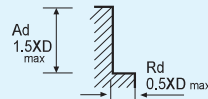
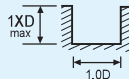


## □ X-STAR series

WORKPIECE	LOW CARBON STEELS		LOW CARBON STEELS		MED ALLOY STEELS		MOLD&DIE STEELS		CAST IRON-GRAY		CAST IRON-GRAY	
HARDNESS	~HB175		~HB275		~HB275		~HB275		~HB200		~HB300	
DIAMETER(mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3	16500	335	13585	276	11320	230	5820	118	15360	300	7765	158
4	12340	326	10190	326	8520	340	4380	175	11550	462	5810	232
5	9895	502	8150	413	6790	345	3490	177	9215	468	4655	236
6	8250	586	6795	483	5660	403	2910	207	7680	546	3880	276
8	6185	754	5095	620	4245	517	2185	266	5760	702	2910	354
10	4950	955	4075	786	3395	656	1745	337	4610	889	2330	449
12	4125	963	3395	793	2830	661	1455	340	3840	897	1940	453
14	3535	890	2910	733	2425	592	1250	314	3290	829	1665	419
16	3095	817	2545	672	2125	561	1090	288	2880	761	1455	384
18	2750	809	2265	667	1885	556	970	285	2560	754	1295	381
20	2475	804	2040	662	1700	552	875	283	2305	749	1165	378
25	1975	631	1630	521	1360	435	700	230	1850	600	930	300

RPM = rev. / min.  
FEED = mm / min.

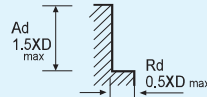
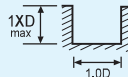


- Use a rigid and precise machines and holders.
- Use a suitable cutting oil.

## □ X-STAR series

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	
DIAMETER(mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3	4850	95	9705	175	13585	250	8085	125	9705	225	2590	50
4	3660	146	7245	290	10190	407	6050	242	7245	290	1910	76
5	2910	147	5820	300	8150	430	4850	250	5820	355	1550	75
6	2425	173	4850	355	6795	560	4045	300	4850	405	1295	75
8	1820	221	3640	405	5095	635	3030	355	3640	455	970	100
10	1455	280	2910	405	4075	635	2425	355	2910	455	775	100
12	1215	283	2425	405	3395	635	2020	355	2425	455	645	100
14	1040	262	2080	405	2910	635	1735	355	2080	455	555	100
16	910	240	1820	405	2545	635	1515	355	1820	455	485	100
18	810	238	1615	380	2265	560	1350	300	1615	405	430	100
20	730	236	1455	380	2040	560	1215	300	1455	405	390	100
25	585	187	1160	370	1630	560	970	300	1160	405	305	73

RPM = rev. / min.  
FEED = mm / min.

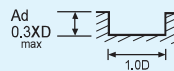


- Use a rigid and precise machines and holders.
- Use a suitable cutting oil.

## □ X-STAR series ▶ Slotting

WORKPIECE	HARDENED STEELS	
HARDNESS	HRc30~45	
DIAMETER(mm)	RPM	FEED
3	6900	552
4	5175	414
5	4140	331
6	3450	414
8	2588	414
10	2070	414
12	1725	414
14	1479	414
16	1294	414
18	1150	368
20	1035	414
25	828	397

RPM = rev. / min.  
FEED = mm / min.

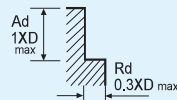


- Use a rigid and precise machines and holders.
- Use a suitable cutting oil.

**X-STAR series** ▶ Side Cutting

WORKPIECE HARDNESS	HARDENED STEELS HRc30~45	
DIAMETER(mm)	RPM	FEED
3	8493	679
4	6369	510
5	5096	611
6	4246	849
8	3185	764
10	2548	713
12	2123	764
14	1820	728
16	1592	701
18	1415	679
20	1274	662
25	1019	611

RPM = rev. / min.  
FEED = mm / min.

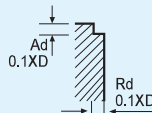


- Use a rigid and precise machines and holders.
- Use a suitable cutting oil.

**X-STAR series** ▶ High Speed Cutting

WORKPIECE HARDNESS	HARDENED STEELS HRc30~45	
DIAMETER(mm)	RPM	FEED
3	18047	2166
4	13535	1624
5	10828	1732
6	9023	2166
8	6768	1895
10	5414	1732
12	4512	1985
14	3867	1856
16	3384	1895
18	3008	1805
20	2707	1841
25	2166	1646

RPM = rev. / min.  
FEED = mm / min.



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