

# ENGINEERED PRECISION BELTS & COMPONENTS



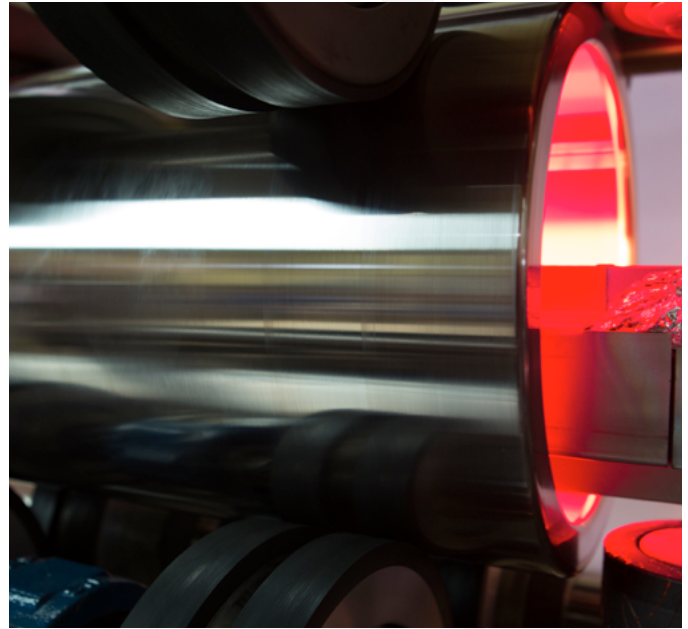
## Introduction

Megadyne offers several advanced elastomers and production processes to manufacture precision belts for a wide range of functions including packaging, medical and food applications. Within this class of specialty belts is Megadyne's advanced Spin Cast Technology.

Precision tolerances, molded endless structure, elasticity, porosity free and multiple durometers are just some of the adjectives that are used to describe Megadyne Spin Cast Specialty Belts. A state-of-the-art proprietary automated process assures products manufactured with Megadyne Spin Cast Technology yields a homogeneous, truly endless belt with precision dimensional tolerances. Top quality materials offer high resistance to flex fatigue with durability for tough environmental conditions.

## Spin Casting - Production Process

Manufacturing Precision Products starts with high quality tooling and exact materials formulation. Molds made in house by Megadyne guarantee tight tolerances, quality control, short lead-times and low cost investment for our customers. The mold design is predicated on part complexity and the material chosen to meet the application requirement. Once the tool is ready, the chosen elastomer is dispersed through a computer controlled process where precise volume and color is delivered into a rotating mold where the centrifugal forces displace the elastomer to the inner wall of the mold. This process enables air to escape yielding a truly endless precision product with a defect-free surface, exact hardness, tolerance and color.



## What Are The Benefits of Spin Cast Technology?

### MATERIAL OPTIONS

The majority of Megadyne Precision Belts and Components are made with either thermoset urethane or thermoplastic Hytrel®, solid polyester thermoplastic material. Thermoset urethane has good water, abrasion, and oil resistance properties and a temperature range of -4°F to +176°F. Hytrel thermoplastic elastomer is a material that can be chosen for more demanding applications requiring high flex fatigue and oil and wear resistance. It is also capable of handling extreme environments with a wide temperature range of -40°F to +212°F. Depending on application, our production process provides the versatility to deliver a wide range of hardness options starting as low as 10 Shore A or as high as 90 Shore A.



## CUSTOM COLORS

Our manufacturing process makes availability of custom colors easy. Contact us for more information.



## TOOLING

Molds are manufactured in-house, thus enabling Megadyne to produce belts very quickly. In addition to molds that yield a product with a smooth outer finished surface, Megadyne can also machine the mold to have integral design shapes such as tracking ribs or other custom molded features. Tooling costs for cast molded belts are reasonably priced, especially when compared to technologies such as injection molding or other competing technologies.

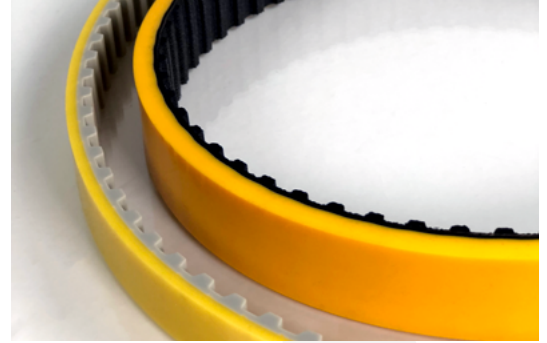


## DUAL OR MULTIPLE DUROMETER CONSTRUCTION OPTIONS

Our process offers the benefit of dual or multiple durometer belt constructions. For example, a dual durometer construction can have a hard surface on the drive side of the belt for long life and durability, while the convey side of the belt can be soft for increased grip of a product conveyed by that side of the belt. For dual and multiple durometer constructions, the production process is repeated, adding layers of material until the desired construction specification is achieved.

