

WINTER diamond Fliese tools

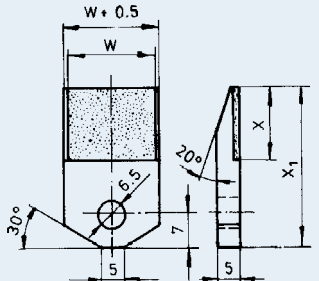
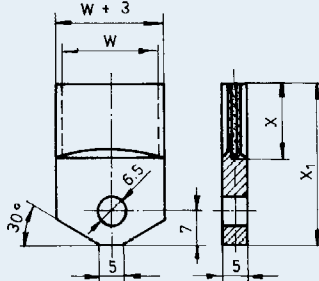
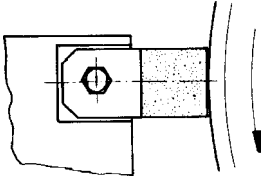
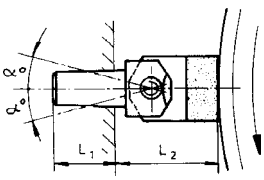
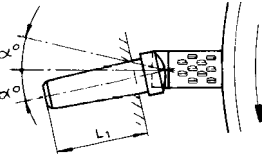
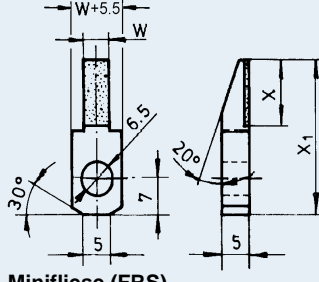
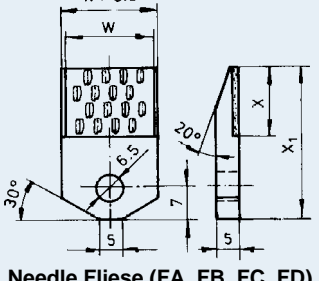
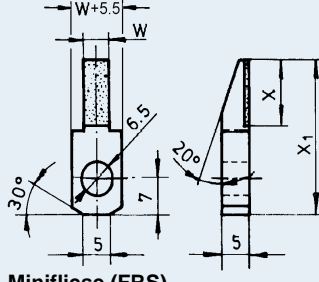
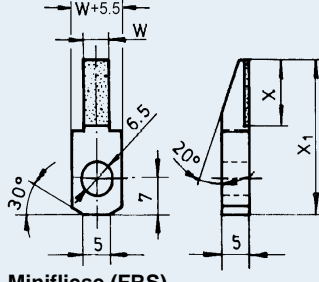
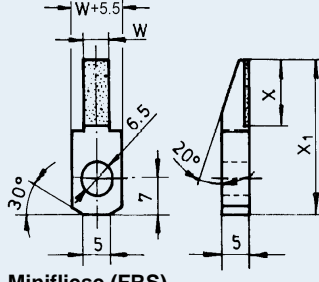
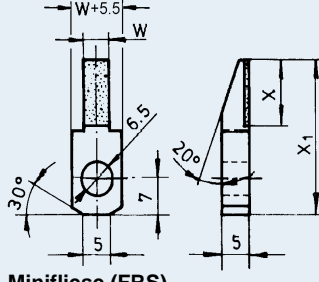
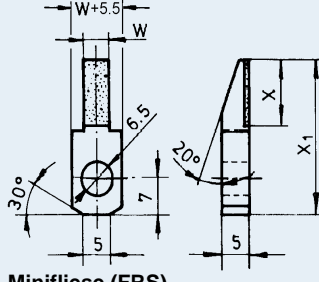
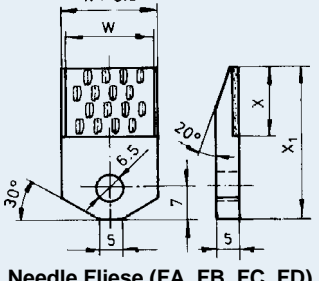
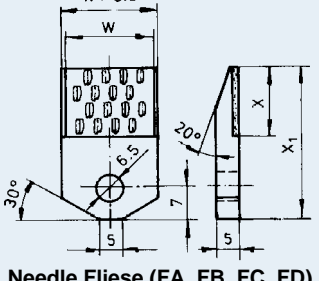
Tool specification in four steps

