

 **OSAWA**
D R I L L S & E N D M I L L S

CATALOGUE 2011



NEW TYPHOON DRILLS

🇬🇧 General-purpose TA, HTA and 4HTA (4 guide chamfers) geometries, SUH for stainless steel and ALH for aluminium: here comes the Osawa New Typhoon range of solid carbide drills.

🇮🇹 TA, HTA e 4HTA (4 fasi) per applicazioni generiche, SUH per acciai inossidabili ed ALH per alluminio: le nuove punte in metallo duro integrale Osawa New Typhoon.

🇩🇪 TA, HTA und 4HTA (4 Führungsfasen) für allgemeine Anwendungen, SUH für rostfreie Stähle und ALH für Aluminium: diese neuen Vollhartmetall-Bohrer der Osawa New Typhoon- Reihe haben optimierte Schneidgeometrien für jedes Anwendungsgebiet.

🇫🇷 Géométries tout-terrain TA, HTA et 4HTA (4 listels), SUH pour inox et ALH pour alu: voila la nouvelle gamme de forets carbure monobloc Osawa New Typhoon.



TA

PV200 COATING

GENERAL PURPOSE · USO GENERICO
ALLGEMEINE ANWENDUNGEN · APPLICATIONS GÉNÉRIQUES



HTA



4HTA

PV300 COATING

GENERAL PURPOSE · USO GENERICO
ALLGEMEINE ANWENDUNGEN · APPLICATIONS GÉNÉRIQUES



SUH

PV300 COATING

LAPPED FLUTES · GOLE LAPPATE
GELÄPPTÉ NUTEN · GOUJOURS RODÉES

STAINLESS STEEL · ACCIAIO INOSSIDABILE
ROSTFREIER STAHL · ACIER INOXYDABLE



ALH

UNCOATED

LAPPED FLUTES · GOLE LAPPATE
GELÄPPTÉ NUTEN · GOUJOURS RODÉES

ALUMINIUM · ALLUMINIO
ALUMINIUM · ALUMINIUM

n **Vf**
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DIN 6539

3XD

343TA - 318N (h7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21



<D mm 2

≥D mm 2

TA

MG

PV200

140°

30°

TA

MG

BR

140°

30°

D(h7)	d(h6)	l	L	Stock	Stock
mm 1.00	2	6	40	●	●
1.10	2	7	40	●	●
1.20	2	8	40	●	●
1.30	2	8	40	●	●
1.40	2	9	40	●	●
1.50	2	9	40	●	●
1.60	2	10	40	●	●
1.70	2	10	40	●	●
1.80	2	11	40	●	●
1.90	2	11	40	●	●
2.00	2	12	40	●	●
2.10	2.1	12	40	●	●
2.20	2.2	13	40	●	●
2.30	2.3	13	46	●	●
2.40	2.4	14	46	●	●
2.50	2.5	14	46	●	●
2.60	2.6	14	46	●	●
2.70	2.7	16	46	●	●
2.80	2.8	16	49	●	●
2.90	2.9	16	49	●	●
3.00	3	16	49	●	●
3.10	3.1	18	49	●	●
3.20	3.2	18	49	●	●
3.30	3.3	18	52	●	●
3.40	3.4	20	52	●	●
3.50	3.5	20	52	●	●
3.60	3.6	20	52	●	●
3.70	3.7	20	52	●	●
3.80	3.8	22	55	●	●
3.90	3.9	22	55	●	●
4.00	4	22	55	●	●
4.10	4.1	22	55	●	●
4.20	4.2	22	55	●	●
4.30	4.3	24	58	●	●
4.40	4.4	24	58	●	○
4.50	4.5	24	58	●	●

● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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DIN 6539

3XD

343TA - 318N (h7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21



TA
MG
PV200
140°
30°

TA
MG
BR
140°
30°

D(h7)	d(h6)	l	L	Stock	Stock
mm 4.60	4.6	24	58	●	●
4.70	4.7	24	58	●	●
4.80	4.8	26	62	●	●
4.90	4.9	26	62	●	●
5.00	5	26	62	●	●
5.10	5.1	26	62	●	●
5.20	5.2	26	62	●	●
5.30	5.3	26	66	●	●
5.40	5.4	28	66	●	●
5.50	5.5	28	66	●	●
5.60	5.6	28	66	●	●
5.70	5.7	28	66	●	●
5.80	5.8	28	70	●	●
5.90	5.9	28	70	●	●
6.00	6	28	70	●	●
6.10	6.1	31	70	●	●
6.20	6.2	31	70	●	●
6.30	6.3	31	70	●	●
6.40	6.4	31	70	●	●
6.50	6.5	31	70	●	●
6.60	6.6	31	70	●	○
6.70	6.7	31	70	●	●
6.80	6.8	34	74	●	●
6.90	6.9	34	74	●	●
7.00	7	34	74	●	●
7.10	7.1	34	74	●	○
7.20	7.2	34	74	●	○
7.30	7.3	34	79	●	○
7.40	7.4	34	79	●	○
7.50	7.5	34	79	●	●
7.60	7.6	37	79	●	○
7.70	7.7	37	79	●	○
7.80	7.8	37	79	●	○
7.90	7.9	37	79	●	○
8.00	8	37	79	●	●
8.10	8.1	37	79	●	●

● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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DIN 6539

3XD

343TA - 318N (h7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21



PV200	BR

D(h7)	d(h6)	l	L	Stock	Stock
mm 8.20	8.2	37	79	●	●
8.30	8.3	37	84	●	○
8.40	8.4	37	84	●	○
8.50	8.5	37	84	●	●
8.60	8.6	40	84	●	○
8.70	8.7	40	84	●	●
8.80	8.8	40	84	●	●
8.90	8.9	40	84	●	○
9.00	9	40	84	●	●
9.10	9.1	40	84	●	○
9.20	9.2	40	84	●	●
9.30	9.3	40	89	●	●
9.40	9.4	40	89	●	○
9.50	9.5	40	89	●	●
9.60	9.6	43	89	●	○
9.70	9.7	43	89	●	○
9.80	9.8	43	89	●	●
9.90	9.9	43	89	●	○
10.00	10	43	89	●	●
10.20	10.2	43	89	●	●
10.50	10.5	43	95	●	●
10.80	10.8	47	95	○	○
11.00	11	47	95	●	●
11.20	11.2	47	102	○	○
11.30	11.3	47	102	○	○
11.50	11.5	47	95	●	●
11.80	11.8	47	102	○	○
12.00	12	51	102	●	●
12.20	12.2	51	102	○	○
12.50	12.5	51	103	●	●
12.80	12.8	51	103	○	○
13.00	13	51	103	●	●
13.50	13.5	54	107	●	○
13.80	13.8	54	107	○	○
14.00	14	54	107	●	○
14.50	14.5	56	111	●	○

