



CUTTING CONDITIONS

Drilling | Solid | Cutting conditions

ADFO-3D

	Low Carbon Steel - Alloy Steel (C<0.3%) SS400 • SCM ~710N/mm ²		Carbon Steel S35C • S50C ~210HB ~710N/mm ²		Alloy Steel SCM • SCr • SNCM 28~35HRC 900~1,100N/mm ²		Plastic Mold Steel NAK80 ~40HRC		Stainless Steel SUS304 480~800N/mm ²	
	Vc	80~120m/min		80~120m/min		50~90m/min		20~40m/min		40~60m/min
Ø	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)
3	10.600	0,045 ~ 0,09	10.600	0,045 ~ 0,09	7.450	0,045 ~ 0,09	3.200	0,045 ~ 0,09	5.300	0,045 ~ 0,09
4	8.000	0,045 ~ 0,12	8.000	0,045 ~ 0,12	5.550	0,045 ~ 0,12	2.400	0,045 ~ 0,12	4.000	0,045 ~ 0,12
6	5.300	0,06 ~ 0,18	5.300	0,06 ~ 0,18	3.700	0,06 ~ 0,18	1.600	0,06 ~ 0,18	2.650	0,06 ~ 0,18
8	4.000	0,08 ~ 0,24	4.000	0,08 ~ 0,24	2.800	0,08 ~ 0,24	1.200	0,08 ~ 0,24	2.000	0,08 ~ 0,24
10	3.200	0,10 ~ 0,30	3.200	0,10 ~ 0,30	2.250	0,10 ~ 0,30	950	0,10 ~ 0,30	1.600	0,10 ~ 0,30
12	2.650	0,12 ~ 0,36	2.650	0,12 ~ 0,36	1.850	0,12 ~ 0,36	800	0,12 ~ 0,36	1.350	0,12 ~ 0,36
14	2.250	0,14 ~ 0,42	2.250	0,14 ~ 0,42	1.600	0,14 ~ 0,42	700	0,14 ~ 0,42	1.150	0,14 ~ 0,42
16	2.000	0,16 ~ 0,48	2.000	0,16 ~ 0,48	1.400	0,16 ~ 0,48	600	0,16 ~ 0,48	1.000	0,16 ~ 0,48
18	1.750	0,18 ~ 0,54	1.750	0,18 ~ 0,54	1.250	0,18 ~ 0,54	550	0,18 ~ 0,54	900	0,18 ~ 0,54
20	1.600	0,20 ~ 0,60	1.600	0,20 ~ 0,60	1.100	0,20 ~ 0,60	500	0,20 ~ 0,60	800	0,20 ~ 0,60

	Cast Iron FC250 ~350N/mm²		Ductile Cast Iron FCD600 400 ~600N/mm²		Aluminium A5052 • A7075 ~350N/mm²		Aluminium Alloy AC4C • ADC 400~600N/mm²	
Vc	80~120m/min		60~100m/min		120~200m/min		120~200m/min	
Ø	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)	Speed (min ⁻¹)	Feed Rate (mm/rev.)
3	10.600	0,045 ~ 0,09	8.500	0,045 ~ 0,09	17.000	0,045 ~ 0,09	17.000	0,045 ~ 0,09
4	8.000	0,045 ~ 0,12	6.350	0,045 ~ 0,12	12.750	0,045 ~ 0,12	12.750	0,045 ~ 0,12
6	5.300	0,06 ~ 0,18	4.250	0,06 ~ 0,18	8.500	0,06 ~ 0,18	8.500	0,06 ~ 0,18
8	4.000	0,08 ~ 0,24	3.200	0,08 ~ 0,24	6.350	0,08 ~ 0,24	6.350	0,08 ~ 0,24
10	3.200	0,10 ~ 0,30	2.550	0,10 ~ 0,30	5.100	0,10 ~ 0,30	5.100	0,10 ~ 0,30
12	2.650	0,12 ~ 0,36	2.100	0,12 ~ 0,36	4.250	0,12 ~ 0,36	4.250	0,12 ~ 0,36
14	2.250	0,14 ~ 0,42	1.800	0,14 ~ 0,42	3.650	0,14 ~ 0,42	3.650	0,14 ~ 0,42
16	2.000	0,16 ~ 0,48	1.600	0,16 ~ 0,48	3.200	0,16 ~ 0,48	3.200	0,16 ~ 0,48
18	1.750	0,18 ~ 0,54	1.400	0,18 ~ 0,54	2.850	0,18 ~ 0,54	2.850	0,18 ~ 0,54
20	1.600	0,20 ~ 0,60	1.250	0,20 ~ 0,60	2.550	0,20 ~ 0,60	2.550	0,20 ~ 0,60

1. Water-soluble coolant may be applied as noted in the above table only under the premise that the work surface has been flattened by milling.
2. Use a rigid and precise machine and holder.
3. Please minimize overhang length as much as possible during machining.
4. Adjust the rotational speed and the feed in accordance with conditions such as the machining shape, machine rigidity, or work holding.
5. Please set up the drill so that the runout of the cutting edge is under 0.02 mm.
6. Please select a cutting fluid that is most suitable for the work material with minimal smoke formation.
7. In the case of dry machining, please use air blow to remove chips to prevent clogging. Please do not machine stainless steel dry.
8. When machining an inclined plane, adjust the rotational speed and the feed in accordance with the angle of the incline (β).
When the machining incline angle (β) is less than 30°, please reduce the feed to 40-60%.
When the machining incline angle (β) is over 30°, please reduce the speed to 60-80%, the feed to 20-40%.
9. Please use step drilling in pilot holes to improve cutting chip separation.
10. If it is necessary to ensure the locating precision of the hole to be machined, adjust the rotational speed and the feed as indicated above (in accordance with the machining precision requirement).
11. Please always use the appropriate cutting fluid recommended by the cutting fluid manufacturer in the machining of magnesium alloys. Be cautious with the cutting chips as they are highly flammable and may pose a serious fire risk if not properly handled.

