

Back spot facing tool **AUTOMATIC BACK SPOT FACER**

Hole diameter: $\varnothing 4.5$ or larger **ERIX**

Details J49

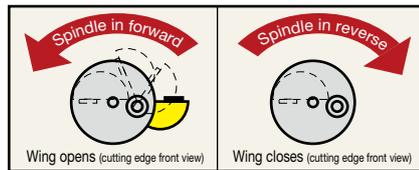


- Simple opening and closing system ideal for the machining of cast iron and aluminum.
- The wing can be exchanged to meet various application requirements including simple back spot facing and front & back chamfering.



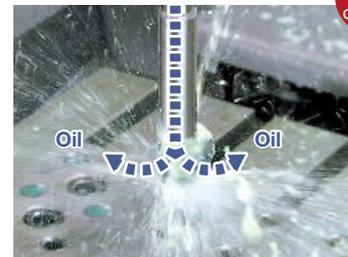
Automatic opening and closing system

When inserting into a starting hole, the machine spindle is rotated in the reverse direction while closing the wing by touching the starting hole of the workpiece. Once the wing passes through the hole, the spindle is rotated in the forward direction in order to open the wing and perform back spot facing.



Reliable cooling through oil hole

Spindles of $\varnothing 10$ or larger have an oil hole. Reduces the problems caused by remaining chips and extends tool life.



Easy NC programming

The machining center can be programmed easily with the following procedure.

<p>1 Reverse the spindle and insert the tool into the starting hole. (The wing remains open due to centrifugal force)</p> <p>Reverse</p>	<p>2 The wing is automatically folded into the spindle when it touches the starting hole.</p> <p>Reverse</p>	<p>3 Lower the spindle until the wing passes the starting hole.</p> <p>Reverse</p>
<p>4 Rotate the spindle forward and pull it upward by the cutting feed. (Machining start)</p> <p>Forward</p>	<p>5 Once back spot facing is done, slightly lower the spindle, then reverse the rotation.</p> <p>Reverse</p>	<p>6 When the spindle is raised while in reverse, the wing is folded into the spindle, allowing it to be extracted from the starting hole.</p> <p>Reverse</p> <p>Machining completed</p>

Advice



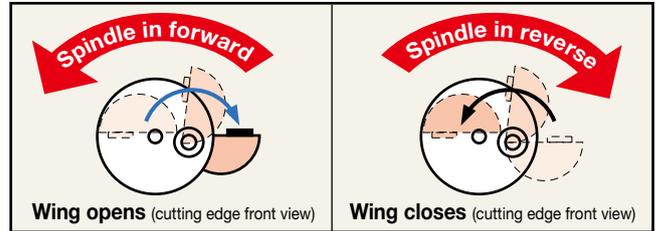
There may be occasions when the spot facing diameter is compatible, but the bore and spindle diameter don't match! In such case, an extra process can be added as follows: Starting hole drilling according to the spindle diameter → Back spot facing → Drilling according to the diameter on the drawing.

The simplest mechanism achieves automatic back spot facing in machining centers.

- Only forward/reverse rotation of the machine spindle makes back spot facing and back chamfering possible.
- Abundant varieties and unique opening/closing method make it ideal for cast iron and aluminum machining.



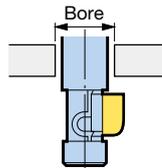
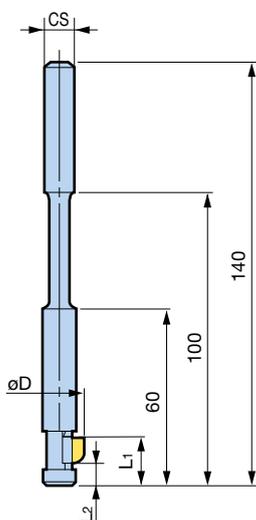
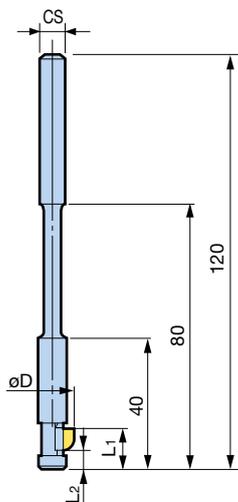
● Automatic opening and closing system



● Reliable cooling through oil hole (Hole diameter $\varnothing 10 - \varnothing 30$)

Reliable lubrication and air supply to the cutting edge reduce the problems caused by chips to extend tool life.