● stock standard ○ non-standard stock EX stock exhaustion

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DIN 6539

3XD

343TA - 318N (h7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21



D(h7)	d(h6)	l	L	Stock	Stock
mm 15.00	15	56	111	●	
15.30	15.3	58	115	○	
15.50	15.5	58	115	●	
15.80	15.8	58	115	○	
16.00	16	58	115	●	

● stock standard ○ non-standard stock EX stock exhaustion

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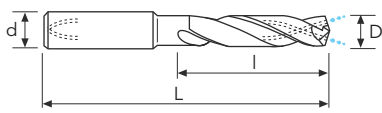
OSAWA
NORM

8XD

12XD

358SUH - 3512SUH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



D(m7)	d(h6)	l	L	Stock	Stock
mm 1.00	3	9.5	50	●	
1.00	3	13.5	55		●
1.10	3	10.5	50	●	
1.10	3	14.9	55		○
1.20	3	11.4	50	●	
1.20	3	16.2	55		●
1.30	3	12.4	50	●	
1.30	3	17.6	55		●
1.40	3	13.3	50	●	
1.40	3	18.9	55		○
1.50	3	14.3	50	●	
1.50	3	20.3	55		●
1.60	3	15.2	50	●	
1.60	3	21.6	65		●
1.70	3	16.2	60	●	
1.70	3	23	65		○
1.80	3	17.1	60	●	
1.80	3	24.3	65		●
1.90	3	18.1	60	●	
1.90	3	25.7	65		○
2.00	3	19	60	●	
2.00	3	27	65		●
2.10	3	20	60	●	
2.10	3	28.4	65		●
2.20	3	20.9	60	●	
2.20	3	29.7	65		●
2.30	3	21.9	60	●	
2.30	3	31.1	65		○
2.40	3	22.8	60	●	
2.40	3	32.4	75		○
2.50	3	23.8	60	●	
2.50	3	33.8	75		●
2.60	3	24.7	60	●	
2.60	3	35.1	75		●
2.70	3	25.7	60	●	
2.70	3	36.5	75		○

● stock standard ○ non-standard stock EX stock exhaustion

	OSAWA NORM	8XD	12XD
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358SUH - 3512SUH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



D(m7)	d(h6)	l	L	Stock	Stock
mm 2.80	3	26.6	60	●	
2.80	3	37.8	75		●
2.90	3	27.6	60	●	
2.90	3	39.2	75		○

● stock standard ○ non-standard stock EX stock exhaustion



DIN 6537K

3XD

353TA - 353HTA - 353SUH - 353ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



353TA

353HTA
353SUH
353ALH

TA

MG

PV200

HTA

MG

PV200

SUH

MG

PV300

ALH

MG

LAPPED

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 3.00	6	14	20	62	●	●	●	●
3.10	6	14	20	62	●	●	●	○
3.20	6	14	20	62	●	●	●	○
3.30	6	14	20	62	●	●	●	●
3.40	6	14	20	62	●	●	●	●
3.50	6	14	20	62	●	●	●	●
3.60	6	14	20	62	●	●	●	○
3.70	6	14	20	62	●	●	●	○
3.80	6	17	24	66	●	●	●	●
3.90	6	17	24	66	●	●	●	○
4.00	6	17	24	66	●	●	●	●
4.10	6	17	24	66	●	●	●	○
4.20	6	17	24	66	●	●	●	●
4.30	6	17	24	66	●	●	●	●
4.40	6	17	24	66	●	●	●	○
4.50	6	17	24	66	●	●	●	●
4.60	6	17	24	66	●	●	●	○
4.70	6	17	24	66	●	●	●	○
4.80	6	20	28	66	●	●	●	●
4.90	6	20	28	66	●	●	●	○
5.00	6	20	28	66	●	●	●	●
5.10	6	20	28	66	●	●	●	●
5.20	6	20	28	66	●	●	●	●
5.30	6	20	28	66	●	●	●	○
5.40	6	20	28	66	●	●	●	○
5.50	6	20	28	66	●	●	●	●
5.60	6	20	28	66	●	●	●	○
5.70	6	20	28	66	●	●	●	○
5.80	6	20	28	66	●	●	●	●
5.90	6	20	28	66	●	●	●	○
6.00	6	20	28	66	●	●	●	●
6.10	8	24	34	79	●	●	●	○
6.20	8	24	34	79	●	●	●	●
6.30	8	24	34	79	●	●	●	○
6.40	8	24	34	79	●	●	●	○
6.50	8	24	34	79	●	●	●	●

● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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DIN 6537K

3XD

353TA - 353HTA - 353SUH - 353ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



353TA

353HTA
353SUH
353ALH

TA

MG

PV200

HTA

MG

PV200

SUH

MG

PV300

ALH

MG

LAPPED

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 6.60	8	24	34	79	●	●	●	○
6.70	8	24	34	79	●	●	●	○
6.80	8	24	34	79	●	●	●	●
6.90	8	24	34	79	●	●	●	○
7.00	8	24	34	79	●	●	●	●
7.10	8	29	41	79	●	●	●	○
7.20	8	29	41	79	●	●	●	○
7.30	8	29	41	79	●	●	●	○
7.40	8	29	41	79	●	●	●	○
7.50	8	29	41	79	●	●	●	●
7.60	8	29	41	79	●	●	●	○
7.70	8	29	41	79	●	●	●	○
7.80	8	29	41	79	●	●	●	●
7.90	8	29	41	79	●	●	●	○
8.00	8	29	41	79	●	●	●	●
8.10	10	35	47	89	●	●	●	○
8.20	10	35	47	89	●	●	●	●
8.30	10	35	47	89	●	●	●	○
8.40	10	35	47	89	●	●	●	○
8.50	10	35	47	89	●	●	●	●
8.60	10	35	47	89	●	●	●	○
8.70	10	35	47	89	●	●	●	○
8.80	10	35	47	89	●	●	●	●
8.90	10	35	47	89	●	●	●	○
9.00	10	35	47	89	●	●	●	●
9.10	10	35	47	89	●	●	●	○
9.20	10	35	47	89	●	●	●	○
9.30	10	35	47	89	●	●	●	○
9.40	10	35	47	89	●	●	●	○
9.50	10	35	47	89	●	●	●	●
9.60	10	35	47	89	●	●	●	○
9.70	10	35	47	89	●	●	●	○
9.80	10	35	47	89	●	●	●	○
9.90	10	35	47	89	●	●	●	○
10.00	10	35	47	89	●	●	●	●
10.10	12	40	55	102	●	●		

