

# PUT THE RIGHT TOOL STEEL TO WORK FOR YOU

Ever wonder which tool steel is the best for your application? Tool steels aren't all the same and that's why we enlist a wide range to meet the needs of virtually every application. Punches and dies from Impax Tooling Solutions®, a division of Wilson Tool International, are crafted from high alloy content steels specifically designed to stamp materials at high speeds and resist extreme heat generated at the tool's cutting edge. Beyond that, the makeup of tool steels varies significantly in hardness, wear resistance and toughness. To determine the right steel for your application, see below or contact us today.

## M2

M2 is a conventional high-speed steel, hardened and triple tempered to HRC:60-63. It has good toughness, wear resistance and high compression strength.

## PM-M4

When the toughness and wear resistance properties of M2 steel aren't enough, we offer an upgrade to PM-M4 tool steel. A particle metallurgy high-speed steel, PM-M4 is hardened and triple tempered to HRC: 62-64, which makes it a better steel for applications that require more toughness, wear resistance and compression strength.

## Ultima® M4

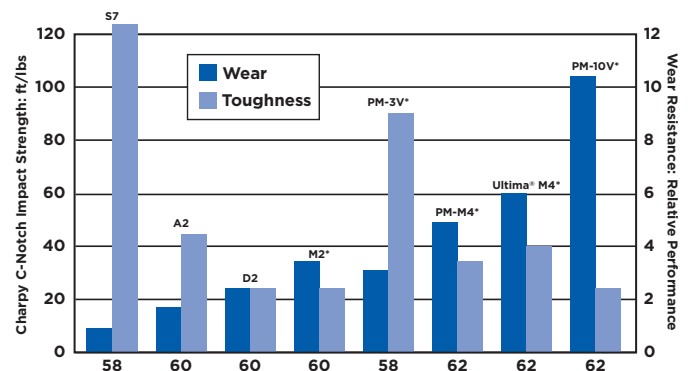
If you are looking for a tool steel that is even tougher than PM-M4, Ultima M4 is the best combination of toughness and wear resistance and though it can be used for any job, is specifically designed for high tensile strength applications or for those using abrasive materials. Applications using Ultima M4 result in significantly reduced tool micro chipping, and substantial reductions in downtime and retooling costs due to less frequent tool replacement. In comparison with other steels, Ultima M4 shows 11% more toughness and 25% more wear resistance over PM-M4, and it provides an 86% increase in toughness and 64% more wear resistance over standard M2 steel.

## PM-10V

PM-10V steel is the most wear resistant steel we offer. It's hardened and triple tempered to HRC:62-64. Stampers who are successful with M2, but need additional tool life, are prime candidates for PM-10V.

## PM-3V

We recommend PM-3V tool steel for the highest level of impact resistance, which has relatively good wear resistance and compressive strength. PM-3V is well suited to stampers who experience chipping and breakage problems with other types of steel such as stainless, HSLA or spring steel, or if the design requires you to pierce material thicknesses that are similar to your hole diameter.



\*Readily available from Wilson Tool. Other tool steels available upon request.



# TOOL STEELS

## CUSTOMER EXPERIENCE

Wilson Tool International provides solutions to the worldwide stamping industry that result in real, measurable production improvements. Below are examples of how our tooling expertise and service has helped stampers perform better, faster and more cost effectively.

**DOUBLE PUNCH LIFE** A customer experiencing tedious and time-consuming production problems with an extrusion application was given two suggestions:

- Move from a P1 to a P2 pilot style punch to increase the tolerance for mis-feeds
- Change tool steel from M2 to **PM-M4** for reduced punch breakage and overall downtime.

**PM-M4 TOOL STEEL** and a P2 pilot style punch more than doubled the customer's tool life.



**900% INCREASE IN HITS** A customer running 75 strokes per minute in .095" thick 316L stainless steel experienced severe galling and tool wear using a .3225" round punch with a die clearance of less than .001". Wilson Tool suggested multiple ways to increase punch life:

- Add Optima® coating to standard M2 tool steel for 12,000 hits
- Change to 3V tool steel with Optima® coating for an increase to 32,000 hits
- Use Ultima® M4 tool steel with Optima® coating for an increase to 110,000 hits

**ULTIMA® M4 TOOL STEEL** with Optima® coating increased hits by 900% with minimal galling or tool wear.

**LONGER CYCLE TIMES** A customer perforating .125" thick, multi-layer, "sandwich" type material experienced extreme tool wear. Wilson Tool provided options to reduce the excessive downtime associated with re-tooling:

- Add Optima® coating to standard M2 tool steel to extend re-tooling to every 12,000 cycles
- Change to a PM-3V tool steel with Optima® coating to extend re-tooling to every 25,000 cycles

**PM-3V TOOL STEEL** with Optima® coating reduced re-tooling costs and doubled output.



For more information, visit [wilsontool.com/StampingToolSteel](http://wilsontool.com/StampingToolSteel), call our tooling technicians at 800-944-4671 or contact your Sales Engineer.

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