



HSS/Co end mills




HSS/Co end mills

 The Osawa catalogue also includes a wide range of HSS/Co end mills, both coated and uncoated.

 Il catalogo Osawa include un'ampia scelta di frese in HSS/Co nudo e rivestito.

 Der Osawa Katalog umfasst eine große Auswahl an beschichteten und unbeschichteten Fräsern aus HSS/Co.

 Le catalogue Osawa inclut une large gamme de fraises en HSS/Co, soit revêtues, soit non revêtues.

HSS/Co

HSS/Co
HIGH SPEED STEEL

n **Vf**
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DIN
327

WS2 - TAWS2 - WSB2 - TAWSB2 (e8)

Ø mm	1-3	3.5-6	6.5-10	10.5-18	19-30	32-40
tol. D µ	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89
tol. R µ	±20					



WS2
TAWS2

WSB2
TAWSB2

HSS/Co
BR
 N

HSS/Co
PV200
 N

HSS/Co
BR
 N BALL NOSE

HSS/Co
PV200
 N BALL NOSE

D(e8)	d(h6)	l	L	Stock	Stock	Stock	Stock
mm 1	6	2.5	47	●	●		
1.5	6	3	47	●	●		
2	6	4	48	●	●	●	○
2.5	6	5	49	●	●	○	○
3	6	5	49	●	●	●	●
3.5	6	6	50	●	●	○	○
4	6	7	51	●	●	●	●
4.5	6	7	51	●	●	○	○
5	6	8	52	●	●	●	●
5.5	6	8	52	●	●	○	○
6	6	8	52	●	●	●	●
6.5	10	10	60	●	●		
7	10	10	60	●	●	○	○
7.5	10	10	60	●	●		
8	10	11	61	●	●	●	●
8.5	10	11	61	●	●		
9	10	11	61	●	●	○	○
9.5	10	11	61	●	●		
10	10	13	63	●	●	●	●
10.5	12	13	70	●	●		
11	12	13	70	●	●	○	○
11.5	12	13	70	●	●		
12	12	16	73	●	●	●	●
12.5	12	16	73	●	●		
13	12	16	73	●	●	○	○
13.5	12	16	73	●	●		
14	12	16	73	●	●	●	●
15	12	16	73	●	●	○	○
16	16	19	79	●	●	●	●
17	16	19	79	●	●	○	○
18	16	19	79	●	●	●	●
19	16	19	79	●	●	○	○
20	20	22	88	●	●	●	●
21	20	22	88	○			
22	20	22	88	●	●	●	○
24	25	26	102	●	○		

● stock standard ○ non-standard stock EX stock exhaustion

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WS2 - TAWS2 - WSB2 - TAWSB2 (e8)

Ø mm	1-3	3.5-6	6.5-10	10.5-18	19-30	32-40
tol. D µ	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89
tol. R µ	±20					



D(e8)	d(h6)	l	L	Stock	Stock	Stock	Stock
mm 25	25	26	102	●	●	●	○
26	25	26	102	●			
27	25	26	102	○			
28	25	26	102	●		○	○
30	25	26	102	●		○	○
32	32	32	112	○			

● stock standard ○ non-standard stock EX stock exhaustion

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WS3 - TAWS3 (e8)

Ø mm	1-3	3.5-6	6.5-10	10.5-18	19-30	32-40
tol. D µ	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89

WSH3 - TAWSH3

Ø mm	1-3	3.5-6	6.5-10	10.5-18	19-30	32-40
tol. D µ		0 / +48	0 / +58	0 / +70	0 / +84	



