WEARmig Tool 60

High-speed steel alloy

Classifications		
Material-no:	DIN 8555	EN 14700
1.3348	W/MSG 4-GZ-60-S	S Z Fe4

Characteristics and field of use

WEARmig Tool 60 is used for the production and repair of tools made of Mo-alloyed high-speed steels, such as cutting knives and planing tools, formcutters, broaching tools, reamers, twist drills etc.

WEARmig Tool 60 is suitable for the following base materials:

Material-no	DIN 17007
1.3316	S 9-1-2
1.3333	S 3-3-2
1.3344	S 6-5-3
1.3346	S 2-9-1

Another application field is the production of wear-resistant coatings on un- or low-alloyed base materials.

Special properties of the weld deposit

The weld deposit of WEARmig Tool 60 is equivalent to a high-speed steel with high cutting performance. After cooling the weld deposit is only machinable by grinding. Machining with tungsten carbide tools is only possible after soft-annealing.

Hardness of the pure weld deposit

Untreated:	60 – 64 HRC
Soft-annealed 800°C:	approx. 250 HB
Hardened 1230°C (oil) + tempered 540°C (2x):	62 – 66 HRC

Weld metal analysis in %

C	Si	Mn	Cr	Mo	V	W	Fe
1.0	0.3	0.4	3.8	8.6	1.9	1.8	balance

Welding instruction

Preheating to 350-650°C, depending on the dimension of the workpiece. This temperature should be maintained during the whole welding process. This wire should be welded with very low amperage settings and subsequent slow cooling to 100°C in an oven or under sand.

Heat treatment

Hardened:	1190-1240°C, quenchant: oil, warm bath: 450-500°C
Tempered:	450-500°C, 2 x 1 h, cooling in still air
Soft-annealed:	800-850°C, 2 – 4 h

Diameter [mm]	Current type	Shielding gas (EN ISO 14175)
1.2 mm	DC (+)	M 12, M 13, M 21, C1
1.6 mm	DC (+)	M 12, M 13, M 21, C1