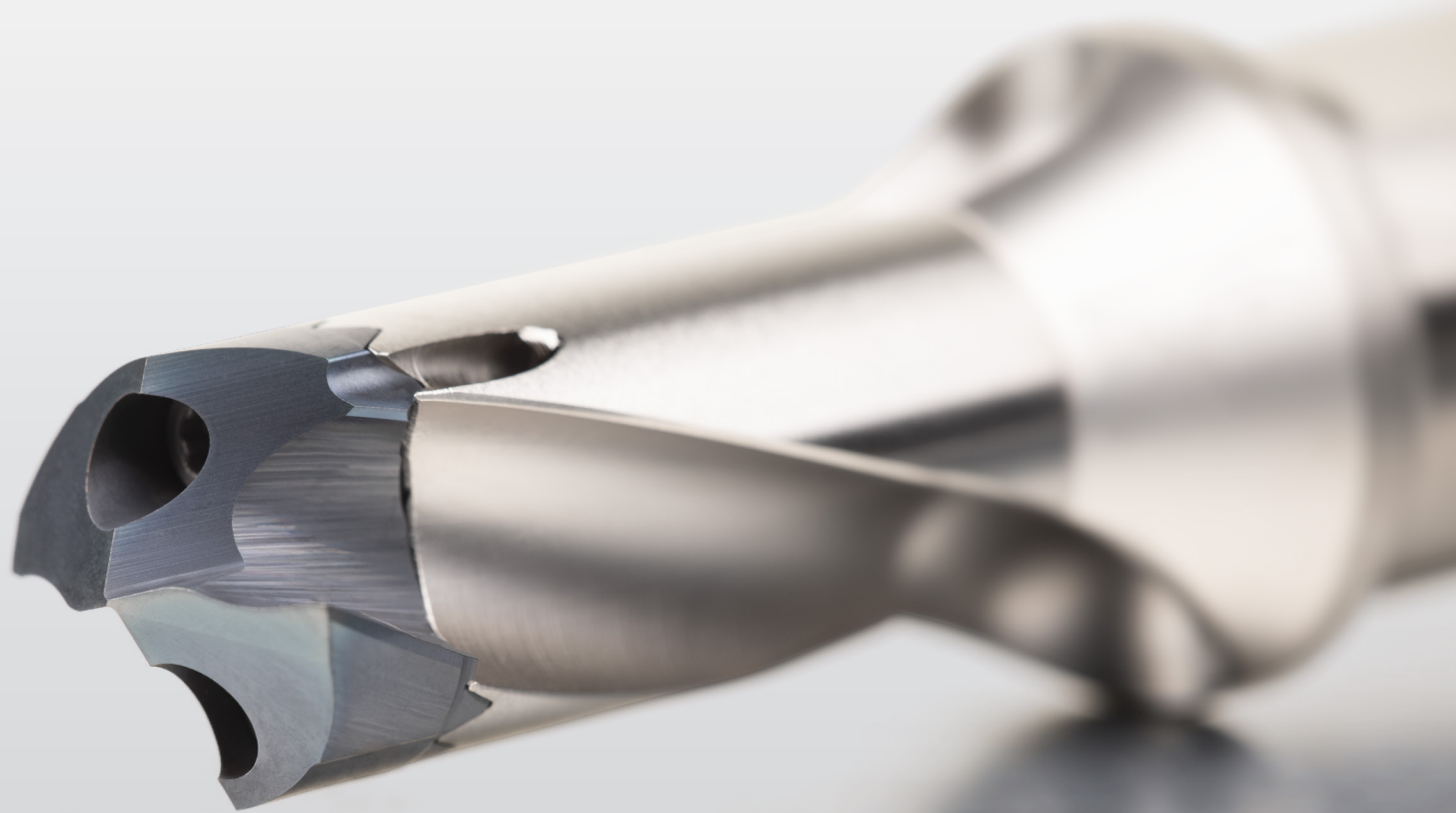


DORMER  PRAMET

HYDRA

**HIGH PERFORMANCE
REPLACEABLE HEAD DRILLS**



 **DORMER**



HYDRA

HIGH PERFORMANCE REPLACEABLE HEAD DRILLS

We have complemented our current Hydra drilling range by introducing additional body lengths: 12xD for deeper hole applications and 1.5xD for improved rigidity in shallow hole and plate drilling applications.

These will support the entire family of solid carbide heads for steel, stainless steel and cast iron machining.

FEATURES AND BENEFITS

- **Consistently high performance**, even after numerous head changes.
- **Reduction in inventory costs** – one body can fit multiple solid carbide head sizes.
- **Versatile** – cylindrical shank with flat allows use in multiple types of holder.
- **Easy and quick head changes** with minimal interruptions to the production process. Heads can be changed without removing the body from the machine.
- Exact fit of head to body maximises tool rigidity for **superior hole accuracy** and precise tolerances.

MATERIAL

PREMIUM MICROGRAIN CARBIDE (Heads)

- Micrograin carbide provides an excellent combination of hardness and toughness, resulting in high wear resistance and longer tool life.

HARDENED STEEL (Body)

- Hardened steel with high gloss nickel plating for high resistance to wear and corrosion.

COATING

TITANIUM ALUMINUM NITRIDE BASED COATING PROVIDES:

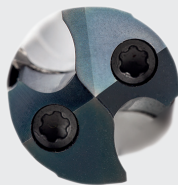
- High toughness and oxidisation resistance.
- Outstanding wear protection in abrasive materials like Cast Iron.
- High hardness at high temperatures created when drilling Cast Irons.
- Increased tool life and productivity.

HEAD TYPES



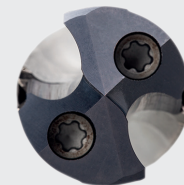
R950

STEEL



R960

STAINLESS STEEL



R970

CAST IRON

HYDRA

HIGH PERFORMANCE REPLACEABLE HEAD DRILLS

GEOMETRY

CORNER DESIGN FOR CAST IRON

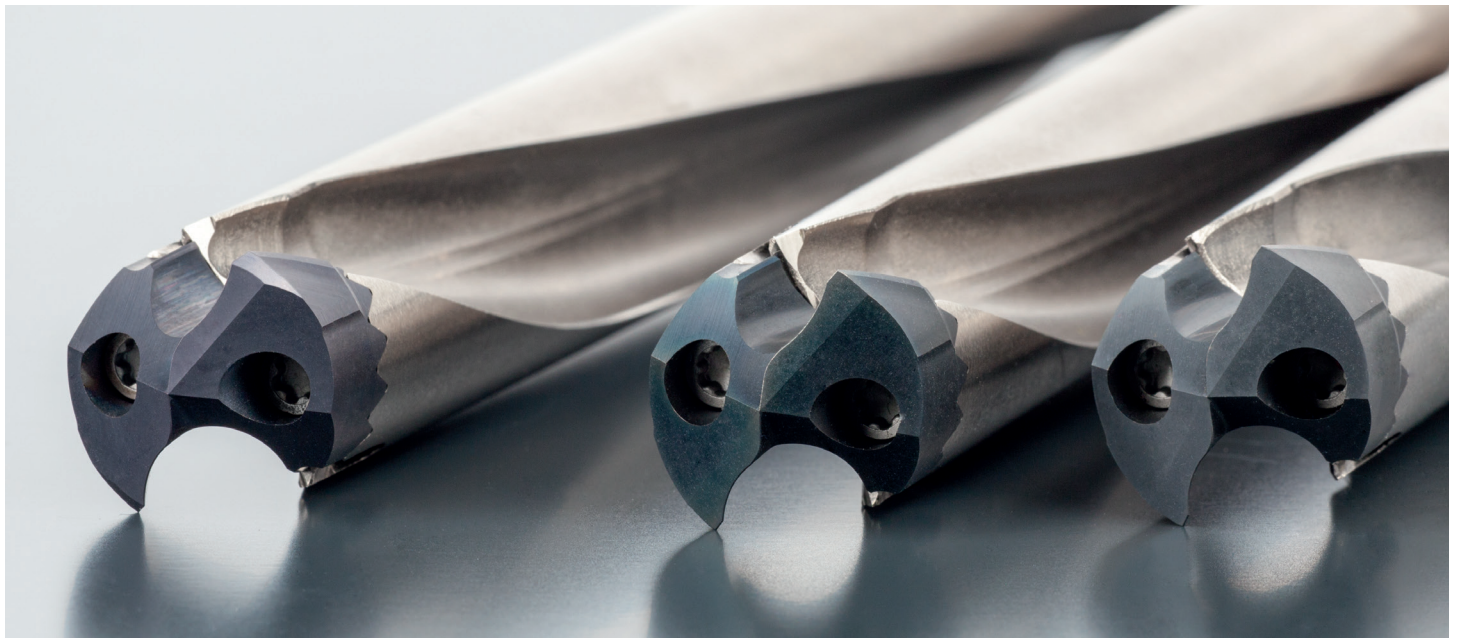
- A strong corner design on the R970 increases stability during drilling and reduces the forces encountered during breakthrough of the exit surface.
- This improves the quality of the exit surface and helps prevent “exit burst” which can occur when drilling cast iron and other granular materials.

POINT GEOMETRY

- 140 degree split point geometry provides good centering capabilities and low thrust forces when drilling most materials.

A COMPLETE RANGE

- Available in 1.5xD, 3xD, 5xD, 8xD and 12xD lengths incorporating coolant holes to improve cutting efficiency and chip evacuation, resulting in higher productivity.
- R950 & R970 - Fractional: 15/32 inch to 1-5/8 inch
- Metric: 12.00 mm to 42.00 mm
- R960 - Fractional: 15/32 inch to 1-11/64 inch
- Metric: 12.00 mm to 30.50 mm
- Best results are obtained using hydraulic holders. Can also be held in ER and Weldon type toolholders.



BODY LENGTHS

1.5xD



NEW

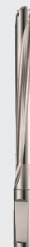
3xD



5xD



8xD



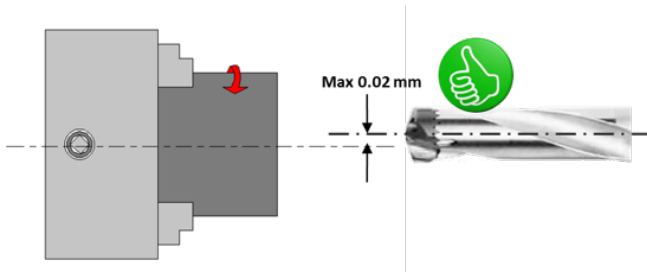
12xD



NEW

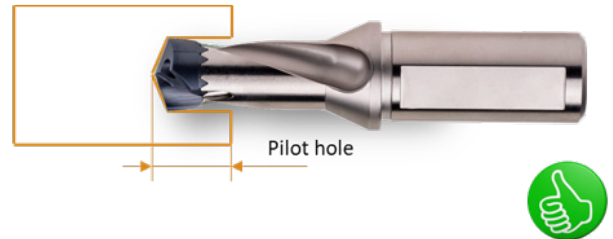
Always

Check the alignment of the drill (lathe applications)

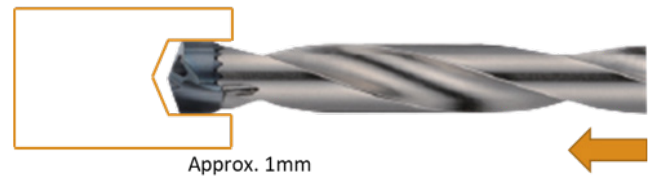


Apply

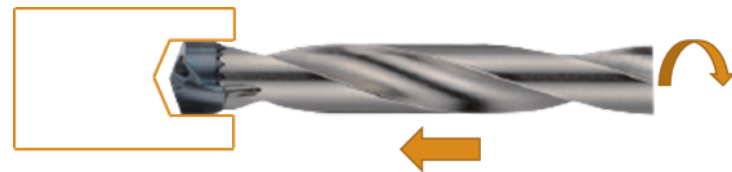
Special programming for 8 and 12xD drilling



Drill a pilot hole (1.5-3xD) with the same HYDRA head diameter (if needed check the runout of the drill max. $\pm 0.05\text{mm}$)



Enter the pilot hole with the 12xD body running a maximum of 500 rpm, up to 1mm above the depth drilled with the pre-drill.



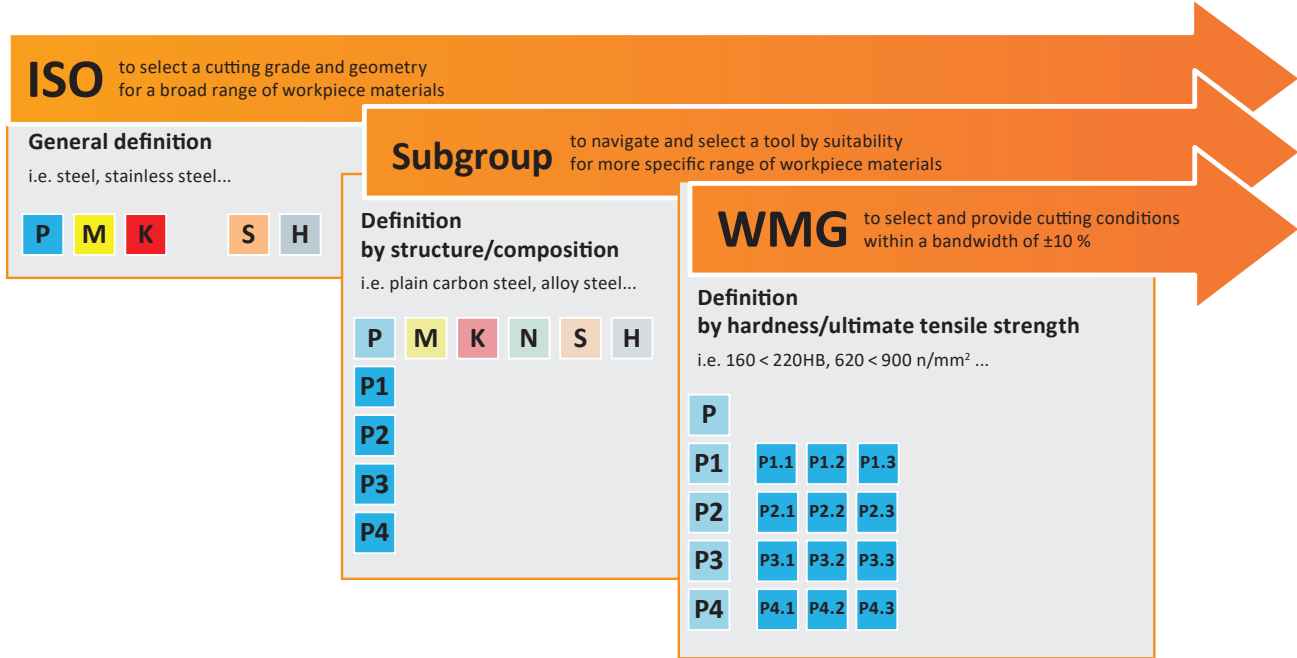
Start coolant and increase the rotational speed up to the recommended rpm. **Note: Apply a short dwell time... don't start the feed before recommended rpm is reached.** Drill without pecking up to the required depth.



When the required depth is reached, retract the drill by 0.1 to 0.5mm and reduce to 500 rpm followed by a complete retraction with normal feed.

Note: retracting the drill with a higher spindle speed may cause shoulder damage by runout or destroy the hole surface and tolerance.

WORKPIECE MATERIAL GROUPS (WMG)



ABOUT DORMER PRAMET'S WORKPIECE MATERIAL CLASSIFICATION

Workpiece material groups ("WMG") are used to support easy and reliable selection of the right cutting tool and starting values for machining conditions in particular applications.

Dormer Pramet classifies workpiece materials into six different colored groups;

- **Blue:** Steel and cast steel (P-group)
- **Yellow:** Stainless steel (M-group)
- **Red:** Cast iron (K-group)
- **Green:** Non-ferrous metals (N-group)
- **Orange:** High-temperature alloys (S-group)
- **Grey:** Hardened materials (H-group)

Each of these are divided into subgroups based on their structure and/or composition. For example, P-group steel and cast steel is split into four subgroups, namely;

- P1 – Free machining steel
- P2 – Plain carbon steel
- P3 – Alloy steel
- P4 – Tool steel

A final division includes material properties, such as hardness and ultimate tensile strength. This is to provide our customers with a complete tool recommendation, including starting values for cutting speed and feed.