<p>WS3 TAWS3</p>				
	HSS/Co BR	HSS/Co PV200	HSS/Co BR	HSS/Co PV200
<p>WSH3 TAWSH3</p>	N	N	N	N

D	d(h6)	l	L	Stock	Stock	Stock	Stock
mm 1	6	3	47	●	○		
1.5	6	7	51	●	○		
2	6	7	51	●	●		
2.5	6	8	52	●	●		
3	6	8	52	●	●		
3.5	6	10	54	●	●		
4	6	11	55	●	●		
4.5	6	11	55	●	●		
5	6	13	57	●	●		
5.5	6	13	57	●	●		
6	6	13	57	●	●	○	●
6.5	10	16	66	●	●		
7	10	16	66	●	●		
8	10	19	69	●	●	○	●
8.5	10	19	69	●	●		
9	10	19	69	●	●		
10	10	22	72	●	●	○	●
11	12	22	79	●	●		
12	12	26	83	●	●	○	●
13	12	26	83	●	●		
14	12	26	83	●	●	○	●
15	12	26	83	●	●		
16	16	32	92	●	●	○	●
18	16	32	92	●	●	○	○
20	20	38	104	●	●	○	●
22	20	38	104	●	●		
24	25	45	121	○			
25	25	45	121	●	●	○(Z4)	○(Z4)
28	25	45	121	○			
30	25	45	121	●	○	○(Z4)	○(Z4)
32	32	53	133	○	○		

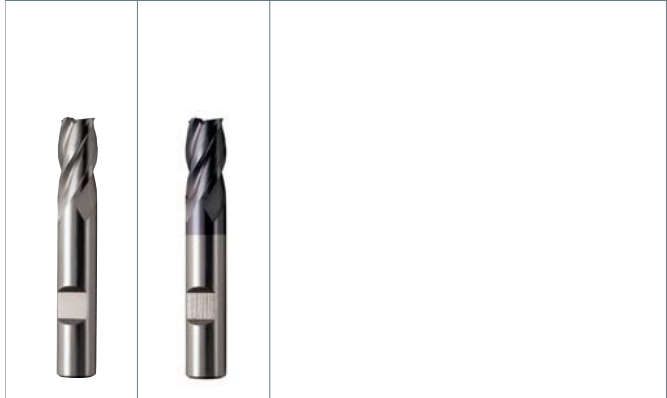
● stock standard ○ non-standard stock EX stock exhaustion

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WS4 (6) TAWS4 (6)



WS4 - TAWS4

Ø mm	2~40
tol. D µ	0 / +40

Z4-Z6
HSS/Co
BR
N
30°

Z4-Z6
HSS/Co
PV200
N
30°

D	d(h6)	l	L	Stock	Stock
mm 2	6	7	51	●	●
3	6	8	52	●	●
4	6	11	55	●	●
5	6	13	57	●	●
6	6	13	57	●	●
7	10	16	66	●	●
8	10	19	69	●	●
9	10	19	69	●	●
10	10	22	72	●	●
11	12	22	79	●	●
12	12	26	83	●	●
13	12	26	83	●	●
14	12	26	83	●	●
15	12	26	83	●	●
16	16	32	92	●	●
17	16	32	92	○	●
18	16	32	92	●	●
19	16	32	92	○	○
20	20	38	104	●	●
22	20	38	104	●●	
24	25	45	121	●(Z6)	○(Z6)
25	25	45	121	●	●
26	25	45	121	○(Z6)	○(Z6)
28	25	45	121	●(Z6)	○(Z6)
30	25	45	121	●(Z6)	●(Z6)
32	32	53	133	○(Z6)	●(Z6)
36	32	53	133	○(Z6)	●(Z6)
40	32	63	143	○(Z6)	●(Z6)

● stock standard ○ non-standard stock EX stock exhaustion



DIN 844



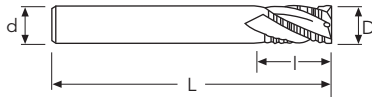
WSR ≤ Ø20
TAWSR ≤ Ø20
WSFR ≤ Ø20
TAWFSR ≤ Ø40



WSR ≥ Ø22
TAWSR ≥ Ø22
WSFR ≥ Ø22

WSR - TAWSR - WSFR - TAWFSR (js12)