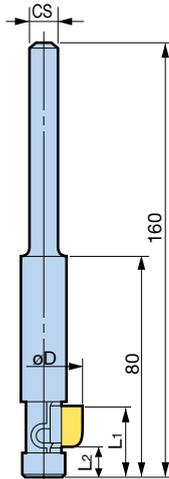
Standard back spot facing series



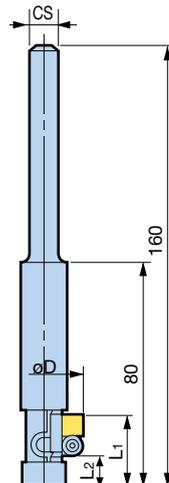
Hole diameter	Spot facing diameter $\varnothing D$	Spindle	Wing	Insert	L ₁	L ₂	CS
4.5	8	27-4.5-CS6	37-011	HSS	11	5	6
5.5	9	27-5.5-CS6	37-011	HSS	11	5	6
	10		-012				
	10.5		-013				
	11		-014				
6.5	9.5	27-6.5-CS6	37-011	HSS	11	5	6
	10.5		-012				
	11		-013				
	11.5		-014				
	13		-015				

7	11.8	27-7-CS8	37-021	HSS	15	5	8
	13.8		-022				
	14.4		-023				
8.4	13	27-8.4-CS8	37-021	HSS	15	5	8
	15		-022				
	15.6		-023				
	17		-024				
9	13.4	27-9-CS8	37-021	HSS	15	5	8
	15		-020-0480				
	15.4		-022				
	16		-023				
	17.4		-024				
	18		-025				
	19.6		-020-0710				

1. Upon purchase, specify the spindle and wing models with reference to the hole diameter and spot facing diameter.
2. The inserts marked with HSS in the table have high-speed steel wings integrated with the cutting edge. HSS wings have no nose radius.
3. Use a NEW BABY CHUCK or NEW HI- POWER MILLING CHUCK for chucking.

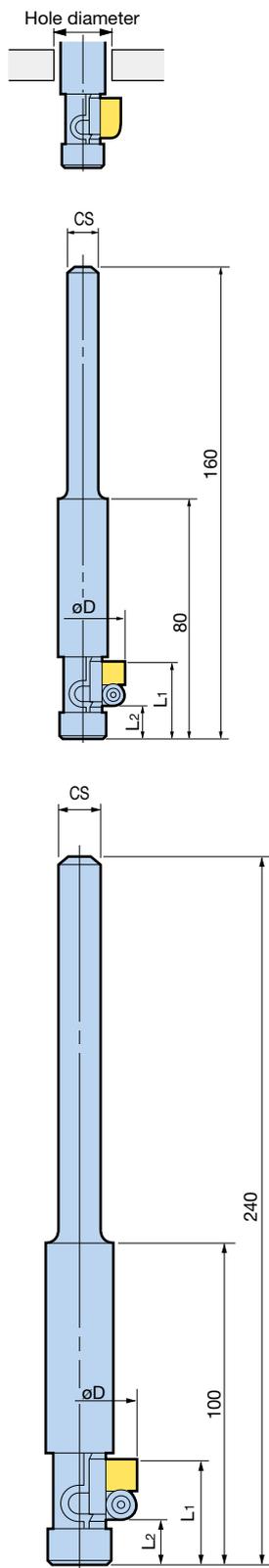


Hole diameter	Spot facing diameter $\varnothing D$	Spindle	Wing	Insert	Nose radius	L ₁	L ₂	CS
10	15.5	27-10-CS10	37-031	HSS	-	24	10	10
	17		-032					
	17.5		-033					
	18		-034					
	19		-035					
	19.6		-030-0730					
10.5	16	27-10.5-CS10	37-031	HSS	-	24	10	10
	17.5		-032					
	18		-033					
	18.5		-034					
	19.5		-035					
	20		-036					
	20.5		-037					
	21.1		-030-0780					
11	16.5	27-11-CS10	37-031	HSS	-	24	10	10
	18		-032					
	18.5		-033					
	19		-034					
	20		-035					
	20.5		-036					
	21		-037					
	22.6		-030-0830					