The table on the next page includes a description of each workpiece material group, as well as examples of commonly used designations.

HOW TO USE THE WMG CHART

To find speeds and feeds:

- Select the product you want on the product page in our catalog or brochure
- Find the appropriate ISO work material group (WMG) at the top of the page
 - ≥ This will let you know if the tool is suitable for your operation and provides the speed (SFM) and alpha character for feed rate (IPR)
- Use the corresponding IPR alpha code to find your cutting feed rate (IPR) in the chart on page 6.



ISO	WMG (Workpiece Material Groups)		Hardness HB or HRC	Ultimate tensile strength Mpa	Examples of material (AISI-SAE, ASTM, UNS)	Old Dormer AMG	Old Pramet ISO			
P	P1	P1.1	Free machining steel sulphurized	< 240 HB	≤ 760	1108, 1109,1113, 1117, 1118, 1132, 1137, 1139, 1140, 1141...	1.1	P1		
		P1.2	(carbon steels with increased machinability)	sulphurized and phosphorized	< 180 HB	≤ 620	1211, 1212, 1213, 1215...	1.1	P1	
		P1.3		sulphurized/phosphorized and leaded	< 180 HB	≤ 550	12L13, 12L14, 12L15...	1.1	P1	
	P2	P2.1	Plain carbon steel (steels comprised of mainly iron and carbon)	containing <0.25%C	< 180 HB	≤ 620	1005, 1006, 1008, 1012, 1013, 1513, 1015, 1020, 1022, 1025, 1024, 1025	1.2	P2	
		P2.2		containing <0.55%C	< 240 HB	≤ 830	1026, 1526, 1030, 1035, 1536, 1040, 1541, 1042, 1045, 1548, 1050, 1055	1.3	P2	
		P2.3		containing >0.55%C	< 300 HB	≤ 1030	1059, 1060, 1561, 1064, 1565, 1065, 1070, 1074, 1078, 1080, 1086, 1090	1.5	P3	
	P3	P3.1	Alloy steel (carbon steels with an alloying content ≤ 10%)	annealed	< 180 HB	≤ 620	1330 -1345... A2317, A2515... 3140... 4023 - 4047... 4118, 4130 - 4137, 4140 - 4147, 4150, 4161... 4320, 4340... 4419, 4422, 4427... 4615 - 4626...	1.4	P3	
		P3.2		hardened and tempered	> 620 ≤ 900		4718, 4720... 4815 - 4820... E50100	1.4	P3	
		P3.3			> 900 ≤ 1240			1.5	P4	
	P4	P4.1	Tool steel (special alloy steel for tools, dies and molds)	annealed	< 26 HRC	≤ 900	A-2, D4, F-1, H-13, P-2...	1.4	P3	
P4.2		hardened and tempered		26 - 39 HRC	> 900 ≤ 1240	1.1520, 1.1645, 1.2008, 1.2319, 1.2378...	1.5	P4		
P4.3				39 - 45 HRC	> 1250 ≤ 1450	100CrMo5, 38CrCoWV18-17-17, 40CrMoS4, X40CrMoV5-1	1.6	P1		
M	M1	M1.1	Ferritic stainless steel (straight chromium non-hardenable alloys)	< 160 HB	≤ 520	405, 409, 429, 430, 430F, 434, 436, 439, 441, 442, 443, 444, 446	2.1	M1		
		M1.2		160 - 220 HB	> 520 ≤ 700	1.4516, 1.4002, 1.4589, 1.4595, 1.4017, 1.4590, 1.4749, 1.4713, 1.4724	2.1	M1		
	M2	M2.1	Martensitic stainless steel (straight chromium hardenable alloys)	annealed	< 200 HB	≤ 670	403, 410, 420, 422, 455, 490 1.4000, 1.4021, 1.4024, 1.4028, 1.4031, 1.4034, 1.4110, 1.4122, 1.4313, 1.4418, 1.4419, 1.4422, 1.4423, 1.4592, 1.4762	2.3	M2	
		M2.2		quenched and tempered	200 - 280 HB	> 670 ≤ 950		2.3	M2	
		M2.3		precipitation-hardened	280 - 380 HB	> 950 ≤ 1300		2.4	M2	
	M3	M3.1	Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys)	< 200 HB	≤ 750	201, 202, 204, 205, 301, 3012, 303, 304, 305, 308, 316, 317, 321, 347	2.2	M3		
		M3.2		200 - 260 HB	> 750 ≤ 870	201L, 301L, 303Se, 304H, 304L, 304LN, 309Cu, 316Ti, 317LMN, 347H	2.2	M3		
		M3.3		260 - 300 HB	> 870 ≤ 1040	1.4308, 1.4301, 1.4305, 1.4311, 1.4552, 1.4401, 1.4571, 1.4878, 1.4961	2.2	M3		
	M4	M4.1	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel	< 300 HB	≤ 990	310MoLN, 314, 904L, 330, 532304, 1.4362, 1.4462, 1.4854, 1.4529	2.3	M4		
		M4.2		Precipitation hardening austenitic stainless steel	300 - 380 HB	≤ 1320	630, 632, 635, PH13-8Mo, 15-5PH, PH15-7Mo, S15500, S17400	2.4	M4	
K	K1	K1.1	Gray iron (ASTM A48) or Automotive Gray iron (ASTM A159)	ferritic or ferritic-pearlitic	< 180 HB	≤ 190	GG10, GG15, G1800, ASTM Grades 20 and 25	3.1	K1	
		K1.2		ferritic-pearlitic or pearlitic	180 - 240 HB	> 190 ≤ 310	GG20, GG25, G2500, G3000, A48 Class 25 and 30	3.2	K1	
		K1.3		pearlitic	240 - 280 HB	> 310 ≤ 390	GG30, GG35, G3500, G4000, A48 Class 50	3.2	K1	
	K2	K2.1	Malleable iron (ASTM A602)	ferritic	< 160 HB	≤ 400	GTS-35-10, GTW-35-04, GTW-S-38-12, GTW-40-05, A47 grade 22010	3.3	K2	
		K2.2		ferritic or pearlitic	160 - 200 HB	> 400 ≤ 550	GTS-45-06, GTW45-07	3.3	K2	
		K2.3		pearlitic	200 - 240 HB	> 550 ≤ 660	GTS55-04, GTS-65-02, GTS-70-02, 5.4204, KTB 550-04	3.4	K2	
	K3	K3.1	Ductile iron (ASTM A536)	ferritic	< 180 HB	≤ 560	GGG-35;3, GGG-40, GGG-50, A439 types D-2C and D-3A	3.3	K3	
		K3.2		ferritic or pearlitic	180 - 220 HB	> 560 ≤ 680	GGG-60, GGG-70, A476, SA-476	3.3	K4	
		K3.3		pearlitic	220 - 260 HB	> 680 ≤ 800	GGG-80, A897 grade 1050/700/7, AD 1600, F34800	3.4	K4	
	K4	K4.1	Austenitic gray iron (ASTM A436)	< 180 HB	≤ 610	GGG & GGL-NiMn 13 7, GGG & GGL-NiCr 20 3, 0.6652, 0.7652				
K4.2		Austenitic ductile iron (ASTM A439 or ASTM A571)		< 240 HB	> 610 ≤ 840	GGL-NiSiCr 30 5 5, GGG-NiSiCr 30 5 5, 0.6680, 0.7680				
K4.3		Austempered ductile iron (ASTM A897)		< 280 HB	> 840 ≤ 980	A897 GRADE 1, A897 GRADE 2, A897 GRADE 3...				
K4.4		(iron-carbon alloy castings with an ausferrite microstructure)		280 - 320 HB	> 980 ≤ 1130	EN-GJS-800-8, EN-GJS-800-10, EN-GJS-900-8, EN-GJS-1050-6, EN-GJS-1200-3				
K4.5				320 - 360 HB	> 1130 ≤ 1280					
K5	K5.1	Compacted graphite iron CGI (ASTM A842)	ferritic	< 180 HB	A842-300, 5.2100, 5.2200, EN-GJV-300, EN-GJV-350					
	K5.2		ferritic or pearlitic	180 - 220 HB	A842-300, 5.2100, EN-GJV-300, EN-GJV-350, -400, -450					
	K5.3		pearlitic	220 - 260 HB	EN-GJV-400, EN-GJV-450, EN-GJV-500					
N	N1	N1.1	Commercially pure wrought aluminum	< 60 HB	≤ 240	A199.8, A199.0Cu, AA1050, AA1100, AA1175, 3.0255, 3.0275, 3.0205	7.1	N1		
		N1.2		Wrought aluminum alloys	half hard tempered	60 - 100 HB	> 240 ≤ 400	AlCu4MgSi, AlMn1Mg1, AA2017, AA3003, AA4043, 3.1325, 3.1355	7.1	N1
		N1.3		full hard tempered	100 - 150 HB	> 400 ≤ 590	AlMg1SiPb, AlZn6CuMgZn, AlZn5.5MgCu, AA6262, AA7050, 3.0517	7.2	N2	
	N2	N2.1	Cast aluminum alloys	< 75 HB	≤ 240	G-AlCu4S, GAlSi5Cu1Mg, G-AlSi7Mg, A295.0, A355.0, LM11, LM21, LM25	7.3	N1		
		N2.2		75 - 90 HB	> 240 ≤ 270	G-AlSi5Cu1Mg, G-AlSi7Mg, A242.0, A319.0, LM14, LM4, LM16	7.3	N1		
		N2.3		90 - 140 HB	> 270 ≤ 440	G-AlCu4MgTi, G-AlCu4Ni2Mg2, A204.0, A771.0, LM30, LM24, ELT-204	7.3	N2		
	N3	N3.1	Free-cutting copper-alloys materials with excellent machining properties			CuPb1P, CuSp, CuZn39Pb3, 2.1498, 2.1546, 2.0780, C18700, C79800, C34200	6.3	N3		
		N3.2		Short-chip copper-alloys with good to moderate machining properties			CuNi3Si, CuZn40, CuZn40Al2, 2.0857, 2.0360, 2.0550, CZ109, CZ135, C28000	6.2	N3	
		N3.3			Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties			Cu-OFe, SF-Cu, CuNi2Be, 2.0070, 2.0090, 2.0855, C103, C10100, C12200	6.1	N4
	N4	N4.1	Thermoplastic polymers			Polyolefine, PE, PP, Styrol, PS, SAN, ABS, PMMA, Acryl, PC	8.1			
N4.2		Thermosetting polymers				Aramid, Epoxy, Fluoropolymer, Melamine, Mehacrylate, Phenolic, Polyester	8.2			
N4.3				Reinforced polymers or composites			GFK, CFK, GMT, LFT, SMC, Kevlar, Honeycomb, Organo	8.3		
N5	N5.1	Graphite			Extruded, Compression Molded and Isostatically Pressed	10.1				
S	S1	S1.1	Titanium or titanium alloys	< 200 HB	≤ 660	R50250, 3.7025, T35, 2TA1, R50400, 3.7035, 2TA2,	4.1	S1		
		S1.2		200 - 280 HB	> 660 ≤ 950	TA6V, Ti-6Al-4V, Ti 10.2.3, Ti5553	4.2	S1		
		S1.3		280 - 360 HB	> 950 ≤ 1200		4.3	S1		
	S2	S2.1	Fe-based high-temperature alloys	< 200 HB	≤ 690	A-286, Discaloy, Haynes 556, Inconel 909, Greek Ascolloy		S2		
		S2.2		200 - 280 HB	> 690 ≤ 970			S2		
	S3	S3.1	Ni-based high-temperature alloys	< 280 HB	≤ 940	Inconel 718, 706 Waspalloy, Udimet 720, Inconel 625	5.2	S3		
		S3.2		280 - 360 HB	> 940 ≤ 1200		5.3	S3		
	S4	S4.1	Co-based high-temperature alloys	< 240 HB	≤ 800	Haynes 25, Stellite 21, 31		S4		
S4.2		240 - 320 HB		> 800 ≤ 1070			S4			
H	H1	H1.1	Chilled cast iron	< 440 HB		GHK-CrNi 350, GHK-470, GHK-475				
		H1.2		Hardened cast iron	< 55 HRC		GHK-500, GHK-530, EN-GJN-HV550, EN-GJN-HV600, EN-GJN-HV600(XCr11), EN-GJN-HV600(XCr14), EN-GJN-NH600(XCr18)		H2	
	H2	H2.1	Hardened steel <55HRC	< 51 HRC		1026, 1526... 1059, 1060... 1090, 1330... A2317, A2515... 3140...	1.7	H3		
		H2.2		> 55 HRC		4023... 4118, 4130... E50100... 50B40, 50B44... 5120, 5130... A-2, D-4, F-1, H-13, P-2... 1.1520, 1.2319, 1.2378... 100CrMo5, 38CrCoWV18-17-17, 40CrMoS4, X40CrMoV5-1...	1.7	H3		
	H3	H3.1	Hardened steel >55HRC	55 - 59 HRC			1.8	H4		
		H3.2		> 59 HRC			1.8	H4		

HOW TO USE THIS CHART:

- 1) Determine your ISO Workpiece Material from the Workpiece Material Groups (WMG) on the previous page
- 2) Use the icons on the next page to find Product Features.
- 3) Find the Surface Feet Per Minute (SFM) and Alpha Code at the top of the Hydra Drill Head pages.

Example: 361 W

361 = SFM

W = Alpha Code used to find your Feed Rate (IPR)

- 4) To find Cutting Feed Rate, refer to chart below.



HM



\emptyset (D)	0.5000 <small>[decimal inch]</small>	0.5938 <small>[decimal inch]</small>	0.6250 <small>[decimal inch]</small>	0.7500 <small>[decimal inch]</small>	1.0000 <small>[decimal inch]</small>	1.1875 <small>[decimal inch]</small>	1.500 <small>[decimal inch]</small>
S	0.004	0.005	0.005	0.006	0.007	0.007	0.009
T	0.005	0.006	0.007	0.007	0.008	0.009	0.010
U	0.008	0.009	0.009	0.007	0.011	0.012	0.014
V	0.011	0.012	0.013	0.013	0.016	0.017	0.020
W	0.015	0.016	0.017	0.018	0.019	0.019	0.020

inch/rev. \pm 25%

HYDRA

HIGH PERFORMANCE REPLACEABLE HEAD DRILLS

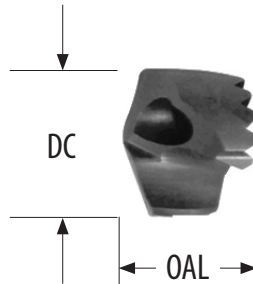
		R950					R960					R970														
Head Range	Inch	15/32 - 1-3/16	15/32 - 1-5/8	15/32 - 1-5/8	35/64 - 1-5/8	35/64 - 1-1/64	15/32 - 1-3/16	15/32 - 1-3/16	15/32 - 1-3/16	35/64 - 1-3/16	35/64 - 1-1/64	15/32 - 1-3/16	15/32 - 1-5/8	15/32 - 1-5/8	35/64 - 1-5/8	35/64 - 1-1/64										
	Metric	12.00 - 30.50	12.00 - 42.00	12.00 - 42.00	13.50 - 42.00	13.50 - 25.65	12.00 - 30.50	12.00 - 30.50	12.00 - 30.50	13.50 - 30.50	13.50 - 25.65	12.00 - 30.50	12.00 - 42.00	12.00 - 42.00	13.50 - 42.00	13.50 - 25.65										
		H851	H853	H855	H858	H8512	H851	H853	H855	H858	H8512	H851	H853	H855	H858	H8512										
		HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS										
		1.5XD	3XD	5XD	8XD	12XD	1.5XD	3XD	5XD	8XD	12XD	1.5XD	3XD	5XD	8XD	12XD										
Body Range	Inch	15/32 - 1-3/16	15/32 - 1-5/8	15/32 - 1-5/8	35/64 - 1-5/8	35/64 - 1-1/64	15/32 - 1-3/16	15/32 - 1-3/16	15/32 - 1-3/16	35/64 - 1-3/16	35/64 - 1-1/64	15/32 - 1-3/16	15/32 - 1-5/8	15/32 - 1-5/8	35/64 - 1-5/8	35/64 - 1-1/64										
	Metric	12.0 - 30.5	12.0 - 42.0	12.0 - 42.0	12.0 - 42.0	14.0 - 25.0	12.0 - 30.5	12.0 - 42.0	12.0 - 42.0	12.0 - 42.0	14.0 - 25.0	12.0 - 30.5	12.0 - 42.0	12.0 - 42.0	12.0 - 42.0	14.0 - 25.0										
		NEW				NEW	NEW				NEW	NEW				NEW										
ISO 513		17 - 19	20 - 23	24 - 27	28 - 30	31 - 32	17 - 19	20 - 23	24 - 27	28 - 30	31 - 32	17 - 19	20 - 23	24 - 27	28 - 30	31 - 32										
P	P1	■	■	■	■	■	■	■	■	■	■															
	P2	■	■	■	■	■	■	■	■	■	■															
	P3	■	■	■	■	■	■	■	■	■	■															
	P4	■	■	■	■	■	■	■	■	■	■															
M	M1						■	■	■	■	■															
	M2						■	■	■	■	■															
	M3						■	■	■	■	■															
	M4						■	■	■	■	■															
K	K1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
	K2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
	K3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
	K4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
	K5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
N	N1																									
	N2																									
	N3																									
	N4																									
S	S1						■	■	■	■	■															
	S2						■	■	■	■	■															
	S3						■	■	■	■	■															
	S4						■	■	■	■	■															
H	H1																									
	H2																									
	H3																									
	H4																									

■ Main application ■ Secondary application *Fractional picture shown






R950 Hydra Drill Head

R950	P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	P4.3	M2.3	M4.2	K2.1	K2.2	K2.3	K3.1	K3.2
	436W	486W	505W	374W	328W	289W	410W	331W	279W	246W	207W	171T	135T	115T	354V	289V	230V	315V	240V
	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3										
	194V	292V	220V	161V	138V	115V	328V	249V	190V										

Replaceable heads in tough micro-grain carbide for quick and easy tool changes. High productivity in a wide range of steels and harder materials. Superior hole accuracy and precise repeatable tolerances. Special Tiphon coating for longer tool life.



