

CM 302

Advanced Light RTM Tooling January 19-23, 2015

Limited number of spaces available.
Fax your registration form to
847-437-0664, attention Rachel Stone
to save your spot. See registration
form for payment details.

Location:

MVP
11692 56th Court North
Clearwater, Florida

Cost:

\$1,850 USD per person
(Lunch and graduation
dinner included)

Hotel Accommodations:

Hampton Inn & Suites
4050 Ulmerton Rd
Clearwater, FL 33762

PARTICIPANTS UNDERSTAND THAT THEY WILL
RECEIVE CONFIDENTIAL INFORMATION AND USE OF
LIGHT RTM MOLDS AND THEY WILL NOT COPY SUCH
INFORMATION IN WHOLE OR IN PART.

(800) 621-8003
compositesone.com
closedmoldalliance.com

Schedule of Events

Monday, Jan 19 - 9:30 AM - 4:30 PM

- Economics of LRTM
- Product Design for Process and Flange
- LRTM Injection Demonstration
- A-Side Mold Construction
- Steps in LRTM Mold Building
- LRTM Demonstration

Tuesday, Jan 20 - 8:00 AM - 4:30 PM

- Waxing Techniques
- Waxing Demonstration
- Design First Layer of Wax
- LRTM Injection Demonstration
- Waxing First Layer

Wednesday, Jan 21 - 8:00 AM - 4:30 PM

- Second Layer of Wax
- LRTM Injection Demonstration
- Waxing Flange Details
- Start Lay-Up on B-Side

Thursday, Jan 22 - 8:00 AM - 4:30 PM

- More Laminates on B-Side
- MVP Equipment
- LRTM Injection Demonstration
- Supplier Presentations
- Finish Wax and Laminate on B-Side
- Graduation Dinner

Friday, Jan 23 - 8:00 AM - 1:00 PM

- Mold Repair and Maintenance
- Gel Coating, Glass Loading, and Troubleshooting
- Questions and Answers
- LRTM Injection Demonstration
- Introduction to Flex Molding (Silicone Bag System)

ClosedMold Alliance

Composites One • MVP
RTM North Technologies

CM 302

Advanced Light RTM
Composites Tooling Training

5-DAY HANDS ON TRAINING

January 19-23, 2015
Clearwater, Florida



Hands On Light RTM Composite Tooling Training

You will learn the basics of Light RTM Tooling including:

WHY RTM?

- Advantages and other options

PATTERN DESIGN AND PREPARATION

- Flanges, draft angles, and undercut considerations

BUILDING THE FACE TOOL

- Materials, their properties, and temperature controls
- Designing, building, and attaching the back-up frame
- Accurate location clamping and attachment system

DEFINING THE PART TO BE BUILT

- Working with dimensional wax
- Designing product cut-offs, vents, and peripheral seals
- Injection port location, multiple injection ports, and sensors
- Designing for ribs, cores, inserts, etc.
- Handling complicated shapes, undercuts, etc.

HOW TO ENSURE PART ACCURACY

- Controlling the problem of laminate shrinkage

BUILDING THE BACK TOOL

- Designing the frame and locking accuracy

TOOL LIFE AND CARE

- Replacing the tool faces

FINISHING AND PREPARATION OF THE TOOL

- Preparing the tool surface
- Release agents and their application
- Installing the mold seal
- Reinforcement materials replacement

GETTING STARTED

- Materials and resources

COSTING TOOLS AND PARTS

- Materials, wastage rates, and formulas for costing

RESIN SYSTEMS AND REINFORCEMENTS

- Review of available resin systems and properties
- Review of reinforcement applications and sources

FILLERS AND THEIR EFFECTS

- Impact on surface finish, part cost, and fire retardant
- Surface finish requirements

INJECTION MACHINES

- Features and benefits
- Catalyst and cure systems, production rates
- Preform materials, manual to fully automated

FLEX MOLDING

- Review of silicone bag systems
- Features and benefits
- Materials and start-up



Registration Form

CM302 Light RTM Composite Tooling Training

January 19-23, 2015

\$1,850 per registrant Full Payment is required with registration prior to

January 12, 2015.

Please fax this form by January 12, 2015

You can fax your registration form and mail your payment to Rachel Stone at:

Composites One
85 W Algonquin Rd #600
Arlington Hts, IL 60005
P: 847.871.1323
F: 847.437.0664

Please make checks payable to RTM North. Full payment is required with this registration. Registration will not be considered final until payment is received. All cancellations made ten working days prior to the commencement of the seminar will receive a full refund. Cancellations made less than ten days prior will be subject to a refund if there is a confirmed alternate. All cancellations must be made in writing.

Name: _____ Title: _____
Company: _____
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Phone: _____ Fax: _____
Products currently being manufactured: _____
Please circle one: Fabricator Supplier Distributor Other