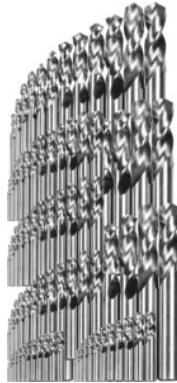


Garant

**Stub drill set HSS-E No. 113150, type N as a refill set, without case, uncoated,
Type: 1-13**

**Order data**

Order number	113730 1-13
GTIN	4045197295606
Item class	11B

Description**Version:**

Made up of stub drills No. 113150.
Particularly robust and strong due to strengthened core.
Ground flutes, with high concentricity.
Bright finish.

Advantage:

Ideal for drilling shallow holes (approx. 2 - 4×D) on NC machines and automatic machines.
Through-coolant: no
Shank: Plain shank
Number of cutting edges Z: 2
Drill range: 1 - 13 mm
Number of drills: 121
Incremental steps of drills: 0.1 mm

Technical description

Drill range	1 - 13 mm
-------------	-----------

Incremental steps of drills	0.1 mm
Number of drills	121
Shank	Plain shank
Number of cutting edges Z	2
Coating	uncoated
Tool material	HSS E
Standard	DIN 1897
Type	N
Tolerance nominal Ø	h8
Point angle	130 °
Through-coolant	no
with case	no
Colour ring	without
Type of product	Jobber drill

User data

	Suitability	V _c	ISO code
Alu plastics	suitable only under restricted conditions	80 m/min	N
Aluminium (short chipping)	suitable only under restricted conditions	45 m/min	N
Alu > 10% Si	suitable only under restricted conditions	50 m/min	N
Steel < 500 N/mm ²	suitable	40 m/min	P
Steel < 750 N/mm ²	suitable	30 m/min	P
Steel < 900 N/mm ²	suitable	25 m/min	P
Steel < 1100 N/mm ²	suitable only under restricted conditions	10 m/min	P
Steel < 1400 N/mm ²	suitable only under restricted conditions	8 m/min	P

INOX < 900 N/mm ²	suitable	12 m/min	M
INOX > 900 N/mm ²	suitable only under restricted conditions	8 m/min	M
Ti > 850 N/mm ²	suitable only under restricted conditions	5 m/min	S
GG(G)	suitable	25 m/min	K
CuZn	suitable only under restricted conditions	80 m/min	N
Uni	suitable		
Oil	suitable		
wet maximum	suitable		

Accessories

Stub drill HSS-E N Ø DC h8 8 mm	113150 8
Stub drill HSS-E N Ø DC h8 5,5 mm	113150 5,5
Stub drill HSS-E N Ø DC h8 4,8 mm	113150 4,8
Stub drill HSS-E N Ø DC h8 3,7 mm	113150 3,7
Stub drill HSS-E N Ø DC h8 6,7 mm	113150 6,7
Stub drill HSS-E N Ø DC h8 1,3 mm	113150 1,3
Stub drill HSS-E N Ø DC h8 10,5 mm	113150 10,5
Stub drill HSS-E N Ø DC h8 1,8 mm	113150 1,8
Stub drill HSS-E N Ø DC h8 1,5 mm	113150 1,5
Stub drill HSS-E N Ø DC h8 2,8 mm	113150 2,8
Stub drill HSS-E N Ø DC h8 6,8 mm	113150 6,8
Stub drill HSS-E N Ø DC h8 2,2 mm	113150 2,2
Stub drill HSS-E N Ø DC h8 12 mm	113150 12
Stub drill HSS-E N Ø DC h8 1,1 mm	113150 1,1
Stub drill HSS-E N Ø DC h8 6,5 mm	113150 6,5
Stub drill HSS-E N Ø DC h8 9,9 mm	113150 9,9

Stub drill HSS-E N Ø DC h8 1,9 mm	113150 1,9
Stub drill HSS-E N Ø DC h8 9,7 mm	113150 9,7
Stub drill HSS-E N Ø DC h8 6,1 mm	113150 6,1
Stub drill HSS-E N Ø DC h8 8,4 mm	113150 8,4
Stub drill HSS-E N Ø DC h8 6,9 mm	113150 6,9
Stub drill HSS-E N Ø DC h8 1 mm	113150 1
Stub drill HSS-E N Ø DC h8 6,4 mm	113150 6,4
Stub drill HSS-E N Ø DC h8 4 mm	113150 4
Stub drill HSS-E N Ø DC h8 13 mm	113150 13
Stub drill HSS-E N Ø DC h8 5 mm	113150 5
Stub drill HSS-E N Ø DC h8 5,6 mm	113150 5,6
Stub drill HSS-E N Ø DC h8 3 mm	113150 3
Stub drill HSS-E N Ø DC h8 2,5 mm	113150 2,5
Stub drill HSS-E N Ø DC h8 11 mm	113150 11
Stub drill HSS-E N Ø DC h8 4,5 mm	113150 4,5
Stub drill HSS-E N Ø DC h8 9,3 mm	113150 9,3
Stub drill HSS-E N Ø DC h8 3,8 mm	113150 3,8
Stub drill HSS-E N Ø DC h8 4,2 mm	113150 4,2
Stub drill HSS-E N Ø DC h8 6,3 mm	113150 6,3
Stub drill HSS-E N Ø DC h8 8,5 mm	113150 8,5
Stub drill HSS-E N Ø DC h8 2,1 mm	113150 2,1
Stub drill HSS-E N Ø DC h8 7,5 mm	113150 7,5
Stub drill HSS-E N Ø DC h8 7,1 mm	113150 7,1
Stub drill HSS-E N Ø DC h8 7,4 mm	113150 7,4
Stub drill HSS-E N Ø DC h8 7,3 mm	113150 7,3
Stub drill HSS-E N Ø DC h8 1,6 mm	113150 1,6
Stub drill HSS-E N Ø DC h8 2,7 mm	113150 2,7
Stub drill HSS-E N Ø DC h8 5,8 mm	113150 5,8
Stub drill HSS-E N Ø DC h8 4,6 mm	113150 4,6

