

Material	
1.1 Structural Steel	All HMT tooling in this category is 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 & Higher Torque settings
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, in-crease 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 are widely used for through Drill Tap applications. Ensure correct torque settings are used. Select the correct torque for Impact tools using the relevant Torque Table on P135. 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	DrillTaps in this category are suitable for pistol drill use up to around M10 Diameter. Larger diameters of Drill Taps used on Rotary Pistol Drills can generate high levels of resistance and drill kickback. Select the correct RPM when using rotary drive tools using the table on P135 / P142.
2.3 Compact Magnet Drill	Compact Magnet Drills are not usually suitable for Drill-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 Drill-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	301125 Drill-Taps are suitable for this application . Maximum tapping thickness for 301125 is the same as the drilltap diameter. Typically a tap hole specification is threaded to the same depth as the diameter
3.2 Standard Plate 5 - 12mm	301125 Drill-Taps are suitable for this application . Maximum tapping thickness for 301125 is the same as the drilltap diameter. Typically a tap hole specification is threaded to the same depth as the diameter
3.3 Medium Plate 12 - 25mm	301130 Drill-Taps in this category are suitable for this application. Typically a tap hole specification is threaded to the same depth as the diameter
3.4 Heavy Plate - above 25mm	301130 Drill-Taps in this category are suitable for this application . Typically a tap hole specification is threaded to the same depth as the diameter
Lubricant	
4.1 SpeedLube	Recommended for all general purpose drilling and tapping applications
4.2 BioCut Paste	Recommended for overhead drilling and other applications where liquid lubricant is not suitable
4.3 BioCut Blue	Recommended for general purpose drilling - before using SpeedLube for Tapping operation.
4.4 Additional Notes	Ensure regular application of quality cooling lubricant, especially when drilling thick or harder materials.



Accessories	
5.1 Impact Adapters	Most of the tools in this category can be suitable for use in Impact Wrenches & Impact Drivers (See Torque table)
5.2 Pistol Drill / Chuck	The Versadrive Hex shank fits into any standard drill chuck. 130mm & 300mm Versadrive Extension Arbors will fit into all drill chucks
5.3 Weldon Adapters	All Versadrive DrillTaps 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 Drill-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?	301125 Spiral-Flute DrillTaps do not require a pilot hole. 301130 Heavy Duty DrillTaps require a pilot hole over M10. When pilot drilling, drilling to approx. 70% of the required hole diameter is generally recommended
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	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.
6.5 Additional Notes	When Drill-tapping into box section ensure the tip of the tooling does not contact the far side of the box section at the same time
	Ensure the Drill-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 Drill Bits - 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 (30 m/min)	Hardened Steel (8 m/min)	Stainless Steel (12 m/min)	Non-Ferrous (50 m/min)
4–6 mm	140–160	160–180	240–280	265–310	1860–2655	210–320	850–1215	2660–3980
7–9 mm	160–295	195–360	300–520	330–570	1240–1590	140–185	565–730	1770–2280
10–12 mm	320–350	395–430	580–635	640–700	930–1120	105–130	425–510	1330–1590
13–15 mm	370–375	445–455	675–690	745–760	795–860	85–100	365–390	1060–1225
16–18 mm	455–580	580–720	880–1120	970–1230	620–695	70–80	285–320	885–995
19–21 mm	685–685	845–845	1245–1245	1370–1370	530–555	60–70	245–255	760–835
22–24 mm	720–720	900–900	1360–1360	1500–1500	505–505	50–60	160–175	665–725

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 (30 m/min)	Hardened Steel (8 m/min)	Stainless Steel (12 m/min)	Non-Ferrous (50 m/min)
M3–M4	95–110	105–120	160–180	N/A	730–960	610–809	490–650	2060–2700
M5–M6	125–130	135–140	200–240	N/A	485–585	405–485	325–385	1455–1750
M8–M10	140–160	150–170	280–300	430–480	295–365	245–310	195–245	870–1095
M12–M14	170–180	185–190	320–340	512–544	210–240	175–200	140–162	625–730
M16–M20	190–295	200–315	360–400	576–640	145–185	125–155	100–125	440–550
M24–M27	N/A	N/A	600–740	960–1184	105–120	90–100	75–85	330–370
M30–M33	N/A	N/A	800–N/A	1200–1400	84–95	68–80	51–60	265–310
M36–M42	N/A	N/A	N/A–N/A	1640–2440	40–72	32–58	24–44	126–228

For Fractional Sizes See P142