Ø mm	~6	6.5~10	10.5~18	19~30	32~40
tol. D µ	±60	±75	±90	±105	±125



WSR	TAWSR	WSFR	TAWFSR

D(js12)	d(h6)	l	L	Z	Stock	Stock	Stock	Stock
mm 6	6	13	57	3	○	●	●	●
7	10	16	66	3	○	●	○	●
8	10	19	69	3	○	●	●	●
9	10	19	69	3	○	●	○	●
10	10	22	72	4	○	●	●	●
11	12	22	79	4	○	●	○	●
12	12	26	83	4	○	●	●	●
13	12	26	83	4	○	●	○	●
14	12	26	83	4	○	●	●	●
15	12	26	83	4	○	●	○	●
16	16	32	92	4	○	●	●	●
17	16	32	92	4	○	●	○	●
18	16	32	92	4	○	●	●	●
19	16	32	92	4	○	○	○	●
20	20	38	104	4	○	●	●	●
22	20	38	104	5	○	○	○	●
24	25	45	121	5				
25	25	45	121	5	○	○	○	●
26	25	45	121	6				
28	25	45	121	6			○	●
30	25	45	121	6	○		○	●
32	32	53	133	6				●
34	32	53	133	6				
35	32	53	133	6				
36	32	53	133	6				●
38	32	63	155	6				
40	32	63	155	6				●

● stock standard ○ non-standard stock EX stock exhaustion

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WL2 - TAWL2 - WLB2 - TAWLB2 (e8)

Ø mm	1-3	3.5-6	6.5-10	10.5-18	19-30	32-40
tol. D µ	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89
tol. R µ	±20					



WL2 TAWL2 	WLB2 TAWLB2 				
		HSS/Co BR	HSS/Co PV200	HSS/Co BR	HSS/Co PV200
		N	N	N BALL NOSE	N BALL NOSE

D(e8)	d(h6)	l	L	Stock	Stock	Stock	Stock
mm 3	6	8	56	●	●	○	○
4	6	11	63	●	●	○	○
5	6	13	68	●	●	○	○
6	6	13	68	●	●	○	○
7	10	16	80	●	○	○	○
8	10	19	88	●	●	○	○
9	10	19	88	●	○	○	○
10	10	22	95	●	●	○	○
11	12	22	102	●	○	○	○
12	12	26	110	●	●	○	○
13	12	26	110	●	○	○	○
14	12	26	110	●	●	○	○
15	12	26	110	●	○	○	○
16	16	32	123	●	●	○	○
17	16	32	123	●	○	○	○
18	16	32	123	●	●	○	○
20	20	38	141	●	●	○	○
22	20	38	141	●			
24	25	45	166	●			
25	25	45	166	●			
28	25	45	166	●			
30	25	45	166	●			
32	32	53	186	○			
36	32	53	186	○			
40	32	63	207	○			

● stock standard ○ non-standard stock EX stock exhaustion



**DIN
844**



WL3 - TAWL3 (e8)

Ø mm	~3	3.5~6	6.5~10	10.5~18	19~30	32~40
tol. D µ	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89

WL4 - TAWL4

Ø mm	3~6	7~40
tol. D µ	0 / +40	0 / +50



WL3 TAWL3 																

D	d(h6)	l	L	Stock	Stock	Stock	Stock
mm 3	6	12	56	●	●	●	○
4	6	19	63	●	●	●	○
5	6	24	68	●	●	●	○
6	6	24	68	●	●	●	●
7	10	30	80	●	●	●	○
8	10	38	88	●	●	●	●
9	10	38	88	●	●	●	○
10	10	45	95	●	●	●	●
11	12	45	102	●	●	●	○
12	12	53	110	●	●	●	●
13	12	53	110	●	●	●	○
14	12	53	110	●	●	●	●
15	12	53	110	●	●	●	○
16	16	63	123	●	●	●	●
17	16	63	123	●	●	○	○
18	16	63	123	●	●	●	●
19	16	63	123	●	●	○	○
20	20	75	141	●	●	● (Z6)	● (Z6)
22	20	75	141	●	○	○ (Z6)	● (Z6)
24	25	90	166	●	○	○ (Z6)	○
25	25	90	166	●	○	● (Z6)	● (Z6)
26	25	90	166	●	○	○ (Z6)	○
28	25	90	166	●	○	○ (Z6)	○ (Z6)
30	25	90	166	●	○	○ (Z6)	● (Z6)
32	32	106	186	●	○	○ (Z6)	● (Z6)
36	32	106	186	●	○	○ (Z6)	● (Z6)
40	40	125	217	●	○	○ (Z6)	● (Z6)

