X1-EH END MILLS

PLAIN SHANK **HPI90 SERIES**

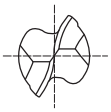
CARBIDE, 2 FLUTE BALL NOSE

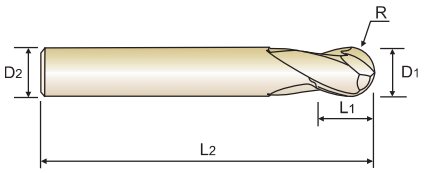
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS
Fraise carbure, 2 dents, hémisphérique
2 TAGLIENTI, SEMISFERICA

- Improvement of tool life by applying new coating.
- Application of tight tolerances for precision machining.

- Verbesserung der Werkzeugstandzeit durch Aufbringen einer neuen Beschichtung
- Enge Toleranzen für die Präzisionsbearbeitung







CARBIDE | 2 | 30° | R +0.001 ~-0.005 | R +0.003 ~-0.007 | PLAIN | C Coating

p.C120

R0.05~R3 R4~R10

Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
HPI90001	R0.05	0.1	4	0.1	50
HPI900015	R0.075	0.15	4	0.15	50
HPI90002	R0.1	0.2	4	0.2	50
HPI90003	R0.15	0.3	4	0.3	50
HPI90004	R0.2	0.4	4	0.6	50
HPI90005	R0.25	0.5	4	0.8	50
HPI90006	R0.3	0.6	4	0.9	50
HPI90008	R0.4	0.8	4	1.2	50
HPI90010	R0.5	1.0	4	1.5	50
HPI90015	R0.75	1.5	4	2.3	50
HPI90020	R1.0	2.0	4	3	60
HPI90025	R1.25	2.5	6	3.8	60
HPI90030	R1.5	3.0	6	5	60
HPI90040	R2.0	4.0	4	6	70
HPI90901	R2.0	4.0	6	6	70
HPI90050	R2.5	5.0	6	8	70
HPI90060	R3.0	6.0	6	10	80
HPI90080	R4.0	8.0	8	12	100
HPI90100	R5.0	10.0	10	15	100
HPI90120	R6.0	12.0	12	18	110
HPI90160	R8.0	16.0	16	24	140
HPI90200	R10.0	20.0	20	30	160

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	+0.001~-0.005	0~-0.010	h4
over R3	+0.003~-0.007	0~-0.012	* Shank Dia.>ø6 : h5

◎ : Excellent ○ : Good

ISO	P													M			K						
Material Description	Non-alloy steel					Low alloy steel			High alloyed steel, and tool steel					Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	15	16	17	18	19	20		
HRc		13	25	28	32	10	29	32	38	15	35	44	15	23	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	409	200	240	180	180	260	160	250	130	230		
Recommend					○			○	○		○	○											

ISO	N										S							H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel					Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1	39.2	39.3	40	41
HRc											15	30	25	38	34			45-49	50-55	56-60	61-65	66-70	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	421-469	481-560	577-654	670-739		400	550
Recommend																		◎	◎	◎	◎	◎	○	◎