Step 1	Select appropriate Fliese size for wheel size																											
FAS 115-	<p>Note: For dressing work with high wear, or for large single and ganged grinding wheels, we recommend twin mounting of Fliese tool (see p. 8) or use of a twin Fliese, e.g. 5T FAS115-20-15-36 (see also p. 11).</p>			<p>FAS/FCS = Fliese width W = 20mm and useful length 15 or 10mm, for large wheels.</p> <p>FBS/FDS = Fliese width W = 10mm and useful length 15 or 10mm, for small wheels</p> <p>FRS = Minifliese, width W = 5mm and useful length 12mm, for very small wheels.</p>																								
Step 2	Select diamond grit for grinding wheel grain size																											
D1001- (Winter designation 115)	<table border="1"> <thead> <tr> <th>Wheel grain</th> <th>Diamond grit</th> <th>Winter code</th> <th>Active width b_p</th> </tr> </thead> <tbody> <tr> <td>120 -180</td> <td>D 501</td> <td>75</td> <td>appr. 0.50</td> </tr> <tr> <td>80 -120</td> <td>D 711</td> <td>90</td> <td>appr. 0.70</td> </tr> <tr> <td>54 - 80</td> <td>D 1001</td> <td>115</td> <td>appr. 1.00</td> </tr> <tr> <td>36 - 54</td> <td>D 1181</td> <td>140</td> <td>appr. 1.12</td> </tr> <tr> <td>46 - 80</td> <td>Needles</td> <td>180</td> <td>appr. 1.20</td> </tr> </tbody> </table>			Wheel grain	Diamond grit	Winter code	Active width b_p	120 -180	D 501	75	appr. 0.50	80 -120	D 711	90	appr. 0.70	54 - 80	D 1001	115	appr. 1.00	36 - 54	D 1181	140	appr. 1.12	46 - 80	Needles	180	appr. 1.20	Further information on grain size available on request.
Wheel grain	Diamond grit	Winter code	Active width b_p																									
120 -180	D 501	75	appr. 0.50																									
80 -120	D 711	90	appr. 0.70																									
54 - 80	D 1001	115	appr. 1.00																									
36 - 54	D 1181	140	appr. 1.12																									
46 - 80	Needles	180	appr. 1.20																									
Step 3	Select Fliese bond for abrasive																											
T 645	<p>Bond: T 645E Preferred for fused alumina (Al_2O_3, including sintered $Al_2O_3 = sol-gel$).</p> <p>Bond: H 770J Preferred for silicon carbide (SiC).</p>			<p>Note: The bond type determines core E or J of the Fliese. Changes on request.</p>																								
Step 4	Select mount or holder, where necessary																											
MK1	<p>If the Fliese is not directly clamped into the machine holder, please order the mount needed, e.g. cylindrical, tapered or square mounts. Recommendation: brazed mount (e.g. MK1) or alternatively swivel mount (see p.8)</p>																											
Example	FAS 115 - 20 - 15 - 33 - D1001 - T645 E - MK1																											
	Step 1	Dimension	Step 2	Step 3	Step 4																							

WINTER diamond Fliese tools

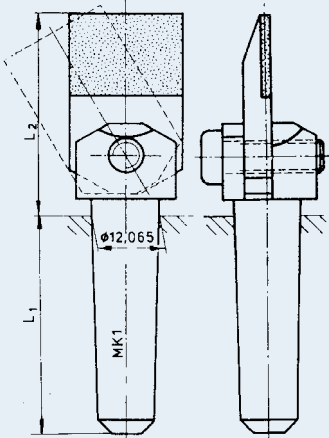
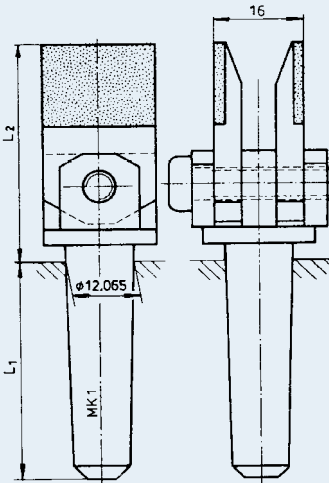
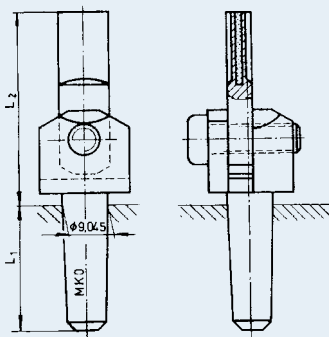
Order data

