



*suttontools*

### D188-Sets -Reduced Shank Drill Sets - 1/2" Shank - Sutton Tools

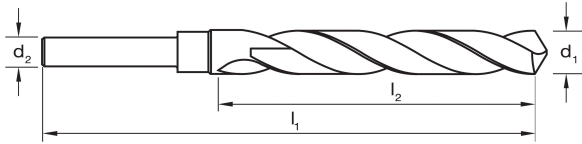
---

Sutton Tools Reduced Shank Drills are designed to increase the drilling capacity of drill chucks and for slow speed (350 RPM or less), large scale boring. Reduced shanks suit 13mm drill chucks. All drills have a 152mm overall length and 86mm flute length.

#### Features:

- Common Length 6" (152mm) overall length with a 3-3/8" (86mm) flute length
- Reduced shanks suit 13mm drill chucks
- 118° standard point for general purpose applications
- Made from M2 High Speed Steel (HSS) offering the best combination of strength, heat & wear resistance
- Blue surface finish for ferrous applications. The steam oxide finish prevents chip build-up on the cutting edges and reduces cutting friction, especially in low carbon steels

Range:



Item #	Pieces	Range	Case	Shank
D188S8R	8	9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1"	Plastic	1/2"
D188RS4	4	5/8, 3/4, 7/8, 1"	Foam	1/2"
D188RS16	16	17/32, 9/16, 19/32, 5/8, 21/32, 11/16, 23/32, 3/4, 25/32, 13/16, 27/32, 7/8, 29/32, 15/16, 31/32, 1"	Plastic	1/2"
D188RS4M	4	16.0, 18.0, 22.0, 25.0mm	Foam	1/2"
D188SM8R	8	14.0, 15.0, 16.0, 16.5, 18.0, 20.0, 22.0, 25.0mm	Plastic	1/2"

