



Michael Day Enterprises, Inc.
 Engineering Thermoplastics
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Michael Day TPVs Typical Processing and Tooling Specifications

This document will provide you with “typical” processing parameters and tooling specifications for MDE TPVs. For shrinkage information please see our “Typical Shrinkage Guide” on our website. This is intended as a guide only and may not work for every application.

Tooling/Process Specifications

Gating	Use smaller gates (30%-50% of wall thickness) to promote higher shear rates and improve flow into mold cavity. Minimum gate size 0.020”																
Shrinkage	Part shrinkage is based on many variables. Prototyping is the only way to get true shrinkage values on specific applications																
Screw Design	Special equipment is not needed to process TPVs. Use a screw ratio L/D of approximately 20:1 and a compression ratio of 2.5:1																
Barrel Capacity	Not less than 1.5 shots and not more than 8 shots																
Clamp Pressure	45 – 69 MPA (3 –5 tons/in ²) of projected area																
Screw RPM	100 –200 RPM																
Screw Cushion	3 – 6 mm (0.125” – 0.250”)																
Improved Flow	MDE TPVs are shear “dependent” materials which implies the higher the shear rate the lower the viscosity. It is more effective to raise injection rates (creating more shear) than to raise temperatures.																
Temperature Settings, °C (°F)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Rear</td> <td style="text-align: center;">Center</td> <td style="text-align: center;">Front</td> <td style="text-align: center;">Nozzle</td> </tr> <tr> <td style="text-align: center;">175 – 195 (347 – 383)</td> <td style="text-align: center;">180 – 200 (356 – 392)</td> <td style="text-align: center;">180 – 205 (356 – 401)</td> <td style="text-align: center;">190 – 230 (374 – 446)</td> </tr> <tr> <td style="text-align: center;">Melt</td> <td colspan="2" style="text-align: center;">Mold</td> <td></td> </tr> <tr> <td style="text-align: center;">195 – 240 (383 – 464)</td> <td colspan="2" style="text-align: center;">10 – 50 (50 – 125)</td> <td></td> </tr> </table>	Rear	Center	Front	Nozzle	175 – 195 (347 – 383)	180 – 200 (356 – 392)	180 – 205 (356 – 401)	190 – 230 (374 – 446)	Melt	Mold			195 – 240 (383 – 464)	10 – 50 (50 – 125)		
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Back Pressure	Keep as low as possible, only enough to allow mixing of masterbatch																
Drying	Dry at 82°C (180°F) for 3 hours in a desiccant drying system. Recommended moisture level should be 0.05% for most applications																
Regrind	Studies conducted show very little property reduction through 5 generations. Recommended level is 20% and drying is recommended if not using a closed loop system that incorporates regrind directly back into process.																