High-performance grit and needle Fliese for mounting directly in machine holder

 <p>High-performance Fliese (FAS, FBS, FCS, FDS) manufactured to a special setting scheme, with very uniform arrangement of full, uncrushed natural grit. Bond T645, Core E</p>	WINTER diamond Fliese						Holder or mount	
	Shape	W	X	X ₁	Grit size	Bond/ Core	Material No.	Please order separately if needed (see pp. 8-9)
 <p>High-performance Fliese (FAS, FBS, FCS, FDS) manufactured to a special setting scheme, with very uniform arrangement of full, uncrushed natural grit. Bond H770, Core J</p>	FAS 75	20	15	33	D501	T645 E	89801327	<p>Examples:</p>  <p>Diamond Fliese® in machine holder</p>  <p>Diamond Fliese® in swivel holder</p>  <p>Needle Fliese with rigid soldered mount, $\alpha = \pm 0...15^\circ$</p>
	FAS 90	20	15	33	D711	T645 E	89300866	
	FAS115	20	15	33	D1001	T645 E	89800874	
	FAS140	20	15	33	D1181	T645 E	89800882	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FBS 75	10	15	33	D501	T645 E	89801335	
	FBS 90	10	15	33	D711	T645 E	89800930	
	FBS115	10	15	33	D1001	T645 E	89800947	
	FBS140	10	15	33	D1181	T645 E	89800955	
 <p>Needle Fliese (FA, FB, FC, FD) Bond T645, Core E.</p>	FCS 75	20	10	28	D501	T645 E	89801343	
	FCS 90	20	10	28	D711	T645 E	89801002	
	FCS115	20	10	28	D1001	T645 E	89800355	
	FCS140	20	10	28	D1181	T645 E	89800047	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FDS 75	10	12	28	D501	T645 E	89801351	
	FDS 90	10	12	28	D711	T645 E	89801043	
	FDS115	10	12	28	D1001	T645 E	89801051	
	FDS140	10	12	28	D1181	T645 E	89801068	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FAS 75	20	15	33	D501	H770J	89801368	
	FAS 90	20	15	33	D711	H770J	89800906	
	FAS115	20	15	33	D1001	H770J	89800914	
	FAS140	20	15	33	D1181	H770J	89800922	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FBS 75	10	15	33	D501	H770J	89801376	
	FBS 90	10	15	33	D711	H770J	89800971	
	FBS115	10	15	33	D1001	H770J	89800988	
	FBS140	10	15	33	D1181	H770J	89800996	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FCS 75	20	10	28	D501	H770J	89801384	
	FCS 90	20	10	28	D711	H770J	89801027	
	FCS115	20	10	28	D1001	H770J	89801035	
	FCS140	20	10	28	D1181	H770J	89800533	
 <p>Minifliese (FRS) Bond T645, Core E.</p>	FDS 75	10	12	28	D501	H770J	89801392	
	FDS 90	10	12	28	D711	H770J	89801084	
	FDS115	10	12	28	D1001	H770J	89801092	
	FDS140	10	12	28	D1181	H770J	89801181	
 <p>Needle Fliese (FA, FB, FC, FD) Bond T645, Core E.</p>	FRS 75	5	12	28	D501	T645 E	55802720	
	FRS 90	5	12	28	D711	T645 E	55802737	
	FRS115	5	12	28	D1001	T645 E	55802834	
 <p>Needle Fliese (FA, FB, FC, FD) Bond T645, Core E.</p>	FA 180	20	15	33	N1100	T645 E	89801798	
	FB 180	10	15	33	N1100	T645 E	89801481	
	FC 180	20	10	28	N1100	T645 E	89801805	
	FD 180	10	12	28	N1000	T645 E	89801813	
<p>Other dimensions and specifications on request. Order example: FAS 90-20-15-33-D711-T645 E / 89800866 FRS 75-5-12-28-D501-T645 E / 55802720 FD 180-10-12-28-N1000-T645 E / 89801813</p>								