R950

15/32 – 1.5/8

DC h ₁ [inch]	DC h ₂ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R950
15/32	11.91	0.4688	9.1	1	0010860
	12.00	0.4724	9.1	1	0010877
	12.10	0.4764	9.1	1	0037904
	12.20	0.4803	9.1	1	0037911
31/64	12.30	0.4844	9.1	1	0010884
	12.50	0.4921	9.4	1	0010907
	12.60	0.4961	9.4	1	0037928
1/2	12.70	0.5000	9.4	1	0010914
	12.80	0.5039	9.4	1	0037935
	12.90	0.5079	9.4	1	0037942
	13.00	0.5118	9.7	1	0010921
33/64	13.10	0.5156	9.7	1	0010938
	13.20	0.5197	9.7	1	0037959
17/32	13.49	0.5313	9.7	1	0010945
	13.50	0.5315	10.3	1	0010952
	13.60	0.5354	10.3	1	0037966
	13.70	0.5394	10.3	1	0037973
	13.80	0.5433	10.3	1	0037980
35/64	13.89	0.5469	10.3	1	0010969
	14.00	0.5512	10.3	1	0010983
	14.10	0.5551	10.3	1	0037997
	14.20	0.5591	10.3	1	0038000
9/16	14.29	0.5625	10.3	1	0011003
	14.50	0.5709	10.3	1	0011010
	14.60	0.5748	11.0	1	0038017
37/64	14.68	0.5781	11.0	1	0011140
	14.70	0.5787	11.0	1	0038024
	14.80	0.5827	11.0	1	0038031
	15.00	0.5906	11.0	1	0011201
19/32	15.08	0.5938	11.0	1	0011218
	15.10	0.5945	11.0	1	0038048
	15.20	0.5984	11.0	1	0038055
	15.24	0.6000	11.0	1	0032268

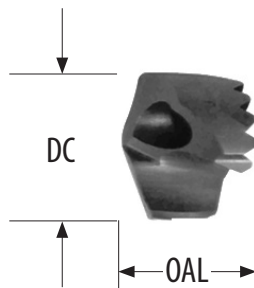
DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R950
39/64	15.48	0.6094	11.0	1	0011232
	15.50	0.6102	11.0	1	0011362
	15.60	0.6142	11.6	1	0038062
5/8	15.70	0.6181	11.6	1	0038079
	15.88	0.6250	11.6	1	0011379
	16.00	0.6299	11.6	1	0011386
	16.08	0.6331	11.6	1	0032275
	16.10	0.6339	11.6	1	0038086
41/64	16.20	0.6378	11.6	1	0038093
	16.27	0.6406	11.6	1	0011393
	16.30	0.6417	11.6	1	0032282
	16.50	0.6496	11.6	1	0011409
21/32	16.60	0.6535	12.2	1	0038109
	16.67	0.6563	12.2	1	0012161
	16.70	0.6575	12.2	1	0038116
43/64	17.00	0.6693	12.2	1	0012185
	17.07	0.6719	12.2	1	0012215
	17.10	0.6732	12.2	1	0038123
11/16	17.20	0.6772	12.2	1	0038130
	17.46	0.6875	12.2	1	0012239
	17.50	0.6890	12.2	1	0012253
	17.60	0.6929	12.9	1	0032299
45/64	17.70	0.6969	12.9	1	0038147
	17.86	0.7031	12.9	1	0012260
	18.00	0.7087	12.9	1	0012277
	18.10	0.7126	12.9	1	0038154
23/32	18.20	0.7165	12.9	1	0038161
	18.26	0.7188	12.9	1	0012284
	18.50	0.7283	12.9	1	0012307
47/64	18.60	0.7323	13.5	1	0038178
	18.65	0.7344	13.5	1	0012321
	18.70	0.7362	13.5	1	0038185
	18.90	0.7441	13.5	1	0038192
	19.00	0.7480	13.5	1	0012338
3/4	19.05	0.7500	13.5	1	0012345
	19.10	0.7520	13.5	1	0038208
	19.20	0.7559	13.5	1	0038215
	19.25	0.7579	13.5	1	0032305
	19.30	0.7598	13.5	1	0032312
	19.35	0.7618	13.5	1	0032329
49/64	19.45	0.7656	13.5	1	0012376
	19.50	0.7677	13.5	1	0012383
	19.60	0.7717	14.1	1	0038222
	19.70	0.7756	14.1	1	0038239
25/32	19.84	0.7813	14.1	1	0012406
	20.00	0.7874	14.1	1	0012413
51/64	20.24	0.7969	14.1	1	0012437
	20.50	0.8071	14.1	1	0012451
13/16	20.64	0.8125	14.8	1	0012468
	21.00	0.8268	14.8	1	0012475
53/64	21.03	0.8281	14.8	1	0012536
27/32	21.43	0.8438	14.8	1	0012550
	21.50	0.8465	14.8	1	0012574
55/64	21.83	0.8594	15.0	1	0012604
	22.00	0.8661	15.0	1	0012628
7/8	22.22	0.8750	15.0	1	0012635
	22.50	0.8858	15.0	1	0032336
57/64	22.62	0.8906	15.0	1	0012642
	22.70	0.8937	15.0	1	0038246
	23.00	0.9055	15.1	1	0012666
29/32	23.02	0.9063	15.1	1	0012673
59/64	23.42	0.9219	15.1	1	0012680
	23.50	0.9252	15.1	1	0038253

DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R950
15/16	23.81	0.9375	15.4	1	0012703
	24.00	0.9449	15.4	1	0012727
61/64	24.21	0.9531	15.4	1	0012741
	24.50	0.9646	15.4	1	0038260
31/32	24.61	0.9688	15.4	1	0012772
	25.00	0.9844	15.8	1	0012819
63/64	25.00	0.9844	15.8	1	0012826
1"	25.40	1.0000	15.8	1	0012833
	25.50	1.0039	15.8	1	0038277
	25.65	1.0098	15.8	1	0032343
1.1/64	25.80	1.0156	15.8	1	0012840
	26.00	1.0236	16.4	1	0013090
1.1/32	26.19	1.0313	16.4	1	0013120
	26.50	1.0433	16.4	1	0038284
1.3/64	26.59	1.0469	16.4	1	0013229
1.1/16	26.99	1.0625	17.1	1	0013243
	27.00	1.0630	17.1	1	0013267
1.5/64	27.38	1.0781	17.1	1	0013274
	27.50	1.0827	17.1	1	0038291
1.3/32	27.78	1.0938	17.1	1	0013281
	28.00	1.1024	17.7	1	0013304
1.7/64	28.18	1.1094	17.7	1	0013311
	28.50	1.1220	17.7	1	0038307
1.1/8	28.58	1.1250	17.7	1	0013328
1.9/64	28.97	1.1406	18.3	1	0013342
	29.00	1.1417	18.3	1	0013366
1.5/32	29.37	1.1563	18.3	1	0013380
	29.50	1.1614	18.3	1	0038314
1.11/64	29.77	1.1719	18.3	1	0013427
	30.00	1.1811	19.0	1	0013434
1.3/16	30.16	1.1875	19.0	1	0013441
	30.50	1.2008	19.0	1	0013465
1.7/32	30.96	1.2188	21.0	1	46104481
	31.00	1.2205	21.0	1	46104482
1.1/4	31.75	1.2500	21.0	1	46104483
	32.00	1.2598	21.0	1	46104484
	32.50	1.2795	21.0	1	46104485
1.19/64	32.94	1.2969	21.0	1	46104486
	33.00	1.2992	21.0	1	46104487
	33.50	1.3189	21.0	1	46104488
1.11/32	34.00	1.3386	23.0	1	46104489
	34.13	1.3438	23.0	1	46104530
	34.50	1.3583	23.0	1	46104531
1.3/8	34.93	1.3750	23.0	1	46104532
	35.00	1.3780	23.0	1	46104533
	36.00	1.4173	23.0	1	46104534
1.27/64	36.12	1.4219	23.0	1	46104535
	36.50	1.4370	23.0	1	46104536
	37.00	1.4567	25.0	1	46104537
1.15/32	37.31	1.4688	25.0	1	46104538
	37.50	1.4764	25.0	1	46104539
	38.00	1.4961	25.0	1	46104540
1.1/2	38.10	1.5000	25.0	1	46104541
	38.50	1.5157	25.0	1	46104542
1.17/32	38.89	1.5313	25.0	1	46104543
	39.00	1.5354	25.0	1	46104544
	39.50	1.5551	25.0	1	46104545
1.9/16	39.69	1.5625	27.0	1	46104546
	40.00	1.5748	27.0	1	46104547
	41.00	1.6142	27.0	1	46104548
1.5/8	41.28	1.6250	27.0	1	46104549
	42.00	1.6535	27.0	1	46104550






R960 Hydra Drill Head

R960	P1.1	P1.2	P1.3	P2.1	M1.1	M1.2	M2.1	M2.2	M2.3	M3.1	M3.2	M3.3	M4.1	M4.2	K1.1	K1.2	K1.3	K2.1	K2.2
	436W	486W	505W	374W	269V	230V	240V	197V	164V	190T	164T	148T	131T	112T	394V	292V	220V	354V	289V
	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	S1.1	S1.2	S1.3	S2.1	S2.2	S3.1	S3.2
	230V	315V	240V	194V	292V	220V	161V	138V	115V	328V	249V	190V	148T	115T	98S	131S	115S	98S	82S
	S4.1	S4.2																	
	75S	66S																	

Replaceable heads in tough micro-grain carbide for quick and easy tool changes. High productivity across a wide range of stainless steel, cast iron & heat resistant materials. Superior hole accuracy and precise repeatable tolerances. Special Ti-phon coating for longer tool life.



R960

15/32 – 1.3/16

DC h ₁ [inch]	DC h ₂ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R960
15/32	11.91	0.4688	9.1	1	0013472
	12.00	0.4724	9.1	1	0013489
	12.10	0.4764	9.1	1	0038338
	12.20	0.4803	9.1	1	0038376
31/64	12.30	0.4844	9.1	1	0013496
	12.50	0.4921	9.4	1	0013519
	12.60	0.4961	9.4	1	0038413
1/2	12.70	0.5000	9.4	1	0013526
	12.80	0.5039	9.4	1	0038437
	12.90	0.5079	9.4	1	0038451
	13.00	0.5118	9.7	1	0013533
33/64	13.10	0.5156	9.7	1	0013540
	13.20	0.5197	9.7	1	0038468
17/32	13.49	0.5313	9.7	1	0013557
	13.50	0.5315	10.3	1	0016022
	13.60	0.5354	10.3	1	0038499
	13.70	0.5394	10.3	1	0038529
	13.80	0.5433	10.3	1	0038543
35/64	13.89	0.5469	10.3	1	0016039
	14.00	0.5512	10.3	1	0016046
	14.10	0.5551	10.3	1	0038567
	14.20	0.5591	10.3	1	0038574
9/16	14.29	0.5625	10.3	1	0016053
	14.50	0.5709	10.3	1	0016060
	14.60	0.5748	11.0	1	0038581
37/64	14.68	0.5781	11.0	1	0016077
	14.70	0.5787	11.0	1	0039601
	14.80	0.5827	11.0	1	0039618
	15.00	0.5906	11.0	1	0016084

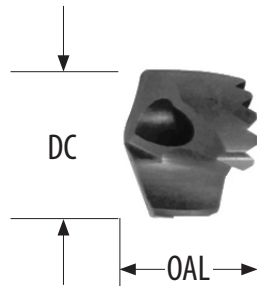
DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R960
19/32	15.08	0.5938	11.0	1	0016091
	15.10	0.5945	11.0	1	0039625
	15.20	0.5984	11.0	1	0039632
39/64	15.24	0.6000	11.0	1	0032350
	15.48	0.6094	11.0	1	0016107
	15.50	0.6102	11.0	1	0016114
	15.60	0.6142	11.6	1	0039649
5/8	15.70	0.6181	11.6	1	0039656
	15.88	0.6250	11.6	1	0016121
	16.00	0.6299	11.6	1	0016138
	16.08	0.6331	11.6	1	0032367
41/64	16.10	0.6339	11.6	1	0039663
	16.20	0.6378	11.6	1	0039670
	16.27	0.6406	11.6	1	0016145
	16.30	0.6417	11.6	1	0032374
	16.50	0.6496	11.6	1	0016152
21/32	16.60	0.6535	12.2	1	0039687
	16.67	0.6563	12.2	1	0016169
	16.70	0.6575	12.2	1	0039694
	17.00	0.6693	12.2	1	0016176
43/64	17.07	0.6719	12.2	1	0016183
	17.10	0.6732	12.2	1	0039700
	17.20	0.6772	12.2	1	0039717
11/16	17.46	0.6875	12.2	1	0016190
	17.50	0.6890	12.2	1	0016503
	17.60	0.6929	12.9	1	0032381
	17.70	0.6969	12.9	1	0039724
45/64	17.86	0.7031	12.9	1	0016640
	18.00	0.7087	12.9	1	0016664
	18.10	0.7126	12.9	1	0039731
	18.20	0.7165	12.9	1	0039748
23/32	18.26	0.7188	12.9	1	0016671
	18.50	0.7283	12.9	1	0016688
	18.60	0.7323	13.5	1	0039755
47/64	18.65	0.7344	13.5	1	0016695
	18.70	0.7362	13.5	1	0039762
	18.90	0.7441	13.5	1	0039779
	19.00	0.7480	13.5	1	0016817
3/4	19.05	0.7500	13.5	1	0016879
	19.10	0.7520	13.5	1	0039786
	19.20	0.7559	13.5	1	0039793
	19.25	0.7579	13.5	1	0032398
	19.30	0.7598	13.5	1	0032404
	19.35	0.7618	13.5	1	0032411
49/64	19.45	0.7656	13.5	1	0016886
	19.50	0.7677	13.5	1	0016947
	19.60	0.7717	14.1	1	0039809
	19.70	0.7756	14.1	1	0039816
25/32	19.84	0.7813	14.1	1	0016954
	20.00	0.7874	14.1	1	0017111
51/64	20.24	0.7969	14.1	1	0017128
	20.50	0.8071	14.1	1	0017159
13/16	20.64	0.8125	14.8	1	0017197
	21.00	0.8268	14.8	1	0017166
53/64	21.03	0.8281	14.8	1	0017203
27/32	21.43	0.8438	14.8	1	0017227
	21.50	0.8465	14.8	1	0017234
55/64	21.83	0.8594	15.0	1	0017241
	22.00	0.8661	15.0	1	0017258
7/8	22.22	0.8750	15.0	1	0017371
	22.50	0.8858	15.0	1	0032428
57/64	22.62	0.8906	15.0	1	0017401
	22.70	0.8937	15.0	1	0039823
	23.00	0.9055	15.1	1	0017425
29/32	23.02	0.9063	15.1	1	0017432

DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R960
59/64	23.42	0.9219	15.1	1	0017456
	23.50	0.9252	15.1	1	0039830
15/16	23.81	0.9375	15.4	1	0017562
	24.00	0.9449	15.4	1	0017579
61/64	24.21	0.9531	15.4	1	0017586
	24.50	0.9646	15.4	1	0039847
31/32	24.61	0.9688	15.4	1	0017593
	25.00	0.9844	15.8	1	0017722
63/64	25.00	0.9844	15.8	1	0017746
1"	25.40	1.0000	15.8	1	0017753
	25.50	1.0039	15.8	1	0039854
	25.65	1.0098	15.8	1	0032435
1.1/64	25.80	1.0156	15.8	1	0018958
	26.00	1.0236	16.4	1	0018965
1.1/32	26.19	1.0312	16.4	1	0018972
	26.50	1.0433	16.4	1	0039878
1.3/64	26.59	1.0469	16.4	1	0018989
1.1/16	26.99	1.0625	17.1	1	0018996
	27.00	1.0630	17.1	1	0019009
1.5/64	27.38	1.0781	17.1	1	0019016
	27.50	1.0827	17.1	1	0039885
1.3/32	27.78	1.0938	17.1	1	0019023
	28.00	1.1024	17.7	1	0019030
1.7/64	28.18	1.1094	17.7	1	0019047
	28.50	1.1220	17.7	1	0039892
1.1/8	28.58	1.1250	17.7	1	0019054
1.9/64	28.97	1.1406	18.3	1	0019061
	29.00	1.1417	18.3	1	0019078
1.5/32	29.37	1.1563	18.3	1	0019085
	29.50	1.1614	18.3	1	0039908
1.11/64	29.77	1.1719	18.3	1	0019092
	30.00	1.1811	19.0	1	0019108
1.3/16	30.16	1.1875	19.0	1	0019115
	30.50	1.2008	19.0	1	0019122



R970 Hydra Drill Head

R970	K1.1	K1.2	K1.3	K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3		
	■ 394V	■ 292V	■ 220V	■ 322V	■ 262V	■ 210V	■ 318V	■ 220V	■ 177V	■ 266V	■ 200V	■ 148V	■ 125V	■ 105V	■ 299V	■ 226V	■ 174V		



Replaceable heads in tough micro-grain carbide for quick and easy tool changes. Engineered for high productivity of cast iron materials. Superior hole accuracy and precise repeatable tolerances. Special Tiphon coating for longer tool life.



R970

HM

15/32 – 1.5/8

DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R970
15/32		0.4689	9.1	1	7332946
		12.0	0.4724	9.1	7332947
		12.1	0.4764	9.1	7332948
		12.2	0.4803	9.1	7332949
31/64		0.4844	9.1	1	7332980
		12.5	0.4921	9.4	7332981
		12.6	0.4961	9.4	7332982
1/2		0.5000	9.4	1	7332983
		12.8	0.5039	9.4	7332984
		12.9	0.5079	9.4	7332985
		13.0	0.5118	9.7	7332986
			0.5156	9.7	7332987
33/64		0.5197	9.7	1	7332988
			0.5313	9.7	7332989
17/32		0.5315	10.3	1	7332990
		13.6	0.5354	10.3	7332991
		13.7	0.5394	10.3	7332992
		13.8	0.5433	10.3	7332993
			0.5469	10.3	7332994
35/64		0.5512	10.3	1	7332995
		14.1	0.5551	10.3	7332996
		14.2	0.5591	10.3	7332997
			0.5625	10.3	7332998
9/16		0.5709	10.3	1	7332999
		14.6	0.5748	11.0	7333000
			0.5781	11.0	7333001
37/64		0.5787	11.0	1	7333002
		14.8	0.5827	11.0	7333003
		15.0	0.5906	11.0	7333004
			0.5938	11.0	7333005
19/32		0.5945	11.0	1	7333006
		15.2	0.5984	11.0	7333007
		15.24	0.6000	11.0	7333008
			0.6094	11.0	7333009
39/64		0.6102	11.6	1	7333010
		15.6	0.6142	11.6	7333011
		15.7	0.6181	11.6	7333012

DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R970
5/8		0.6250	11.6	1	7333013
	16.0	0.6299	11.6	1	7333014
	16.08	0.6331	11.6	1	7333015
	16.1	0.6339	11.6	1	7333016
	16.2	0.6378	11.6	1	7333017
41/64		0.6406	11.6	1	7333018
	16.3	0.6417	11.6	1	7333019
	16.5	0.6496	11.6	1	7333020
	16.6	0.6535	12.2	1	7333021
21/32		0.6563	12.2	1	7333022
	16.7	0.6575	12.2	1	7333023
	17.0	0.6693	12.2	1	7333024
43/64		0.6719	12.2	1	7333025
	17.1	0.6732	12.2	1	7333026
	17.2	0.6772	12.2	1	7333027
11/16		0.6875	12.2	1	7333028
	17.5	0.6890	12.2	1	7333029
	17.6	0.6929	12.9	1	7333030
	17.7	0.6969	12.9	1	7333031
45/64		0.7031	12.9	1	7333032
	18.0	0.7087	12.9	1	7333033
	18.1	0.7126	12.9	1	7333034
	18.2	0.7165	12.9	1	7333035
23/32		0.7188	12.9	1	7333036
	18.5	0.7283	12.9	1	7333037
	18.6	0.7323	13.5	1	7333038
47/64		0.7344	13.5	1	7333039
	18.7	0.7362	13.5	1	7333040
	18.9	0.7441	13.5	1	7333041
	19.0	0.7480	13.5	1	7333042
3/4		0.7500	13.5	1	7333043
	19.1	0.7520	13.5	1	7333044
	19.2	0.7559	13.5	1	7333045
	19.25	0.7579	13.5	1	7333046
	19.3	0.7598	13.5	1	7333047
	19.35	0.7618	13.5	1	7333048
49/64		0.7656	13.5	1	7333049
	19.5	0.7677	13.5	1	7333050
	19.6	0.7717	14.1	1	7333051
	19.7	0.7756	14.1	1	7333052
25/32		0.7813	14.1	1	7333053
	20.0	0.7874	14.1	1	7333054
51/64		0.7969	14.1	1	7333055
	20.5	0.8071	14.1	1	7333056
13/16		0.8125	14.8	1	7333057
	21.0	0.8268	14.8	1	7333058
53/64		0.8281	14.8	1	7333059
27/32		0.8438	14.8	1	7333060
	21.5	0.8465	14.8	1	7333061
55/64		0.8594	15.0	1	7333062
	22.0	0.8661	15.0	1	7333063
7/8		0.8750	15.0	1	7333064
	22.5	0.8858	15.0	1	7333065
57/64		0.8906	15.0	1	7333066
	22.7	0.8937	15.0	1	7333067
	23.0	0.9055	15.1	1	7333068
29/32		0.9063	15.1	1	7333069
59/64		0.9219	15.1	1	7333070
	23.5	0.9252	15.1	1	7333071
15/16		0.9375	15.4	1	7333072
	24.0	0.9449	15.4	1	7333073
61/64		0.9531	15.4	1	7333074
	24.5	0.9646	15.4	1	7333075
31/32		0.9688	15.4	1	7333076
	25.0	0.9843	15.8	1	7333077

DC h ₇ [inch]	DC h ₇ [mm]	DC [decimal inch]	OAL [mm]	Pack Qty	R970
63/64		0.9844	15.8	1	7333078
1		1.0000	15.8	1	7333079
	25.5	1.0039	15.8	1	7333080
	25.65	1.0098	15.8	1	7333081
1.1/64		1.0156	15.8	1	7333082
	26.0	1.0236	16.4	1	7333083
1.1/32		1.0313	16.4	1	7333084
	26.5	1.0433	16.4	1	7333085
1.3/64		1.0469	16.4	1	7333086
1.1/16		1.0625	17.1	1	7333087
	27.0	1.0630	17.1	1	7333088
1.5/64		1.0781	17.1	1	7333089
	27.5	1.0827	17.1	1	7333090
1.3/32		1.0938	17.1	1	7333091
	28.0	1.1024	17.7	1	7333092
1.7/64		1.1094	17.7	1	7333093
	28.5	1.1220	17.7	1	7333094
1.1/8		1.1250	17.7	1	7333095
1.9/64		1.1406	18.3	1	7333096
	29.0	1.1417	18.3	1	7333097
1.5/32		1.1563	18.3	1	7333098
	29.5	1.1614	18.3	1	7333099
1.11/64		1.1719	18.3	1	7333100
	30.0	1.1811	19.0	1	7333101
1.3/16		1.1875	19.0	1	7333102
	30.5	1.2008	19.0	1	7333103
1.7/32		1.2188	21.0	1	7333104
	31.0	1.2205	21.0	1	7333105
1.1/4		1.2500	21.0	1	7333106
	32.0	1.2598	21.0	1	7333107
	32.5	1.2795	21.0	1	7333108
1.19/64		1.2968	21.0	1	7333109
	33.0	1.2992	21.0	1	7333110
	33.5	1.3189	21.0	1	7333111
	34.0	1.3386	23.0	1	7333112
1.11/32		1.3438	23.0	1	7333113
	34.5	1.3583	23.0	1	7333114
1.3/8		1.3750	23.0	1	7333115
	35.0	1.3780	23.0	1	7333116
	36.0	1.4173	23.0	1	7333117
1.27/64		1.4219	23.0	1	7333118
	36.5	1.4370	23.0	1	7333119
	37.0	1.4567	25.0	1	7333120
1.15/32		1.4688	25.0	1	7333121
	37.5	1.4764	25.0	1	7333122
	38.0	1.4961	25.0	1	7333123
1.1/2		1.5000	25.0	1	7333124
	38.5	1.5157	25.0	1	7333125
1.17/32		1.5313	25.0	1	7333126
	39.0	1.5354	25.0	1	7333127
	39.5	1.5551	25.0	1	7333128
1.9/16		1.5625	27.0	1	7333129
	40.0	1.5748	27.0	1	7333130
	41.0	1.6142	27.0	1	7333131
1.5/8		1.6250	27.0	1	7333132
	42.0	1.6535	27.0	1	7333133

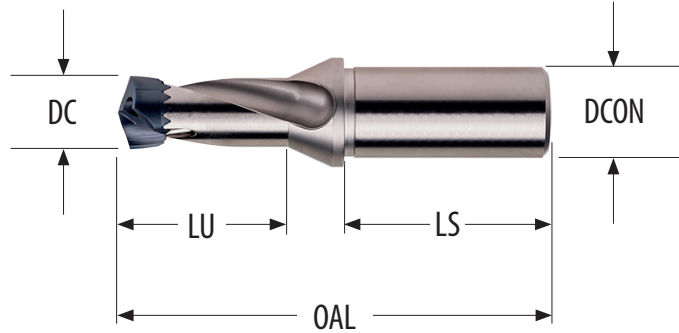
H851 1.5xD Hydra Bodies

H851 Apply starting values for speed and feed with a correction factor of **1.10**

Cylindrical Shank on fractional body sizes and Whistle Notch Shank on metric body sizes allows for options in tool holding.

Bodies allow for extremely accurate clamping and reliable use of internal coolant.

Four (4) screws and one (1) screwdriver are included with each drill body.



H851

ISO 9766

1.5XD

HSS

140°

NEW

31/64 – 1.3/16

Fractional shank type shown

HYDRA HEAD				1.5xD HYDRA BODY – FRACTIONAL SHANK					1.5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15/32	0010860	0013472	7332946	5/8	25.5	88.5	47.63	7833294	16.00	25.5	88.5	48.0	7833297
12.0	0010877	0013489	7332947	5/8	25.5	88.5	47.63	7833294	16.00	25.5	88.5	48.0	7833297
12.1	0037904	0038338	7332948	5/8	25.5	88.5	47.63	7833294	16.00	25.5	88.5	48.0	7833297
12.2	0037911	0038376	7332949	5/8	25.5	88.5	47.63	7833294	16.00	25.5	88.5	48.0	7833297
31/64	0010884	0013496	7332980	5/8	25.5	88.5	47.63	7833294	16.00	25.5	88.5	48.0	7833297
12.5	0010907	0013519	7332981	5/8	25.8	88.8	47.63	7833295	16.00	25.8	88.8	48.0	7833298
12.6	0037928	0038413	7332982	5/8	25.8	88.8	47.63	7833295	16.00	25.8	88.8	48.0	7833298
1/2	0010914	0013526	7332983	5/8	25.8	88.8	47.63	7833295	16.00	25.8	88.8	48.0	7833298
12.8	0037935	0038437	7332984	5/8	25.8	88.8	47.63	7833295	16.00	25.8	88.8	48.0	7833298
12.9	0037942	0038451	7332985	5/8	25.8	88.8	47.63	7833295	16.00	25.8	88.8	48.0	7833298
13.0	0010921	0013533	7332986	5/8	30.9	93.9	47.63	7833296	16.00	27.0	90.0	48.0	7833299
33/64	0010938	0013540	7332987	5/8	30.9	93.9	47.63	7833296	16.00	27.0	90.0	48.0	7833299
13.2	0037959	0038468	7332988	5/8	30.9	93.9	47.63	7833296	16.00	27.0	90.0	48.0	7833299
17/32	0010945	0013557	7332989	5/8	30.9	93.9	47.63	7833296	16.00	27.0	90.0	48.0	7833299
13.5	0010952	0016022	7332990	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
13.6	0037966	0038499	7332991	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
13.7	0037973	0038529	7332992	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
13.8	0037980	0038543	7332993	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
35/64	0010969	0016039	7332994	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
14.0	0010983	0016046	7332995	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
14.1	0037997	0038567	7332996	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
14.2	0038000	0038574	7332997	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
9/16	0011003	0016053	7332998	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
14.5	0011010	0016060	7332999	3/4	30.3	93.9	50.8	7833331	16.00	30.9	93.9	48.0	7833330
14.6	0038017	0038581	7333000	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
37/64	0011140	0016077	7333001	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
14.7	0038024	0039601	7333002	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
14.8	0038031	0039618	7333003	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
15.0	0011201	0016084	7333004	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
19/32	0011218	0016091	7333005	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336