12	17.5	27-12-CS10	37-031	HSS	-	24	10	10				
	19		-032									
	19.5		-033									
	20		-034									
	21		-035									
	21.5		-036									
	22		-037									
	24		-042									
	25.6		-040-0930						080208	0.8	25	9
13	17.5	27-13-CS10	37-031	HSS	-	24	10	10				
	19		-032									
	19.5		-033									
	20		-034									
	21		-035									
	21.5		-036									
	22		-037									
	24		-042									
	26		-044						080208	0.8	25	9
13.5	18	27-13.5-CS12	37-031	HSS	-	24	10	12				
	19.5		-032									
	20		-033									
	20.5		-034									
	21.5		-035									
	22		-036									
	22.5		-037									
	24		-041									
	26		-043						080208	0.8	25	9
	28.1		-050-1030						C-0820	0.4	23	9

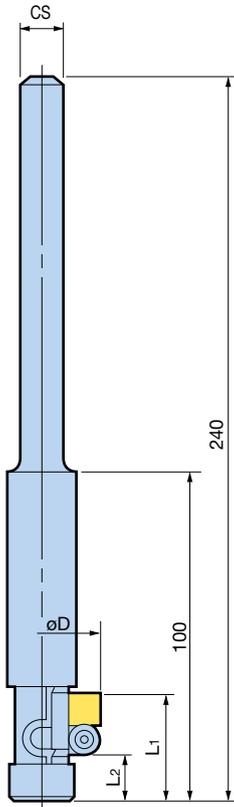
- Upon purchase, specify the spindle and wing models with reference to the hole diameter and spot facing diameter.
- The inserts marked with HSS in the table have high-speed steel wings integrated with the cutting edge. HSS wings have no nose radius.
- Inserts for cast iron (K) are included with wings as standard. Insert for steel (P) is also available. Please order separately. (10 pcs packet)



Hole diameter	Spot facing diameter $\varnothing D$	Spindle	Wing	Insert	Nose radius	L ₁	L ₂	CS				
14	18.5	27-14-CS12	37-031	HSS	—	24	10	12				
	20		-032									
	20.5		-033									
	21		-034									
	22		-035									
	22.5		-036									
	23		-037									
	25		-042									
	27		-044									
	29.6		-050-1080						C-0820	0.8	25	9
15	19.5	27-15-CS12	37-031	HSS	—	24	10	12				
	21		-032									
	21.5		-033									
	22		-034									
	23		-035									
	23.5		-036									
	24		-037									
	26		-042						080208	0.8	25	9
	30		-052						C-0820	0.4	23	9
	32.6		-050-1180						C-1000			
15.5	20	27-15.5-CS12	37-031	HSS	—	24	10	12				
	21.5		-032									
	22		-033									
	22.5		-034									
	23.5		-035									
	24		-036									
	24.5		-037									
	26		-041						080208	0.8	25	9
	30		-051						C-0820	0.4	23	9

16	24	27-16-CS12	37-060-0750	Carbide brazing	—	28	11	12		
	26		-061	080208						
	30		-062	090308					0.8	30
	33		-063							
	33.6		-070-1230	K-1050B					0.4	28
17	27	27-17-CS16	37-061	080208	0.8	28	11	16		
	31		-062	090308						
	34		-063	K-1150B					0.4	28
	36.6		-070-1330							
17.5	26	27-17.5-CS16	37-060-0775	Carbide brazing	—	28	11	16		
	27.5		-061	080208						
	31.5		-062	090308					0.8	30
	33		-060-1125							
	34.5		-063	K-1150B					0.4	28
	38.1		-070-1380							
18	28	27-18-CS16	37-061	080208	0.8	28	11	16		
	32		-062	090308						
	35		-063	K-1250B					0.4	28
	39.6		-070-1430							
19	28	27-19-CS16	37-061	080208	0.8	28	11	16		
	32		-062	090308						
	35		-063	K-1250B					0.4	28
	40.6		-080-1480							

1. Upon purchase, specify the spindle and wing models with reference to the hole diameter and spot facing diameter.
2. The inserts marked with HSS in the table have high-speed steel wings integrated with the cutting edge. HSS wings have no nose radius.
3. Inserts for cast iron (K) are included with wings as standard. Insert for steel (P) is also available. Please order separately. (10 pcs packet)