● stock standard ○ non-standard stock EX stock exhaustion



DIN 6537K

3XD

353TA - 353HTA - 353SUH - 353ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



353TA

353HTA
353SUH
353ALH

TA

MG

PV200

HTA

MG

PV200

SUH

MG

PV300

ALH

MG

LAPPED

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 10.20	12	40	55	102	●	●	●	●
10.30	12	40	55	102	●	●	●	
10.40	12	40	55	102	○	○		
10.50	12	40	55	102	●	●	●	●
10.60	12	40	55	102	●	●	●	
10.70	12	40	55	102	○	○		
10.80	12	40	55	102	●	●	●	○
10.90	12	40	55	102	○	○		
11.00	12	40	55	102	●	●	●	●
11.10	12	40	55	102	○	○		
11.20	12	40	55	102	●	●	○	○
11.30	12	40	55	102	●	●	○	○
11.40	12	40	55	102	○	○		
11.50	12	40	55	102	●	●	●	●
11.60	12	40	55	102	○	○		
11.70	12	40	55	102	○	○		
11.80	12	40	55	102	●	●	●	○
11.90	12	40	55	102	○	○		
12.00	12	40	55	102	●	●	●	●
12.20	14	40	60	107	○	●	●	○
12.50	14	43	60	107	●	●	●	○
12.60	14	43	60	107				
12.80	14	43	60	107	○	●	●	○
13.00	14	43	60	107	●	●	●	○
13.30	14	43	60	107	○	●	●	○
13.50	14	43	60	107	●	●	●	○
13.80	14	43	60	107	○	●	●	○
14.00	14	43	60	107	●	●	●	○
14.20	16	45	65	115				
14.50	16	45	65	115	●	●	●	○
14.60	16	45	65	115				
15.00	16	65	65	115	●	●	●	○
15.30	16	65	65	115	○	●	●	○
15.50	16	65	65	115	●	●	●	○
15.80	16	65	73	115	○	●	●	○
16.00	16	65	73	115	●	●	●	○

● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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DIN 6537K

3XD

353TA - 353HTA - 353SUH - 353ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



					TA	HTA	SUH	ALH
353TA					MG	MG	MG	MG
353HTA					PV200	PV200	PV300	LAPPED
353SUH					140°	140°	140°	140°
353ALH					30°	30°	30°	30°
D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 16.50	18	73	73	123	○	●	●	○
17.00	18	73	73	123	○	●	●	○
17.50	18	73	73	123	○	●	●	○
18.00	18	73	73	123	○	●	●	○
18.50	20	79	79	131	○	●	●	○
19.00	20	79	79	131	○	●	●	○
19.50	20	79	79	131	○	●	●	○
20.00	20	79	79	131	○	●	●	○

● stock standard ○ non-standard stock EX stock exhaustion

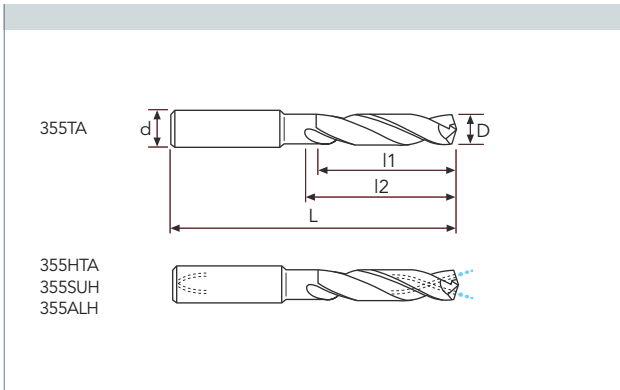


DIN 6537L

5XD

355TA - 355HTA - 355SUH - 355ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



TA	HTA	SUH	ALH
MG	MG	MG	MG
PV200	PV200	PV300	LAPPED
140°	140°	140°	140°
30°	30°	30°	30°

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 3.00	6	23	28	66	●	●	●	●
3.10	6	23	28	66	●	●	●	○
3.20	6	23	28	66	●	●	●	○
3.30	6	23	28	66	●	●	●	●
3.40	6	23	28	66	●	●	●	●
3.50	6	23	28	66	●	●	●	●
3.60	6	23	28	66	●	●	●	○
3.70	6	23	28	66	●	●	●	○
3.80	6	29	36	74	●	●	●	●
3.90	6	29	36	74	●	●	●	○
4.00	6	29	36	74	●	●	●	●
4.10	6	29	36	74	●	●	●	○
4.20	6	29	36	74	●	●	●	●
4.30	6	29	36	74	●	●	●	●
4.40	6	29	36	74	●	●	●	○
4.50	6	29	36	74	●	●	●	●
4.60	6	29	36	74	●	●	●	○
4.70	6	29	36	74	●	●	●	○
4.80	6	35	44	82	●	●	●	●
4.90	6	35	44	82	●	●	●	○
5.00	6	35	44	82	●	●	●	●
5.10	6	35	44	82	●	●	●	●
5.20	6	35	44	82	●	●	●	●
5.30	6	35	44	82	●	●	●	○
5.40	6	35	44	82	●	●	●	○
5.50	6	35	44	82	●	●	●	●
5.60	6	35	44	82	●	●	●	○
5.70	6	35	44	82	●	●	●	○
5.80	6	35	44	82	●	●	●	●
5.90	6	35	44	82	●	●	●	○
6.00	6	35	44	82	●	●	●	●
6.10	8	43	53	91	●	●	●	○
6.20	8	43	53	91	●	●	●	●
6.30	8	43	53	91	●	●	●	○
6.40	8	43	53	91	●	●	●	○
6.50	8	43	53	91	●	●	●	●

● stock standard ○ non-standard stock EX stock exhaustion



DIN 6537L

5XD

355TA - 355HTA - 355SUH - 355ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