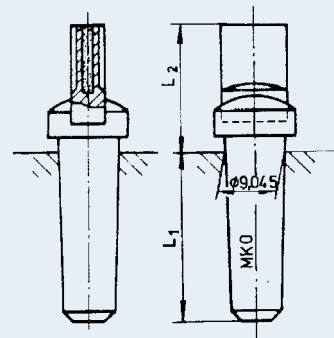
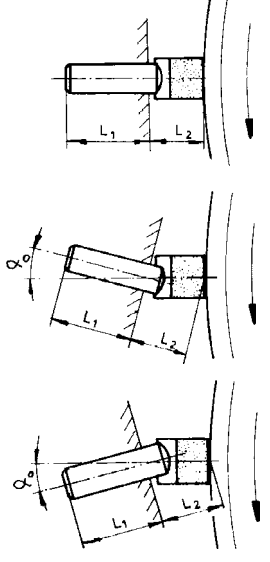
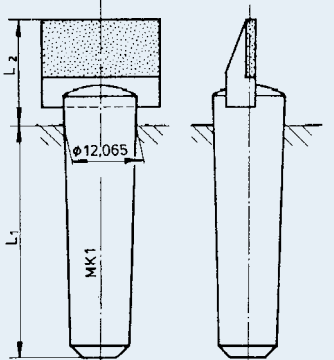
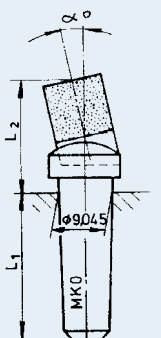
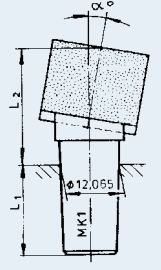
Swivel holders for WINTER diamond Fliese tools

Order data

Examples:		Swivel holder for WINTER diamond Fliese																							
		Shape and diameter mm	Clamping length L_1 mm	Inclination angle α°																					
 <p>Swivel holder MK1</p>	K (all tapered shanks) e.g. MK1, MK0, K1:13.5	For non-standard mounts please indicate L_1 .	Self-adjustable by clamping																						
	Z (all cylindrical shapes)	-																							
	V (all shapes with square cross section)	Please attach drawing indicating dimensions																							
Please order swivel holder separately																									
 <p>Swivel holder MK1 for two Fliese tools</p>		Material No.	Swivel holder for Diamond Fliese	Explanations of abbreviations																					
 <p>Swivel holder MK0</p>		55900087 55900038	MK1 MK0	△ Standard, Morse taper																					
		55900070	MK1-19 / M6	△ MK1 shortened plus tightening thread M 6																					
		55900557 55900540	Z10-50 Z6-30	△ Cylindrical Ø 10 x 50mm △ Cylindrical Ø 6 x 30mm																					
			Swivel holder for two Fliese																						
		55900054 55900021	MK1 Z 12.7 - 50	△ Standard, Morse taper △ Cylindrical Ø 1/2" x 2"																					
		Diamond Fliese®	<table border="1"> <thead> <tr> <th colspan="2">L_1 and L_2</th> <th colspan="2">L_2 head length [mm]</th> </tr> <tr> <th rowspan="2">L_1 clamping length [mm]</th> <th rowspan="2"></th> <th>$\alpha = 0...5^\circ$</th> <th>$\alpha = 5...15^\circ$</th> </tr> </thead> <tbody> <tr> <td>FAS</td> <td rowspan="4">Standard mounts, see sketches. Shortened Morse taper & cylindrical shank to specification.</td> <td>37 ± 1</td> <td>39.5 ± 2</td> </tr> <tr> <td>FBS</td> <td>37 ± 1</td> <td>29.5 ± 2</td> </tr> <tr> <td>FCS</td> <td>32 ± 1</td> <td>34.5 ± 2</td> </tr> <tr> <td>FDS</td> <td>32 ± 1</td> <td>34.5 ± 2</td> </tr> </tbody> </table>		L_1 and L_2		L_2 head length [mm]		L_1 clamping length [mm]		$\alpha = 0...5^\circ$	$\alpha = 5...15^\circ$	FAS	Standard mounts, see sketches. Shortened Morse taper & cylindrical shank to specification.	37 ± 1	39.5 ± 2	FBS	37 ± 1	29.5 ± 2	FCS	32 ± 1	34.5 ± 2	FDS	32 ± 1	34.5 ± 2
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Holders for WINTER diamond Fliese tools

