



6 Step Tool Selection (continued)

- 5 Select the recommended **Cutting Speed (vc)** and **Coolant recommendations** according to the material to be machined.

Example:

Speed range for XDLW090408SR-D X400 for Facing in **Alloyed Steel (Rm 950-1200 N/mm² and 280-355 HBN)**
70 – 150 m/min

Material specifications can be found in the Materials Reference Charts pages D1 - D35.

Commercial Name	UNS Number	UK: BS, EN	Sweden: SS	USA: AISI/SAE	Germany: Wnr	Germany: DIN	France: AFNOR	Italy: UNI	Spain: UNF	Japan: JS
Alloyed Steels										
T4 Z8NWC11805401		874		T4	1.055	S18, L2.5	Z8NWC11805401	X78WC1180540	H518, L1.5	SK50
Z8NWC118165					1.2389	X20Cr21Ni8.5	Z8NWC118165			
Z8NWC9-3					1.2387	X40CrMoV93	Z8NWC9-3	Z19SDVD12-1		
Stainless Steels										
S3	UNS S3010									
S32		Z84S18								
S15										
S24										
S31										
S32										
S33	302S31	2339	301	1.4310	X12CrNi17.7	Z12CN17.07	X12CrNi17.07	F3517		SUS301
S34	302S31	2346	302	1.4319	X12CrNi18.9	Z12CN18.09	X12CrNi18.09	F314		SUS302
S35	302S31	2346	303	1.4305	X8CrNiS18.9	Z12CN18.09	X12CrNiS18.09	F3508		SUS303
S36	304S31	2302	304	1.4301	X6CrNi18.9	Z6CN18.09	X6CrNi18.09	F3501	F.35417-F.3504	SUS304
S37	305S19		305	1.4312	X8CrNi18.12	Z8CN18.12	X8CrNi18.12	F.3503		SUS305

- 6 **Technical information** can be found at the end of each selected family which contains calculation formulas, mounting instructions, etc...



Speed v_c (m/min)		Wear Resistance									
		Speed min. - max.									
Coolant Recommendation											
Recommended		Possible									
ISO	Materials	Rm and Hardness	X400	X500	SP6519	GH2	SC6525	SC6025	SC3025	SC3025	SC3025
P	Unalloyed Steel	<180 N/mm ² <180 HBN	120 - 200								
		<950 N/mm ² <280 HBN	105 - 230								
M	Alloyed Steel	950-1200 N/mm ² 280-355 HBN	70 - 150								
		1200-1400 N/mm ² 355-415 HBN	45 - 95								
K	Stainless Steel	Austenitic + Ferritic 300 series	115 - 250								
		Martensitic 400 series	100 - 220								
N	Cast Iron	Grey GG-Fl	50 - 110								
		Spheroidal Ductile GGG-F55	140 - 295								
S	High Temperature Alloys	Maraging 600 series	110 - 240								
		Malleable GG-1, MNSP	100 - 220								
H	Aluminum & Alloys	Aluminum & Alloys <16% Si, 116 HBN	305 - 2120								
		Aluminum + Silicon >16% Si, 92 HBN	245 - 1760								
H	Hard Materials	Iron Based	23 - 48								
		Cobalt Based	21 - 44								
		Nickel Based	24 - 51								
		Titanium Based	35 - 73								
		Hard Steel >1400 N/mm ² >440 HBN	45 - 95								
		Chilled Cast Iron >1400 N/mm ² >460 HBN	35 - 80								

7792VX
Technical Information

End Mills & Face Mills

The advantages of face milling and producing cavities with Stellram's high feed face mill are numerous.

The unique design of the insert, approach angle and the cutter body ensure the cutting forces are predominantly directed in the axial direction. The example shown with a round insert tool shows complex forces which result in high levels of vibration and damage to the cutting edge.

7792VX

- Cutting forces predominantly axial
- Relationship between cutting edge and work piece is at its most stable.
- Results in high feed rates and consistent tool life.

Round Insert Tools

- Tangential forces act around the radius
- Leads to vibration and damage at the cutting edge
- Leads to reduced feed and lower productivity

The 7792VX machines with a constant volume of chip throughout all aspects of producing cavities and produces a side wall that is close to profile.

Round insert tools have increasing chip volume through the process.

7792VX

- Constant cutting section (chip volume) irrespective of position in cavity.
- Producing a close to profile side wall.
- Near-square side walls possible.

Centre clearance

Side wall

Round Insert

- Greater surface contact.
- Increased chip section for side wall machining.
- Vibration in corners.
- Undulating side wall curves.

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