HYDRA HEAD				1.5xD HYDRA BODY – FRACTIONAL SHANK					1.5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15.1	0038048	0039625	7333006	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
15.2	0038055	0039632	7333007	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
15.24	0032268	0032350	7333008	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
39/64	0011232	0016107	7333009	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
15.5	0011362	0016114	7333010	3/4	32.3	97.3	50.8	7833332	20.00	32.3	97.3	50.0	7833336
15.6	0038062	0039649	7333011	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
15.7	0038079	0039656	7333012	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
5/8	0011379	0016121	7333013	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.0	0011386	0016138	7333014	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.08	0032275	0032367	7333015	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.1	0038086	0039663	7333016	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.2	0038093	0039670	7333017	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
41/64	0011393	0016145	7333018	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.3	0032282	0032374	7333019	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.5	0011409	0016152	7333020	3/4	34.9	99.9	50.8	7833333	20.00	34.9	99.9	50.0	7833337
16.6	0038109	0039687	7333021	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
21/32	0012161	0016169	7333022	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
16.7	0038116	0039694	7333023	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
17.0	0012185	0016176	7333024	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
43/64	0012215	0016183	7333025	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
17.1	0038123	0039700	7333026	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
17.2	0038130	0039717	7333027	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
11/16	0012239	0016190	7333028	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
17.5	0012253	0016503	7333029	3/4	36.4	101.4	50.8	7833334	20.00	36.4	101.4	50.0	7833338
17.6	0032299	0032381	7333030	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
17.7	0038147	0039724	7333031	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
45/64	0012260	0016640	7333032	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
18.0	0012277	0016664	7333033	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
18.1	0038154	0039731	7333034	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
18.2	0038161	0039748	7333035	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
23/32	0012284	0016671	7333036	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
18.5	0012307	0016688	7333037	3/4	39.0	104.0	50.8	7833335	20.00	39.0	104.0	50.0	7833339
18.6	0038178	0039755	7333038	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
47/64	0012321	0016695	7333039	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
18.7	0038185	0039762	7333040	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
18.9	0038192	0039779	7333041	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.0	0012338	0016817	7333042	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
3/4	0012345	0016879	7333043	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.1	0038208	0039786	7333044	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.2	0038215	0039793	7333045	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.25	0032305	0032398	7333046	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.3	0032312	0032404	7333047	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.35	0032329	0032411	7333048	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
49/64	0012376	0016886	7333049	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.5	0012383	0016947	7333050	1"	40.4	111.4	57.15	7833345	25.00	40.4	111.4	56.0	7833340
19.6	0038222	0039809	7333051	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
19.7	0038239	0039816	7333052	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
25/32	0012406	0016954	7333053	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
20.0	0012413	0017111	7333054	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
51/64	0012437	0017128	7333055	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
20.5	0012451	0017159	7333056	1"	43.0	114.0	57.15	7833346	25.00	43.0	114.0	56.0	7833341
13/16	0012468	0017197	7333057	1"	44.5	115.5	57.15	7833347	25.00	44.5	115.5	56.0	7833342
21.0	0012475	0017166	7333058	1"	44.5	115.5	57.15	7833347	25.00	44.5	115.5	56.0	7833342
53/64	0012536	0017203	7333059	1"	44.5	115.5	57.15	7833347	25.00	44.5	115.5	56.0	7833342
27/32	0012550	0017227	7333060	1"	44.5	115.5	57.15	7833347	25.00	44.5	115.5	56.0	7833342
21.5	0012574	0017234	7333061	1"	44.5	115.5	57.15	7833347	25.00	44.5	115.5	56.0	7833342
55/64	0012604	0017241	7333062	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343
22.0	0012628	0017258	7333063	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343
7/8	0012635	0017371	7333064	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343
22.5	0032336	0032428	7333065	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343
57/64	0012642	0017401	7333066	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343
22.7	0038246	0039823	7333067	1"	46.1	117.1	57.15	7833348	25.00	46.1	117.1	56.0	7833343

HYDRA HEAD				1.5xD HYDRA BODY – FRACTIONAL SHANK					1.5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#	DCON h ₆	LU	OAL	LS	H851 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
23.0	0012666	0017425	7333068	1"	47.0	118.0	57.15	7833349	25.00	47.0	118.0	56.0	7833344
29/32	0012673	0017432	7333069	1"	47.0	118.0	57.15	7833349	25.00	47.0	118.0	56.0	7833344
59/64	0012680	0017456	7333070	1"	47.0	118.0	57.15	7833349	25.00	47.0	118.0	56.0	7833344
23.5	0038253	0039830	7333071	1"	47.0	118.0	57.15	7833349	25.00	47.0	118.0	56.0	7833344
15/16	0012703	0017562	7333072	1"	49.3	124.3	57.15	7833350	32.00	49.3	124.3	60.0	7833357
24.0	0012727	0017579	7333073	1"	49.3	124.3	57.15	7833350	32.00	49.3	124.3	60.0	7833357
61/64	0012741	0017586	7333074	1"	49.3	124.3	57.15	7833350	32.00	49.3	124.3	60.0	7833357
24.5	0038260	0039847	7333075	1"	49.3	124.3	57.15	7833350	32.00	49.3	124.3	60.0	7833357
31/32	0012772	0017593	7333076	1"	49.3	124.3	57.15	7833350	32.00	49.3	124.3	60.0	7833357
25.0	0012819	0017722	7333077	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
63/64	0012826	0017746	7333078	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
1	0012833	0017753	7333079	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
25.5	0038277	0039854	7333080	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
25.65	0032343	0032435	7333081	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
1.1/64	0012840	0018958	7333082	1.1/4	49.7	124.7	60.33	7833351	32.00	49.7	124.7	60.0	7833358
26.0	0013090	0018965	7333083	1.1/4	52.3	127.3	60.33	7833352	32.00	52.3	127.3	60.0	7833359
1.1/32	0013120	0018972	7333084	1.1/4	52.3	127.3	60.33	7833352	32.00	52.3	127.3	60.0	7833359
26.5	0038284	0039878	7333085	1.1/4	52.3	127.3	60.33	7833352	32.00	52.3	127.3	60.0	7833359
1.3/64	0013229	0018989	7333086	1.1/4	52.3	127.3	60.33	7833352	32.00	52.3	127.3	60.0	7833359
1.1/16	0013243	0018996	7333087	1.1/4	52.8	127.8	60.33	7833353	32.00	52.8	127.8	60.0	7833360
27.0	0013267	0019009	7333088	1.1/4	52.8	127.8	60.33	7833353	32.00	52.8	127.8	60.0	7833360
1.5/64	0013274	0019016	7333089	1.1/4	52.8	127.8	60.33	7833353	32.00	52.8	127.8	60.0	7833360
27.5	0038291	0039885	7333090	1.1/4	52.8	127.8	60.33	7833353	32.00	52.8	127.8	60.0	7833360
1.3/32	0013281	0019023	7333091	1.1/4	52.8	127.8	60.33	7833353	32.00	52.8	127.8	60.0	7833360
28.0	0013304	0019030	7333092	1.1/4	54.4	129.4	60.33	7833354	32.00	54.4	129.4	60.0	7833361
1.7/64	0013311	0019047	7333093	1.1/4	54.4	129.4	60.33	7833354	32.00	54.4	129.4	60.0	7833361
28.5	0038307	0039892	7333094	1.1/4	54.4	129.4	60.33	7833354	32.00	54.4	129.4	60.0	7833361
1.1/8	0013328	0019054	7333095	1.1/4	54.4	129.4	60.33	7833354	32.00	54.4	129.4	60.0	7833361
1.9/64	0013342	0019061	7333096	1.1/4	55.8	130.8	60.33	7833355	32.00	55.8	130.8	60.0	7833362
29.0	0013366	0019078	7333097	1.1/4	55.8	130.8	60.33	7833355	32.00	55.8	130.8	60.0	7833362
1.5/32	0013380	0019085	7333098	1.1/4	55.8	130.8	60.33	7833355	32.00	55.8	130.8	60.0	7833362
29.5	0038314	0039908	7333099	1.1/4	55.8	130.8	60.33	7833355	32.00	55.8	130.8	60.0	7833362
1.11/64	0013427	0019092	7333100	1.1/4	55.8	130.8	60.33	7833355	32.00	55.8	130.8	60.0	7833362
30.0	0013434	0019108	7333101	1.1/4	58.4	133.4	60.33	7833356	32.00	58.4	133.4	60.0	7833363
1.3/16	0013441	0019115	7333102	1.1/4	58.4	133.4	60.33	7833356	32.00	58.4	133.4	60.0	7833363
30.5	0013465	0019122	7333103	1.1/4	58.4	133.4	60.33	7833356	32.00	58.4	133.4	60.0	7833363

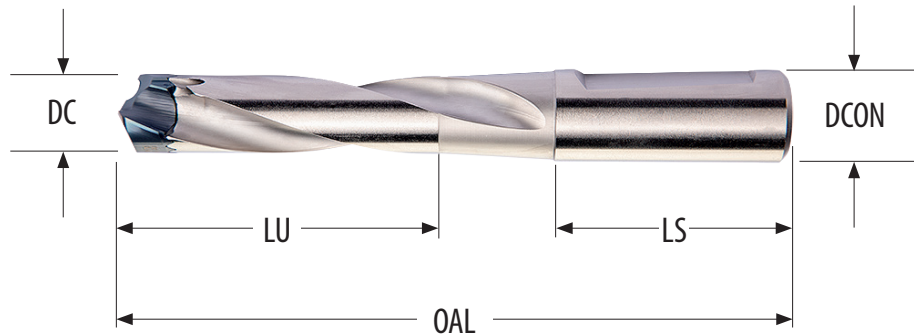
H853 3xD Hydra Bodies

H853 Apply starting values for speed and feed with a correction factor of **1.00**

Cylindrical Shanks with flats for multipurpose tool holding. Straight flats on fractional shanks and Whistle Notch (angled) flats on metric shanks allow for options in tool holding.

Bodies allow for extremely accurate clamping and reliable use of internal coolant.

Four (4) screws and one (1) screwdriver are included with each drill body.



H853

DIN 6535HB
DIN 6535HE

3XD

HSS

140°



Fractional shank type shown

31/64 – 1.3/16

HYDRA HEAD				3xD HYDRA BODY – FRACTIONAL SHANK					3xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h _g	LU	OAL	LS	H853 EDP#	DCON h _g	LU	OAL	LS	H853 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15/32	0010860	0013472	7332946	5/8	44.0	105.0	48.0	0033043	16.0	44.0	105.0	48.0	0017777
12.0	0010877	0013489	7332947	5/8	44.0	105.0	48.0	0033043	16.0	44.0	105.0	48.0	0017777
12.1	0037904	0038338	7332948	5/8	44.0	105.0	48.0	0033043	16.0	44.0	105.0	48.0	0017777
12.2	0037911	0038376	7332949	5/8	44.0	105.0	48.0	0033043	16.0	44.0	105.0	48.0	0017777
31/64	0010884	0013496	7332980	5/8	44.0	105.0	48.0	0033043	16.0	44.0	105.0	48.0	0017777
12.5	0010907	0013519	7332981	5/8	44.0	105.0	48.0	0033050	16.0	44.0	105.0	48.0	0017791
12.6	0037928	0038413	7332982	5/8	44.0	105.0	48.0	0033050	16.0	44.0	105.0	48.0	0017791
1/2	0010914	0013526	7332983	5/8	44.0	105.0	48.0	0033050	16.0	44.0	105.0	48.0	0017791
12.8	0037935	0038437	7332984	5/8	44.0	105.0	48.0	0033050	16.0	44.0	105.0	48.0	0017791
12.9	0037942	0038451	7332985	5/8	44.0	105.0	48.0	0033050	16.0	44.0	105.0	48.0	0017791
13.0	0010921	0013533	7332986	5/8	47.0	110.0	48.0	0033067	16.0	47.0	110.0	48.0	0017906
33/64	0010938	0013540	7332987	5/8	47.0	110.0	48.0	0033067	16.0	47.0	110.0	48.0	0017906
13.2	0037959	0038468	7332988	5/8	47.0	110.0	48.0	0033067	16.0	47.0	110.0	48.0	0017906
17/32	0010945	0013557	7332989	5/8	47.0	110.0	48.0	0033067	16.0	47.0	110.0	48.0	0017906
13.5	0010952	0016022	7332990	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
13.6	0037966	0038499	7332991	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
13.7	0037973	0038529	7332992	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
13.8	0037980	0038543	7332993	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
35/64	0010969	0016039	7332994	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
14.0	0010983	0016046	7332995	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
14.1	0037997	0038567	7332996	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
14.2	0038000	0038574	7332997	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
9/16	0011003	0016053	7332998	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
14.5	0011010	0016060	7332999	3/4	52.5	116.5	48.0	0033074	16.0	52.5	116.5	48.0	0017913
14.6	0038017	0038581	7333000	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
37/64	0011140	0016077	7333001	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
14.7	0038024	0039601	7333002	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
14.8	0038031	0039618	7333003	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
15.0	0011201	0016084	7333004	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
19/32	0011218	0016091	7333005	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293

HYDRA HEAD				3xD HYDRA BODY – FRACTIONAL SHANK					3xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15.1	0038048	0039625	7333006	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
15.2	0038055	0039632	7333007	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
15.24	0032268	0032350	7333008	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
39/64	0011232	0016107	7333009	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
15.5	0011362	0016114	7333010	3/4	55.5	126.5	50.0	0033081	20.0	55.5	126.5	50.0	0018293
15.6	0038062	0039649	7333011	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
15.7	0038079	0039656	7333012	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
5/8	0011379	0016121	7333013	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.0	0011386	0016138	7333014	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.08	0032275	0032367	7333015	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.1	0038086	0039663	7333016	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.2	0038093	0039670	7333017	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
41/64	0011393	0016145	7333018	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.3	0032282	0032374	7333019	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.5	0011409	0016152	7333020	3/4	59.5	131.5	50.0	0033098	20.0	59.5	131.5	50.0	0018316
16.6	0038109	0039687	7333021	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
21/32	0012161	0016169	7333022	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
16.7	0038116	0039694	7333023	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
17.0	0012185	0016176	7333024	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
43/64	0012215	0016183	7333025	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
17.1	0038123	0039700	7333026	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
17.2	0038130	0039717	7333027	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
11/16	0012239	0016190	7333028	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
17.5	0012253	0016503	7333029	3/4	62.5	136.5	50.0	0033104	20.0	62.5	136.5	50.0	0018323
17.6	0032299	0032381	7333030	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
17.7	0038147	0039724	7333031	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
45/64	0012260	0016640	7333032	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
18.0	0012277	0016664	7333033	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
18.1	0038154	0039731	7333034	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
18.2	0038161	0039748	7333035	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
23/32	0012284	0016671	7333036	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
18.5	0012307	0016688	7333037	3/4	66.5	141.5	50.0	0033111	20.0	66.5	141.5	50.0	0018330
18.6	0038178	0039755	7333038	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
47/64	0012321	0016695	7333039	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
18.7	0038185	0039762	7333040	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
18.9	0038192	0039779	7333041	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.0	0012338	0016817	7333042	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
3/4	0012345	0016879	7333043	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.1	0038208	0039786	7333044	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.2	0038215	0039793	7333045	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.25	0032305	0032398	7333046	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.3	0032312	0032404	7333047	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.35	0032329	0032411	7333048	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
49/64	0012376	0016886	7333049	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.5	0012383	0016947	7333050	1	69.5	156.5	56.0	0033128	25.0	69.5	156.5	56.0	0018347
19.6	0038222	0039809	7333051	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
19.7	0038239	0039816	7333052	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
25/32	0012406	0016954	7333053	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
20.0	0012413	0017111	7333054	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
51/64	0012437	0017128	7333055	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
20.5	0012451	0017159	7333056	1	73.5	156.5	56.0	0033135	25.0	73.5	156.5	56.0	0018354
13/16	0012468	0017197	7333057	1	76.5	156.5	56.0	0033142	25.0	76.5	156.5	56.0	0018361
21.0	0012475	0017166	7333058	1	76.5	156.5	56.0	0033142	25.0	76.5	156.5	56.0	0018361
53/64	0012536	0017203	7333059	1	76.5	156.5	56.0	0033142	25.0	76.5	156.5	56.0	0018361
27/32	0012550	0017227	7333060	1	76.5	156.5	56.0	0033142	25.0	76.5	156.5	56.0	0018361
21.5	0012574	0017234	7333061	1	76.5	156.5	56.0	0033142	25.0	76.5	156.5	56.0	0018361
55/64	0012604	0017241	7333062	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378
22.0	0012628	0017258	7333063	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378
7/8	0012635	0017371	7333064	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378
22.5	0032336	0032428	7333065	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378
57/64	0012642	0017401	7333066	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378
22.7	0038246	0039823	7333067	1	80.1	161.5	56.0	0033159	25.0	80.1	161.5	56.0	0018378