## OPTIONAL POLYURETHANE OR RUBBER SUBSTRATES

New from Megadyne is the ability to cast Hytrel or Urethane over other material substrates. One common substrate used is Megapower molded urethane synchronous belts. Megapower, molded with 88 Shore A thermoset urethane is available in belt pitches MXL, XL, L, H, T2.5, T5, T10, AT5 and AT10. The ability to mold a secondary urethane in durometers from 10 Shore A to 90 Shore A hardness enables customers to take advantage of Megadyne's broad number of available belt sizes without tooling investment for small or large quantity needs. Furthermore, this also applies to our rubber products as Megadyne can also incorporate our rubber belt substrates (synchronous or v-belt) into the base belt construction and spin cast layers of Urethane or Hytrel onto the belt convey side to offer desired friction and outstanding wear resistance.

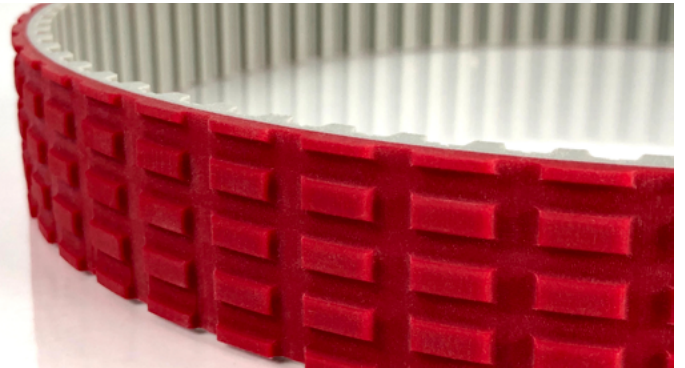


## FDA Materials

Urethane Belts with FDA compliant materials can also be cast for many applications such as those in the food, packaging, and pharmaceutical industries. They are available on a made-to-order basis in a range of Shore A hardness from 55 to 85.

## Modifications

In addition to the integral design shapes and custom molded features that can optionally be incorporated into production tooling molds, our extensive modification capabilities enable us to customize spin cast belts with any number of additional special features such as holes, slots, pockets, perforations, and grooves using our Advanced CNC workstations.



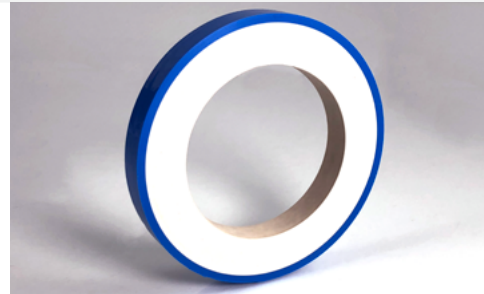
## Applications

Megadyne Precision Engineered Belts are ideal for light power transmission or product handling applications. Our solid elastomer cast belts made with Urethane and Hytrel offer elastic properties that ensure the belt maintains proper tension even on drives with fixed center distances that offer no means of belt tensioning. Below are some of the common industries where our belts are used.

- Fiber Optics
- Banking
- Pharmaceutical
- Food
- Tobacco
- Packaging
- Paper Handling
- Wire Pullers
- Medical Equipment
- Ticketing Equipment
- ATM
- Collating Machinery

## Megadyne Spin Cast Belts

Material	Hytrel®	Urethane
<b>Material Description</b>	Thermoplastic elastomer	Thermoset urethane
<b>Hardness Range</b> (Shore A)	30/40/50/60/70	Custom blending - from 10 to 90
<b>Dual or Multiple Durometers</b> (Shore A)	Not available	Any combination of hardness from 10 to 90
<b>Color Options</b>	Only available in Tan (Natural color of Hytrel)	Standard Colors: Orange – Red – White – Black – Blue Upon request can be custom blended to any color
<b>Belt Outside Diameter (inch)</b>	1.5" to 17"	1.5" to 17"
<b>Thickness Range (inch)</b>	0.010" to 0.040"	0.010" to 0.500"
<b>FDA Material</b> (Shore A)	Not Available	Available in 55 - 65 - 75 - 85
<b>Working Temperature Range</b> (°C)	-40 °C (-40 °F) to 100 °C (+212 °F)	-20 °C (-4 °F) to 80 °C (176 °F)
<b>Water Resistance</b>	Good	Good
<b>Abrasion Resistance</b>	Good	Good
<b>Oil Resistance</b>	Very Good	Good
<b>Material Properties/Benefits</b>	High Flex Fatigue Resistance	Hydrolic stability
<b>Custom Molded Features and Integral Design Shapes</b>	Yes	Yes
<b>Base Belt/Substrate Options</b>	Rubber or Polyurethane Belt	Rubber or Polyurethane Belt
<b>Belt Modifications</b>	Yes	Yes



Hytrel® is a registered trademark of DuPont

# About The Megadyne Group

Founded in 1957 in Mathi, Italy, Megadyne is a leading global manufacturer and fabricator of power transmission, product handling, materials handling, and linear positioning belts, hose, and metal products.

With manufacturing operations in Europe, Middle East and Africa (EMEA), Asia Pacific (APAC), and the Americas, Megadyne is well poised to be your partner. From a broad selection of materials and processes, we service over 20 major industries offering high quality products, outstanding service, technical support, and state of the art logistics to ensure we develop the right product for your application and have it at the right location when you need it.

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