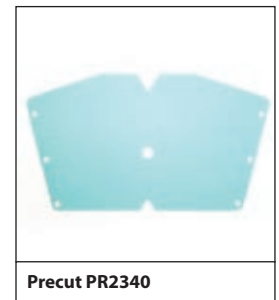
Precut PRL



Precut PR5



Precut PR55



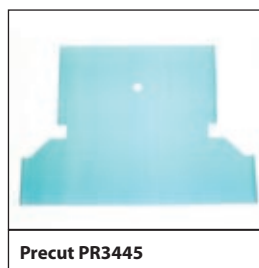
Precut PR2340



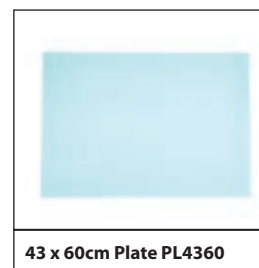
Precut PR2843



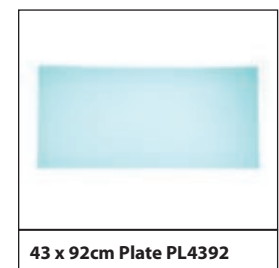
Precut PR3235



Precut PR3445

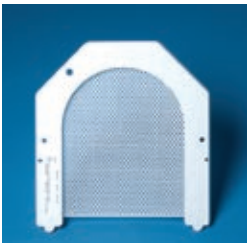


43 x 60cm Plate PL4360



43 x 92cm Plate PL4392

Perforation Styles



Standard Perforation



ComfortPerf



IMRT Reinforced,
Style 18



IMRT Reinforced,
Style 20



IMRT Reinforced,
Style 22

Perforation Type	Frame Type	Dimensions	Thickness	Part Number
Standard Perforated	Disposable	9 x 10"	1.6mm	MT-APU-1.6
Standard Perforated	Disposable	9 x 10"	2.4mm	MT-APU-2.4
Standard Perforated	Disposable	9 x 10"	3.2mm	MT-APU
Standard Perforated	Reloadable	9 x 10"	1.6mm	MT-APUR-1.6
Standard Perforated	Reloadable	9 x 10"	2.4mm	MT-APUR-2.4
Standard Perforated	Reloadable	9 x 10"	3.2mm	MT-APUR
Standard Perforated	Disposable	9 x 12"	1.6mm	MT-APU-12-1.6
Standard Perforated	Disposable	9 x 12"	2.4mm	MT-APU-12-2.4
Standard Perforated	Disposable	9 x 12"	3.2mm	MT-APU-12
Standard Perforated	Reloadable	9 x 12"	1.6mm	MT-APUR-12-1.6
Standard Perforated	Reloadable	9 x 12"	2.4mm	MT-APUR-12-2.4
Standard Perforated	Reloadable	9 x 12"	3.2mm	MT-APUR-12
Standard Perforated	Disposable	9 x 14"	1.6mm	MT-APU-14-1.6
Standard Perforated	Disposable	9 x 14"	2.4mm	MT-APU-14-2.4
Standard Perforated	Disposable	9 x 14"	3.2mm	MT-APU-14
Standard Perforated	Reloadable	9 x 14"	1.6mm	MT-APUR-14-1.6
Standard Perforated	Reloadable	9 x 14"	2.4mm	MT-APUR-14-2.4
Standard Perforated	Reloadable	9 x 14"	3.2mm	MT-APUR-14
Standard Perforated	Disposable - Wide	9.5 x 10"	1.6mm	MT-APUW-1.6
Standard Perforated	Disposable - Wide	9.5 x 10"	2.4mm	MT-APUW-2.4
Standard Perforated	Disposable - Wide	9.5 x 10"	3.2mm	MT-APUW
Standard Perforated	Disposable - Wide	9.5 x 12"	2.4mm	MT-APUW-12-2.4
Standard Perforated	Disposable - Wide	9.5 x 12"	3.2mm	MT-APUW-12
ComfortPerf	Disposable	9 x 10"	2.4mm	MT-APU-CP201
ComfortPerf	Disposable	9 x 10"	3.2mm	MT-APU-CP301
ComfortPerf	Reloadable	9 x 10"	2.4mm	MT-APUR-CP201
ComfortPerf	Reloadable	9 x 10"	3.2mm	MT-APUR-CP301
Style 18	Disposable	9 x 10"	2.4mm	MT-APUI-18-24
Style 18	Disposable	9 x 10"	3.2mm	MT-APUI-18-32
Style 18	Reloadable	9 x 10"	2.4mm	MT-APUIR-18-24
Style 18	Reloadable	9 x 10"	3.2mm	MT-APUIR-18-32
Style 20	Disposable	9 x 10"	2.4mm	MT-APUI-20-24
Style 20	Disposable	9 x 10"	3.2mm	MT-APUI-20-32
Style 20	Reloadable	9 x 10"	2.4mm	MT-APUIR-20-24
Style 20	Reloadable	9 x 10"	3.2mm	MT-APUIR-20-32
Style 20	Disposable-Wide	9 x 10	3.2mm	MT-APUI-A-20-32
Style 22	Disposable	9 x 10"	3.2mm	MT-APUI-22-32
Style 22	Reloadable	9 x 10"	3.2mm	MT-APUIR-22-32
Lateral Thermoplastic	Reloadable	11 x 10"	3.2mm	MT-APUL

Uni-frame Reloadable ABS Frame	MT-APUR-1
Uni-frame Reloadable Lateral Frame	20-LTBP-2

Breast Repositioning Supports



Thermoplastic breast positioning is primarily intended to hold the breast up and away from the chest wall, reducing both skin folds and unwanted radiation dose into the patient's lung. Standard perforated and IMRT Reinforced Thermoplastics are compatible with the MT-350, MT-250 and C-Qual™ Breastboards. Posicast Thermoplastics are compatible with the Posiboard-2 Breastboard. All breast thermoplastics are reloadable. See page 2 for more information on thermoplastic types.

