Cutting data recommendation for FixReam 700

Feed and cutting speed

FXR700 | FXR705

Cutting material: CU111 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	120	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	120	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	120	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	100	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	100	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	100	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	80	0.10	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15

FXR702 | FXR703

Cutting material: CU111 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	150	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	150	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	150	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	130	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	130	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	130	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	120	0.10	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	150	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	150	0.20	0.10	0.15

* MAPAL Machining Groups

** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

FXR700 / FXR705

Cutting material: HP905 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	120	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	120	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	110	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	110	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	100	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	100	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	80	0.10	0.10	0.15
	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	0.10
	P5	P5.1	Cast steel		110	0.15	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	90	0.20	0.10	0.15
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	90	0.15	0.10	0.15
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	90	0.15	0.10	0.15
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	90	0.15	0.10	0.15
N	N3	N3.1	Graphite > 8 µm		80	0.08	0.10	0.15
		N3.2	Graphite < 8 µm		80	0.08	0.10	0.15

FXR702 | FXR703

Cutting material: HP905 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	140	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	140	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	130	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	130	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	120	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	120	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	100	0.10	0.10	0.15
	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	0.10
	P5	P5.1	Cast steel		130	0.15	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	140	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	140	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	110	0.20	0.10	0.15
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	110	0.15	0.10	0.15
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	110	0.15	0.10	0.15
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	110	0.15	0.10	0.15
N	N3	N3.1	Graphite > 8 µm		80	0.08	0.10	0.15
		N3.2	Graphite < 8 µm		80	0.08	0.10	0.15

* MAPAL Machining Groups

** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

FXR700 | FXR705

Cutting material: CP905 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	100	0.20	0.10	0.15

FXR702 | FXR703

Cutting material: CP905 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	140	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	140	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	120	0.20	0.10	0.15

FXR700 | FXR702 | FXR703 | FXR705

Cutting material: HP421 | Lead: LC1G | LD1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	
	P6	P6.1	Stainless cast steel, ferritic and martensitic		40	0.08	0.10	
M	M1	M1.1	Stainless steels, austenitic	< 700	40	0.08	0.10	
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000	20	0.08	0.10	
	M2	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	40	0.08	0.10	
	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000	20	0.08	0.10	

* MAPAL Machining Groups

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

FXR700 | FXR702 | FXR703 | FXR705

Cutting material: HP625 | Lead: LC1G | LD1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
S	S1	S1.1	Titanium, titanium alloys	< 400	20	0.08	0.10	
	S2	S2.1	Titanium, titanium alloys	< 1,200	20	0.08	0.10	
		S2.2	Titanium, titanium alloys	> 1,200	20	0.08	0.10	
	S3	S3.1	Nickel, non-alloy and alloy	< 900	20	0.08	0.10	
		S3.2	Nickel, non-alloy and alloy	> 900	20	0.08	0.10	
	S4	S4.1	High-temperature super alloy Ni, Co and Fe-based		20	0.08	0.10	
	S5	S5.1	Tungsten and molybdenum alloys		20	0.08	0.10	

FXR700 | FXR705

Cutting material: HP622 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
N	N1	N1.1	Aluminium, unalloyed and alloyed < 3 % Si		150	0.20	0.10	0.15
		N1.2	Aluminium, alloyed ≤ 7 % Si		150	0.20	0.10	0.15
		N1.3	Aluminium, alloyed > 7-12 % Si		150	0.20	0.10	0.15
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	100	0.20	0.10	0.15
		N2.2	Copper, alloy	> 300	100	0.20	0.10	0.15
		N2.3	Brass, bronze, gunmetal	< 1,200	100	0.10	0.10	0.15

FXR702 | FXR703

Cutting material: HP622 | Lead: LA1G | LB1G

MMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v_c [m/min]	Feed f_z	Stock removal a_p [mm] for tool diameter	
						z 6		
					Internal cooling	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
N	N1	N1.1	Aluminium, unalloyed and alloyed < 3 % Si		200	0.20	0.10	0.15
		N1.2	Aluminium, alloyed ≤ 7 % Si		200	0.20	0.10	0.15
		N1.3	Aluminium, alloyed > 7-12 % Si		150	0.20	0.10	0.15
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	150	0.20	0.10	0.15
		N2.2	Copper, alloy	> 300	150	0.20	0.10	0.15
		N2.3	Brass, bronze, gunmetal	< 1,200	100	0.10	0.10	0.15

* MAPAL Machining Groups

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.