355TA

355HTA
355SUH
355ALH

TA

MG

PV200

HTA

MG

PV200

SUH

MG

PV300

ALH

MG

LAPPED

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 6.60	8	43	53	91	●	●	●	○
6.70	8	43	53	91	●	●	●	○
6.80	8	43	53	91	●	●	●	●
6.90	8	43	53	91	●	●	●	○
7.00	8	43	53	91	●	●	●	●
7.10	8	43	53	91	●	●	●	○
7.20	8	43	53	91	●	●	●	○
7.30	8	43	53	91	●	●	●	○
7.40	8	43	53	91	●	●	●	○
7.50	8	43	53	91	●	●	●	●
7.60	8	43	53	91	●	●	●	○
7.70	8	43	53	91	●	●	●	○
7.80	8	43	53	91	●	●	●	●
7.90	8	43	53	91	●	●	●	○
8.00	8	43	53	91	●	●	●	●
8.10	10	49	61	103	●	●	●	○
8.20	10	49	61	103	●	●	●	●
8.30	10	49	61	103	●	●	●	○
8.40	10	49	61	103	●	●	●	○
8.50	10	49	61	103	●	●	●	●
8.60	10	49	61	103	●	●	●	○
8.70	10	49	61	103	●	●	●	○
8.80	10	49	61	103	●	●	●	●
8.90	10	49	61	103	●	●	●	○
9.00	10	49	61	103	●	●	●	●
9.10	10	49	61	103	●	●	●	○
9.20	10	49	61	103	●	●	●	○
9.30	10	49	61	103	●	●	●	○
9.40	10	49	61	103	●	●	●	○
9.50	10	61	61	103	●	●	●	●
9.60	10	61	61	103	●	●	●	○
9.70	10	61	61	103	●	●	●	○
9.80	10	61	61	103	●	●	●	○
9.90	10	61	61	103	●	●	●	○
10.00	10	61	61	103	●	●	●	●
10.10	12	71	71	118	●	●		

● stock standard ○ non-standard stock EX stock exhaustion



DIN 6537L

5XD

355TA - 355HTA - 355SUH - 355ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



355TA

355HTA
355SUH
355ALH

TA

MG

PV200

140°

30°

HTA

MG

PV200

140°

30°

SUH

MG

PV300

140°

30°

ALH

MG

LAPPED

140°

30°

D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 10.20	12	71	71	118	●	●	●	●
10.30	12	71	71	118	●	●	●	●
10.40	12	71	71	118	○	○	●	●
10.50	12	71	71	118	●	●	●	●
10.60	12	71	71	118	●	●	●	●
10.70	12	71	71	118	○	○	●	●
10.80	12	71	71	118	●	●	●	○
10.90	12	71	71	118	○	○	●	○
11.00	12	71	71	118	●	●	●	●
11.10	12	71	71	118	○	○	●	○
11.20	12	71	71	118	●	●	●	○
11.30	12	71	71	118	●	●	●	○
11.40	12	71	71	118	○	●	●	○
11.50	12	71	71	118	●	●	●	●
11.60	12	71	71	118	○	○	●	○
11.70	12	71	71	118	○	○	●	○
11.80	12	71	71	118	●	●	●	○
11.90	12	71	71	118	○	○	●	○
12.00	12	71	71	118	●	●	●	●
12.20	14	77	77	124	○	●	●	○
12.50	14	77	77	124	●	●	●	○
12.60	14	77	77	124	○	●	●	○
12.80	14	77	77	124	○	●	●	○
13.00	14	77	77	124	●	●	●	○
13.30	14	77	77	124	○	●	●	○
13.50	14	77	77	124	●	●	●	○
13.80	14	77	77	124	○	●	●	○
14.00	14	77	77	124	●	●	●	○
14.20	16	83	83	133	○	●	●	○
14.50	16	83	83	133	●	●	●	○
14.60	16	83	83	133	○	●	●	○
15.00	16	83	83	133	●	●	●	○
15.30	16	83	83	133	○	●	●	○
15.50	16	83	83	133	●	●	●	○
15.80	16	83	83	133	○	●	●	○
16.00	16	83	83	133	●	●	●	○

● stock standard ○ non-standard stock EX stock exhaustion



DIN 6537L

5XD

355TA - 355HTA - 355SUH - 355ALH (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



					TA	HTA	SUH	ALH
					MG	MG	MG	MG
<p>355TA</p> <p>355HTA 355SUH 355ALH</p>					PV200	PV200	PV300	LAPPED
					140°	140°	140°	140°
					30°	30°	30°	30°
D(m7)	d(h6)	l1	l2	L	Stock	Stock	Stock	Stock
mm 16.50	18	93	93	143	○	●	●	○
17.00	18	93	93	143	○	●	●	○
17.50	18	93	93	143	○	●	●	○
18.00	18	93	93	143	○	●	●	○
18.50	20	101	101	153	○	●	●	○
19.00	20	101	101	153	○	●	●	○
19.50	20	101	101	153	○	○	●	○
20.00	20	101	101	153	○	●	●	○

● stock standard ○ non-standard stock EX stock exhaustion



**OSAWA
NORM**

8XD



4 guide chamfers
4 fasi
4 Führungsfasen
4 listels

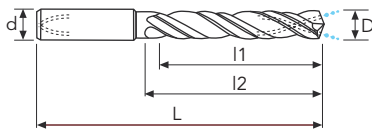
NEW

3584HTA



3584HTA (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



D(m7)	d(h6)	l1	l2	L	Stock
mm 3.00	6	32	40	85	●
3.10	6	32	40	85	○
3.20	6	32	40	85	●
3.30	6	32	40	85	●
3.40	6	32	40	85	○
3.50	6	32	40	85	●
3.60	6	36	40	85	○
3.70	6	36	40	85	○
3.80	6	36	40	85	●
3.90	6	36	40	85	○
4.00	6	38	46	85	●
4.10	6	38	46	85	●
4.20	6	38	46	85	●
4.30	6	40	46	97	●
4.40	6	40	46	97	○
4.50	6	44	46	97	●
4.60	6	44	46	97	○
4.70	6	44	46	97	○
4.80	6	44	46	97	●
4.90	6	44	46	97	○
5.00	6	48	57	97	●
5.10	6	48	57	97	●
5.20	6	48	57	97	●
5.30	6	48	57	97	○
5.40	6	48	57	97	○
5.50	6	48	57	97	●
5.60	6	48	57	97	●
5.70	6	48	57	97	○
5.80	6	48	57	97	●
5.90	6	48	57	97	○
6.00	6	48	57	97	●
6.10	8	64	76	116	●
6.20	8	64	76	116	●
6.30	8	64	76	116	●
6.40	8	64	76	116	○
6.50	8	64	76	116	●

● stock standard ○ non-standard stock EX stock exhaustion



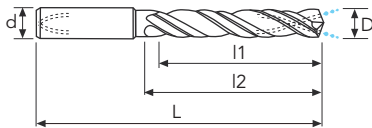
4 guide chamfers
4 fasi
4 Führungsfasen
4 listels

