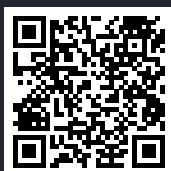


**Form your own inserts
as simple as 1, 2, 3**



www.formdrill.com

Formdrills will produce your own inserts out of the part's material

Formdrill process works in steel, stainless steel, copper, brass and aluminium up to 12 mm thickness

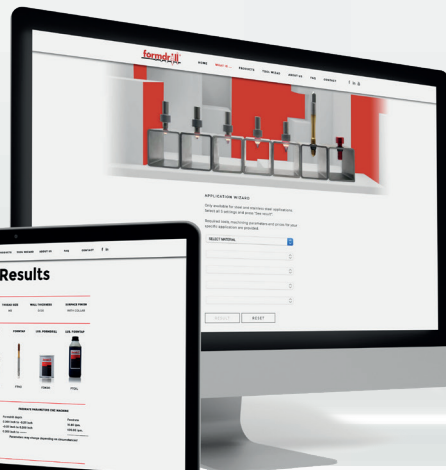
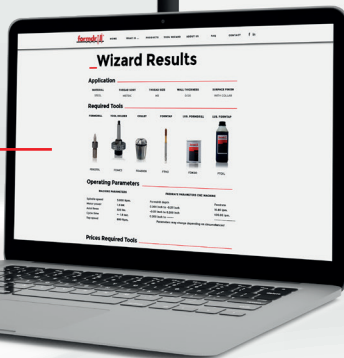
More **ADVANTAGES & BENEFITS**

- Very fast process
- Strong connections, high pull out and torque values
- Very cost effective compared to weld nuts or threaded inserts
- No special machines required
- Only small investment required
- Repeatability, high tolerances
- No additional components
- Can easily be automated
- Clean workspace (chipless)

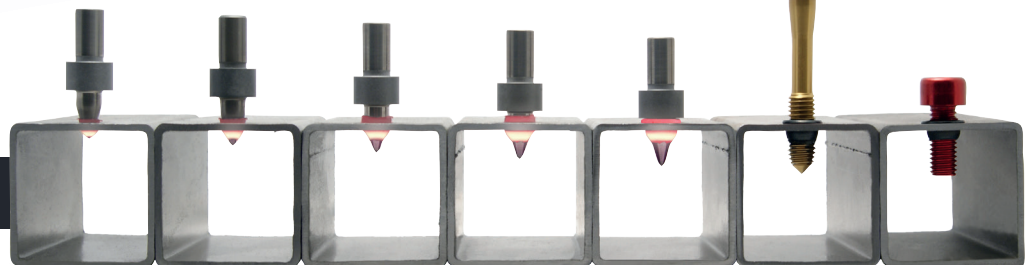
Application Wizard

The wizard is available for determining steel and stainless steel applications.

Provides required tools, machining parameters and prices for your specific application. Check it out on our website!



How does it **WORK?**



Formdrills use rotational speed and axial force to produce friction. This friction heats up the material and softens it enough to make a hole and displace the material to form an insert.

The length of the formed insert is 2 to 3 times the original material thickness.

The next step is to create threads using a forming tap, Formtap.

Self-tapping screws can be used to save the tapping operation.

This formed insert can also be used as a through hole for welded, soldered or brazed connections in copper tubing or for a load bearing surface as in U-Joints.



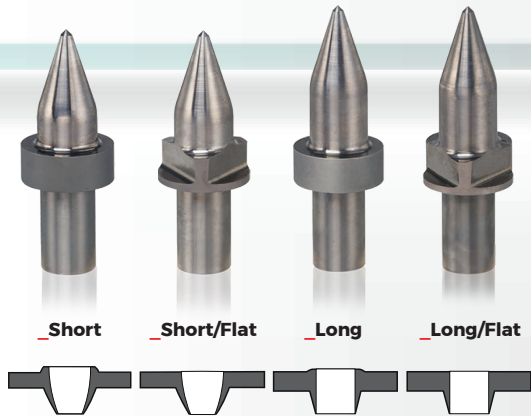
To form your own inserts you can use a standard drill press, milling machine or CNC system and the following tools and accessories:

1. A **Formdrill** specified by diameter and style

Short styles are used in thinner materials

Long styles are for thicker materials and for straight through holes

Short / flat or **long / flat** style to remove the upper portion of the bushing for a flush flat surface finish



3. **Lubrication Unit**

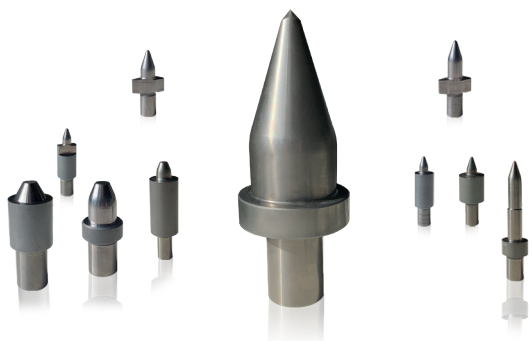
Lubrication units are available for use in CNC machines.