Stub drill HSS-E N Ø DC h8 12,5 mm	113150 12,5
Stub drill HSS-E N Ø DC h8 5,1 mm	113150 5,1
Stub drill HSS-E N Ø DC h8 9,2 mm	113150 9,2
Stub drill HSS-E N Ø DC h8 11,8 mm	113150 11,8
Stub drill HSS-E N Ø DC h8 4,3 mm	113150 4,3
Stub drill HSS-E N Ø DC h8 3,6 mm	113150 3,6
Stub drill HSS-E N Ø DC h8 9,1 mm	113150 9,1
Stub drill HSS-E N Ø DC h8 3,9 mm	113150 3,9
Stub drill HSS-E N Ø DC h8 11,5 mm	113150 11,5
Stub drill HSS-E N Ø DC h8 3,1 mm	113150 3,1
Stub drill HSS-E N Ø DC h8 8,7 mm	113150 8,7
Stub drill HSS-E N Ø DC h8 10,2 mm	113150 10,2
Stub drill HSS-E N Ø DC h8 5,7 mm	113150 5,7
Stub drill HSS-E N Ø DC h8 1,4 mm	113150 1,4
Stub drill HSS-E N Ø DC h8 7,8 mm	113150 7,8
Stub drill HSS-E N Ø DC h8 8,9 mm	113150 8,9
Stub drill HSS-E N Ø DC h8 5,2 mm	113150 5,2
Stub drill HSS-E N Ø DC h8 6,6 mm	113150 6,6
Stub drill HSS-E N Ø DC h8 7 mm	113150 7
Stub drill HSS-E N Ø DC h8 3,3 mm	113150 3,3
Stub drill HSS-E N Ø DC h8 3,2 mm	113150 3,2
Stub drill HSS-E N Ø DC h8 2,3 mm	113150 2,3
Stub drill HSS-E N Ø DC h8 8,3 mm	113150 8,3
Stub drill HSS-E N Ø DC h8 4,7 mm	113150 4,7
Stub drill HSS-E N Ø DC h8 7,9 mm	113150 7,9
Stub drill HSS-E N Ø DC h8 7,7 mm	113150 7,7
Stub drill HSS-E N Ø DC h8 1,7 mm	113150 1,7
Stub drill HSS-E N Ø DC h8 7,2 mm	113150 7,2
Stub drill HSS-E N Ø DC h8 4,1 mm	113150 4,1

Stub drill HSS-E N Ø DC h8 2,4 mm	113150 2,4
Stub drill HSS-E N Ø DC h8 4,4 mm	113150 4,4
Stub drill HSS-E N Ø DC h8 8,1 mm	113150 8,1
Stub drill HSS-E N Ø DC h8 4,9 mm	113150 4,9
Stub drill HSS-E N Ø DC h8 8,2 mm	113150 8,2
Stub drill HSS-E N Ø DC h8 3,4 mm	113150 3,4
Stub drill HSS-E N Ø DC h8 2,9 mm	113150 2,9
Stub drill HSS-E N Ø DC h8 5,9 mm	113150 5,9
Stub drill HSS-E N Ø DC h8 5,3 mm	113150 5,3
Stub drill HSS-E N Ø DC h8 2 mm	113150 2
Stub drill HSS-E N Ø DC h8 6,2 mm	113150 6,2
Stub drill HSS-E N Ø DC h8 9,5 mm	113150 9,5
Stub drill HSS-E N Ø DC h8 9,8 mm	113150 9,8
Stub drill HSS-E N Ø DC h8 9,4 mm	113150 9,4
Stub drill HSS-E N Ø DC h8 7,6 mm	113150 7,6
Stub drill HSS-E N Ø DC h8 1,2 mm	113150 1,2
Stub drill HSS-E N Ø DC h8 5,4 mm	113150 5,4
Stub drill HSS-E N Ø DC h8 8,6 mm	113150 8,6
Stub drill HSS-E N Ø DC h8 9,6 mm	113150 9,6
Stub drill HSS-E N Ø DC h8 9 mm	113150 9
Stub drill HSS-E N Ø DC h8 2,6 mm	113150 2,6
Stub drill HSS-E N Ø DC h8 3,5 mm	113150 3,5
Stub drill HSS-E N Ø DC h8 10 mm	113150 10
Stub drill HSS-E N Ø DC h8 8,8 mm	113150 8,8
Stub drill HSS-E N Ø DC h8 6 mm	113150 6