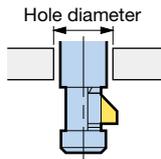
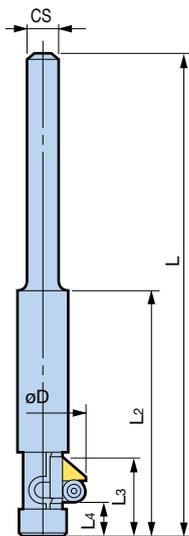
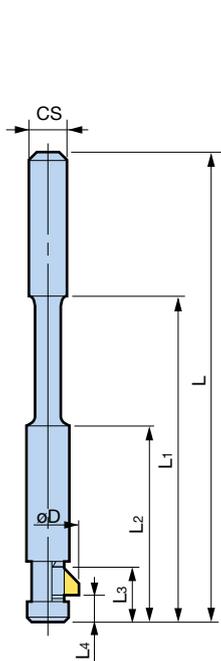


Hole diameter	Spot facing diameter $\varnothing D$	Spindle	Wing	Insert	Nose radius	L ₁	L ₂	CS
20	29	27-20-CS16	37-061	080208	0.8	28	11	16
	30		-060-0900					
	33		-062	090308		30		
	36		-063					
	43.6		-080-1580					
21	30	27-21-CS20	37-061	080208	0.8	28	11	20
	34		-062	090308				
	37		-063					
	46.6		-080-1680	K-1450B		0.4		
22	30	27-22-CS20	37-061	080208	0.8	30	13	20
	33		-060-1000					
	34		-062	090308		32		
	36		-060-1150					
	37		-063					
	40		-090-1350	120308		33		
	41		-091					
	47.6		-090-1730	K-1450B		0.4		
23	31	27-23-CS20	37-061	080208	0.8	30	13	20
	35		-062	090308				
	38		-063					
	42		-091	120308		33		
24	32	27-24-CS20	37-061	080208	0.8	30	13	20
	36		-062	090308				
	39		-063					
	40		-090-1250					
	43		-091	120308		33		
25	33	27-25-CS20	37-101	090308	0.8	46	15	20
	40		-102	120308				
	45		-111					
	50		-121	150412		1.2		
26	34	27-26-CS25	37-101	090308	0.8	46	15	25
	40		-100-1300					
	41		-102	120308		44		
	46		-111					
	51		-121					
27	35	27-27-CS25	37-101	090308	0.8	46	15	25
	42		-102	120308				
	47		-111					
	52		-121	150412		1.2		
28	36	27-28-CS25	37-101	090308	0.8	46	15	25
	43		-102	120308				
	48		-111					
	53		-121			150412		
29	37	27-29-CS25	37-101	090308	0.8	46	15	25
	44		-102	120308				
	49		-111					
	54		-121	150412		1.2		
30	38	27-30-CS25	37-101	090308	0.8	46	15	25
	45		-102					
	46		-100-1400	120308		44		
	50		-111					
	55		-121					

1. Upon purchase, specify the spindle and wing models with reference to the hole diameter and spot facing diameter.
2. Inserts for cast iron (K) are included with wings as standard. Insert for steel (P) is also available. Please order separately. (10 pcs packet)

Tools for larger diameter holes than $\varnothing 30$ are also available. Please contact us for details.

45° Back Chamfering Series



Hole diameter	Chamfering diameter $\varnothing D$	Spindle	Wing	Insert	L	L ₁	L ₂	L ₃	L ₄	CS
4.5	8	27-4.5-CS6	34-011	HSS	120	80	40	11	5	6
5.5	9	-5.5								
6.5	9.5	-6.5								
7	14.4	27-7 -CS8	34-023	HSS	140	100	60	15	5	8
8.4	15.6	-8.4								
9	16	-9								

