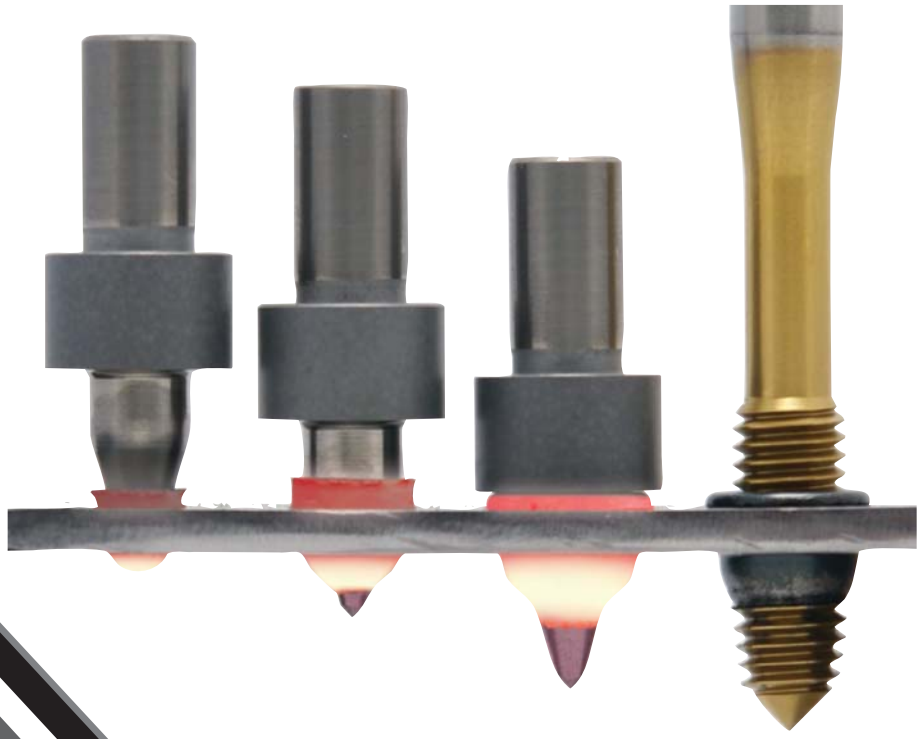
formdrill®



CREATE YOUR OWN INSERTS

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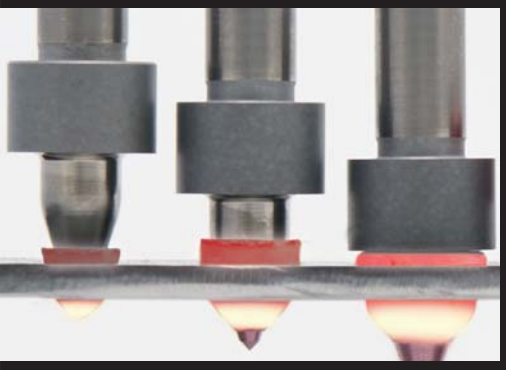
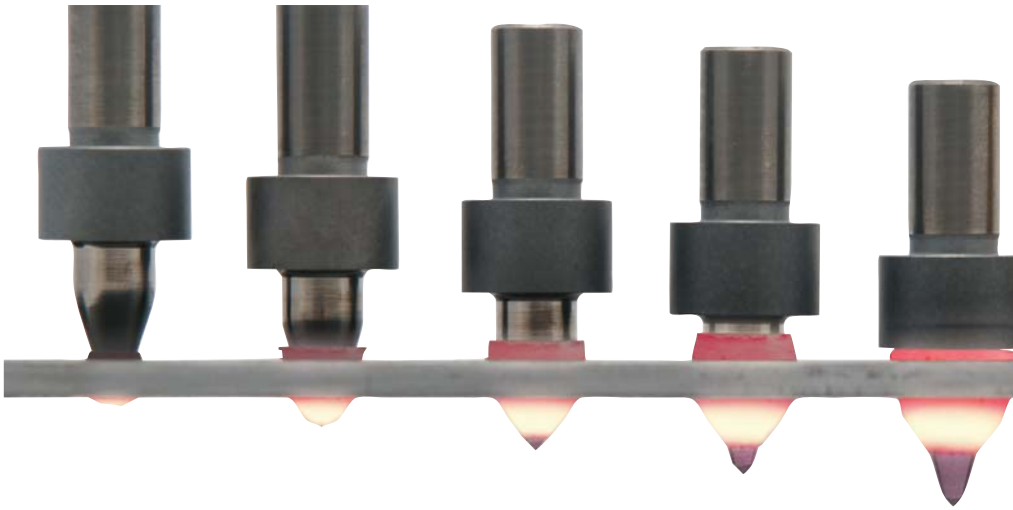
FORMDRILLS WILL PRODUCE YOUR OWN INSERTS OUT OF THE PART'S MATERIAL

