

4PGRM

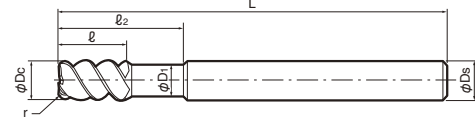
Number of Flutes: 4

Deep Slotting and Finishing of Hard Materials (Radius)



Recommended Material

★ 1st Recommendation



Lineup

(Unit: mm)

Description	Std.	Outside Dia. øDc	Outside Dia. tolerance	Length of edge ℓ	Neck Dia. øD1	Under Neck Length ℓ2	Shank Dia. øDs	Overall length L	Spec. of Corners r
4PGRM030-045-06-R025	●	3	-0.014 -0.028	4.5	2.7	9	6	57	R 0.25
4PGRM030-045-06-R050	●	3	-0.014 -0.028	4.5	2.7	9	6	57	R 0.5
4PGRM040-060-06-R025	●	4	-0.020 -0.038	6	3.7	12	6	57	R 0.25
4PGRM040-060-06-R050	●	4	-0.020 -0.038	6	3.7	12	6	57	R 0.5
4PGRM050-075-06-R025	●	5	-0.020 -0.038	7.5	4.6	15	6	76	R 0.25
4PGRM050-075-06-R050	●	5	-0.020 -0.038	7.5	4.6	15	6	76	R 0.5
4PGRM060-090-06-R025	●	6	-0.020 -0.038	9	5.5	18	6	76	R 0.25
4PGRM060-090-06-R050	●	6	-0.020 -0.038	9	5.5	18	6	76	R 0.5
4PGRM060-090-06-R075	●	6	-0.020 -0.038	9	5.5	18	6	76	R 0.75
4PGRM060-090-06-R100	●	6	-0.020 -0.038	9	5.5	18	6	76	R 1.0
4PGRM080-120-08-R050	●	8	-0.025 -0.047	12	7.4	24	8	100	R 0.5
4PGRM080-120-08-R100	●	8	-0.025 -0.047	12	7.4	24	8	100	R 1.0
4PGRM080-120-08-R150	●	8	-0.025 -0.047	12	7.4	24	8	100	R 1.5

(Unit: mm)

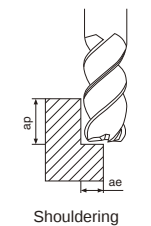
Description	Std.	Outside Dia. øDc	Outside Dia. tolerance	Length of edge ℓ	Neck Dia. øD1	Under Neck Length ℓ2	Shank Dia. øDs	Overall length L	Spec. of Corners r
4PGRM080-120-08-R200	●	8	-0.025 -0.047	12	7.4	24	8	100	R 2.0
4PGRM100-150-10-R050	●	10	-0.025 -0.047	15	9.2	30	10	100	R 0.5
4PGRM100-150-10-R100	●	10	-0.025 -0.047	15	9.2	30	10	100	R 1.0
4PGRM100-150-10-R150	●	10	-0.025 -0.047	15	9.2	30	10	100	R 1.5
4PGRM100-150-10-R200	●	10	-0.025 -0.047	15	9.2	30	10	100	R 2.0
4PGRM120-180-12-R050	●	12	-0.032 -0.059	18	11	36	12	125	R 0.5
4PGRM120-180-12-R100	●	12	-0.032 -0.059	18	11	36	12	125	R 1.0
4PGRM120-180-12-R150	●	12	-0.032 -0.059	18	11	36	12	125	R 1.5
4PGRM120-180-12-R200	●	12	-0.032 -0.059	18	11	36	12	125	R 2.0
4PGRM160-240-16-R050	●	16	-0.032 -0.059	24	15	48	16	125	R 0.5
4PGRM160-240-16-R150	●	16	-0.032 -0.059	24	15	48	16	125	R 1.5
4PGRM200-300-20-R050	●	20	-0.040 -0.073	30	19	60	20	150	R 0.5
4PGRM200-300-20-R200	●	20	-0.040 -0.073	30	19	60	20	150	R 2.0

Number of Flutes Z=4

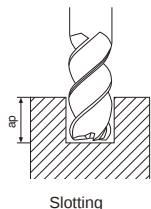
- Radius type with 4 flutes. The diameter of the neck portion (øD1) is thinner than the cutting diameter (øDc), it is suitable for deep slotting. Due to the corner R on the cutting edge, it is applicable for finishing of sloped workpiece.

Recommended Cutting Conditions

Shouldering



Shouldering



Slotting

Workpiece Materials		Depth of Cut (ap×ae) (mm)		Outside Dia. (mm)	ø3	ø6	ø8	ø10	ø12	ø16	ø20
		Roughing	Finishing								
Steel	< 30HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	21,200	10,600	8,000	6,400	5,300	4,000	3,200
				Feed Rate (mm/min)	2,400	2,400	2,400	2,400	2,400	2,400	2,400
	30~40HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	19,100	9,600	7,200	5,700	4,800	3,600	2,900
				Feed Rate (mm/min)	1,900	1,900	1,900	1,950	1,950	2,010	1,950
	40~45HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	17,000	8,500	6,400	5,100	4,200	3,200	2,500
				Feed Rate (mm/min)	1,400	1,400	1,400	1,430	1,400	1,400	1,330
	45~50HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	12,700	6,400	4,800	3,800	3,200	2,400	1,900
				Feed Rate (mm/min)	820	820	860	860	890	860	840
	50~55HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	8,500	4,200	3,200	2,500	2,100	1,600	1,300
				Feed Rate (mm/min)	350	350	380	410	380	380	380
	> 55HRC	1Dc×0.2Dc	1.5Dc×0.1Dc	Spindle Revolution (min ⁻¹)	7,400	3,700	2,800	2,200	1,900	1,400	1,100
				Feed Rate (mm/min)	250	250	250	270	270	280	270

Please refer to page L46 about Slotting.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)