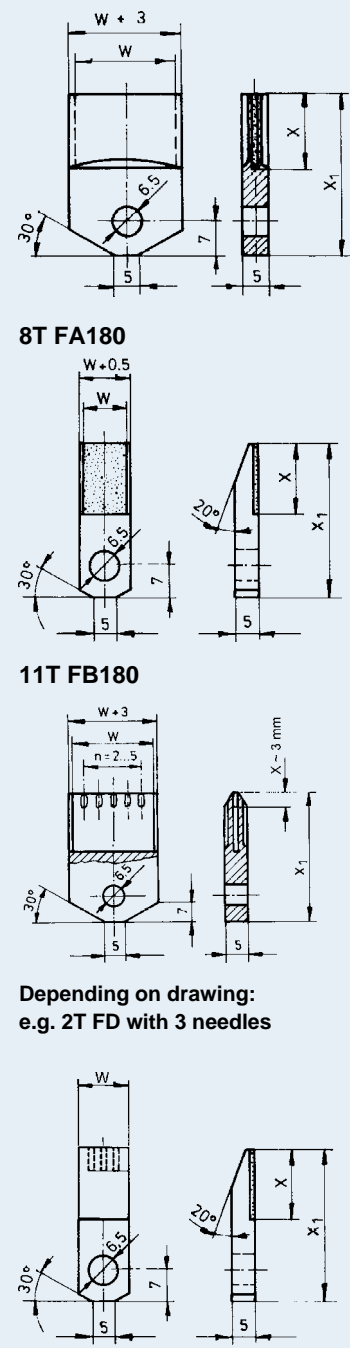
Order data

Examples:	Holder for WINTER diamond Fliese																								
	Shape and diameter mm	Clamping length L_1 mm	Inclination angle α° degrees	Inclination direction L - R																					
 Z Ø - L₁ - G	K (all tapered shapes, e.g. MK0, MK1) Z (all cylindrical shapes)	For non-standard mounts please indicate L_1 . The same applies for indications of modification, e.g. tightening thread M6	Standard mounts to table, or special designs acc. to dimension drawing.	G \triangle straight R \triangle right inclined L \triangle left inclined																					
						V All shapes with square cross section	Please attach drawing indicating dimensions	Machine dependent, available with $\alpha = 6^\circ$ 8° 10° 12° 15°																	
 MK1 - 40 G	Order example: Fliese with holder																								
 MK0 - 25.5 - 10	FAS75-20-15-MK1-40-G \triangle MK1, $L_1 = 40$ mm, straight $\alpha = 0^\circ$ D501 - T645 E FBS90-10-15-MK0-25.5-10 \triangle MK0, $L_1 = 25.5$ mm, 10° D711 - H770 J FCS115-20-10-Z10-30-15L \triangle cylinder $\varnothing 10 \times 30$ mm, 15° left D1001 - T645 E FDS140-10-12-MK1-19/M6-6R \triangle MK1 shortened with tightening thread M6, 6° inclined to right $L_1 = 19$ mm																								
