

Material	
1.1 Structural Steel	All HMT tooling in this category are suitable for the common grades of steel
1.2 Hardened Steel	This category of tooling is not generally suitable for Hardened steel applications
1.3 Stainless Steel	Suitable for harder materials such as stainless steel when used at reduced RPM (Rotary drilling machines) or higher torque settings (Impact Wrenches)
1.4 Non Ferrous	All HMT tooling in this category is suitable for Non Ferrous materials
1.5 Additional Notes	Heat Affected Zones (HAZ) are areas of metal that have been exposed to welding, flame cutting or other high temperatures and are often harder to drill, enlarge or re-work. In these situations it usually helps to reduce RPM speeds, increase feed pressure, and use a rotary drilling machine with a powerful motor
	Plasma or Flame Cut holes: Flame cut or profiled holes can often be tapered or have a poor finish. Specify drilled holes to avoid these problems.
	Punched holes: When reworking holes that have been created by punching, note that the edge will have been hardened by the shearing action of the punch which affects the structure of the material
	Flame cut/punched/profiled holes will require more torque to tap than drilled holes due to heat build up. Caution: Sometimes flame cut holes do not have parallel sides meaning risk of tap breakage
Apparatus / Drilling Machines	
2.1 Impact Wrench	Impact Wrenches and Impact Drivers can be suitable for through hole tapping applications Ensure correct torque settings are used. Select the correct torque for Impact tools using the relevant Torque Table on P133 / P142. If exact match is not available select the closest torque setting above the recommendation
	When using Impact Wrenches, this tooling will perform best on higher torque settings. Low torque can lead to the cutting tool stalling during the cut, which can lead to a breakage.
2.2 Rotary Pistol Drill	ImpactaTaps in this category are suitable for pistol drill use up to around M10 Diameter. Larger diameters of taps used on Rotary Pistol Drills can generate high levels of resistance & drill kickback Select the correct RPM when using rotary drive tools using the table on P133 / P142.
2.3 Compact Magnet Drill	Compact Magnet Drills are not usually suitable for Tapping as they do not usually have the correct features such as reverse or variable speed
2.4 Large Magnet/Pillar Drill	These units are suitable for tapping if they have gear speed options, variable speed, and reversing feature
2.5 Additional Notes	When using a Magnet Drill regularly check that the slides, handles, arbors and movable parts have not vibrated loose over time. Ensure a debris-free surface of sufficient steel thickness for strong magnet hold when Magnet Drilling - (min 10mm)
	When using cordless power-tools, regularly check that sufficient battery charge is still available. Low battery charge results in torque drop, which can damage cutting tools
	If the drilling machine has a variable speed trigger switch (once the appropriate gear setting has been selected) it is recommended to use the full speed available by fully depressing the trigger switch. Feathering the trigger will give inconsistent spindle speed and torque
Thickness	
3.1 Sheet Metal up to 4mm	All HMT Taps in this category are suitable for this application. Standard practice is for the thread depth to match the thread diameter — Eg an M10 thread typically requires around 10 mm of thread depth.
3.2 Standard Plate 5 - 12mm	All HMT Taps in this category are suitable for this application. Standard practice is for the thread depth to match the thread diameter — Eg an M10 thread typically requires around 10 mm of thread depth.
3.3 Medium Plate 12 - 25mm	All HMT Taps in this category are suitable for this application. Standard practice is for the thread depth to match the thread diameter — Eg an M10 thread typically requires around 10 mm of thread depth.
3.4 Heavy Plate - above 25mm	Consider using heavy duty tapping options such as 308015 Long series taps
3.5 Additional Notes	This page of advice refers to Through Hole tapping. For Blind hole tapping, Spiral Flute ImpactaTaps are primarily recommended along with a Versadrive clutched adapter to prevent the Tap breaking when it makes contact with the bottom of the hole
Lubricant	
4.1 SpeedLube	Recommended for all general purpose tapping applications
4.2 BioCut Paste	Recommended for overhead drilling and other applications where liquid lubricant is not suitable
4.3 BioCut Blue	Not recommended for general purpose tapping.
4.4 Additional Notes	Ensure regular application of quality cooling lubricant, especially when drilling thick or harder materials



