

Material	
1.1 Structural Steel	For best results use 209015 TurboTip Drill bits
1.2 Hardened Steel	Feasible for drilling some grades of hardened steel in controlled situations. For best results, the HMT Ultra tooling range is recommended. Hardened or heat-affected materials may require higher torque, reduced RPM & feed rates and extra coolant
1.3 Stainless Steel	For best results use 202050 or 209010 Cobalt Drill bits on Rotary setting
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
Apparatus / Drilling Machines	
2.1 Impact Wrench	Impact Wrenches and Impact Drivers can be suitable for drilling applications using the 209015 TurboTip Drill bit. Ensure correct torque settings are used. Select the correct torque for Impact tools using the relevant Torque Table on P127 / 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	All HMT drill bits are suitable for pistol drill use. Rotary pistol drills are recommended for Stainless Steels
2.3 Compact Magnet Drill	All Versadrive Drill bits can be adapted for use in a compact magnet drill with a Weldon adapter. Alternatively the 201070 Drill bits have a weldon shank
2.4 Large Magnet/Pillar Drill	All the HMT tools in this category can be adapted for use in a large magnet drill with either a Weldon adapter or a morse taper adapter
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 drill bits are suitable for this application Also consider Step Drills & Step Cutters for this thickness of material
3.2 Standard Plate 5 - 12mm	All HMT drill bits are suitable for this application
3.3 Medium Plate 12 - 25mm	All HMT drill bits are suitable for this application
3.4 Heavy Plate - above 25mm	All HMT drill bits are suitable for this application Consider using a magnet drill adapter to save fatigue
Lubricant	
4.1 SpeedLube	Recommended for all general purpose drilling 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 along with harder steels and stainless steels where heat reduction is critical. Best choice if the material is to be welded or galvanised
4.4 Additional Notes	Ensure regular application of quality cooling lubricant, especially when drilling thick or harder materials. Use flood coolant to keep tool & workpiece cool to prevent work hardening.



Accessories	
5.1 Impact Adapters	Suitable for using 209015 TurboTip Drill bits in impact wrenches and impact drivers (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 drill bits can be adapted for use in Magdrills with the 111130 Adapter. Alternatively the 201070 Drill bits have a weldon shank
5.4 Morse Taper Adapters	All Versadrive drill bits can be adapted for use in Morse Taper type drills with the 111045 Adapters
Best Practice	
6.1 Do I need a pilot hole or a centre punch?	TurboTip drilling products, up to 13mm, generally do not need a pilot hole created. Cobalt split-point drills require pilot holes when above 10mm. Centre punching improves hole position accuracy but is not required for TurboTips. Pilot Drilling is recommended for all drill types when the diameter is above 13mm Pilot 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	TurboTip Drills are recommended for through hole applications. 209010 Cobalt Split-Point Drills are recommended for blind hole drilling.
	Hardened or heat-affected materials may require higher torque, reduced RPM and feed rates and extra coolant.
	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	2385–1590	635–425	955–635	3980–2655
7–9 mm	160–295	195–360	300–520	330–570	1365–1060	365–285	545–425	2275–1770
10–12 mm	320–350	395–430	580–635	640–700	955–795	255–210	380–320	1590–1325
13–15 mm	370–375	445–455	675–690	745–760	735–635	195–170	295–255	1225–1060
16–18 mm	455–580	580–720	880–1120	970–1230	595–530	160–140	240–210	995–885
19–21 mm	685–685	845–845	1245–1245	1370–1370	505–455	135–120	200–180	840–760
22–24 mm	720–720	900–900	1360–1360	1500–1500	435–400	115–105	175–160	725–665
For Fractional Sizes See P142								