

Material	
1.1 Structural Steel	101030 and 101035 Holecutters are highly recommended for drilling structural steel
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 & extra coolant
1.3 Stainless Steel	Suitable for drilling most grades of stainless steel. Reduce RPM spindle speed, increase feed pressure, and ensure sufficient coolant supply.
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
	Hot Rivet Drilling: This is a specialist application for both HoleCutters and Annular Broach Cutters where legacy hot rivets need to be removed by drilling through the rivet. Refer to HMT's Rivet Drilling Guidance for best practice
Apparatus / Drilling Machines	
2.1 Impact Wrench	Not recommended for impact use in hard materials such as structural steel, due to the high rotation speed of impact wrenches. Non Ferrous and softer materials can be drilled using impact wrenches / impact drivers
2.2 Rotary Pistol Drill	Rotary Pistol Drills are highly recommended for best results with Holecutters. Generally the best results are achieved with the lower speed settings
2.3 Compact Magnet Drill	Can be used with 111035 Adapter. Check there is enough travel/stroke on the magdrill. Exchange the supplied pilot drill for the 101030P-0003 series Pilot Pin
2.4 Large Magnet/Pillar Drill	Recommended for use with larger holecutters, for example above 50mm diameter. Large magdrills can be fitted with a weldon adapter, as above, however large magdrills and pillar drills can also be fitted with a chuck
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	101050 TCT SheetCutters are recommended
3.2 Standard Plate 5 - 12mm	101030 HoleCutters are recommended
3.3 Medium Plate 12 - 25mm	101030 HoleCutters are recommended. For thicker materials, predrill a 6.35mm pilot first, then use a sprung pilot drill or pilot pin as a guide.
3.4 Heavy Plate - above 25mm	For drilling holes in steel thicker than 20mm it is recommended to ventilate the hole during the cut to clear the swarf. This means backing the cutter up out of the hole being cut, while the cutting tool is rotating, which will usually remove any swarf build up.
3.5 Additional Notes	The standard 101030 HoleCutter has a 55mm cutting depth capacity, and has been used at this max capacity for drilling steel 50mm+ in thickness for structural steel and bridge strengthening projects. 101035 Extra Long HoleCutters have a reach of 120mm with an effective cutting depth of 100mm.
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		Not normally recommended for use with Holecutters			
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		Versadrive HoleCutters can be used with Versadrive Weldon shank Magnet Drill Adapters. When used like this the standard pilot drill can be used, or it can be removed and replaced with an extended length pilot pin (eg 101030P-0003) for use as an annular broaching type cutter			
5.4 Morse Taper Adapters		All Versadrive Holecutters can be adapted for use in Morse Taper type drills with the 11045 Adapters			
Best Practice					
6.1 Do I need a pilot hole or a centre punch?		For an accurate hole start, centre-punch the material to create a positive location point. When using the integral pilot drillbit in the TCT holecutter, it is possible for the cutter to catch and twist unexpectedly when the pilot drill breaks through, which may cause breakage; this is not considered a warranty fault. To minimise this risk, use a separate 1/4" (6.35 mm) drill bit to pre-drill the pilot hole. You can then refit the pilot drill, or alternatively use a solid 101030P-003 Pilot Pin as a stronger pilot guide.			
		For hand-held applications; apply firm, steady feed pressure throughout the cut, using extra caution at the beginning of the cut, as the hole is established.			
		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			
6.3 How many holes can I expect the cutting tool to last?					
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		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.			
TCT Holecutters					
Diameter Range		Structural Steel (24 m/min)	Hardened Steel (8 m/min)	Stainless Steel (12 m/min)	Non-Ferrous (65 m/min)
12–17 mm	15/32"–11/16"	635–450	210–150	315–225	1725–1220
18–25 mm	3/4"–1"	420–305	140–100	210–155	1145–825
26–31 mm	1-1/16"–1-1/4"	295–245	100–80	150–120	800–670
32–39 mm	1-5/16"–1-17/32"	240–195	80–60	120–95	645–530
40–46 mm	1-9/16"–1-13/16"	190–165	65–55	95–80	515–450
47–53 mm	1-7/8"–2-3/32"	165–145	55–45	80–70	450–390
54–60 mm	2-1/8"–2-3/8"	145–125	45–40	70–60	390–345
61–70 mm	2-3/8"–2-3/4"	125–110	40–35	60–50	345–300
71–80 mm	2-13/16"–3-5/32"	110–95	35–30	50–45	300–255
TCT SheetCutters					
Diameter Range		Structural Steel (50 m/min)	Hardened Steel (8 m/min)	Stainless Steel (30 m/min)	Non-Ferrous (80 m/min)
14–17 mm	15/32"–11/16"	1135–940	N/A	680–565	1815–1480
18–25 mm	3/4"–1"	885–635	N/A	530–380	1415–1010
26–31 mm	1-1/16"–1-1/4"	610–515	N/A	365–310	975–820
32–39 mm	1-5/16"–1-17/32"	500–410	N/A	300–245	800–655
40–46 mm	1-9/16"–1-13/16"	395–345	N/A	235–200	635–555
47–53 mm	1-7/8"–2-3/32"	345–300	N/A	205–175	555–505
54–60 mm	2-1/8"–2-3/8"	300–265	N/A	180–155	505–425
61–70 mm	2-3/8"–2-3/4"	265–230	N/A	155–130	425–365
71–76 mm	2-13/16"–3-5/32"	230–215	N/A	130–120	365–330