Reference values for material S235JR (St37/2) with 2 mm wall thickness:

Thread	centerdrill core hole -Ø mm	Flow Forming RPM	Flow Forming Torque Nm	Flow Forming machine output kW	Thread Forming RPM	Thread Forming Torque Nm
Metric ISO thread - DIN 13						
M3 x 0,5	2,7	3000	2,5	0,7	1500	1,3
M4 x 0,7	3,7	2600	3,0	0,8	1100	3,0
M5 x 0,8	4,5	2500	4,0	0,9	900	4,9
M6 x 1	5,4	2400	5,0	1,1	800	9,3
M8 x 1,25	7,3	2100	7,0	1,5	600	19,0
M10 x 1,5	9,2	1800	10,0	1,7	380	39,0
M12 x 1,75	10,9	1500	14,0	1,9	300	50,0
M14 x 2	13,0	1500	16,0	2,2	300	55,0
M16 x 2	14,8	1400	19,0	2,4	200	57,0
M18 x 2,5	16,7	1300	25,0	2,5	180	75,0
M20 x 2,5	18,7	1200	29,0	3,0	160	105,0
Whitworth pipe thread - DIN ISO 228						
G1/8" x 28	9,2	1800	10	1,7	380	13,0
G1/4" x 19	12,4	1600	16	2,1	280	34,0
G3/8" x 19	15,9	1400	24	2,6	200	46,0
G1/2" x 14	19,9	1200	32	3,2	140	94,0
G3/4" x 14	25,4	1000	55	3,8	100	128,0

Pull-out forces of formed threads

Determined pull-out forces in kN for material S235JR (ST37/2)

The stated values are empirical values and vary depending on the type of former, material, and material thickness. For stainless steel the value is slightly higher. For aluminum it is much lower.

Thread	Material Thickness (mm)	kN
M4	1.0	5 - 6
	2.0	8 - 9
M5	1.0	8 -10
	1.5	11 -13
	2.0	14 -15
M6	1.5	12 -16
	2.0	16 -17
	3.0	23 -24
M8	2.0	22 -27
	3.0	36 -42
	4.0	43 -45

Thread	Material Thickness (mm)	kN
M10	3.0	46 -53
	4.0	68 -72
M12	3.0	50 -72
	4.0	84 -91
	5.0	84 -106
M16	3.0	94 -97
	4.0	94 -115
	5.0	126 -141
M20	3.0	122 -142
	4.0	147 -162
	5.0	196 -200

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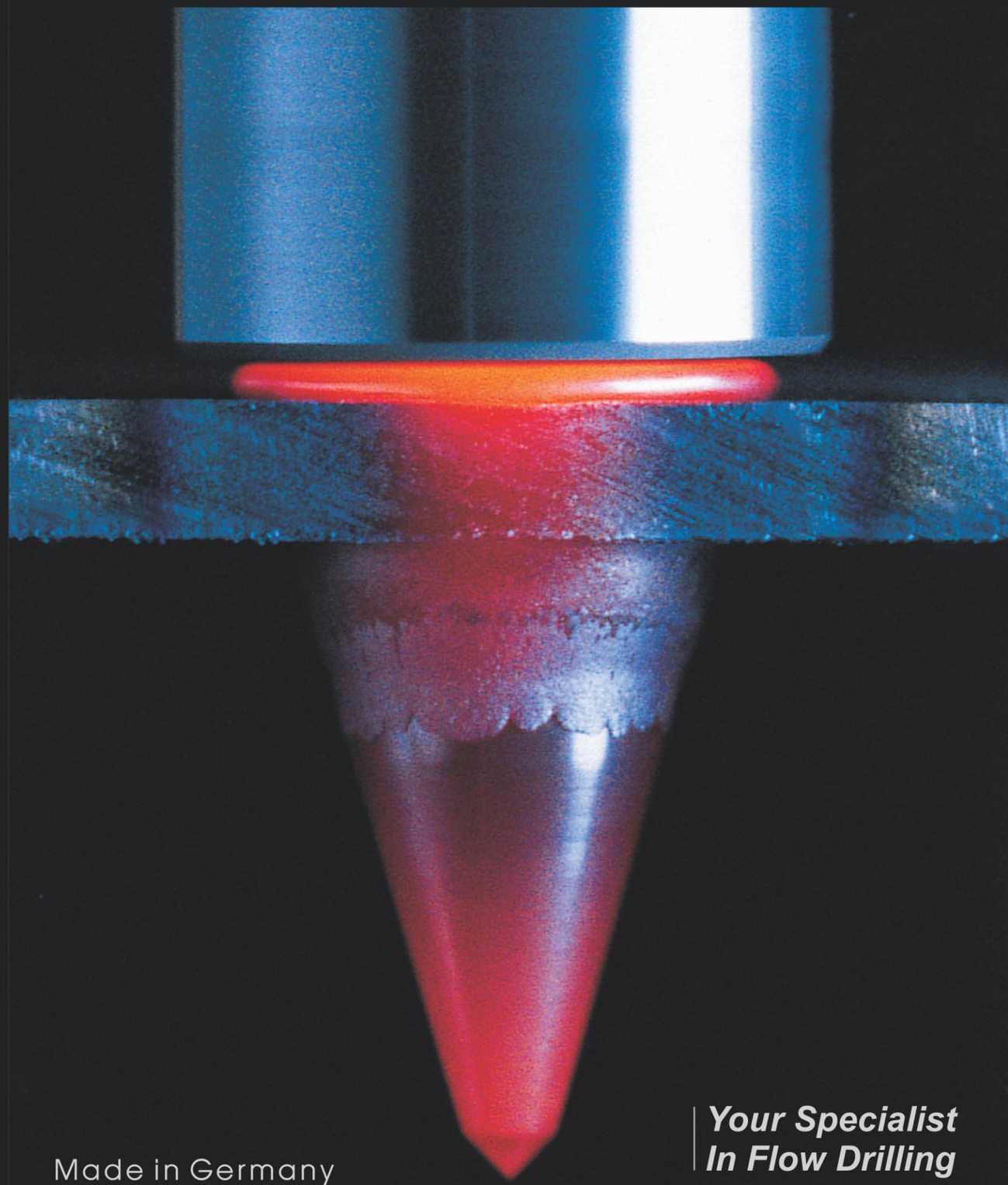