 MK1 - 19 - 15L	<table border="1"> <thead> <tr> <th rowspan="3">Diamond Fliese®</th> <th colspan="2">L_1 and L_2</th> </tr> <tr> <th>L_1 clamping length [mm]</th> <th>L_2 head length [mm]</th> </tr> <tr> <th></th> <th>$\alpha = 0...5^\circ$</th> <th>$\alpha = 5...15^\circ$</th> </tr> </thead> <tbody> <tr> <td>FAS</td> <td rowspan="4">Standard holders, see sketches. Shorter Morse taper and cylindrical shank to specification.</td> <td>23.5 ± 1</td> <td>25 ± 2</td> </tr> <tr> <td>FBS</td> <td>23.5 ± 1</td> <td>25 ± 2</td> </tr> <tr> <td>FCS</td> <td>18.5 ± 1</td> <td>20 ± 2</td> </tr> <tr> <td>FDS</td> <td>18.5 ± 1</td> <td>20 ± 2</td> </tr> </tbody> </table>				Diamond Fliese®	L_1 and L_2		L_1 clamping length [mm]	L_2 head length [mm]		$\alpha = 0...5^\circ$	$\alpha = 5...15^\circ$	FAS	Standard holders, see sketches. Shorter Morse taper and cylindrical shank to specification.	23.5 ± 1	25 ± 2	FBS	23.5 ± 1	25 ± 2	FCS	18.5 ± 1	20 ± 2	FDS	18.5 ± 1	20 ± 2
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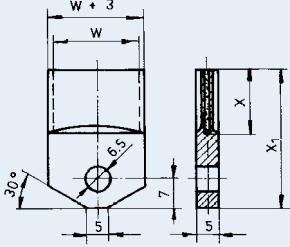
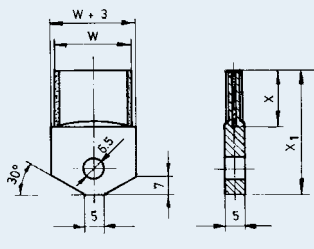
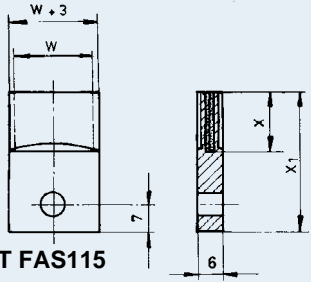
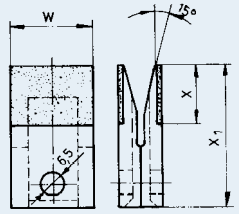
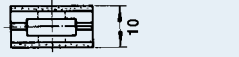
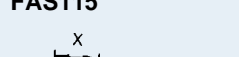
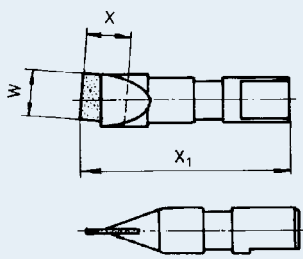
Special designs