NEW
3584HTA



3584HTA (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



D(m7)	d(h6)	l1	l2	L	Stock
mm 6.60	8	64	76	116	○
6.70	8	64	76	116	○
6.80	8	64	76	116	●
6.90	8	64	76	116	○
7.00	8	64	76	116	●
7.10	8	64	76	116	●
7.20	8	64	76	116	●
7.30	8	64	76	116	○
7.40	8	64	76	116	○
7.50	8	64	76	116	●
7.60	8	64	76	116	○
7.70	8	64	76	116	○
7.80	8	64	76	116	●
7.90	8	64	76	116	○
8.00	8	64	76	116	●
8.10	10	80	95	142	●
8.20	10	80	95	142	●
8.30	10	80	95	142	●
8.40	10	80	95	142	○
8.50	10	80	95	142	●
8.60	10	80	95	142	●
8.70	10	80	95	142	○
8.80	10	80	95	142	●
8.90	10	80	95	142	○
9.00	10	80	95	142	●
9.10	10	80	95	142	●
9.20	10	80	95	142	●
9.30	10	80	95	142	○
9.40	10	80	95	142	○
9.50	10	80	95	142	●
9.60	10	80	95	142	○
9.70	10	80	95	142	○
9.80	10	80	95	142	●
9.90	10	80	95	142	○
10.00	10	80	95	142	●
10.20	12	96	114	163	●

● stock standard ○ non-standard stock EX stock exhaustion



**OSAWA
NORM**

8XD



4 guide chamfers
4 fasi
4 Führungsfasen
4 listels

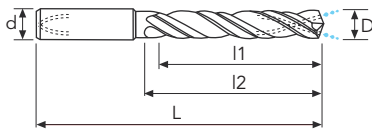
NEW

3584HTA



3584HTA (m7)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	+12 / +2	+16 / +4	+21 / +6	+25 / +7	+29 / +8



**MG
PV300**



D(m7)	d(h6)	l1	l2	L	Stock
mm 10.50	12	96	114	163	●
10.80	12	96	114	163	●
11.00	12	96	114	163	●
11.20	12	96	114	163	●
11.30	12	96	114	163	○
11.50	12	96	114	163	●
11.80	12	96	114	163	●
12.00	12	96	114	163	●
12.20	14	112	133	182	●
12.50	14	112	133	182	●
12.80	14	112	133	182	●
13.00	14	112	133	182	●
13.50	14	112	133	182	●
14.00	14	112	133	182	●
14.50	16	128	152	204	●
15.00	16	128	152	204	●
15.50	16	128	152	204	●
16.00	16	128	152	204	●

● stock standard ○ non-standard stock EX stock exhaustion

CAPTION-FORMULAS / LEGENDA-FORMULE / FORMELN / FORMULE		
Vc (m/min)	speed / velocità / Geschwindigkeit / vitesse	$Vc (m/min) = \frac{\pi \times D \times n}{1000}$ $n (rev/min) = \frac{1000 \times Vc}{\pi \times D}$ $Vf (mm/min) = n \times Zn \times fz$ $fn (mm/rev) = Zn \times fz$
D (mm)	diameter / diametro / Durchmesser / diamètre	
n (rev/min)	revolutions per minute / nr di giri al minuto	
	U/min (Umdrehungen pro Minute) / tours par minute	
π	3,14	
Vf (mm/min)	feed / avanzamento / Vorschub / avance	
Zn	number of teeth / numero taglienti / Schneidenzahl / numéro de dents	
fz	feed per tooth / avanzamento-dente / Vorschub (mm/Schneiden) / avance (mm/dent)	
fn	feed (mm/rev) / avanzamento (mm/giro) / Vorschub (mm/Umdrehungen) / avance (mm/tour)	

NEW TYPHOON DRILLS											
343TA - 318N* - 353TA - 355TA - 353HTA - 353SUH - 353ALH - 355HTA - 355SUH - 355ALH - 3584HTA											
GROUP GRUPPO GRUPPE GROUPE	ISO	N/mm ²	L	fn (mm/rev) - Ø						Vc (m/min)	
				3~5	5~8	8~11	11~14	14~17	17~20		
1 2 3 4	P	~700	3xD	0.08~0.16	0.14~0.25	0.20~0.30	0.25~0.35	0.30~0.40	0.35~0.45	90~140	75~120
			5xD	0.07~0.14	0.12~0.22	0.18~0.25	0.22~0.31	0.26~0.35	0.31~0.40		
			8xD	0.05~0.10	0.08~0.15	0.12~0.17	0.15~0.21	0.18~0.24	0.21~0.28		
3 4 5	P	700~1000	3xD	0.07~0.14	0.12~0.18	0.15~0.22	0.20~0.25	0.25~0.30	0.30~0.40	80~120	70~105
			5xD	0.06~0.12	0.10~0.16	0.13~0.19	0.17~0.22	0.22~0.25	0.26~0.35		
			8xD	0.04~0.08	0.07~0.11	0.09~0.13	0.12~0.15	0.15~0.18	0.18~0.25		
6	P	1000~1300	3xD	0.06~0.12	0.10~0.16	0.15~0.20	0.18~0.25	0.20~0.28	0.22~0.30	60~80	50~70
			5xD	0.05~0.10	0.09~0.14	0.13~0.17	0.16~0.22	0.17~0.25	0.19~0.26		
			8xD	0.04~0.07	0.06~0.10	0.09~0.12	0.11~0.15	0.12~0.18	0.13~0.19		
13 14	K		3xD	0.10~0.20	0.18~0.32	0.30~0.38	0.35~0.45	0.40~0.50	0.45~0.55	80~140	70~125
			5xD	0.09~0.17	0.16~0.28	0.26~0.34	0.31~0.40	0.35~0.44	0.40~0.48		
			8xD	0.06~0.12	0.11~0.20	0.18~0.24	0.22~0.28	0.25~0.31	0.28~0.34		
9 10	M		3xD	0.07~0.14	0.12~0.18	0.16~0.25	0.20~0.28	0.25~0.32	0.30~0.35	50~75	
			5xD	0.06~0.12	0.10~0.16	0.14~0.22	0.17~0.25	0.22~0.28	0.26~0.31		
			8xD	0.04~0.08	0.08~0.14	0.13~0.17	0.15~0.20	0.18~0.22	0.20~0.24		
11	M		3xD	0.05~0.10	0.08~0.12	0.10~0.15	0.12~0.18	0.14~0.22	0.16~0.25	30~50	
			5xD	0.05~0.09	0.07~0.11	0.09~0.13	0.10~0.16	0.12~0.19	0.14~0.22		
			8xD	0.04~0.06	0.05~0.08	0.06~0.09	0.07~0.11	0.08~0.13	0.10~0.15		
15 16	N		3xD	0.10~0.20	0.18~0.32	0.30~0.38	0.35~0.45	0.40~0.50	0.45~0.55	130~240	
			5xD	0.09~0.17	0.16~0.28	0.26~0.34	0.31~0.40	0.35~0.44	0.40~0.48		
			8xD	0.06~0.12	0.11~0.20	0.18~0.24	0.22~0.28	0.25~0.31	0.28~0.34		