### Applications:

ISO	VDI	Description	Condition	Hardness	Strength	Optimal
P	1	Steel - Non-alloy, cast & free cutting (~ 0.15 %C)	Annealed	125MPa	440MPa	●
P	2	Steel - Non-alloy, cast & free cutting (~ 0.45 %C)	Annealed	190MPa	640MPa	●
P	3	Steel - Non-alloy, cast & free cutting (~ 0.45 %C)	Quenched & Tempered	250MPa	840MPa	○
P	4	Steel - Non-alloy, cast & free cutting (~ 0.75 %C)	Annealed	270MPa	910MPa	○
P	5	Steel - Non-alloy, cast & free cutting (~ 0.75 %C)	Quenched & Tempered	300MPa	1010MPa	○
P	6	Steel - Low alloy & cast < 5% of alloying elements	Annealed	180MPa	610MPa	●
P	7	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	275MPa	930MPa	○
P	8	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	300MPa	1010MPa	○
P	9	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	350HB	1180MPa	
P	10	Steel - High alloy, cast & tool	Annealed	200MPa	680MPa	○
P	11	Steel - High alloy, cast & tool	Hardened & Tempered	325HB	1100MPa	
P	12	Steel - Corrosion resistant & cast - Ferritic / Martensitic	Annealed	200HB	680MPa	
P	13	Steel - Corrosion resistant & cast - Martensitic	Quenched & Tempered	240HB	810MPa	
M	14.1	Stainless Steel - Austenitic	Age Hardened	180MPa	610MPa	○
M	14.2	Stainless Steel - Duplex		250MPa	840MPa	○
M	14.3	Stainless Steel - Precipitation Hardening		250HB	840MPa	
K	15	Cast Iron, Grey (GG) - Ferritic / Pearlitic		180MPa	610MPa	○
K	16	Cast Iron, Grey (GG) - Pearlitic		260HB	880MPa	
K	17	Cast Iron, Nodular (GGG) - Ferritic		160MPa	570MPa	○
K	18	Cast Iron, Nodular (GGG) - Pearlitic		250HB	840MPa	
K	19	Cast Iron, Malleable - Ferritic		130MPa	460MPa	○
K	20	Cast Iron, Malleable - Pearlitic		230HB	780MPa	
N	21	Aluminum & Magnesium, wrought alloy - Non Heat Treatable		60MPa	210MPa	●
N	22	Aluminum & Magnesium, wrought alloy - Heat Treatable	Age Hardened	100MPa	360MPa	●
N	23	Aluminum & Magnesium, cast alloy ?12% Si - Non Heat Treatable		75MPa	270MPa	○
N	24	Aluminum & Magnesium, cast alloy ?12% Si - Heat Treatable	Age Hardened	90MPa	320MPa	○
N	25	Aluminum & Magnesium, cast alloy >12% Si - Non Heat Treatabl		130HB	460MPa	
N	26	Copper & Copper alloys (Brass/Bronze) - Free cutting, Pb > 1%		110MPa	390MPa	○
N	27	Copper & Copper alloys (Brass/Bronze) - Brass (CuZn, CuSnZn)		90MPa	320MPa	○
N	28	Copper & Copper alloys (Brass/Bronze) - Bronze (CuSn)		100MPa	360MPa	○
N	29	Non-metallic - Thermosetting & fiber-reinforced plastics				
N	30	Non-metallic - Hard rubber, wood etc.				
S	31	High temperature alloys - Fe based	Annealed	200HB	680MPa	
S	32	High temperature alloys - Fe based	Age Hardened	280HB	950MPa	
S	33	High temperature alloys - Ni / Co based	Annealed	250HB	840MPa	
S	34	High temperature alloys - Ni / Co based	Age Hardened	350HB	1180MPa	
S	35	High temperature alloys - Ni / Co based	Cast	320HB	1080MPa	
S	36	Titanium & Titanium alloys - CP Titanium			400MPa	
S	37.1	Titanium & Titanium alloys - Alpha alloys			860MPa	
S	37.2	Titanium & Titanium alloys - Alpha / Beta alloys	Annealed		960MPa	
S	37.3	Titanium & Titanium alloys - Alpha / Beta alloys	Age Hardened		1170MPa	
S	37.4	Titanium & Titanium alloys - Beta alloys	Annealed		830MPa	
S	37.5	Titanium & Titanium alloys - Beta alloys	Age Hardened		1400MPa	
H	38.1	Hardened steel	Hardened & Tempered	45HRC		
H	38.2	Hardened steel	Hardened & Tempered	55HRC		

#### KEY

● Optimal ○ Effective | **P** Steel **M** Stainless **K** Cast Iron **N** Non-Ferous Metals **S** Titanium & Super Alloys **H** Hard Materials

### Applications:

ISO	VDI	Description	Condition	Hardness	Strength	Optimal
H	39.1	Hardened steel	Hardened & Tempered	58HRC		
H	39.2	Hardened steel	Hardened & Tempered	62HRC		
H	40	Cast Iron - Chilled	Cast	400MPa	1350MPa	o
H	41	Cast Iron	Hardened & Tempered	55HRC		

#### KEY

Optimal
  Effective
 P Steel
 M Stainless
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials

### Trade/DIY Applications:

Wood	Metal	Specialty	Masonry
Soft Wood	Steel	<ul style="list-style-type: none"> <li>● PVC Plastic</li> </ul>	<ul style="list-style-type: none"> <li>○ Masonry</li> </ul>
Hard Wood	Hard Steel	Acrylic	Plasterboard
Wood & Nails	Stainless Steel	mineral rock wool foams (EPS, PUR),	Compressed Fibre Cement
Chipboard	Aluminium	○ Polystyrene	Cement Sheet
Plywood	Copper / Brass	○ Leather	Ceramic Tile
MDF	Cast Iron	○ Rubber	Hebel
Green Wood	Sheet Metal	Fibreglass	Brick
Sandwich Construction	Precious Metals	Carbon Fibre	Concrete
Pallet	Metal Pipe	Glass	Reinforced Concrete
Window Frame		Laminate	Stone
			Granite
			Marble

#### KEY

Optimal
  Effective