HYDRA HEAD				3x3 HYDRA BODY – FRACTIONAL SHANK					3x3 HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
23.0	0012666	0017425	7333068	1	82.5	160.5	56.0	0033166	25.0	82.5	160.5	56.0	0018385
29/32	0012673	0017432	7333069	1	82.5	160.5	56.0	0033166	25.0	82.5	160.5	56.0	0018385
59/64	0012680	0017456	7333070	1	82.5	160.5	56.0	0033166	25.0	82.5	160.5	56.0	0018385
23.5	0038253	0039830	7333071	1	82.5	160.5	56.0	0033166	25.0	82.5	160.5	56.0	0018385
15/16	0012703	0017562	7333072	1	86.2	170.2	60.0	0033173	32.0	86.2	170.2	60.0	0018392
24.0	0012727	0017579	7333073	1	86.2	170.2	60.0	0033173	32.0	86.2	170.2	60.0	0018392
61/64	0012741	0017586	7333074	1	86.2	170.2	60.0	0033173	32.0	86.2	170.2	60.0	0018392
24.5	0038260	0039847	7333075	1	86.2	170.2	60.0	0033173	32.0	86.2	170.2	60.0	0018392
31/32	0012772	0017593	7333076	1	86.2	170.2	60.0	0033173	32.0	86.2	170.2	60.0	0018392
25.0	0012819	0017722	7333077	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
63/64	0012826	0017746	7333078	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
1	0012833	0017753	7333079	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
25.5	0038277	0039854	7333080	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
25.65	0032343	0032435	7333081	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
1.1/64	0012840	0018958	7333082	1.1/4	88.0	170.0	60.0	0033180	32.0	88.0	170.0	60.0	0018408
26.0	0013090	0018965	7333083	1.1/4	92.0	175.0	60.0	0033197	32.0	92.0	175.0	60.0	0018415
1.1/32	0013120	0018972	7333084	1.1/4	92.0	175.0	60.0	0033197	32.0	92.0	175.0	60.0	0018415
26.5	0038284	0039878	7333085	1.1/4	92.0	175.0	60.0	0033197	32.0	92.0	175.0	60.0	0018415
1.3/64	0013229	0018989	7333086	1.1/4	92.0	175.0	60.0	0033197	32.0	92.0	175.0	60.0	0018415
1.1/16	0013243	0018996	7333087	1.1/4	94.0	175.0	60.0	0033210	32.0	94.0	175.0	60.0	0018422
27.0	0013267	0019009	7333088	1.1/4	94.0	175.0	60.0	0033210	32.0	94.0	175.0	60.0	0018422
1.5/64	0013274	0019016	7333089	1.1/4	94.0	175.0	60.0	0033210	32.0	94.0	175.0	60.0	0018422
27.5	0038291	0039885	7333090	1.1/4	94.0	175.0	60.0	0033210	32.0	94.0	175.0	60.0	0018422
1.3/32	0013281	0019023	7333091	1.1/4	94.0	175.0	60.0	0033210	32.0	94.0	175.0	60.0	0018422
28.0	0013304	0019030	7333092	1.1/4	97.0	180.0	60.0	0033227	32.0	97.0	180.0	60.0	0018439
1.7/64	0013311	0019047	7333093	1.1/4	97.0	180.0	60.0	0033227	32.0	97.0	180.0	60.0	0018439
28.5	0038307	0039892	7333094	1.1/4	97.0	180.0	60.0	0033227	32.0	97.0	180.0	60.0	0018439
1.1/8	0013328	0019054	7333095	1.1/4	97.0	180.0	60.0	0033227	32.0	97.0	180.0	60.0	0018439
1.9/64	0013342	0019061	7333096	1.1/4	100.0	185.0	60.0	0033234	32.0	100.0	185.0	60.0	0018446
29.0	0013366	0019078	7333097	1.1/4	100.0	185.0	60.0	0033234	32.0	100.0	185.0	60.0	0018446
1.5/32	0013380	0019085	7333098	1.1/4	100.0	185.0	60.0	0033234	32.0	100.0	185.0	60.0	0018446
29.5	0038314	0039908	7333099	1.1/4	100.0	185.0	60.0	0033234	32.0	100.0	185.0	60.0	0018446
1.1/16	0013427	0019092	7333100	1.1/4	100.0	185.0	60.0	0033234	32.0	100.0	185.0	60.0	0018446
30.0	0013434	0019108	7333101	1.1/4	104.0	185.0	60.0	0033425	32.0	104.0	185.0	60.0	0018453
1.3/16	0013441	0019115	7333102	1.1/4	104.0	185.0	60.0	0033425	32.0	104.0	185.0	60.0	0018453
30.5	0013465	0019122	7333103	1.1/4	104.0	185.0	60.0	0033425	32.0	104.0	185.0	60.0	0018453
1.7/32	46104481	—	7333104	—	—	—	—	—	32.0	111.5	196.5	60.0	46111405
31.00	46104482	—	7333105	—	—	—	—	—	32.0	111.5	196.5	60.0	46111405
1.1/4	46104483	—	7333106	—	—	—	—	—	32.0	111.5	196.5	60.0	46111405
32.00	46104484	—	7333107	—	—	—	—	—	32.0	111.5	196.5	60.0	46111405
32.50	46104485	—	7333108	—	—	—	—	—	32.0	116.5	201.5	60.0	46111406
1.19/64	46104486	—	7333109	—	—	—	—	—	32.0	116.5	201.5	60.0	46111406
33.00	46104487	—	7333110	—	—	—	—	—	32.0	116.5	201.5	60.0	46111406
33.50	46104488	—	7333111	—	—	—	—	—	32.0	116.5	201.5	60.0	46111406
34.00	46104489	—	7333112	—	—	—	—	—	40.0	121.5	216.5	70.0	46111407
1.11/32	46104530	—	7333113	—	—	—	—	—	40.0	121.5	216.5	70.0	46111407
34.50	46104531	—	7333114	—	—	—	—	—	40.0	121.5	216.5	70.0	46111407
1.3/8	46104532	—	7333115	—	—	—	—	—	40.0	121.5	216.5	70.0	46111407
35.00	46104533	—	7333116	—	—	—	—	—	40.0	121.5	216.5	70.0	46111407
36.00	46104534	—	7333117	—	—	—	—	—	40.0	125.5	221.5	70.0	46111408
1.27/64	46104535	—	7333118	—	—	—	—	—	40.0	125.5	221.5	70.0	46111408
36.50	46104536	—	7333119	—	—	—	—	—	40.0	125.5	221.5	70.0	46111408
37.00	46104537	—	7333120	—	—	—	—	—	40.0	131.5	226.5	70.0	46111409
1.15/32	46104538	—	7333121	—	—	—	—	—	40.0	131.5	226.5	70.0	46111409
37.50	46104539	—	7333122	—	—	—	—	—	40.0	131.5	226.5	70.0	46111409
38.00	46104540	—	7333123	—	—	—	—	—	40.0	131.5	226.5	70.0	46111409
1.1/2	46104541	—	7333124	—	—	—	—	—	40.0	136.5	231.5	70.0	46111410
38.50	46104542	—	7333125	—	—	—	—	—	40.0	136.5	231.5	70.0	46111410
1.17/32	46104543	—	7333126	—	—	—	—	—	40.0	136.5	231.5	70.0	46111410
39.00	46104544	—	7333127	—	—	—	—	—	40.0	136.5	231.5	70.0	46111410
39.50	46104545	—	7333128	—	—	—	—	—	40.0	136.5	231.5	70.0	46111410
1.9/16	46104546	—	7333129	—	—	—	—	—	40.0	146.5	246.5	70.0	46111411

HYDRA HEAD				3×D HYDRA BODY – FRACTIONAL SHANK					3×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#	DCON h ₆	LU	OAL	LS	H853 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
40.00	46104547	—	7333130	—	—	—	—	—	40.0	146.5	246.5	70.0	46111411
41.00	46104548	—	7333131	—	—	—	—	—	40.0	146.5	246.5	70.0	46111411
1.5/8	46104549	—	7333132	—	—	—	—	—	40.0	151.5	251.5	70.0	46111412
42.00	46104550	—	7333133	—	—	—	—	—	40.0	151.5	251.5	70.0	46111412

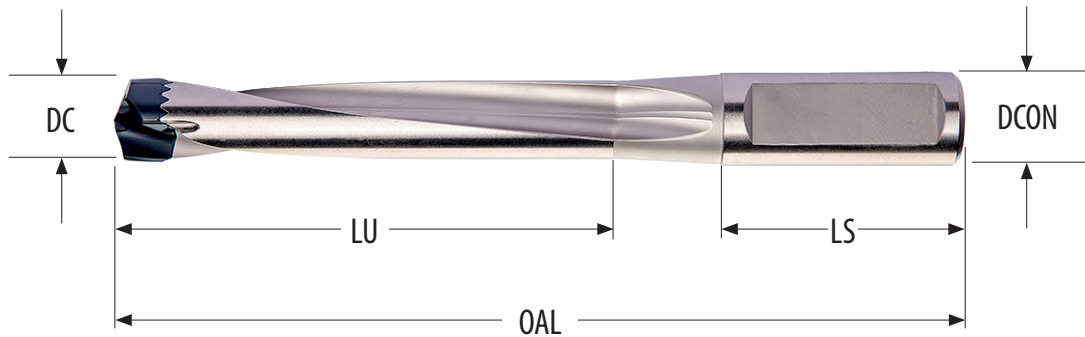
H855 5xD Hydra Bodies

H855 Apply starting values for speed and feed with a correction factor of **0.95**

Cylindrical Shanks with flats for multipurpose tool holding. Straight flats on fractional shanks and Whistle Notch (angled) flats on metric shanks allow for options in tool holding.

Bodies allow for extremely accurate clamping and reliable use of internal coolant.

Four (4) screws and one (1) screwdriver are included with each drill body



H855

DIN 6535HB
DIN 6535HE

5XD

HSS

140°

31/64 – 1.3/16

Fractional shank type shown

HYDRA HEAD				5xD HYDRA BODY – FRACTIONAL SHANK					5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15/32	0010860	0013472	7332946	5/8	69.0	130.0	48.0	0033586	16.0	69.0	130.0	48.0	0018460
12.0	0010877	0013489	7332947	5/8	69.0	130.0	48.0	0033586	16.0	69.0	130.0	48.0	0018460
12.1	0037904	0038338	7332948	5/8	69.0	130.0	48.0	0033586	16.0	69.0	130.0	48.0	0018460
12.2	0037911	0038376	7332949	5/8	69.0	130.0	48.0	0033586	16.0	69.0	130.0	48.0	0018460
31/64	0010884	0013496	7332980	5/8	69.0	130.0	48.0	0033586	16.0	69.0	130.0	48.0	0018460
12.5	0010907	0013519	7332981	5/8	69.0	130.0	48.0	0034095	16.0	69.0	130.0	48.0	0018477
12.6	0037928	0038413	7332982	5/8	69.0	130.0	48.0	0034095	16.0	69.0	130.0	48.0	0018477
1/2	0010914	0013526	7332983	5/8	69.0	130.0	48.0	0034095	16.0	69.0	130.0	48.0	0018477
12.8	0037935	0038437	7332984	5/8	69.0	130.0	48.0	0034095	16.0	69.0	130.0	48.0	0018477
12.9	0037942	0038451	7332985	5/8	69.0	130.0	48.0	0034095	16.0	69.0	130.0	48.0	0018477
13.0	0010921	0013533	7332986	5/8	74.0	140.0	48.0	0034132	16.0	74.0	140.0	48.0	0018484
33/64	0010938	0013540	7332987	5/8	74.0	140.0	48.0	0034132	16.0	74.0	140.0	48.0	0018484
13.2	0037959	0038468	7332988	5/8	74.0	140.0	48.0	0034132	16.0	74.0	140.0	48.0	0018484
17/32	0010945	0013557	7332989	5/8	74.0	140.0	48.0	0034132	16.0	74.0	140.0	48.0	0018484
13.5	0010952	0016022	7332990	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
13.6	0037966	0038499	7332991	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
13.7	0037973	0038529	7332992	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
13.8	0037980	0038543	7332993	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
35/64	0010969	0016039	7332994	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
14.0	0010983	0016046	7332995	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
14.1	0037997	0038567	7332996	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
14.2	0038000	0038574	7332997	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
9/16	0011003	0016053	7332998	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
14.5	0011010	0016060	7332999	3/4	81.5	146.5	48.0	0034699	16.0	81.5	146.5	48.0	0018491
14.6	0038017	0038581	7333000	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
37/64	0011140	0016077	7333001	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
14.7	0038024	0039601	7333002	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
14.8	0038031	0039618	7333003	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
15.0	0011201	0016084	7333004	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
19/32	0011218	0016091	7333005	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507

HYDRA HEAD				5xD HYDRA BODY – FRACTIONAL SHANK					5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
15.1	0038048	0039625	7333006	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
15.2	0038055	0039632	7333007	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
15.24	0032268	0032350	7333008	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
39/64	0011232	0016107	7333009	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
15.5	0011362	0016114	7333010	3/4	86.5	156.5	50.0	0034705	20.0	86.5	156.5	50.0	0018507
15.6	0038062	0039649	7333011	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
15.7	0038079	0039656	7333012	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
5/8	0011379	0016121	7333013	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.0	0011386	0016138	7333014	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.08	0032275	0032367	7333015	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.1	0038086	0039663	7333016	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.2	0038093	0039670	7333017	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
41/64	0011393	0016145	7333018	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.3	0032282	0032374	7333019	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.5	0011409	0016152	7333020	3/4	92.5	166.5	50.0	0034712	20.0	92.5	166.5	50.0	0018514
16.6	0038109	0039687	7333021	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
21/32	0012161	0016169	7333022	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
16.7	0038116	0039694	7333023	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
17.0	0012185	0016176	7333024	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
43/64	0012215	0016183	7333025	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
17.1	0038123	0039700	7333026	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
17.2	0038130	0039717	7333027	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
11/16	0012239	0016190	7333028	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
17.5	0012253	0016503	7333029	3/4	97.5	171.5	50.0	0034736	20.0	97.5	171.5	50.0	0018521
17.6	0032299	0032381	7333030	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
17.7	0038147	0039724	7333031	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
45/64	0012260	0016640	7333032	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
18.0	0012277	0016664	7333033	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
18.1	0038154	0039731	7333034	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
18.2	0038161	0039748	7333035	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
23/32	0012284	0016671	7333036	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
18.5	0012307	0016688	7333037	3/4	103.5	176.5	50.0	0034743	20.0	103.5	176.5	50.0	0018538
18.6	0038178	0039755	7333038	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
47/64	0012321	0016695	7333039	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
18.7	0038185	0039762	7333040	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
18.9	0038192	0039779	7333041	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.0	0012338	0016817	7333042	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
3/4	0012345	0016879	7333043	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.1	0038208	0039786	7333044	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.2	0038215	0039793	7333045	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.25	0032305	0032398	7333046	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.3	0032312	0032404	7333047	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.35	0032329	0032411	7333048	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
49/64	0012376	0016886	7333049	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.5	0012383	0016947	7333050	1	108.5	191.5	56.0	0034798	25.0	108.5	191.5	56.0	0018545
19.6	0038222	0039809	7333051	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
19.7	0038239	0039816	7333052	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
25/32	0012406	0016954	7333053	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
20.0	0012413	0017111	7333054	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
51/64	0012437	0017128	7333055	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
20.5	0012451	0017159	7333056	1	114.5	196.5	56.0	0034804	25.0	114.5	196.5	56.0	0018552
13/16	0012468	0017197	7333057	1	119.5	196.5	56.0	0034811	25.0	119.5	196.5	56.0	0018569
21.0	0012475	0017166	7333058	1	119.5	196.5	56.0	0034811	25.0	119.5	196.5	56.0	0018569
53/64	0012536	0017203	7333059	1	119.5	196.5	56.0	0034811	25.0	119.5	196.5	56.0	0018569
27/32	0012550	0017227	7333060	1	119.5	196.5	56.0	0034811	25.0	119.5	196.5	56.0	0018569
21.5	0012574	0017234	7333061	1	119.5	196.5	56.0	0034811	25.0	119.5	196.5	56.0	0018569
55/64	0012604	0017241	7333062	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576
22.0	0012628	0017258	7333063	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576
7/8	0012635	0017371	7333064	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576
22.5	0032336	0032428	7333065	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576
57/64	0012642	0017401	7333066	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576
22.7	0038246	0039823	7333067	1	125.1	201.1	56.0	0034835	25.0	125.1	201.1	56.0	0018576