*318N Vc & fn = -30%

NEW TYPHOON DRILLS - MINI											
358SUH - 3512SUH											
GROUP GRUPPO GRUPPE GROUPE	ISO	N/mm ²	L	fn (mm/rev) - Ø				Vc (m/min)			
				1~1.5	1.5~2	2~2.5	2.5~2.9				
1 2 3 4	P	~700	Vc(m/min)	50~90	60~115	70~115	70~115				
			8xD	0.040~0.065	0.061~0.087	0.080~0.110	0.100~0.130				
			12xD	0.033~0.052	0.049~0.070	0.065~0.088	0.080~0.105				
3 4 5	P	700~1000	Vc(m/min)	40~70	50~80	60~80	60~80				
			8xD	0.037~0.059	0.055~0.079	0.074~0.100	0.092~0.120				
			12xD	0.030~0.048	0.045~0.064	0.060~0.080	0.075~0.097				
6	P	1000~1300	Vc(m/min)	25~45	33~52	40~52	40~52				
			8xD	0.018~0.029	0.027~0.038	0.036~0.048	0.045~0.058				
			12xD	0.014~0.023	0.022~0.031	0.029~0.039	0.036~0.047				
13 14	K		Vc(m/min)	50~80	60~100	70~105	70~105				
			8xD	0.052~0.084	0.080~0.112	0.105~0.140	0.130~0.170				
			12xD	0.042~0.068	0.063~0.090	0.085~0.114	0.105~0.138				
9 10	M		Vc(m/min)	30~50	40~60	40~60	40~60				
			8xD	0.021~0.036	0.032~0.048	0.043~0.061	0.054~0.074				
			12xD	0.017~0.030	0.026~0.039	0.035~0.050	0.043~0.059				
11	M		Vc(m/min)	18~22	23~38	27~38	27~38				
			8xD	0.018~0.029	0.027~0.038	0.036~0.048	0.045~0.058				
			12xD	0.014~0.023	0.022~0.031	0.029~0.039	0.036~0.047				
15 16	N		Vc(m/min)	70~120	90~140	105~140	105~140				
			8xD	0.052~0.084	0.080~0.112	0.105~0.140	0.130~0.170				
			12xD	0.042~0.068	0.063~0.090	0.085~0.115	0.105~0.138				

For 8xD and 12xD drills, reduce fn by 50% for initial 0.5xD / Per punte 8xD e 12xD, ridurre fn del 50% per profondità iniziale di 0.5xD

Für Bohrer 8xD und 12xD, fn 50% reduzieren für die erste Tiefe von 0.5xD / Forets 8xD et 12xD: réduire l'avance du 50% dans la partie initiale du trou (jusqu'à une profondeur de 0.5xD)

Parameters

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
E 24-2 Ne	-	SS 34	Fe 360B FN	-	-	-
NFA 35-501 E 28	-	-	-	-	-	-
E 24-U	-	-	Fe37-3	-	-	-
Fd 5	-	-	-	-	-	-
A 37 CP	F.1110	SGV 410	-	-	-	-
CC 12	F.111	S 15 C	080 M 15	-	-	-
CC20	F.112	-	C20C21	-	-	-
A 42 CP	A42 RCI	SGV 410	Fe 410 1KW	-	-	-
S 250	11SMn28	SUM 22	CF9SMn28	-	-	AVP
S 250 Pb	11SMnPb28	SUM 22 L	CF9SMnPb28	-	-	-
-	F.210.F	SUM 32	-	-	-	-
35 MF 6	F.210.G	-	-	-	-	-
45 MF 4	-	-	-	-	-	-
S 300	12 SMn 35	SUM 25	CF 9 SMn 36	-	-	AVZ
-	-	-	36SMnPb14	-	-	PR 80
XC 10	F.1510	S 10 C	C10	-	-	-
-	-	S 10 C	-	-	-	-
20 M 5	F.1515	SMnC 420	G22Mn3	-	-	-
XC 18	F.1511	S 15 Ck	080 M 15	-	-	-
XC 25	F.1120	S 25 C	C25	-	-	-
-	-	SS400	Fe 360 B	-	-	-
A 48 FP	-	-	-	-	-	-
CC 35	F.113	S 35 C	C35	-	-	-
CC 35	F.113	S 35 C	C35	-	-	-
CC45	F.114	S 45 C	C45	-	-	-
AF 60 C 40	F.114.A	-	C40	-	-	-
AF 70 C 55	F.115	S 55 C	C55	-	-	-
E 36-3	-	SM 490 A, B, C	Fe 510	-	-	-
A 52 FP	-	-	-	-	-	-
35 M 5	-	-	-	-	-	-
XC 38	F.1130	S 35 C	C35	-	-	-
XC 38 TS	-	S 35 C	C36	-	-	-
XC 45	F.1140	S 45 C	C45	-	-	-
XC 55	F.1203	S55 C	C50	-	-	-
XC 48 TS	-	S 50 C	C53	-	-	-
Y342	F.1140	-	-	-	-	-
-	-	-	FeE390KG	-	-	-
-	-	-	-	-	-	-
CC55	-	-	C60	-	-	-
XC 65	F.1150	S 58 C	C60	-	-	-
XC 68	F.5103	-	C70	-	-	-
XC 75	F.5107	-	-	-	-	-
XC 100	F.5117	SUP 4	-	-	-	-
55 S 7	56Si7	-	55Si8	-	-	-
40 M 5	36Mn5	SMn 438(H)	-	-	-	-
20 M 5	-	SCMn1	C28MN	-	-	-
-	-	-	-	-	-	-
100 C 6	F.131	SUJ 2	100Cr6	-	-	-
15 D 3	16 Mo3	STBA 12	16Mo3 KW	-	-	-
20 NCD 2	F.1522	SNCM 220(H)	20NiCrMo2	-	-	-
40 NCD 2	F.129	SNCM 240	40NiCrMo2(KB)	-	-	-
18 NCD 6	14NiCrMo13	-	-	-	-	-
32 C 4	35Cr4	SCr430(H)	34Cr4(KB)	-	-	-
42 C 2	42 Cr 4	SCr 440 (H)	40Cr4	-	-	-
42 C 2	42 Cr 4	SCr 440 (H)	41Cr4 KB	-	-	-
42 C 4 TS	F.1207	SCr 440	-	-	-	-
16 MC 5	F.1516	-	16MnCr5	-	-	-
55 C 3	-	SUP 9(A)	55Cr3	-	-	-
25 CD 4	F.1251/55Cr3	SCM 420 / SCM430	25CrMo4(KB)	-	-	-
35 CD 4	34 CrMo 4	SCM 432	34CrMo4KB	-	-	-
42 CD 4 TS	42 CrMo 4	SCM 440	41 CrMo 4	-	-	-
40 CD 4	F.1252	SCM 440	40CrMo4	-	-	-
42 CD 4	F.1252	SCM 440	42CrMo4	-	-	-
15 CD 4.5	-	-	12CrMo910	-	-	-
30 CD 12	F.124.A	-	30CrMo12	-	-	-
12 CD 9, 10	F.155 / TU.H	-	12CrMo9 10	-	-	-
50 CV 4	F.143	SUP 10	50CrV4	-	-	-
30 CD 12	F.1712	-	30CrMo12	-	-	-
-	-	-	-	-	-	Weldox 500

