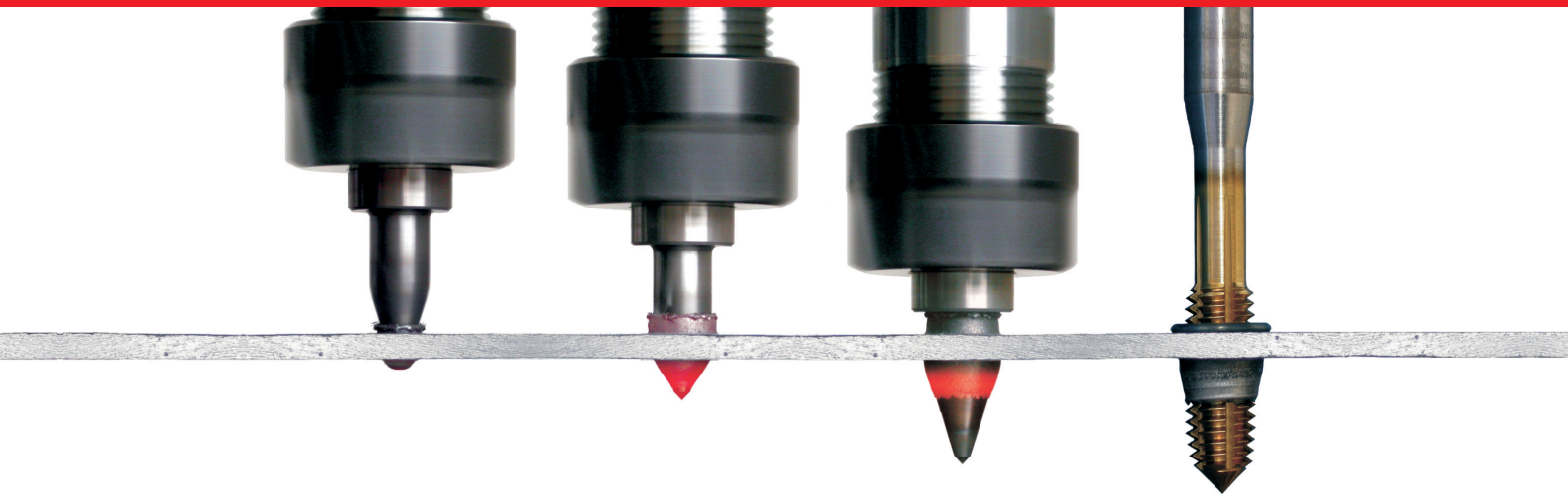
Flowdrill®



Efficient and Chipless Joining

We replace:

- Insert nut
- Tin bolt
- Weld nut
- Rivet nut

Our Products - For Your Success

Flowdrill

Thermal friction drill

"Standard"- with collar

"Flat"- plane surface

Flowtaps

Cold formed roll tap

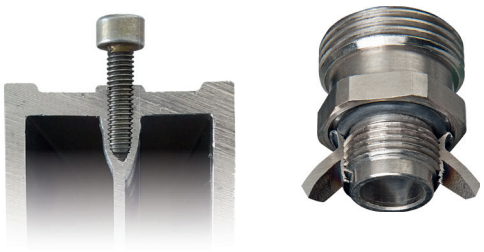
The Technology: Thermal friction drilling and thread forming

Flowdrilling
A Flowdrill® uses rotational speed and axial force for a local creation of frictional heat. It plastifies metal materials and forms accurate bushings in between seconds:

- with multiple length of the original material thickness
- chipless, no waste
- in steel, stainless steel, aluminum, brass, copper...
- for all typical material thicknesses > 0.5 mm
- for high loaded threads from M2 to M20 and up to G1"
- thus replaces welding nuts, rivet nuts and pressed nuts

Flowtapping
Flowtapping is also a chipless operation. The thread shape is formed through the whole bush length. Therefore a thread length of minimum 1 x D can normally be achieved.
The load of a cold formed thread beats a standard cut thread and effects a positive operating lifetime benefit as well.

Five typical use cases
1. Flowdrill & Flowtap or thread forming screw
2. Bearing sleeve / hinges
3. Brazing or welding joints
4. Connecting different materials
5. Sealing surface. e.g. chamfer for O-rings



Aludrill / Alutap

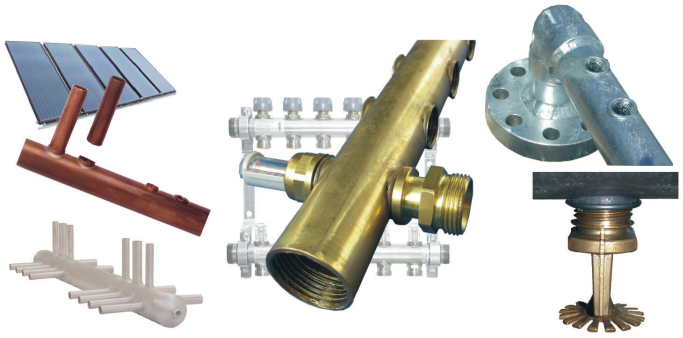
Flowdrill for aluminium

Accessoires

Collets / tool holders with cooler disc

Typical Application Areas

Automotive and agriculture



Construction, solar and heating industry

Stairs, handrails and fronts

Steel furniture and rehab accessories

The basic equipment

Starterset

Flow2go

Flexible on site and in the workshop

Your Advantages

Increase of productivity:

- chipless drilling and tapping
- no waste and removal costs
- no additional investment or storage costs
- reduction of operation steps
- no extraneous materials needed
- high process reliability
- solid-carbide tools provide extra-long lifetime

Perfect flexibility - applicable on:

- standard pillar machines
- CNC - automated machines
- our special designed mobile drilling unit “Flow2go”

The Company

For almost 40 years years we manufacture our special hard metal tools by in-house production only. We are your qualified specialist for any kind of Flowdrill applications and, as a system supplier with an aligned assortment, your first choice for any Flowdrill projects.

We will be glad to attend your project from the initial trial to the final serial production - worldwide! With our almost three decades of experience you will benefit first-hand from our knowhow as market leader. We deliver our established products worldwide through our offices and representatives.

Machine parameters for Flowdrill and Flowtap

Thread size	Flowdrill				Flowtap
	Flowdrill Ø [mm]	Spindle speed [min⁻¹]	Motor power [kW]	Process time [s]	Spindle speed [min⁻¹]
M2	1.8	3200	0.5	2	1600
M3	2.7	3000	0.6	2	1350
M4	3.7	2600	0.7	2	1000
M5	4.5	2500	0.8	2	800
M6	5.4	2400	1.0	2	650
M8	7.3	2200	1.3	2	500
M10	9.2	2000	1.5	3	400
M12	10.9	1800	1.7	3	330
M16	14.8	1400	2.2	4	250
M20	18.7	1200	2.7	5	200
BSP 1/8”	9.2	2000	1.5	3	400
BSP 1/4”	12.4	1600	2.0	3	360
BSP 3/8”	15.9	1400	2.3	4	300
BSP 1/2”	19.9	1200	3.0	5	270
BSP 3/4”	25.4	1100	3.5	6	200
BSP 1”	31.9	1000	5.0	9	180

Material thickness [mm]	Determined pull out strength on mild steel (S235) [kN]								
	M4	M5	M6	M8	M10	M12	M16	M20	**
1.0	6	10							s
1.5	7	13	16	24*					s
2.0	9	15	17	27	50*				s
3.0			24	42	53	72	97	142	s
				37	52	67	88		l
4.0				45	72	91	105	162	s
				45	68	86	115		l
5.0						101		>200	s
							141	106	l

Note: 1kN » 100 kg
Stainless steel: approx. 20-40% higher values

*additional value on stainless steel
**s = Flowdrill type 'short'
**l = Flowdrill type 'long'

Material thickness [mm]	Determined overtorque on mild steel (S235) [Nm]						
	M4	M5	M6	M8	M10	M12	M16
1.0	5	8					
1.5		11	17	25			
2.0	9	13	20	28			
3.0			27	50	66	136	197
4.0			28	67	98	163	
5.0						269	

Notes

Parameters on this table apply to mild steel with 2mm thickness. These data are only standard values and might change with different thread sizes, thread length variations and material properties. Stainless steel requires 15% less RPM speed for Flowdrilling and a 0.1mm diameter increase for M8 threads and larger. Aluminum and other non-ferrous materials require approx. 50% higher RPM speeds for Flow-drilling. For thicker materials add 1 second process time/mm. CNC-data are available on request.

Tool lifetime under optimal conditions: e.g. Flowdrill for M8 in 2mm thickness

- mild steel: approx 10 000 holes
- stainless steel: approx. 5 000 holes

Flowdrill:
All Flowdrill tools are available in diameter steps of 0,1mm. We will also support you with any kind of customized Flowdrills according to your specific application.

Flowtap:
Our standard range contains cold forming taps from M2-M20 as well as BSP1/16” - BSP1". All standard Flowtaps are TIN-coated with lubrication flutes.

In addition we can also deliver Flowtaps for the following thread types on request: MF / NPT / UNC / UNF / Rp / Rc / BSPP / BSPT / NC / API / NPF / NPS

Contact

Flowdrill B.V.
Tel.: + 31 30 2416606
info@flowdrill.nl

Flowdrill France
Tel.: +33 6 32 05 86 29
info@flowdrill.fr

Flowdrill GmbH
Tel.: + 49 6201 29091 0
info@flowdrill-gmbh.de

Flowdrill Inc.
Tel.: +1 314 968 1134
info@flowdrill.com

Flowdrill Ltd.
Tel.: +44 1746 250 003
info@flowdrill.co.uk