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Your Specialist In Flow Drilling

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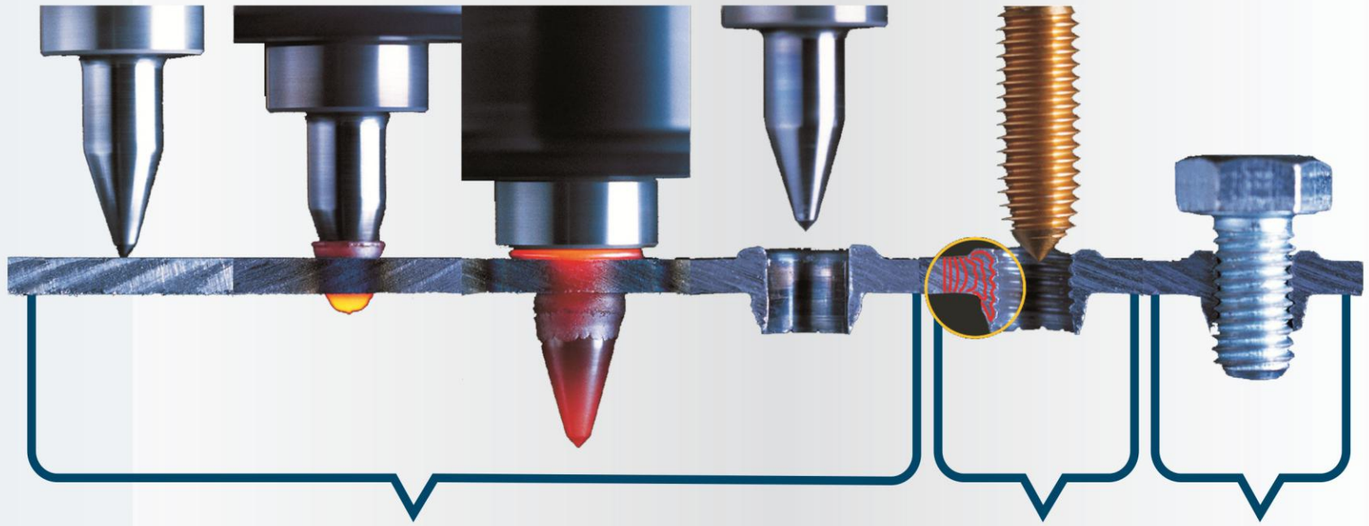
***amt** offers a complete solution for your flow drilling process.*

Flow Drilling Process



No wobbling, No twisting!!!

Flow punch forming is based on a combination of axial force and relatively high speed, which results in heat from friction. The frictional heat and high contact pressure plastify the material and enable the centerdrill to go through the material in a matter of seconds

Thread forming is a chipless process in which the material is rendered flowable and displaced from the thread root into the crests. It is similar in principle to the rolling of external threads

The Advantages of Flow Punch Forming :

- Non-cutting manufacturing process
- Reinforced material fiber orientation, can withstand high drawing forces
- Highly accurate threads, therefore miscutting is not possible
- Low wear after multiple connections due to increased hardness
- 3 to 10 times faster than thread cutting
- Increased lifetime due to special TiN coating
- Reduced friction, less burr formation and scoring
- Can be automated

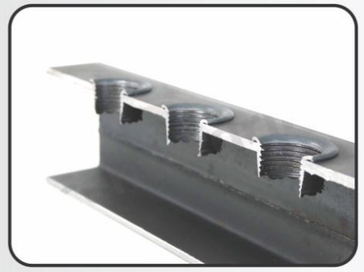
Material Cost Savings

With Centerdrill + Centertap, estimated material savings of approx. 20% up to 90%

Time Saving

40% time saving compared to other technologies, like welding or rivet nuts

Centerdrill Replaces



Centerdrill Beginner Set

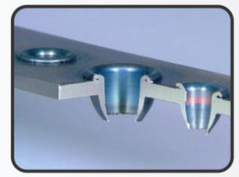
The perfect start with the flow drilling process!

The Centerdrill Beginner-Set consists of:

1 x Centerdrill flow drilling tool of your choice
1 x Centertap threadformer of your choice
1 x Collet chuck with cooling ring of your choice
1 x Parting paste for flow drilling 250 gm.
1 x Lubricant for thread forming 250 ml
1 x Centerdrill collet, suitable to your previously selected tools
1 x Toolcase (available only with collet chuck MT2)

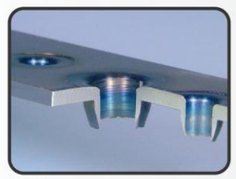
Standard Centerdrill

Centerdrill Short & Long



Surface with collar

Centerdrill
Short-Flat & Long-Flat



Surface without collar

Processable Materials

- Welding steels
- Stainless steels
- Aluminum
- Copper
- Brass
- Bronze
- Magnetic materials
- Special alloys

Centerdrill process works upto 12.0mm wall thickness !