HYDRA HEAD				5xD HYDRA BODY – FRACTIONAL SHANK					5xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
23.0	0012666	0017425	7333068	1	129.5	210.5	56.0	0034842	25.0	129.5	210.5	56.0	0018583
29/32	0012673	0017432	7333069	1	129.5	210.5	56.0	0034842	25.0	129.5	210.5	56.0	0018583
59/64	0012680	0017456	7333070	1	129.5	210.5	56.0	0034842	25.0	129.5	210.5	56.0	0018583
23.5	0038253	0039830	7333071	1	129.5	210.5	56.0	0034842	25.0	129.5	210.5	56.0	0018583
15/16	0012703	0017562	7333072	1	135.2	220.2	60.0	0034859	32.0	135.2	220.2	60.0	0018590
24.0	0012727	0017579	7333073	1	135.2	220.2	60.0	0034859	32.0	135.2	220.2	60.0	0018590
61/64	0012741	0017586	7333074	1	135.2	220.2	60.0	0034859	32.0	135.2	220.2	60.0	0018590
24.5	0038260	0039847	7333075	1	135.2	220.2	60.0	0034859	32.0	135.2	220.2	60.0	0018590
31/32	0012772	0017593	7333076	1	135.2	220.2	60.0	0034859	32.0	135.2	220.2	60.0	0018590
25.0	0012819	0017722	7333077	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
63/64	0012826	0017746	7333078	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
1	0012833	0017753	7333079	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
25.5	0038277	0039854	7333080	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
25.65	0032343	0032435	7333081	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
1.1/64	0012840	0018958	7333082	1.1/4	140.0	225.0	60.0	0034866	32.0	140.0	225.0	60.0	0018606
26.0	0013090	0018965	7333083	1.1/4	146.0	230.0	60.0	0034873	32.0	146.0	230.0	60.0	0018613
1.1/32	0013120	0018972	7333084	1.1/4	146.0	230.0	60.0	0034873	32.0	146.0	230.0	60.0	0018613
26.5	0038284	0039878	7333085	1.1/4	146.0	230.0	60.0	0034873	32.0	146.0	230.0	60.0	0018613
1.3/64	0013229	0018989	7333086	1.1/4	146.0	230.0	60.0	0034873	32.0	146.0	230.0	60.0	0018613
1.1/16	0013243	0018996	7333087	1.1/4	151.0	235.0	60.0	0034897	32.0	151.0	235.0	60.0	0018620
27.0	0013267	0019009	7333088	1.1/4	151.0	235.0	60.0	0034897	32.0	151.0	235.0	60.0	0018620
1.5/64	0013274	0019016	7333089	1.1/4	151.0	235.0	60.0	0034897	32.0	151.0	235.0	60.0	0018620
27.5	0038291	0039885	7333090	1.1/4	151.0	235.0	60.0	0034897	32.0	151.0	235.0	60.0	0018620
1.3/32	0013281	0019023	7333091	1.1/4	151.0	235.0	60.0	0034897	32.0	151.0	235.0	60.0	0018620
28.0	0013304	0019030	7333092	1.1/4	157.0	240.0	60.0	0034903	32.0	157.0	240.0	60.0	0018637
1.7/64	0013311	0019047	7333093	1.1/4	157.0	240.0	60.0	0034903	32.0	157.0	240.0	60.0	0018637
28.5	0038307	0039892	7333094	1.1/4	157.0	240.0	60.0	0034903	32.0	157.0	240.0	60.0	0018637
1.1/8	0013328	0019054	7333095	1.1/4	157.0	240.0	60.0	0034903	32.0	157.0	240.0	60.0	0018637
1.9/64	0013342	0019061	7333096	1.1/4	162.0	245.0	60.0	0034934	32.0	162.0	245.0	60.0	0018644
29.0	0013366	0019078	7333097	1.1/4	162.0	245.0	60.0	0034934	32.0	162.0	245.0	60.0	0018644
1.5/32	0013380	0019085	7333098	1.1/4	162.0	245.0	60.0	0034934	32.0	162.0	245.0	60.0	0018644
29.5	0038314	0039908	7333099	1.1/4	162.0	245.0	60.0	0034934	32.0	162.0	245.0	60.0	0018644
1.1/16	0013427	0019092	7333100	1.1/4	162.0	245.0	60.0	0034934	32.0	162.0	245.0	60.0	0018644
30.0	0013434	0019108	7333101	1.1/4	167.0	255.0	60.0	0034965	32.0	167.0	255.0	60.0	0018651
1.3/16	0013441	0019115	7333102	1.1/4	167.0	255.0	60.0	0034965	32.0	167.0	255.0	60.0	0018651
30.5	0013465	0019122	7333103	1.1/4	167.0	255.0	60.0	0034965	32.0	167.0	255.0	60.0	0018651
1.7/32	46104481	—	7333104	—	—	—	—	—	32.0	176.5	261.5	60.0	46111413
31.00	46104482	—	7333105	—	—	—	—	—	32.0	176.5	261.5	60.0	46111413
1.1/4	46104483	—	7333106	—	—	—	—	—	32.0	176.5	261.5	60.0	46111413
32.00	46104484	—	7333107	—	—	—	—	—	32.0	176.5	261.5	60.0	46111413
32.50	46104485	—	7333108	—	—	—	—	—	32.0	186.5	271.5	60.0	46111414
1.19/64	46104486	—	7333109	—	—	—	—	—	32.0	186.5	271.5	60.0	46111414
33.00	46104487	—	7333110	—	—	—	—	—	32.0	186.5	271.5	60.0	46111414
33.50	46104488	—	7333111	—	—	—	—	—	32.0	186.5	271.5	60.0	46111414
34.00	46104489	—	7333112	—	—	—	—	—	40.0	196.5	291.5	70.0	46111415
1.11/32	46104530	—	7333113	—	—	—	—	—	40.0	196.5	291.5	70.0	46111415
34.50	46104531	—	7333114	—	—	—	—	—	40.0	196.5	291.5	70.0	46111415
1.3/8	46104532	—	7333115	—	—	—	—	—	40.0	196.5	291.5	70.0	46111415
35.00	46104533	—	7333116	—	—	—	—	—	40.0	196.5	291.5	70.0	46111415
36.00	46104534	—	7333117	—	—	—	—	—	40.0	201.5	296.5	70.0	46111416
1.27/64	46104535	—	7333118	—	—	—	—	—	40.0	201.5	296.5	70.0	46111416
36.50	46104536	—	7333119	—	—	—	—	—	40.0	201.5	296.5	70.0	46111416
37.00	46104537	—	7333120	—	—	—	—	—	40.0	211.5	306.5	70.0	46111417
1.15/32	46104538	—	7333121	—	—	—	—	—	40.0	211.5	306.5	70.0	46111417
37.50	46104539	—	7333122	—	—	—	—	—	40.0	211.5	306.5	70.0	46111417
38.00	46104540	—	7333123	—	—	—	—	—	40.0	211.5	306.5	70.0	46111417
1.1/2	46104541	—	7333124	—	—	—	—	—	40.0	211.5	316.5	70.0	46111418
38.50	46104542	—	7333125	—	—	—	—	—	40.0	211.5	316.5	70.0	46111418
1.17/32	46104543	—	7333126	—	—	—	—	—	40.0	211.5	316.5	70.0	46111418
39.00	46104544	—	7333127	—	—	—	—	—	40.0	211.5	316.5	70.0	46111418
39.50	46104545	—	7333128	—	—	—	—	—	40.0	211.5	316.5	70.0	46111418
1.9/16	46104546	—	7333129	—	—	—	—	—	40.0	226.5	325.5	70.0	46111419

HYDRA HEAD				5×D HYDRA BODY – FRACTIONAL SHANK					5×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#	DCON h ₆	LU	OAL	LS	H855 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
40.00	46104547	—	7333130	—	—	—	—	—	40.0	226.5	325.5	70.0	46111419
41.00	46104548	—	7333131	—	—	—	—	—	40.0	226.5	325.5	70.0	46111419
1.5/8	46104549	—	7333132	—	—	—	—	—	40.0	236.5	336.5	70.0	46111420
42.00	46104550	—	7333133	—	—	—	—	—	40.0	236.5	336.5	70.0	46111420

H858 8×D Hydra Bodies

H858 Apply starting values for speed and feed with a correction factor of **0.90**

Cylindrical Shanks with Whistle Notch (angled) flats allow for options in tool holding.
 Bodies allow for extremely accurate clamping and reliable use of internal coolant.
 Four (4) screws and one (1) screwdriver are included with each drill body.



H858

DIN 6535HB
DIN 6535HE

8XD

HSS

140°

14.0 – 42.5

HYDRA HEAD				8×D HYDRA BODY – FRACTIONAL SHANK					8×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
13.5	0010952	0016022	7332990	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
13.6	0037966	0038499	7332991	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
13.7	0037973	0038529	7332992	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
13.8	0037980	0038543	7332993	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
35/64	0010969	0016039	7332994	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
14.0	0010983	0016046	7332995	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
14.1	0037997	0038567	7332996	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
14.2	0038000	0038574	7332997	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
9/16	0011003	0016053	7332998	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
14.5	0011010	0016060	7332999	—	—	—	—	—	16.0	124.5	191.5	48.0	0018668
14.6	0038017	0038581	7333000	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
37/64	0011140	0016077	7333001	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
14.7	0038024	0039601	7333002	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
14.8	0038031	0039618	7333003	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.0	0011201	0016084	7333004	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
19/32	0011218	0016091	7333005	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.1	0038048	0039625	7333006	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.2	0038055	0039632	7333007	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.24	0032268	0032350	7333008	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
39/64	0011232	0016107	7333009	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.5	0011362	0016114	7333010	—	—	—	—	—	20.0	133.5	201.5	50.0	0018675
15.6	0038062	0039649	7333011	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
15.7	0038079	0039656	7333012	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
5/8	0011379	0016121	7333013	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.0	0011386	0016138	7333014	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.08	0032275	0032367	7333015	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.1	0038086	0039663	7333016	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.2	0038093	0039670	7333017	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
41/64	0011393	0016145	7333018	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.3	0032282	0032374	7333019	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682

HYDRA HEAD				8xD HYDRA BODY – FRACTIONAL SHANK					8xD HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
16.5	0011409	0016152	7333020	—	—	—	—	—	20.0	141.5	211.5	50.0	0018682
16.6	0038109	0039687	7333021	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
21/32	0012161	0016169	7333022	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
16.7	0038116	0039694	7333023	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
17.0	0012185	0016176	7333024	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
43/64	0012215	0016183	7333025	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
17.1	0038123	0039700	7333026	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
17.2	0038130	0039717	7333027	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
11/16	0012239	0016190	7333028	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
17.5	0012253	0016503	7333029	—	—	—	—	—	20.0	150.5	221.5	50.0	0018699
17.6	0032299	0032381	7333030	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
17.7	0038147	0039724	7333031	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
45/64	0012260	0016640	7333032	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
18.0	0012277	0016664	7333033	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
18.1	0038154	0039731	7333034	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
18.2	0038161	0039748	7333035	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
23/32	0012284	0016671	7333036	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
18.5	0012307	0016688	7333037	—	—	—	—	—	20.0	158.5	226.5	50.0	0018705
18.6	0038178	0039755	7333038	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
47/64	0012321	0016695	7333039	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
18.7	0038185	0039762	7333040	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
18.9	0038192	0039779	7333041	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.0	0012338	0016817	7333042	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
3/4	0012345	0016879	7333043	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.1	0038208	0039786	7333044	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.2	0038215	0039793	7333045	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.25	0032305	0032398	7333046	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.3	0032312	0032404	7333047	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.35	0032329	0032411	7333048	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
49/64	0012376	0016886	7333049	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.5	0012383	0016947	7333050	—	—	—	—	—	25.0	167.5	251.5	56.0	0018712
19.6	0038222	0039809	7333051	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
19.7	0038239	0039816	7333052	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
25/32	0012406	0016954	7333053	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
20.0	0012413	0017111	7333054	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
51/64	0012437	0017128	7333055	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
20.5	0012451	0017159	7333056	—	—	—	—	—	25.0	175.5	264.5	56.0	0018729
13/16	0012468	0017197	7333057	—	—	—	—	—	25.0	184.5	266.5	56.0	0018736
21.0	0012475	0017166	7333058	—	—	—	—	—	25.0	184.5	266.5	56.0	0018736
53/64	0012536	0017203	7333059	—	—	—	—	—	25.0	184.5	266.5	56.0	0018736
27/32	0012550	0017227	7333060	—	—	—	—	—	25.0	184.5	266.5	56.0	0018736
21.5	0012574	0017234	7333061	—	—	—	—	—	25.0	184.5	266.5	56.0	0018736
55/64	0012604	0017241	7333062	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
22.0	0012628	0017258	7333063	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
7/8	0012635	0017371	7333064	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
22.5	0032336	0032428	7333065	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
57/64	0012642	0017401	7333066	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
22.7	0038246	0039823	7333067	—	—	—	—	—	25.0	192.1	271.1	56.0	0018743
23.0	0012666	0017425	7333068	—	—	—	—	—	25.0	200.5	280.5	56.0	0018750
29/32	0012673	0017432	7333069	—	—	—	—	—	25.0	200.5	280.5	56.0	0018750
59/64	0012680	0017456	7333070	—	—	—	—	—	25.0	200.5	280.5	56.0	0018750
23.5	0038253	0039830	7333071	—	—	—	—	—	25.0	200.5	280.5	56.0	0018750
15/16	0012703	0017562	7333072	—	—	—	—	—	32.0	208.2	295.2	60.0	0018767
24.0	0012727	0017579	7333073	—	—	—	—	—	32.0	208.2	295.2	60.0	0018767
61/64	0012741	0017586	7333074	—	—	—	—	—	32.0	208.2	295.2	60.0	0018767
24.5	0038260	0039847	7333075	—	—	—	—	—	32.0	208.2	295.2	60.0	0018767
31/32	0012772	0017593	7333076	—	—	—	—	—	32.0	208.2	295.2	60.0	0018767
25.0	0012819	0017722	7333077	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774
63/64	0012826	0017746	7333078	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774
1	0012833	0017753	7333079	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774
25.5	0038277	0039854	7333080	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774
25.65	0032343	0032435	7333081	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774

HYDRA HEAD				8×D HYDRA BODY – FRACTIONAL SHANK					8×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#	DCON h ₆	LU	OAL	LS	H858 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
1.1/64	0012840	0018958	7333082	—	—	—	—	—	32.0	217.0	300.0	60.0	0018774
26.0	0013090	0018965	7333083	—	—	—	—	—	32.0	225.0	310.0	60.0	0018781
1.1/32	0013120	0018972	7333084	—	—	—	—	—	32.0	225.0	310.0	60.0	0018781
26.5	0038284	0039878	7333085	—	—	—	—	—	32.0	225.0	310.0	60.0	0018781
1.3/64	0013229	0018989	7333086	—	—	—	—	—	32.0	225.0	310.0	60.0	0018781
1.1/16	0013243	0018996	7333087	—	—	—	—	—	32.0	234.0	320.0	60.0	0018798
27.0	0013267	0019009	7333088	—	—	—	—	—	32.0	234.0	320.0	60.0	0018798
1.5/64	0013274	0019016	7333089	—	—	—	—	—	32.0	234.0	320.0	60.0	0018798
27.5	0038291	0039885	7333090	—	—	—	—	—	32.0	234.0	320.0	60.0	0018798
1.3/32	0013281	0019023	7333091	—	—	—	—	—	32.0	234.0	320.0	60.0	0018798
28.0	0013304	0019030	7333092	—	—	—	—	—	32.0	242.0	325.0	60.0	0018804
1.7/64	0013311	0019047	7333093	—	—	—	—	—	32.0	242.0	325.0	60.0	0018804
28.5	0038307	0039892	7333094	—	—	—	—	—	32.0	242.0	325.0	60.0	0018804
1.1/8	0013328	0019054	7333095	—	—	—	—	—	32.0	242.0	325.0	60.0	0018804
1.9/64	0013342	0019061	7333096	—	—	—	—	—	32.0	251.0	335.0	60.0	0018811
29.0	0013366	0019078	7333097	—	—	—	—	—	32.0	251.0	335.0	60.0	0018811
1.5/32	0013380	0019085	7333098	—	—	—	—	—	32.0	251.0	335.0	60.0	0018811
29.5	0038314	0039908	7333099	—	—	—	—	—	32.0	251.0	335.0	60.0	0018811
1.11/64	0013427	0019092	7333100	—	—	—	—	—	32.0	251.0	335.0	60.0	0018811
30.0	0013434	0019108	7333101	—	—	—	—	—	32.0	259.0	345.0	60.0	0018828
1.3/16	0013441	0019115	7333102	—	—	—	—	—	32.0	259.0	345.0	60.0	0018828
30.5	0013465	0019122	7333103	—	—	—	—	—	32.0	259.0	345.0	60.0	0018828
1.7/32	46104481	—	7333104	—	—	—	—	—	32.0	271.5	356.5	60.0	46111421
31.00	46104482	—	7333105	—	—	—	—	—	32.0	271.5	356.5	60.0	46111421
1.1/4	46104483	—	7333106	—	—	—	—	—	32.0	271.5	356.5	60.0	46111421
32.00	46104484	—	7333107	—	—	—	—	—	32.0	271.5	356.5	60.0	46111421
32.50	46104485	—	7333108	—	—	—	—	—	40.0	286.5	371.5	60.0	46111422
1.19/64	46104486	—	7333109	—	—	—	—	—	40.0	286.5	371.5	60.0	46111422
33.00	46104487	—	7333110	—	—	—	—	—	40.0	286.5	371.5	60.0	46111422
33.50	46104488	—	7333111	—	—	—	—	—	40.0	286.5	371.5	60.0	46111422
34.00	46104489	—	7333112	—	—	—	—	—	40.0	301.5	396.5	70.0	46111423
1.11/32	46104530	—	7333113	—	—	—	—	—	40.0	301.5	396.5	70.0	46111423
34.50	46104531	—	7333114	—	—	—	—	—	40.0	301.5	396.5	70.0	46111423
1.3/8	46104532	—	7333115	—	—	—	—	—	40.0	301.5	396.5	70.0	46111423
35.00	46104533	—	7333116	—	—	—	—	—	40.0	301.5	396.5	70.0	46111423
36.00	46104534	—	7333117	—	—	—	—	—	40.0	311.5	406.5	70.0	46111424
1.27/64	46104535	—	7333118	—	—	—	—	—	40.0	311.5	406.5	70.0	46111424
36.50	46104536	—	7333119	—	—	—	—	—	40.0	311.5	406.5	70.0	46111424
37.00	46104537	—	7333120	—	—	—	—	—	40.0	326.5	421.5	70.0	46111425
1.15/32	46104538	—	7333121	—	—	—	—	—	40.0	326.5	421.5	70.0	46111425
37.50	46104539	—	7333122	—	—	—	—	—	40.0	326.5	421.5	70.0	46111425
38.00	46104540	—	7333123	—	—	—	—	—	40.0	326.5	421.5	70.0	46111425
1.1/2	46104541	—	7333124	—	—	—	—	—	40.0	336.5	431.5	70.0	46111426
38.50	46104542	—	7333125	—	—	—	—	—	40.0	336.5	431.5	70.0	46111426
1.17/32	46104543	—	7333126	—	—	—	—	—	40.0	336.5	431.5	70.0	46111426
39.00	46104544	—	7333127	—	—	—	—	—	40.0	336.5	431.5	70.0	46111426
39.50	46104545	—	7333128	—	—	—	—	—	40.0	336.5	431.5	70.0	46111426
1.9/16	46104546	—	7333129	—	—	—	—	—	40.0	351.5	451.5	70.0	46111427
40.00	46104547	—	7333130	—	—	—	—	—	40.0	351.5	451.5	70.0	46111427
41.00	46104548	—	7333131	—	—	—	—	—	40.0	351.5	451.5	70.0	46111427
1.5/8	46104549	—	7333132	—	—	—	—	—	40.0	361.5	461.5	70.0	46111428
42.00	46104550	—	7333133	—	—	—	—	—	40.0	361.5	461.5	70.0	46111428