● stock standard ○ non-standard stock EX stock exhaustion

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WLFR - TAWLFR (j12)

Ø mm	~6	6.5~10	10.5~18	19~30	32~40
tol. D µ	±60	±75	±90	±105	±125

D(js 12)	d(h6)	l	L	Z	Stock	Stock
mm 6	6	24	68	3	●	●
8	10	38	88	3	●	●
10	10	45	95	4	●	●
12	12	53	110	4	●	●
14	12	53	110	4	●	●
16	16	63	123	4	●	●
18	16	63	123	4	●	●
20	20	75	141	4	●	●
22	20	75	141	5		●
25	25	90	166	5	○	●
30	25	90	166	6		●
32	32	106	186	6		●
36	32	106	186	6		●
40	32	125	217	6		●

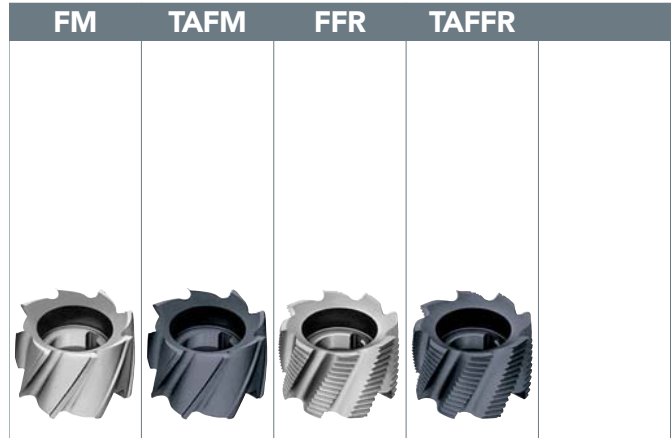
● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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DIN 1880

FM - TAFM - FFR - TAFFR

tol. D mm	+0.25 / -0.15
tol. d1 mm	+0.02 / -0
tol. H mm	+0.5 / -0



			<p>Z8-Z14</p>	<p>Z8-Z14</p>	<p>Z6-Z12</p>	<p>Z6-Z12</p>
			<p>HSS/Co</p> <p>BR</p>	<p>HSS/Co</p> <p>PV200</p>	<p>HSS/Co</p> <p>BR</p>	<p>HSS/Co</p> <p>PV200</p>
			<p>N</p>	<p>N</p>	<p>HR FINE</p>	<p>HR FINE</p>
			<p>30°</p>	<p>30°</p>	<p>30°</p>	<p>30°</p>
D	d1	H	Stock	Stock	Stock	Stock
mm 40	16	32	● (Z8)	● (Z8)	● (Z6)	● (Z6)
50	22	36	● (Z8)	● (Z8)	● (Z8)	● (Z8)
63	27	40	● (Z8)	● (Z8)	● (Z8)	● (Z8)
80	27	45	○ (Z10)	○ (Z10)	○ (Z10)	○ (Z10)
100	32	50	○ (Z10)	○ (Z10)	○ (Z10)	○ (Z10)
160	50	63	○ (Z14)	○ (Z14)	○ (Z12)	○ (Z12)

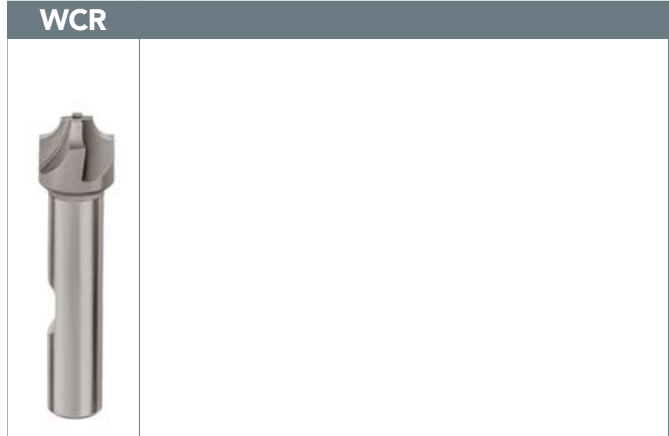
● stock standard ○ non-standard stock EX stock exhaustion