FORMDRILL PROCESS WOR
BRASS AND ALUMINIUM UP



METRIC, METRIC FINE, BSP, NPT, UNC, UNF, …

AVAILABLE UPTO 32.0 mm Ø



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)

HOW DOES IT WORK?

Formdrills use the speed of rotation and the axial force to produce friction. This friction heats up the material and softens it enough to form the hole and displace the material to form the insert.

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

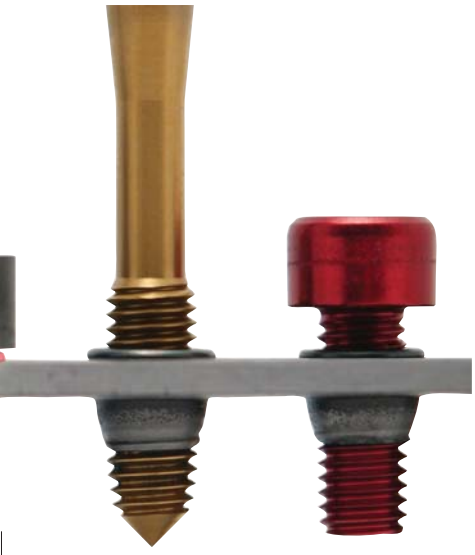
The next step is to create threads using a forming tap, Formtap.

Self-tapping screws can also be used to save the tapping operation.
This formed insert is also used as a through hole for welded, soldered or brazed connections in copper tubing, or for a load-bearing surface as in U-Joints.

RKS IN STEEL, STAINLESS STEEL, COPPER,
P TO 12.0mm THICKNESS

Formdrill

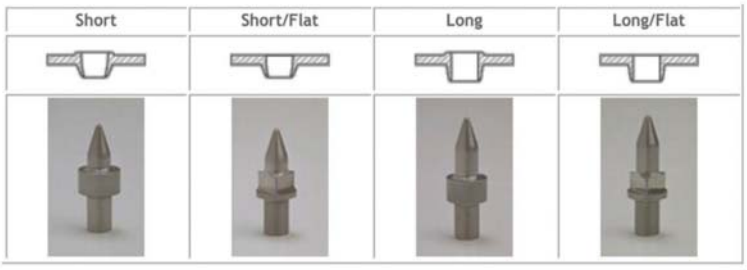
Basically, you create your own inserts



TO FORM YOUR OWN INSERTS YOU CAN USE YOUR OWN DRILL PRESS, MILLING MACHINE OR CNC SYSTEM AND THE FOLLOWING TOOLS AND ACCESSORIES:

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

- SHORT styles are for thinner wall thickness
- 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



2. A **TOOLHOLDER** and **COLLET** is available with MC2 shank for sizes up to 14.9 mm. or a MC3 shank for sizes 10.0 mm. and larger. A 20.0 mm. shank is also available for both sizes. The toolholders have a special heat sink attached for dissipating excess heat generated by repetitive drilling. This is very important to protect your drilling equipment.

3. **FORMDRILL LUBRICANT** is designed to prolong tool life by reducing material build up on the tool. Lubricants are available in both paste and liquid form. Lubrication units are available for use in CNC machines.

4. **FORMTAP.** Is a roll forming style tap used to maximize thread strenght and pull-out resistance. No chips are produced.

5. **FORMTAP LUBRICANT.** Maximizes tool life of taps while maintaining high quality threads.

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.

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

Thread type and diameter	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
M10x1.25	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	FD1240S	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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