H8512 12×D Hydra Bodies

H8512 Apply starting values for speed and feed with a correction factor of **0.80**


Cylindrical Shanks only allow for most accurate tool holding.

Bodies allow for extremely accurate clamping and reliable use of internal coolant.

Four (4) screws and one (1) screwdriver are included with each drill body.




H8512




12XD

HSS



140°



NEW

14.0 – 25.0

HYDRA HEAD				12×D HYDRA BODY – FRACTIONAL SHANK					12×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H8512 EDP#	DCON h ₆	LU	OAL	LS	H8512 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
13.5	0010952	0016022	7332990	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
13.6	0037966	0038499	7332991	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
13.7	0037973	0038529	7332992	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
13.8	0037980	0038543	7332993	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
35/64	0010969	0016039	7332994	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
14.0	0010983	0016046	7332995	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
14.1	0037997	0038567	7332996	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
14.2	0038000	0038574	7332997	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
9/16	0011003	0016053	7332998	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
14.5	0011010	0016060	7332999	—	—	—	—	—	16.00	168.0	236.0	48.0	7833364
14.6	0038017	0038581	7333000	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
37/64	0011140	0016077	7333001	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
14.7	0038024	0039601	7333002	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
14.8	0038031	0039618	7333003	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.0	0011201	0016084	7333004	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
19/32	0011218	0016091	7333005	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.1	0038048	0039625	7333006	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.2	0038055	0039632	7333007	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.24	0032268	0032350	7333008	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
39/64	0011232	0016107	7333009	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.5	0011362	0016114	7333010	—	—	—	—	—	20.00	180.0	250.3	50.0	7833365
15.6	0038062	0039649	7333011	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
15.7	0038079	0039656	7333012	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
5/8	0011379	0016121	7333013	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.0	0011386	0016138	7333014	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.08	0032275	0032367	7333015	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.1	0038086	0039663	7333016	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.2	0038093	0039670	7333017	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
41/64	0011393	0016145	7333018	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.3	0032282	0032374	7333019	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366

HYDRA HEAD				12×D HYDRA BODY – FRACTIONAL SHANK					12×D HYDRA BODY – METRIC SHANK				
DC	R950 EDP#	R960 EDP#	R970 EDP#	DCON h ₆	LU	OAL	LS	H8512 EDP#	DCON h ₆	LU	OAL	LS	H8512 EDP#
[inch]				[inch]	[mm]	[mm]	[mm]		[inch]	[mm]	[mm]	[mm]	
16.5	0011409	0016152	7333020	—	—	—	—	—	20.00	192.0	262.6	50.0	7833366
16.6	0038109	0039687	7333021	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
21/32	0012161	0016169	7333022	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
16.7	0038116	0039694	7333023	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
17.0	0012185	0016176	7333024	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
43/64	0012215	0016183	7333025	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
17.1	0038123	0039700	7333026	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
17.2	0038130	0039717	7333027	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
11/16	0012239	0016190	7333028	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
17.5	0012253	0016503	7333029	—	—	—	—	—	20.00	204.0	275.0	50.0	7833367
17.6	0032299	0032381	7333030	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
17.7	0038147	0039724	7333031	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
45/64	0012260	0016640	7333032	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
18.0	0012277	0016664	7333033	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
18.1	0038154	0039731	7333034	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
18.2	0038161	0039748	7333035	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
23/32	0012284	0016671	7333036	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
18.5	0012307	0016688	7333037	—	—	—	—	—	20.00	216.0	287.2	50.0	7833368
18.6	0038178	0039755	7333038	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
47/64	0012321	0016695	7333039	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
18.7	0038185	0039762	7333040	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
18.9	0038192	0039779	7333041	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.0	0012338	0016817	7333042	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
3/4	0012345	0016879	7333043	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.1	0038208	0039786	7333044	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.2	0038215	0039793	7333045	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.25	0032305	0032398	7333046	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.3	0032312	0032404	7333047	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.35	0032329	0032411	7333048	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
49/64	0012376	0016886	7333049	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.5	0012383	0016947	7333050	—	—	—	—	—	25.00	228.0	305.6	56.0	7833369
19.6	0038222	0039809	7333051	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
19.7	0038239	0039816	7333052	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
25/32	0012406	0016954	7333053	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
20.0	0012413	0017111	7333054	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
51/64	0012437	0017128	7333055	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
20.5	0012451	0017159	7333056	—	—	—	—	—	25.00	240.0	317.8	56.0	7833370
13/16	0012468	0017197	7333057	—	—	—	—	—	25.00	252.0	330.1	56.0	7833371
21.0	0012475	0017166	7333058	—	—	—	—	—	25.00	252.0	330.1	56.0	7833371
53/64	0012536	0017203	7333059	—	—	—	—	—	25.00	252.0	330.1	56.0	7833371
27/32	0012550	0017227	7333060	—	—	—	—	—	25.00	252.0	330.1	56.0	7833371
21.5	0012574	0017234	7333061	—	—	—	—	—	25.00	252.0	330.1	56.0	7833371
55/64	0012604	0017241	7333062	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
22.0	0012628	0017258	7333063	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
7/8	0012635	0017371	7333064	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
22.5	0032336	0032428	7333065	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
57/64	0012642	0017401	7333066	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
22.7	0038246	0039823	7333067	—	—	—	—	—	25.00	264.0	343.0	56.0	7833372
23.0	0012666	0017425	7333068	—	—	—	—	—	25.00	276.0	354.8	56.0	7833373
29/32	0012673	0017432	7333069	—	—	—	—	—	25.00	276.0	354.8	56.0	7833373
59/64	0012680	0017456	7333070	—	—	—	—	—	25.00	276.0	354.8	56.0	7833373
23.5	0038253	0039830	7333071	—	—	—	—	—	25.00	276.0	354.8	56.0	7833373
15/16	0012703	0017562	7333072	—	—	—	—	—	32.00	288.0	371.7	60.0	7833374
24.0	0012727	0017579	7333073	—	—	—	—	—	32.00	288.0	371.7	60.0	7833374
61/64	0012741	0017586	7333074	—	—	—	—	—	32.00	288.0	371.7	60.0	7833374
24.5	0038260	0039847	7333075	—	—	—	—	—	32.00	288.0	371.7	60.0	7833374
31/32	0012772	0017593	7333076	—	—	—	—	—	32.00	288.0	371.7	60.0	7833374
25.0	0012819	0017722	7333077	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375
63/64	0012826	0017746	7333078	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375
1	0012833	0017753	7333079	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375
25.5	0038277	0039854	7333080	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375
25.65	0032343	0032435	7333081	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375
1.1/64	0012840	0018958	7333082	—	—	—	—	—	32.00	300.0	383.8	60.0	7833375

H860
H861

Set of 2 Hydra Screws
Hydra Drill Screw Driver





H860	H861
	
N1 - N7	N1 - N6

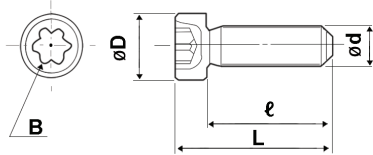
NOTE: Four (4) screws and one (1) screwdriver are included with a drill body.

H860	H861	For Hydra Head Range	Pack Qty	H860 EDP#	H861 EDP#
H860N1	H861N1	15/32 – 15.5	1	0018835	0018897
H860N2	H861N2	15.6 – 18.5	1	0018842	0018903
H860N3	H861N3	18.6 – 21.5	1	0018859	0018910
H860N4	H861N3	55/64 – 31/32	1	0018866	0018910
H860N5	H861N4	25.0 – 1.3/32	1	0018873	0018927
H860N6	H861N5	28.0 – 33.5	1	0018880	0018934
H860N7	H861N6	34.0 – 42.0	1	46111949	46260354

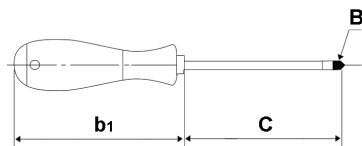
TORQUE TABLE

T			TORQUE VALUES Nm (metric System)	TORQUE VALUES in/lbs (inch System)
H860	H861	Drilling Diameter		
H860N1	H861N1	12.0mm-15.0mm 31/64"-39/64"	0.75-0.99	6.6-8.8
H860N2	H861N2	16.0mm-18.0mm 41/64"-23/32"	0.93-1.24	8.2-11.0
H860N3	H861N3	19.0mm-21.0mm 49/64"-27/32"	1.84-2.44	16.3-21.6
H860N4	H861N3	22.0mm-24.0mm 57/64"-31/32"	2.73-3.72	24.2-32.9
H860N5	H861N4	25.0mm-27.0mm 1.1/64"-1.3/32"	4.14-5.52	36.6-48.8
H860N6	H861N5	28.0mm-33.5mm 1.1/8"-1.3/16"	4.97-6.63	44.0-58.7
H860N7	H861N6	35.0mm-42.5mm	7.20	63.7

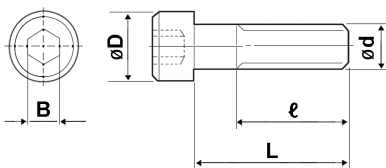
SCREWS AND SCREW-DRIVERS DATA



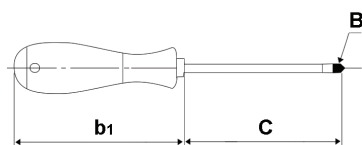
e-code	d	Pitch	L (mm)	l (mm)	D (mm)	B
H860N1	M2.2	0.45	7.5	5.7	3.5	8IP
H860N2	M2.5	0.45	9.0	7.0	4.1	10IP
H860N3	M3.0	0.50	10.5	8.0	4.9	15IP
H860N4	M3.5	0.60	11.5	8.8	5.5	15IP
H860N5	M4.0	0.70	12.5	9.5	6.0	20IP
H860N6	M4.5	0.75	14.3	10.8	6.8	25IP



e-code	B	C	b1
H861N1	8IP	60	104
H861N2	10IP	80	111
H861N3	15IP	80	111
H861N4	20IP	100	118
H861N5	25IP	100	118



e-code	d	Pitch	L (mm)	l (mm)	D (mm)	B
H860N7	M5.0	0.8	15	FULL	8.5	4



e-code	B	C	b1
H861N6	4	75	111

DRILLING HINTS & TIPS WITH THE HYDRA DRILL**COOLANTS**

For maximum chip evacuation and tool performance, coolant use is recommended.

Emulsion coolant concentration of 6 – 8% is recommended for most applications, at a coolant pressure of 20 bar or higher. For high strength steel, stainless steels and tougher drilling applications, use a higher concentration of 10-12%. In these applications, particularly in stainless steels, it is recommended to use the maximum coolant pressure on the machine.

The Hydra-drill coolant holes provide improved web strength and reduce heat at the cutting edges for increased productivity and longer tool life.

HOLDERS

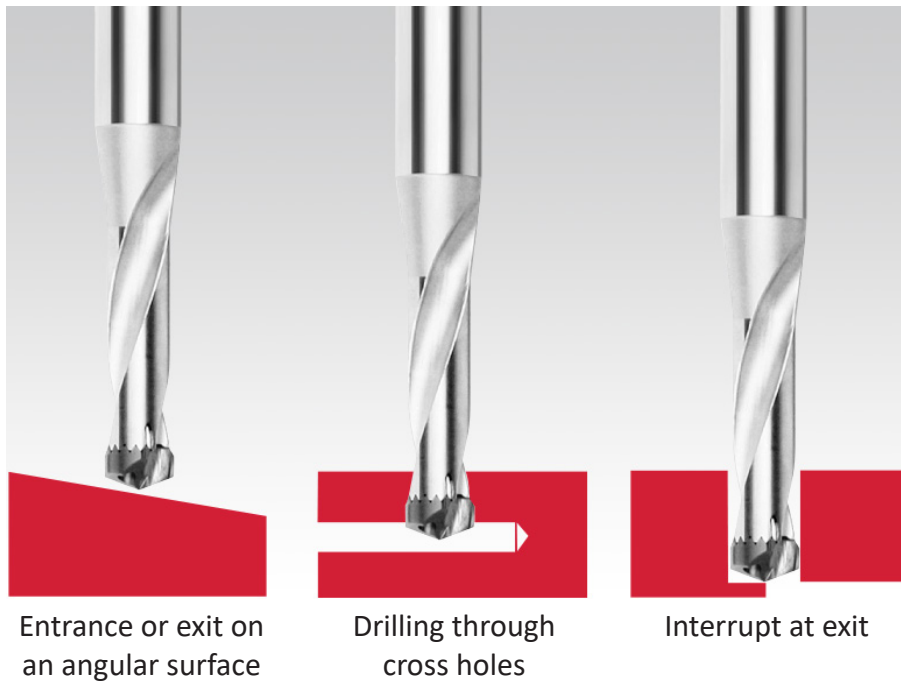
Always use tool holders and collets that provide good concentricity between the drill and the machine spindle. Use a positive stop to prevent the tool from backing up into the holder. Radial runout in the tool assembly must be accurately checked and maintained.

WORKPIECE

A secure and rigid workpiece will minimise deflection, and allow for better accuracy and true position of the hole.

FEEDS

It is important not to underfeed the drill which will cause it to dwell and dull. This is particularly true in work hardening materials. Feed rates should be high enough for proper chip formation.



In these drilling scenarios, reducing feed rate to 1/3 (33%) is generally recommended. Drilling into an entry angle of more than 10° is NOT recommended – surface should be milled flat first.

SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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