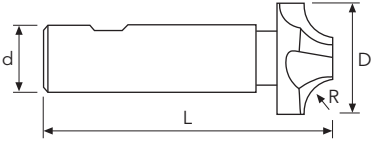

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**DIN
6518**

WCR (H11)

Ø mm	8-12	13-20	21-28	31-52
tol. R µ	+60 / 0	+75 / 0	+90 / 0	+110 / 0





Z4

HSS/Co
BR

N

0°

D	R(H11)	d(h6)	L	Stock
mm 8	1.0	10	60	●
9	1.5	10	60	●
10	2.0	10	60	●
11	2.5	10	60	●
12	3.0	12	60	●
13	3.5	12	60	●
14	4.0	12	60	●
15	4.5	12	60	●
16	5.0	12	60	●
19	5.5	16	67	●
20	6.0	16	67	●
21	6.5	16	71	●
22	7.0	16	71	●
23	7.5	16	71	●
24	8.0	16	71	●
25	8.5	25	85	●
26	9.0	25	85	●
27	9.5	25	85	●
28	10.0	25	85	●
31	10.5	25	90	○
32	11.0	25	90	●
34	12.0	25	90	●
41	12.5	25	100	○
42	13.0	25	100	○
44	14.0	25	100	○
46	15.0	25	100	○
48	16.0	25	100	○
52	18.0	32	112	○
56	20	32	112	○

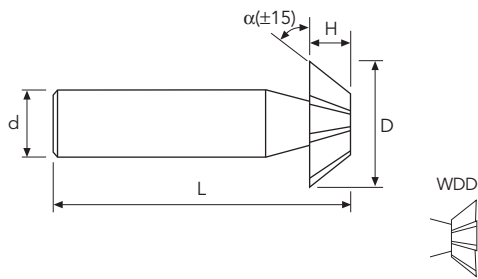
● stock standard ○ non-standard stock EX stock exhaustion

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DIN 1833

WDC45 - WDC60 - WDD45 - WDD60 (js16)

Ø mm	~18	20~30	32~38
tol. D mm	±0.65	±0.65	±0.80

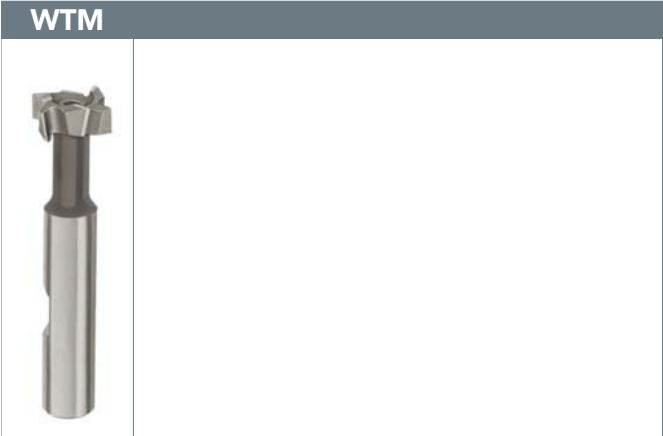


					Z6-Z12	Z6-Z12	Z6-Z12	Z6-Z12
					HSS/Co	HSS/Co	HSS/Co	HSS/Co
					BR	BR	BR	BR
					N	N	N	N
					α	α	α	α
					45°	60°	45°	60°
D(js16)	d(h6)	H	L	Z	Stock	Stock	Stcok	Stock
mm 16	12	4	60	6	●		●	
20	12	5	63	6	●		●	
22	12	6	67	6	●		●	
25	16	6.3	67	8	●		●	
28	16	7.5	67	8	●		●	
32	16	8	71	10	●		●	
38	16	10	80	12	○		○	
mm 16	12	6.3	60	6		●		●
20	12	8	63	6		●		●
22	12	9	67	6		●		●
25	16	10	67	8		●		●
28	16	11	67	8		●		●
32	16	12.5	71	10		●		●
38	16	16	80	12		○		○