Accessories	
5.1 Impact Adapters	All the tools in this category are suitable for use in Impact Wrenches (See Torque Table)
5.2 Pistol Drill / Chuck	The Versadrive Hex shank fits into any standard drill chuck. 130mm and 300mm Versadrive Extension Arbors will fit into all drill chucks
5.3 Weldon Adapters	All Versadrive taps can be adapted for use in Magnet Drills with the 111130 Adapter. Magnet Drills must have a reverse function to be suitable for tapping
5.4 Morse Taper Adapters	All Versadrive taps can be adapted for use in Morse Taper drills with the 111045 Adapters
Best Practice	
6.1 Do I need a pilot hole or a centre punch?	Pilot drill the exact tapping size hole for best results When tapping into box section ensure the tip of the tooling does not contact the far side of the box section at the same time
6.2 What is the correct feed pressure?	Apply firm, steady feed pressure throughout the cut. Excess feed pressure will increase heat buildup and reduce tool life
6.3 How many holes can I expect the cutting tool to last?	There are many customer reports of HMT tooling lasting for hundreds of holes, however, due to the demanding nature of some portable drilling applications, this can vary widely depending on the application. HMT can take the MATLAS details of your application and provide an estimate of tool life
6.4 How can I prevent chipping or breakage	Standard ImpactaTaps are recommended for through hole applications only - for blind hole tapping see P137 Tap the hole in one pass where possible, applying adequate lubrication before you start. If the tap is over-run from the hole once it is tapped, to remove the risk of cross-threading, remove the tap from the adapter and locate it in the thread by hand, before reversing.
6.5 Additional Notes	Avoid lateral movement or tilting which can cause damage to the tooling. Do not use excessive feed pressure. Steady feed pressure will mean the tool is better controlled and held at 90° to the cut. This helps prevent snagging, chipping or kick-back Try to maintain a consistent flow of swarf.
	When re-threading an existing thread, use caution to avoid cross-threading which can lead to tap breakage or thread damage. To avoid damage to the tap, it is advisable to insert/start the tap into the thread by hand before driving it through at the correct torque
	Ensure the Tap is inserted squarely to the hole Poorly aligned or off-centre taps will greatly increase the risk of breakage Drilling operations take place in a wide variety of environments, each with different risks and requirements. For this reason, safe working practices and specific risk assessments or method statements must be determined by the user. Always select and use appropriate PPE, follow correct operating procedures for all equipment, and inspect tooling before use.

Versadrive ImpactaTaps - Metric Sizes								
Diameter Range	Impact Torque - Nm				Spindle Speed - Rotary RPM			
	Sheet up to 4mm thick	Plate 5 - 12mm thick	Plate 12 - 25mm thick	Plate over 25mm thick	Structural Steel (10 m/min)	Hardened Steel (5 m/min)	Stainless Steel (8 m/min)	Non-Ferrous (30 m/min)
M3–M4	105–120	160–180	N/A	N/A	1060–800	530–400	850–640	3180–2390
M5–M6	135–140	200–240	N/A	N/A	640–530	320–265	510–425	1910–1590
M8–M10	150–170	280–300	430–480	512–544	400–320	200–160	320–255	1190–955
M12–M14	185–190	320–340	512–544	576–640	265–230	130–115	210–180	795–685
M16–M20	200–315	360–400	576–640	960–1184	200–160	100–80	160–130	600–480
M24–M27	N/A	600–740	960–1184	1200–1400	135–120	70–60	110–95	400–355
M30–M33	N/A	800–980	1200–1400	1640–1940	105–95	55–45	85–75	320–290
M36–M42	N/A	N/A–1940	1640–1940	1990–2450	90–75	45–40	70–60	265–230
For Fractional Sizes See P142								