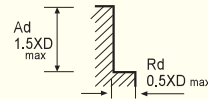
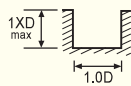


■ X-STAR series, Fractional

WORKPIECE	LOW CARBON STEELS		LOW CARBON STEELS		MED ALLOY STEELS		MOLD&DIE STEELS		CAST IRON-GRAY		CAST IRON-DUCTILE	
HARDNESS	~HB175		~HB275		~HB275		~HB275		~HB200		~HB300	
D(Fractional)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1/8	15585	12	12835	10	10695	8	5500	4	14515	11	7335	5
3/16	10360	20	8560	17	7150	14	3670	8	9690	19	4880	9
1/4	7795	24	6420	20	5350	17	2750	8	7260	23	3665	11
5/16	6235	29	5135	24	4280	20	2200	10	5805	27	2935	14
3/8	5195	39	4280	32	3565	27	1835	13	4840	36	2445	18
7/16	4455	38	3665	31	3055	26	1570	13	4145	35	2095	18
1/2	3895	37	3210	30	2675	25	1375	13	3630	34	1835	17
9/16	3465	35	2850	29	2375	24	1220	12	3225	32	1630	16
5/8	3115	33	2565	27	2140	23	1100	11	2905	31	1465	15
3/4	2600	31	2140	25	1785	21	915	11	2420	29	1220	14
1	1950	25	1605	21	1335	17	690	9	1815	24	915	12

RPM = rev. / min.  
FEED = inch / min.

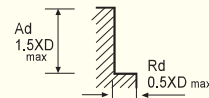
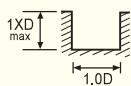


- ※ Use a rigid and precise machines and holders.
- ※ Use a suitable cutting oil.

■ X-STAR series, Fractional

WORKPIECE	CAST IRON-MALLEABLE		STAINLESS 300 SERIES		STAINLESS 400 SERIES		STAINLESS PH SERIES		TITANIUM ALLOYS		HIGH TEMP ALLOYS	
HARDNESS	~HB300		~HB275		~HB185		~HB325		~HB295		~HB300	
D(Fractional)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1/8	4585	4	9170	7	12835	10	7640	5	9170	9	2445	2
3/16	3070	6	6080	12	8550	17	5080	10	6080	14	1600	3
1/4	2290	7	4585	14	6420	22	3820	12	4585	16	1220	3
5/16	1835	8	3665	16	5135	25	3055	14	3665	18	980	4
3/8	1530	11	3055	16	4280	25	2545	14	3055	18	815	4
7/16	1310	11	2620	16	3665	25	2185	14	2620	18	700	4
1/2	1145	11	2290	16	3210	25	1910	14	2290	18	610	4
9/16	1020	10	2035	20	2850	29	1700	17	2035	20	545	6
5/8	915	9	1835	16	2565	25	1530	14	1835	18	490	4
3/4	765	9	1520	15	2410	22	1275	12	1520	16	400	4
1	575	7	1145	15	1605	22	955	12	1145	16	305	3

RPM = rev. / min.  
FEED = inch / min.

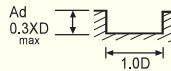


- ※ Use a rigid and precise machines and holders.
- ※ Use a suitable cutting oil.

■ X-STAR series(Slotting), Fractional

WORKPIECE	HARDENED STEELS	
HARDNESS	HRC30~45	
D(Fractional)	RPM	FEED
1/8	6573	16
3/16	4382	16
1/4	3287	17
5/16	2629	17
3/8	2191	17
7/16	1878	17
1/2	1643	16
9/16	1461	16
5/8	1315	16
3/4	1096	17
1	822	16

RPM = rev. / min.  
FEED = inch / min.

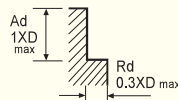


- ※ Use a rigid and precise machines and holders.
- ※ Use a suitable cutting oil.

■ X-STAR series(Side Cutting), Fractional

WORKPIECE	HARDENED STEELS	
HARDNESS	HRC30~45	
D(Fractional)	RPM	FEED
1/8	8102	29
3/16	5401	28
1/4	4051	29
5/16	3241	29
3/8	2701	28
7/16	2315	29
1/2	2025	28
9/16	1800	28
5/8	1620	29
3/4	1350	29
1	1013	26

RPM = rev. / min.  
FEED = inch / min.

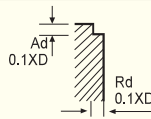


- ※ Use a rigid and precise machines and holders.
- ※ Use a suitable cutting oil.

■ **X-STAR series(High Speed Cutting), Fractional**

WORKPIECE	HARDENED STEELS	
HARDNESS	HRC30~45	
D(Fractional)	RPM	FEED
1/8	17121	75
3/16	11414	78
1/4	8561	75
5/16	6848	77
3/8	5707	75
7/16	4892	76
1/2	4280	75
9/16	3805	75
5/8	3424	75
3/4	2854	75
1	2140	73

RPM = rev. / min.  
FEED = inch / min.



- ※ Use a rigid and precise machines and holders.
- ※ Use a suitable cutting oil.

■ **ZE716A, ZR706A series**

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS		HARDENED STEELS		HARDENED STEELS		HARDENED STEELS		HARDENED STEELS	
	HRc 30~ HRc 40		HRc 40~ HRc 50		HRc 50~ HRc 55		HRc 55~ HRc 60		HRc 60~ HRc 65		HRc 65~ HRc 70	
DIAMETER(mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6(1/4)	24800	5350	23500	4900	16000	4900	13500	3300	10500	2100	8000	1450
8(5/16)	20000	5500	19000	5000	12000	4600	10000	3100	8000	2000	6000	1400
10(3/8)	16000	4900	15500	4500	9500	4100	8000	2900	6400	1800	4800	1300
12(1/2)	13000	4500	12500	4100	8000	3800	6600	2500	5300	1600	4000	1150
16(5/8)	10000	4000	9700	3700	6000	3400	5000	2300	4000	1250	3000	870
20(3/4)	8000	3350	7800	3400	4800	3200	4000	2100	3200	1020	2400	690

RPM = rev. / min.  
FEED = inch / min.