Perforation Type	Thickness	Part Number
Standard Perforated	2.4mm	MT-RFX-918-2.4
Standard Perforated	3.2mm	MT-RFX-918
IMRT Reinforced, Pink	3.2mm	MT-RFI-918-HP
IMRT Reinforced	2.4mm	MT-RFI-918-2.4
IMRT Reinforced	3.2mm	MT-RFI-918
Reloadable Handles (2)		MT-RF-H2

Posicast Type	Perforation Type	Part Number
Standard	Multiperfo	SIN-900111
Standard	Microperfo	SIN-910111
Plus	Microperfo	SIN-920111
Lite	Multiperfo	SIN-760111
Lite	Microperfo	SIN-770111
Breast L-profiles		SIN-106019

HipFix® Thermoplastics



Reloadable Handles & Groin Piece	MT-PLHA-01
Groin Piece	20-PLVC-SUB8

HipFix Thermoplastics are available with reloadable or disposable handles and with either solid, standard perforated or IMRT Reinforced perforation styles. Groin piece must be purchased separately for disposable thermoplastics.

Perforation Type	Handle Type	Dimensions	Thickness	Part Number
Solid	Reloadable	18 x 24"	3.2mm	MT-HFX-1824S
Solid	Reloadable	18 x 24"	2.4mm	MT-HFX-1824-2.4S
Solid	Reloadable	18 x 22"	3.2mm	MT-HFX-1822S
Solid	Reloadable	18 x 22"	2.4mm	MT-HFX-1822-2.4S
Solid	Disposable	18 x 22"	3.2mm	MT-PLHA-0201
Perforated	Reloadable	18 x 22"	3.2mm	MT-HFX-1822
Perforated	Reloadable	18 x 22"	2.4mm	MT-HFX-1822-2.4
Perforated	Disposable	18 x 22"	3.2mm	MT-PLHA-0202
IMRT Reinforced	Reloadable	18 x 22"	3.2mm	MT-HFI-1822
IMRT Reinforced	Reloadable	18 x 22"	2.4mm	MT-HFI-1822-2.4
IMRT Reinforced	Disposable	18 x 22"	3.2mm	MT-PLHAI-0203

Multifix® Thermoplastics



Small Posicast Thermoplastics are used on the Multifix System allowing arms and legs to be fixed in straight or bent positions.

Precut Type	Posicast Multiperfo	Posicast Microperfo	Posicast-Plus Microperfo	Posicast-Lite Multiperfo	Posicast-Lite Microperfo
PR8 - small	SIN-940080	SIN-950080	SIN-930080	SIN-762080	SIN-772080
PR9 - large	SIN-940090	SIN-950090	SIN-930090	SIN-762090	SIN-772090

Thermoplastic Tips

Warming

Before beginning the warming process make sure that your water bath is at 165°F (74°C). Using water which is not the correct temperature can contribute significantly to an uneven hole pattern in the mask once it is pulled. Once your water bath is at the proper temperature place the thermoplastic in the water. Follow the heating times outlined in the thermoplastic manual. Under or overheating the mask can compromise the quality of the mask.



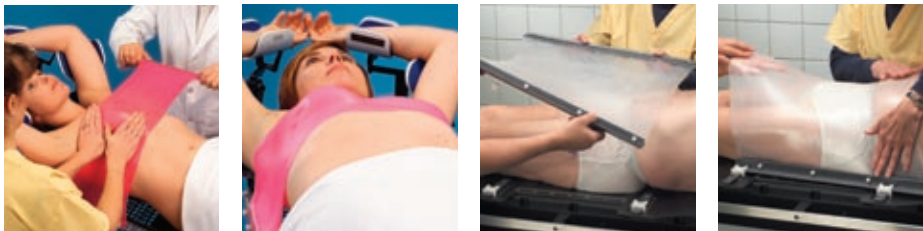
Water Bath

MT-RH-1500

Forming Thermoplastics

When thermoplastic has been in the waterbath for the appropriate amount of time, pull it out of the water and remove excess water off the thermoplastic.

Carefully form the thermoplastic over the patient and dock the mask onto the baseplate. Gently form the thermoplastic around the bony anatomy of the patient such as the nasion and chin. Make sure the thermoplastic is lying evenly on the patients skin and the patient is still in the desired position for treatment.



Cooling and Storing

It is important to completely cool thermoplastics before removing them from the patient. Heat in the thermoplastic indicates it hasn't finished setting. Removing thermoplastics while still warm may result in additional shrinking of the thermoplastic as the heat dissipates from the mask without the benefit of an anatomical stopping point.

To help with the cooling process CIVCO offers a few simple solutions. Cold Spray can be sprayed across the molded cast to speed cure time. The Cold Mitt contains pliable gel to conform to the body contours, speeding the cooling of formed thermoplastics. Store in the freezer; the internal gel remains flexible to -20°F (-28°C). Some departments simply use a cool, damp towel to speed the cooling process.

Finally, thermoplastics should be stored safely and at room temperature until they are no longer needed for the patient.



Cold Spray MT-CB-61



Cold Mitt MT-CB-60