7. **Special Tools**

We also manufacture special Formdrill tools according to your application. Everything is possible: different length, angle, coating, cut off tip or any other modification.

Our engineers will gladly assist in designing custom Formdrill tools.



2. **Tool holder and Collet**

Available in different sizes and shanks. The tool holders have a special heat sink attached for dissipating excess heat generated by repetitive drilling. This is very important to protect your drilling equipment.

4. **Formtap** is a roll forming style tap used to maximize thread strength and pull-out resistance. No chips are produced.



5. **Lubricant** is designed to prolong tool life by reducing material build up on the tool. Lubricants are available in both paste and liquid form.



6. **Formdrill Portable Mag drill**

Mobile solution to use our Formdrill tools outside the workshop. The drill is manufactured to the highest quality standards and can be used up to M10 in 3.0mm (7/16-UNC - 1/8NPT in 0.120" wall)



Tool holder



Collet

Retainer nut



8. **Starter Set**

A complete set to start with Formdrill. Tool case with Formdrill tool, Formtap, lubricant; Everything you need to get started. Available in many different setups.



The process is proven; it has been in use for over 30 years.

Users include multi-national groups in the automotive, heating and cooling, medical equipment, building structural frameworks, road lighting and signal fixtures and metal furniture manufacturers.

Formed inserts are as strong or stronger than the same diameter welded nuts:

Thread type and Ø	Wall Thickness	Din Welded nuts (pull-out force in N)	Formdrill (pull-out force in N)	Torque (in Nm)	Class
M4x0,70	2,0 mm	8.750	8.280	9,0	8
M5x0,80	2,0 mm	14.200	14.940	13,0	10
M6x1,0	2,0 mm	16.000	17.350	20,0	8
M6x1,0	3,0 mm	24.000	+24.000	26,0	12
M8x1,25	2,0 mm	22.000	26.000	28,0	8
M8x1,25	3,0 mm	36.500	40.000	51,0	10
M10x1,5	4,0 mm	69.500	69.800	96,0	12
M12x1,75	5,0 mm	84.000	97.000	267,0	10
M20x2,5	5,0 mm	196.000	+200.000	-	8

These values apply to mild steel. Torque and pull-out resistance will vary with different materials.

Drill presses, milling machines or CNC systems will work.

Examples of equipment requirements are as follows:

Metric Threads

Thread diameter	Formdrill part no.	Spindle Speed (mild steel)	Spindle Speed (stainless steel)	Motor power	Cycle Time (seconds)
M3 x 0,5	FD0270S	2.700 - 3.300	2.300 - 2.900	0,8 kW.	< 2,0 sec
M4 x 0,7	FD0370S	2.700 - 3.300	2.300 - 2.900	0,8 kW.	< 2,0 sec
M5 x 0,8	FD0450S	2.500 - 3.100	2.200 - 2.800	1,0 kW.	< 2,0 sec
M6 x 1,0	FD0530S	2.500 - 3.100	2.200 - 2.800	1,0 kW.	< 2,0 sec
M8 x 1,25	FD0730S	2.200 - 2.800	1.800 - 2.400	1,5 kW.	2,0 sec
M10 x 1,5	FD0920S	1.900 - 2.500	1.600 - 2.200	1,8 kW.	3,0 sec
M12 x 1,75	FD1090S	1.700 - 2.300	1.500 - 2.100	2,0 kW.	4,0 sec
M14 x 2,0	FD1300S	1.500 - 2.100	1.300 - 1.900	2,2 kW.	5,0 sec
M16 x 2,0	FD1480S	1.300 - 1.900	1.100 - 1.700	2,5 kW.	6,5 sec
M18 x 2,5	FD1670S	1.200 - 1.800	1.050 - 1.650	2,5 kW.	7,0 sec
M20 x 2,5	FD1870S	1.000 - 1.400	900 - 1.300	3,0 kW.	8,0 sec

BSP Threads

Thread diameter	Formdrill part no.	Spindle Speed (mild steel)	Spindle Speed (stainless steel)	Motor power	Cycle Time (seconds)
1/8" BSP	FD0920S	1.900 - 2.500	1.600 - 2.200	1,8 kW.	3,0 sec
1/4" BSP	FD1240S	1.700 - 2.300	1.500 - 2.100	2,0 kW.	4,5 sec
3/8" BSP	FD1590S	1.200 - 1.800	1.100 - 1.700	2,5 kW.	6,5 sec
1/2" BSP	FD1990S	800 - 1.200	700 - 1.100	3,0 kW.	10,0 sec
3/4" BSP	FD2540S	700 - 1.100	600 - 1.000	4,0 kW.	13,0 sec

Parameters may vary according to material properties. Consult us for Aluminium and Copper.

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