● stock standard ○ non-standard stock EX stock exhaustion

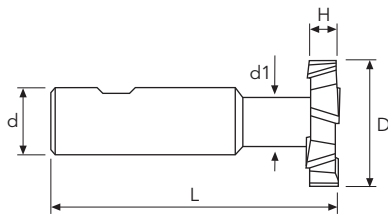

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**DIN
851**



WTM (d11)

Ø mm	10~18	19~30	32~40
tol. D µ	-50 / -160	-65 / -195	-80 / -240



 Z6-Z8
 HSS/Co
 BR
 N
 15°

D(d11)	d(h6)	d1	H(d11)	L	Z	Stock
mm 12.5	10	5	6	57	6	●
16	10	6.5	8	62	6	●
18	12	8	8	70	6	●
19	12	8	9	71	6	●
21	12	10	9	74	6	●
22	12	10	10	75	6	●
25	16	12	11	82	6	●
28	16	13	12	83	6	●
32	16	15	14	90	8	●
36	25	17	16	103	8	○
40	25	19	18	108	8	○

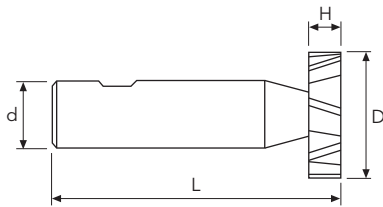
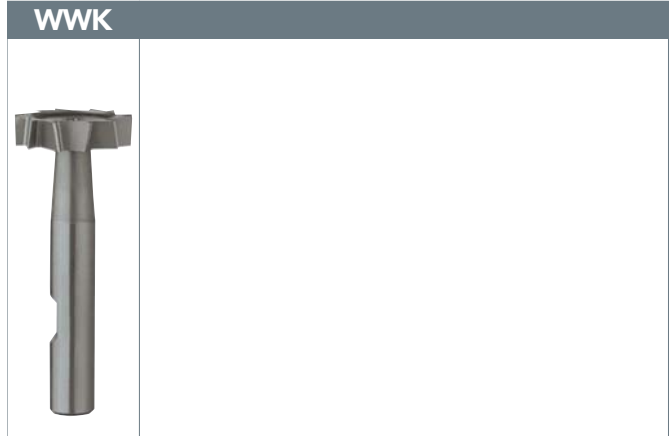
● stock standard ○ non-standard stock EX stock exhaustion


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**DIN
850**

WWK (h11 - e8)

Ø mm	10~18	19~30	32~50
tol. D µ	0 / -110	0 / -130	0 / -160
tol. H µ	-32 / -59	-40 / -73	-50 / -89



 Z8-Z14
 HSS/Co
 BR
 N
 10°

D(h11)	d(h6)	H(e8)	L	Z	Stock
mm 10.5	6	2	50	8	●
10.5	6	2.5	50	8	○
10.5	6	3	50	8	●
13.5	10	2	56	8	●
13.5	10	2.5	56	8	○
13.5	10	3	56	8	●
13.5	10	4	56	8	●
16.5	10	2.5	56	8	●
16.5	10	3	56	8	●
16.5	10	4	56	8	●
16.5	10	5	56	8	●
19.5	10	3	63	10	●
19.5	10	4	63	10	●
19.5	10	5	63	10	●
19.5	10	6	63	10	●
22.5	10	4	63	10	●
22.5	10	5	63	10	●
22.5	10	6	63	10	●
22.5	10	8	63	10	○
25.5	10	5	63	10	●
25.5	10	6	63	10	●
25.5	10	7	63	10	○
25.5	10	8	63	10	○
28.5	10	5	63	10	●
28.5	10	6	63	10	●
28.5	10	7	63	10	○
28.5	10	8	63	10	○
32.5	12	5	71	12	●
32.5	12	6	71	12	●
32.5	12	7	71	12	○
32.5	12	8	71	12	●
32.5	12	10	71	12	●
38.5	12	7	71	12	○
38.5	12	8	71	12	○
38.5	12	9	71	12	○
38.5	12	10	71	12	○
45.5	12	10	71	14	○

● stock standard ○ non-standard stock EX stock exhaustion