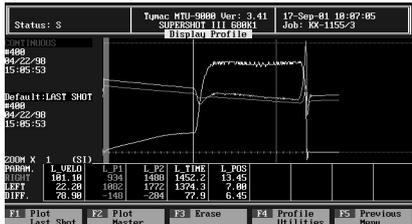


SuperShot 7 Phase Velocity Control

Tymac Seven (7) Phase Velocity Control System

Programmable real-time closed-loop CNC control of all injection phases provides maximum shot consistency and repeatability. The SuperShot also significantly reduces flash and porosity, while providing dimensional stability and excellent surface finish.

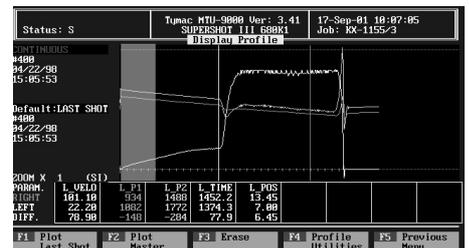


1st Phase/LIFT-OFF:

Absorbs initial oil surge from accumulator to prevent shock wave in the metal and prevent gas entrapment. Remains constant for all setups.

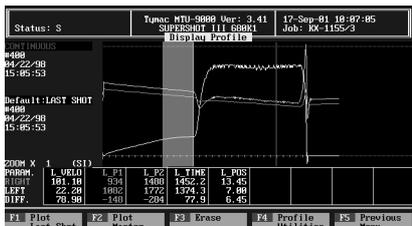
2nd Phase/CLOSE POUR HOLE:

Advances plunger past the pour hole at a precisely controlled velocity and fills cold chamber to a minimum of 50% full. Remains constant for all setups.



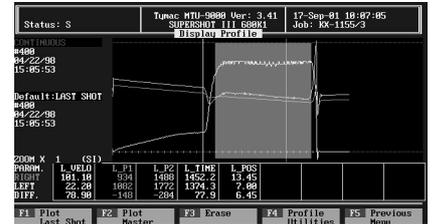
3rd Phase/SLOW APPROACH:

Precisely controlled at the "critical slow shot velocity" to eliminate waves and turbulence in the metal. Prevents porosity caused by gas entrapment.



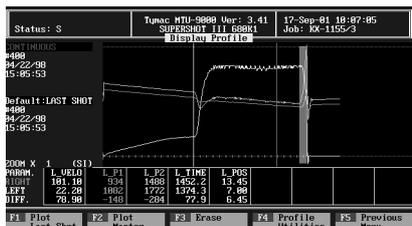
4th Phase/FAST SHOT:

The industry's fastest acceleration to high cavity filling speed. Closed-loop control even at maximum injection speed provides the best reproducibility possible. Automatically compensates for other variables to prevent defects.



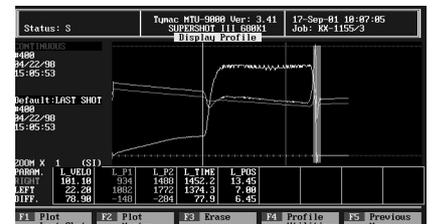
5th Phase/LOW IMPACT:

The industry's fastest deceleration allows higher fast shot velocities, to obtain less porosity and better surface finish without flash. Increases the machine's effective clamping tonnage by 25 to 50%. Unique Tymac flexible control by metal pressure or position compensates for ladle variation automatically.



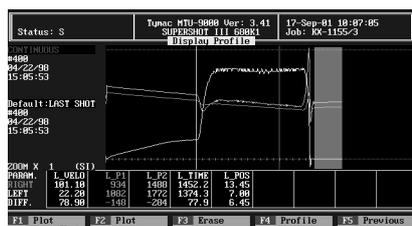
6th Phase/FINAL FILL:

Increases Metal Pressure within milliseconds after LOW IMPACT to increase casting density and prevent porosity without excessive flash.



7th Phase/FINAL SQUEEZE

Unique Tymac flexible control of intensifier by metal pressure, position, and time automatically compensates for stroke variation. The faster and more consistent response made possible through Tymac Intensimax Control delivers minimum porosity and optimum properties.



Tymac Controls Corp

127 Main St. Franklin, NJ 07416 Phone: (973)827-4050 Fax: (973)827-9247 us@tymac.com (10/2001)
 US Patents: 3,911,419, 3,878,375, 4,094,490, 4,249,186 4,383,449, 4,504,920, 4,734,869 Canadian Patent: 1-234-902 European Patent: 0 126 174

SuperShot 7 Phase Velocity Control

Tymac “Intensimax” Hydraulic Intensification System

Integrated intensification package, independent of system pressure, providing extremely rapid response and consistent final cavity pressure. It will precisely control the intensification phase to improve response time, minimize variation in final metal pressure and build up metal pressure before gate freeze off. Includes:

- Multiplier with direct acting control valve and independent close-coupled power (accumulator) supply.
- Smooth and fast-acting cartridge manifold hydraulic check system.
- Independent final pressure control.
- Independent speed control of pressure buildup timing.
- Tymac high-speed intensifier driver electronics and software which triggers the start of intensification by time, position, pressure or any combination. Compensates for ladle variations.

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