



Molds with significant countour in sealing area

These two molds show the adaptability of Torr's vacuum bagging systems. These EVT's (Elastomeric Vacuum Tools) have vacuum ports and thermocouple connections in the diaphragm. Tools are hinged and have detents to prevent accidental closure of tool.



Tool installed on electroformed nickel mold

This tool is 96" long and hinged on the end to provide layup access to the two linear cavities running the length of the mold. High-temp gas-springs significantly reduce opening force. Note the swing clamp on each side to hold seal in contact with mold surface during vacuum initiation.



Large contoured tools built without molds

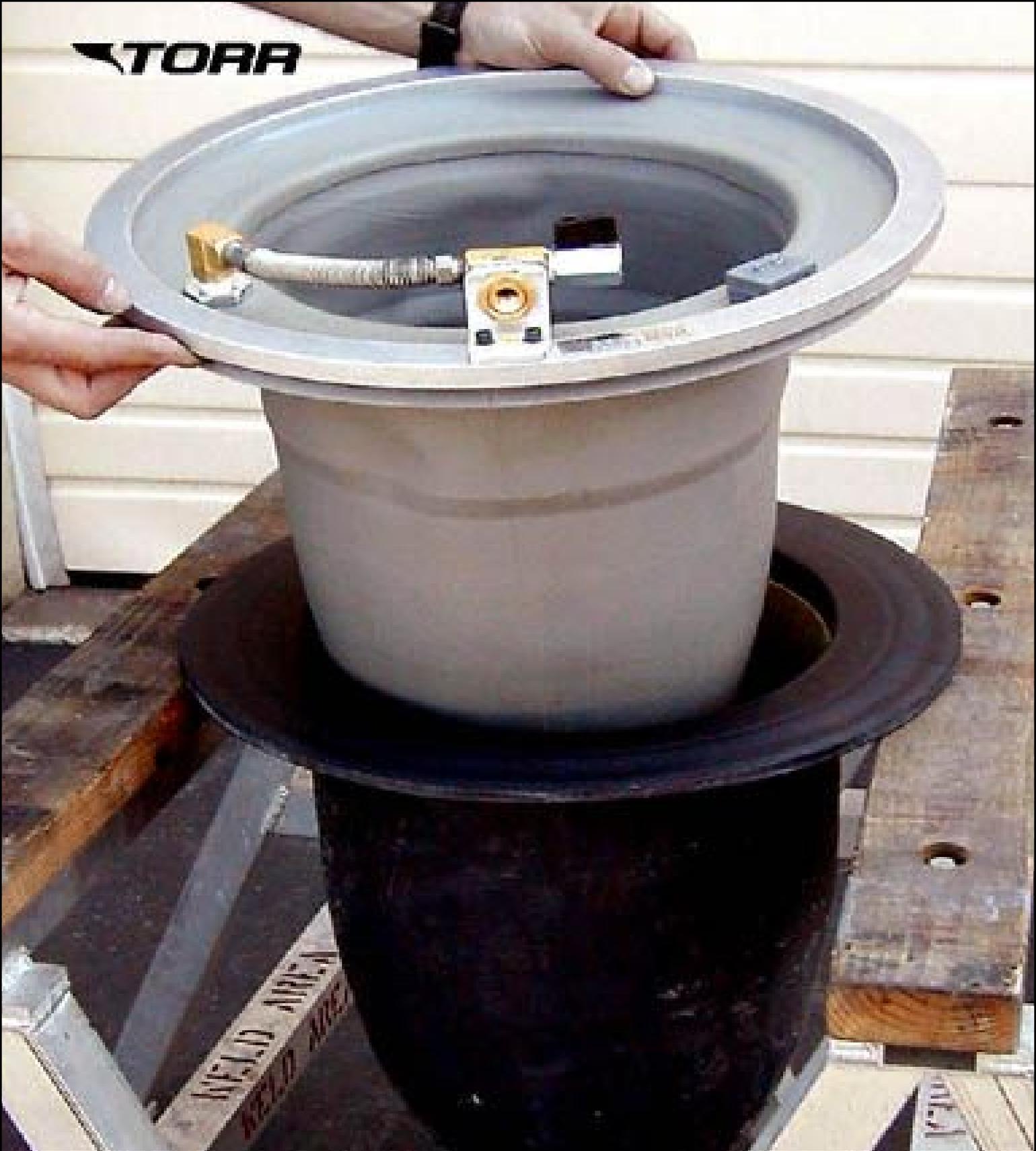
These tools, almost 14 ft. long, were built using customer-supplied information. The client was located overseas and shipping the molds to the US was cost-prohibitive. The frames and diaphragms are contoured to fit the molds. 2 handles on each end and a vacuum release valve are provided.



Core-bonding tool with translucent diaphragm

There are certain processes where seeing through the diaphragm has advantages. This tool allows personnel to confirm location of core potting compounds and adhesive. Torr has a variety of high-strength translucent silicone rubber available

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EVT (Elastomeric Vacuum Tool) with molded diaphragm

This small radome mold is a perfect fit for a Torr tool. The molded diaphragm provides a wrinkle-free, consistent vacuum bag everytime. Tool has one vacuum port and one type J thermocouple connection through the diaphragm.



EVT fabricated for cast/machined Invar mold

Torr's T-7 seal system is more adaptable than any other. Hinged and counterbalanced with gas-springs, this ergonomic configuration allows for efficient compaction and final cure.



43 ft. tool for Invar mold

To better match the thermal expansion, this tool has an Invar bar frame carried by an upper steel frame. Stainless steel clips hold them together and the diaphragm can be easily changed. At each end are hydraulic lifters used to lift and transport the tool.



Contoured tools for debulking RTM preforms

Many customers use our tools for compacting and debulking preforms prior to being placed in molds. The diaphragms for these tools are cut and spliced to fit, as opposed to being molded from B-stage silicone. Lids are counterbalanced and swing clamps near the front hold the lids closed.

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Tool fabricated to fit Invar mold

This photo shows a variety of hardware including a vacuum port, release valve, handles, alignment tabs, and swing clamps. Note how the frame, diaphragm, and seal follow the mold contour. No other seal system available will work as effectively.



Molded diaphragm for large radome

This shape can either be seamed from cured sheet, or molded from B-stage silicone on a mold or form provided by the customer. This particular tool has alignment tabs and swing clamps that hold the seal in contact with the mold surface. Tool has 4 vacuum and 2 thermocouple connections.



Diaphragm with expanding pleat for making flanged duct

EVTs for male tools are typically straightforward to make. This flanged part (behind tool) made for an interesting solution. The diaphragm has a lay-flat pleat down the center that allows you to grab and expand the throat area so it fits around the upper flange, then retracts and overlaps with very little mark-off on the part. This is an autoclave-cure tool.