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
5 700-1000 N/mm ² ALLOY STEEL ACCIAI LEGATI LEGIERTE STÄHLE ACIERS ALLIÉS	W1	1.1545	C105W1	BW1A	1880
	L3	1.2067	100Cr6	BL 3	(2140)
	L2	1.2210	115 CrV 3	-	-
	P20 + S	1.2312	40 CrMnMoS 8 6	-	-
	-	1.2419	105WCr6	-	2140
	O1	1.2510	100 MnCrW 4	BO1	-
	S1	1.2542	45 WCrV 7	BS1	2710
	4340	1.6582	34 CrNiMo 6	817 M 40	2541
	5120	1.7147	20 MnCr 5	-	-
	-	-	-	-	-
6 900-1200 N/mm ² TOOL AND HIGH ALLOY STEEL ACCIAI DA UTENSILI E ALTO LEGATI WERKZEUG- UND HOCHLEGIERTE STÄHLE ACIERS POUR OUTILS ET FORTEMENT ALLIÉS	D3	1.2080	X210 Cr 12	BD3	2710
	P20	1.2311	40 CrMnMo 7	-	-
	H13	1.2344	X40CrMoV 5 1	BH13	2242
	A2	1.2363	X100 CrMoV 5 1	BA2	2260
	D2	1.2379	X155 CrMoV 12 1	BD2	2310
	D4 (D6)	1.2436	X210 CrW 12	BD6	2312
	H21	1.2581	X30WCrV9 3	BH21	-
	L6	1.2713	55NiCrMoV 6	-	-
	M 35	1.3243	S6/5/2/5	BM 35	2723
	M 2	1.3343	S6/5/2	BM2	2722
	M 7	1.3348	S2/9/2	-	2782
	HW 3	1.4718	X45CrSi 9 3	401 S 45	-
	-	1.7321	20 MoCr 4	-	2625
7 1200-1500 N/mm ² (35-45HRC) HIGH TENSILE STRENGTH STEEL ACCIAI AD ELEVATA RESISTENZA HOCHFESTE STÄHLE ACIERS HAUTE RÉSIDANCE	A128 (A)	1.3401	G-X120 Mn 12	BW10	2183
8 45-63HRC HARDENED STEEL ACCIAI TEMPRATI GEHÄRTETE STÄHLE ACIERS TREMPÉS	-	-	-	-	-
9 MARTENSITIC AND FERRITIC STAINLESS STEEL ACCIAI INOSSIDABILI MARTENSITICI E FERRITICI MARTENSITISCHE UND FERRITISCHE ROSTFREIE STÄHLE ACIERS INOXYDABLES MARTENSITIQUE ET FERRITIQUE	420 C	1.4034	X43Cr16	-	-
	440 B/1	1.4112	X90 Cr Mo V18	-	-
	-	1.2083	X42 Cr 13	-	2314
	403	1.4000	X6Cr13	403 S 17	2301
	(410S)	1.4001	X7 Cr 14	(403 S17)	2301
	405	1.4002	X6 CrAl 13	405 S 17	-
	416	1.4005	X12 CrS 13	416 S 21	2380
	410	1.4006	X 10 Cr 13	410 S21	2302
	430	1.4016	X6 Cr 17	430 S 17	2320
	420	1.4021	X20 Cr 13	420 S 37	2303
	420F	1.4028	X30 Cr 13	420 S 45	(2304)
	(420)	1.4031	X39Cr13	420 S 45	(2304)
	431	1.4057	X20 CrNi 17 2	431 S 29	2321
	430F	1.4104	X12 CrMoS 17	-	2383
	434	1.4113	X6 CrMo 17	434 S 17	2325
	430Ti	1.4510	X6 CrTi 17	-	-
	409	1.4512	X5 CrTi 12	409 S 17	-
10 AUSTENITIC STAINLESS STEEL (V2A) ACCIAI INOSSIDABILI AUSTENITICI (V2A) AUSTENITISCHE ROSTFREIE STÄHLE (V2A) ACIERS INOXYDABLES AUSTENITIQUE (V2A)	304	1.4301	X5 CrNi 18 9	304 S 15	2332
	305	1.4303	X5 CrNi 18 12	305 S 19	-
	303	1.4305	X12 CrNiS 18 8	303 S 21	2346
	304L	1.4306	X2 CrNiS 18 9	304 S 12	2352
	301	1.4310	X12 CrNi 17 7	-	2331
	304	1.4350	X5 CrNi 18 9	304 S 31	2332
	304	1.4350	X5 CrNi 18 9	304 S 31	2333
11 AUSTENITIC STAINLESS STEEL (V4A) ACCIAI INOSSIDABILI AUSTENITICI (V4A) AUSTENITISCHE ROSTFREIE STÄHLE (V4A) ACIERS INOXYDABLES AUSTENITIQUE (V4A)	304LN	1.4311	X2 CrNiN 18 10	304 S 62	2371
	316	1.4401	X5 CrNiMo 18 10	316 S 16	2347
	316L	1.4404	-	316 S 12/13/14/22/24	2348
	316LN	1.4429	X2 CrNiMoN 18 13	-	2375
	316L	1.4435	X2 CrNiMo 18 12	316 S 12/13/14/22/24	2353
	316	1.4436	-	316 S 33	2343
	317L	1.4438	X2 CrNiMo 18 16	317 S 12	2367
	329	1.4460	X3 CrNiMoN 27 5 2	-	2324
	321	1.4541	X10 CrNiTi 18 9	321 S 12	2337
	347	1.4550	X10 CrNiNb 18 9	347 S 17	2338
	316Ti	1.4571	X10 CrNiMoTi 18 10	320 S 17	2350
	309	1.4828	X15 CrNiSi 20 12	309 S 24	-
	330	1.4864	X12 NiCrSi 36 16	-	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
Y 105	F.5118	SK 3	C100 KU	-	-	-
Y 100 C 6	F.520 L	-	-	-	-	-
-	-	-	-	-	-	-
40 CMD 8 +S	X210CrW12	-	-	-	-	Holdax
105W C 13	F.5233	SKS 31	107WCr5KU	-	-	-
90MnWCrV5	F.5220	(SK53)	95MnWCr5KU	-	-	-
55W20	F.5241	-	45WCrV8KU	-	-	-
35 NCD 6	F.1280	SNCM 447	35NiCrMo6KB	-	-	-
20 MC 5	-	-	-	-	-	-
-	-	-	-	-	-	Weldox 700
Z200 C 12	F.5212	SKD 1	X210Cr13KU	-	-	K 100
40 CMD 8	F.5263	-	-	-	-	-
Z 40 CDV 5	F.5318	SKD 61	X40CrMoV511KU	-	-	-
Z 100 CDV 5	F.5227	SKD 12	X100CrMoV51KU	-	-	-
Z 160 CDV 12	F.520.A	SKD11	X155CrVMo121KU	-	-	K 110
Z 200 CD 12	F.5213	SKD 2	X215CrW121KU	-	-	-
Z 30 WCV 9	F.526	SKD5	X30WCrV 9 3 KU	-	-	-
55 NCDV 7	F.520.S	SKT4	-	-	-	-
6-5-2-5	F.5613	SKH 55	HS6-5-5	-	-	-
Z 85 WDCV	F.5603	SKH 51	HS6-5-2-2	-	-	-
2 9 2	-	-	HS2-9-2	-	-	-
Z 45 CS 9	F.3220	SUH1	X45CrSi8	-	-	-
-	F.1523	-	30CrMo4	-	-	-
Z 120 M 12	F.8251	SCMnH 1	GX120Mn12	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	WRB WRA
Z 40 C 14	F.5263	SUS 420 J1	-	-	-	-
Z 6 C 13	F.3110	SUS 403	X6Cr13	-	-	-
Z 8 C 13	F.3110	SUS 410 S	X6Cr13	-	-	-
Z 8 CA 12	F.3111	SUS 405	X6 CrAl 13	-	-	-
Z 11 CF 13	F.3411	SUS 416	X12CrS13	-	-	-
Z 10 C 14	F.3401	SUS 410	X12Cr13	-	-	-
Z 8 C 17	F.3113	SUS 430	X8Cr17	-	-	-
Z 20 C 13	F.3402	SUS 420 J1	X20Cr13	-	-	-
Z 30 C 13	F.3403	SUS 420 J2	X30Cr13	-	-	-
Z 40 C 14	F.3404	(SUS 420 J1)	-	-	-	-
Z 15 CNi 16.02	F.3427	SUS 431	X16CrNi16	-	-	-
Z 10 CF 17	F.3117	SUS 430 F	X10CrS17	-	-	-
Z 8 CD 17.01	-	SUS 434	X8CrMo17	-	-	-
Z 4 CT 17	-	SUS 430 LX	X6CrTi17	-	-	-
Z 6 CT 12	-	SUH 409	X6CrTi12	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 8 CN 18.12	-	SUS 305	X8CrNi19 10	-	-	-
Z 10 CNF 18.09	F.3508	SUS 303	X10CrNiS 18 09	-	-	-
Z 2 CN 18.10	F.3503	SUS 304L	X2CrNi18 11	-	-	-
Z 12 CN 17.07	F.3517	SUS 301	X12CrNi17 07	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 2 CN 18.10	-	SUS 304 LN	-	-	-	-
Z 6 CND 17.11	F.3543	SUS 316	X5CrNiMo17 12	-	-	-
Z 2 CND 17.13	-	SUS316L	X2CrNiMo17 12	-	-	-
Z 2 CND 17.13	-	SUS 316 LN	-	-	-	-
Z 2 CND 17.13	-	SUS316L	X2CrNiMo17 12	-	-	-
Z 6 CND18-12-03	-	-	X8CrNiMo 17 13	-	-	-
Z 2 CND 19.15	-	SUS 317 L	X2CrNiMo18 16	-	-	-
Z5 CND 27.05.Az	F.3309	SUS 329 J1	-	-	-	-
Z 6 CND 18.10	F.3553	SUS 321	X6CrNiTi18 11	-	-	-
Z 6 CNNb 18.10	F.3552	SUS 347	X6CrNiNb18 11	-	-	-
Z 6 CNDT 17.12	F.3535	-	X6CrNiMoTi 17 12	-	-	-
Z 15 CNS 20.12	-	SUH 309	X16 CrNi 24 14	-	-	-
Z 12 NCS 35.16	-	SUH 330	-	-	-	-