Order data

Examples:	WINTER diamond Fliese						Remarks	
	Shape	W	X	X ₁	Grit size	Bond and core		
 <p>Depending on drawing: e.g. 2T FD with 3 needles</p>	9T FB180	10	15	33	N800	T625 J	Needle Fliese for specially high requirements for active width (b _D) and constant wear behaviour. Mat.-Nr. 9T FB b _D = 0.8 89802850 1T FB b _D = 1.0 89802826 8T FA b _D = 0.9 89802842	
	1T FB180	10	15	33	N1000	T645 J		
	8T FA180	20	15	33	N900	T625 J		
		11T FB180	10	15	33	N1000	T645 E	Like 1T FB 180, but in steel core E
		13T FB180	10	15	33	N800	T645 E	Like 9T FB, but in steel core E 11T FB b _D = 1.0 13T FB b _D = 0.8
		6T FD180	10	12	22	N800	T645J	Single-row needle Fliese for specially high requirements for profile accuracy and constant wear. Mat. No. 6T FD = 2 needles 82113519 2T FD = 3 needles 89802818 10T FD = 4 needles 82094298 1T FC = 5 needles 82094296
		2T FD180	10	12	22	N800	T645J	
		10T FD180	10	12	28	N800	T645J	
		1T FC180	20	10	28	N800	T645J	
		4SN-FB180	10,5	15	33	N801	M625 E	Single row needle Fliese with synthetic diamonds (N801= 0.8 x 0.8 x 5 mm) For specially high requirements for constant wear behaviour. Diagonal diamond arrangement b _d = 1.15 mm Mat. No. 4SN-FB = 2 needles 82156846 1SN-FB = 3 needles 82148119 SN-FB = 4 needles 82148036 1SN-FA = 5 needles 82147933
	1SN-FB180	10,5	15	33	N801	M625 E		
	SN-FB180	10,5	15	33	N801	M625 E		
	1SN-FA180	20,5	15	33	N801	M625 E		
	5SN-FB180	10,5	15	33	N601	M625 E	Single row needle Fliese with synthetic diamonds (N601 = 0.6 x 0.6 x 5 mm) For specially high requirements for constant wear behaviour. Diagonal diamond arrangement b _d = 0.8 mm Mat. No. 5SN-FB = 2 needles 82157681 3SN-FB = 3 needles 82156081 2SN-FB = 4 needles 82151139 SN-FA = 5 needles 82158735	
	3SN-FB180	10,5	15	33	N601	M625 E		
	2SN-FB180	10,5	15	33	N601	M625 E		
	SN-FA180	20,5	15	33	N601	M625 E		
Other dimensions and specifications on request.								
Order example:								
2T FD180-10-12-22 / N800 / T645J (example without holder)						89802818		
3SN-FB180-10.5-15-32 / N601 / M601 E						82156081		

WINTER diamond Fliese tools
Special versions

Order data

Examples:	WINTER diamond Fliese						Remarks
	Shape	W	X	X ₁	Grit size	Bond	
 <p>3T FAS115</p>	3T FAS115	20	15	33	D1001	T645J	<p>Dressing double-sided profiles, e.g. crankshaft bearings. Diamond plate centrally arranged, special core material. Constant active width (b_D)</p> <p>3T FAS b_D = 1.15 ^{+0.05}₋₀ mm</p> <p>Mat. No. 89801432</p>
 <p>9T FAS115</p>	9T FAS115	20	15	33	D1001	T645J	<p>Dressing double-sided profiles, e.g. crankshaft bearings. Diamond plate centrally arranged, special core material and restricted core tolerance. Constant active width.</p> <p>9T FAS b_D = 1.15 ⁺⁰_{-0.05} mm Tolerance of parallelism from diamond plate to core within 0.02mm.</p> <p>Mat. No. 89802242</p>
 <p>5T FAS115</p>	5T FAS115	20	15	36	D1001	T645J	<p>Dressing double-sided profiles, e.g. crankshaft bearings. Diamond plate centrally arranged, special core material and restricted core tolerance. Constant active width.</p> <p>5T FAS b_D = 1.15 ± 0.02mm x 2 = 2.3mm</p> <p>Mat. No. 89801902</p> <p>The high diamond content permits accurate dressing even of large grinding wheel volumes.</p>
 <p>1T FAS90</p>	1T FAS90	20	15	35	D711	T645J	<p>Diamond twin Fliese with cooling duct, coolant supply necessary. For especially high demands, e.g. centerless grinding, high-speed grinding.</p> <p>D711: Grit range 80-120 D1001: Grit range 54-80 D1181: Grit range 36-54 D711 b_D = 0.7 mm x 2 = 1.4 mm D1001 b_D = 1.00 mm x 2 = 2.0 mm D1181 b_D = 1.12 mm x 2 = 2.24 mm</p>
 <p>1T FAS115</p>	1T FAS115	20	15	35	D1001	T645J	
 <p>1T FAS140</p>	1T FAS140	20	15	35	D1181	T645J	
 <p>1T FDS90</p>	1T FDS90	10	12	45	D711	T645 E	<p>DIAFORM Fliese for cost-effective rough profiling with DIAFORM unit. Saves the profile diamond from premature wear.</p> <p>1T FDS90 b_D = 0.7 - 55802883</p>
<p>Other dimensions and specifications on request. Order examples: 3T FAS115-20-15-33 / D1001 / T645J (example without holder) 89801432 5T FAS115-20-15-36 / D1001 / T645J (example without holder) 89801902</p>							