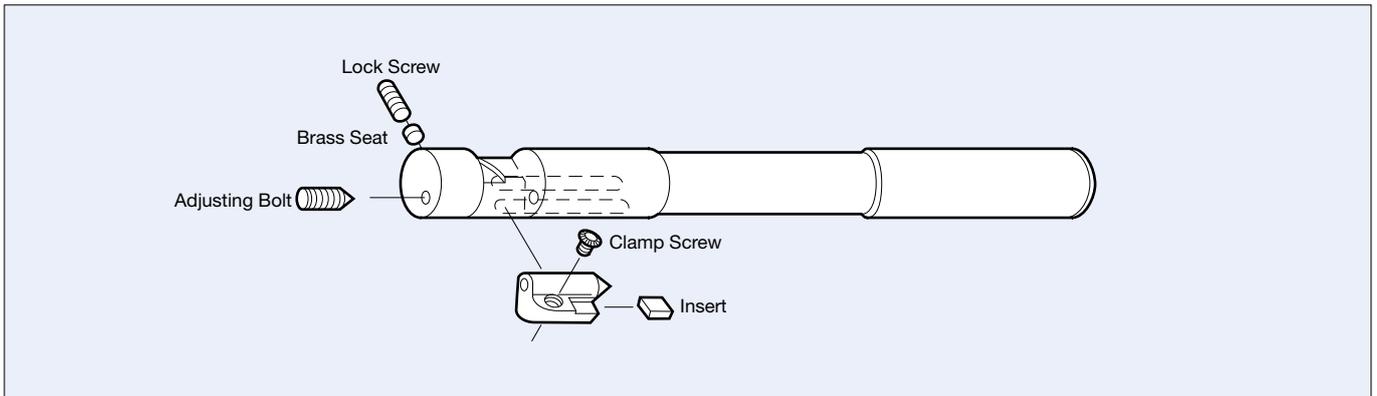
Hole diameter	Chamfering diameter $\varnothing D$	Spindle	Wing	Insert	L	L ₁	L ₂	L ₃	L ₄	CS
10	19	27-10 -CS10	34-035	HSS	160	—	80	24	10	10
10.5	19.5	-10.5								
11	20	-11								
12	21	-12								
13	21	-13	34-035	HSS	160	—	80	24	10	12
13.5	21.5	27-13.5-CS12								
14	22	-14								
15	23	-15								
15.5	23.5	-15.5	34-063	090308 x 45	240	—	100	30	11	12
16	33	27-16 -CS12								
17	34	27-17 -CS16								
17.5	34.5	-17.5								
18	35	-18	34-063	090308 x 45	240	—	100	30	11	16
19	35	-19								
20	36	-20								
21	37	27-21 -CS20								
22	37	-22	34-063	090308 x 45	240	—	100	32	13	20
23	38	-23								
24	39	-24								
25	50	-25								
26	51	27-26 -CS25	34-121	150412 x 45	240	—	100	46	15	25
27	52	-27								
28	53	-28								
29	54	-29								
30	55	-30								

1. Upon purchase, specify the spindle and wing models with reference to the hole diameter and chamfering diameter.
2. The inserts marked with HSS in the table have high-speed steel wings integrated with the cutting edge.
3. Inserts for cast iron (K) are included with wings as standard. Insert for steel (P) is also available. Please order separately. (10 pcs packet)

Tools for larger diameter holes than $\varnothing 30$ are also available. Please contact us for details.

AUTOMATIC BACK SPOT FACER

<Spare Parts>



<Adjusting Bolt, Lock Bolt Set>

Hole diameter	Adjusting bolt	Allen key size for adjusting bolt	Lock Screw Set Set Contents: Brass (2 pcs), Screws (2 pcs), Allen Key (1 pc)
4.5 - 6.5	211-1	0.9	215-1
7 - 9	211-2	1.3	
10 - 15.5	211-3	2	215-3
16 - 24	211-4	3	215-4
25 - 30	211-5	5	215-5

<Clamp Screw>

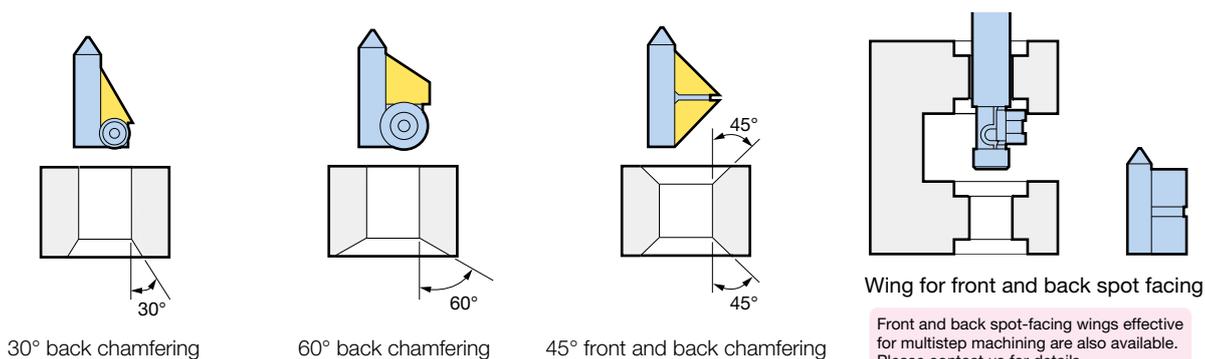
Wing Model	Clamp Screw
040 - 061	4-631
062 - 102	5-639
110 - 121	6-635

1. Note that the clamp screws for wing models 37-060-1125 and 37-060-1150 are different from those listed in the table at left. (Refer to table below)

Wing Model	Clamp Screw
37-060-1125	5-639
37-060-1150	5-639

Wing replacement permits back machining of different diameters and different angles.

※ For models and dimensions, refer to the following page.

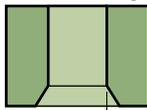


(● Tools for hole diameter larger than $\phi 30$
The various series are also available in hole diameter sizes up to $\phi 69$. Please contact us for details.)

Wing Models by Angle

- For 30° and 60° back chamfering, as well as 45° front and back chamfering, select spindles and wings from the table below.

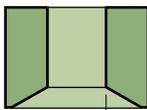
30° back chamfering



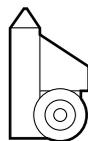
30°



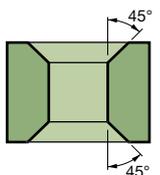
60° back chamfering



60°

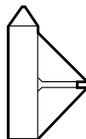


45° front and back chamfering



45°

45°



Hole diameter	Chamfering diameter	Spindle Model	Wing Model		
			30° back chamfering	60° back chamfering	45° front & back chamfering
4.5	8	27- 4.5-CS 6	34-011-30	34-011-60	35-011
5.5	9	- 5.5			
6.5	9.5	- 6.5			
7	14.4	27- 7 -CS 8	34-023-30	34-023-60	35-022
8.4	15.6	- 8.4			
9	16	- 9			
10	19	27-10 -CS10	34-035-30	34-035-60	35-035
10.5	19.5	- 10.5			
11	20	- 11			
12	21	- 12			
13	21	- 13			
13.5	21.5	27-13.5-CS12			
14	22	- 14			
15	23	- 15			
15.5	23.5	- 15.5			
16	26	- 16	34-061-30 * (Insert 090308 x 30)	34-063-60 * (Insert 090308 x 60)	35-060
17	27	27-17 -CS16			
17.5	27.5	- 17.5			
18	28	- 18			
19	28	- 19			
20	29	- 20			
21	30	27-21 -CS20			
22	30	- 22			
23	31	- 23			
24	32	- 24			
25	40	- 25	34-102-30 * (Insert 150412 x 30)	34-121-60 * (Insert 150412 x 60)	35-102
26	41	27-26 -CS25			
27	42	- 27			
28	43	- 28			
29	44	- 29			
30	45	- 30			

- * mark indicates insert type of wing. Insert for cast iron (K) is included as standard. Insert for steel (P) is also available. Please order separately. (10 pcs packet)
- Refer to the previous pages for spindle dimensions.
- The chamfering diameter shows the maximum machinable value.

Cutting Conditions

● For horizontal machining centers and interrupted cutting

When using on a horizontal machining center or for interrupted cutting, double the spindle speed and decrease the feed by 20 to 30%.

● Feed when passing through the workpiece 

Set the feed at $f=0.2\text{mm/rev}$ or lower when inserting/extracting the tool into/from the workpiece.

● For use with internal coolant 

Coolant discharged during inserting/extracting the tool into/from the workpiece interrupts the opening and closing of the wing, which leads to danger. Stop supplying coolant except when cutting.

● Prohibition of hand feed operation 

Always use mechanical feed when cutting with this product. Hand feed should never be used as it may cause unstable cutting, affecting the opening and closing of the wing and leading to damage.

● Spindle selection for the hole diameter 

The workpiece starting hole serves as a guide for the spindle during cutting. Always use a spindle that matches the hole diameter.

Spot facing diameter (Chamfering diameter)	Spindle speed n (min ⁻¹)	Feed f (mm/rev)	
		Steel	Cast Iron
9-11	700	0.03	0.05
12-14	600	0.04	0.06
15-17	500	0.05	0.08
18-21	400	0.07	0.10
22-25	550	0.08	0.12
26-30	470	0.09	0.14
31-35	400	0.11	0.16
36-40	350	0.13	0.18
41-45	325	0.14	0.21
46-50	275	0.16	0.24
51-60	250	0.18	0.27
61-70	225	0.22	0.33
71-80	200	0.24	0.37