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
12 DUPLEX	S32750	1.4410	X 2 CrNiMoN 25 7 4	-	2328
	S31500	1.4417	X 2 CrNiMoSi 19 5	-	2376
	S31803	1.4462	X 2 CrNiMoN 22 5 3	-	2377
	S32760	1.4501	X 3 CrNiMoN 25 7	-	-
	630	1.4542	X5CrNiCNb16-4	-	-
	A564/630	-	-	-	-
13 GREY CAST IRON GHISA GRIGIA GRAUGUSS FONTE GRISE	A48-20B	0.6010	GG-10	Grade 100	0110-00
	A48-25B	0.6015	GG-15	Grade 150	0115-00
	A48-30B	0.6020	GG-20	Grade 200	0120-00
	A48-40B	0.6025	GG-25	Grade 250	0125-00
	A48-45B	0.6030	GG-30	Grade 300	0130-00
	A48-50B	0.6035	GG-35	Grade 350	0135-00
	A48-60B	0.6040	GG-40	Grade 400	0140-00
	32510	-	GTS-35	B340/12	0815-00
	A220-40010	0.8145	GTS-45	P440/7	0852-00
	A220-50005	0.8155	GTS-55-04	P510/4	0854-00
	A220-70003	0.8165	GTS-65-02	P570/3	0856-00
	A220-70003	-	GTS-65	P570/3	0858
A220-80002	0.8170	GTS-70-02	P690/2	0862-00	
14 NODULAR CAST IRON GHISA SFEROIDALE SPHÄROGUSS FONTE NODULAIRE	-	0.7033	GGG-35.3	350/22L40	0717-15
	60/40/18	0.7040	GGG-40	420/12	0717-02
	(60/40/18)	0.7043	GGG-40.3	370/17	0717-12
	65/45/12	0.7050	GGG-50	500/7	0727-02
	80/55/06	0.7060	GGG-60	600/3	0727-03
	100/70/03	0.7070	GGG-70	700/2	0737-01
	120/90/02	0.7080	GGG-80	800/2	-
15 WROUGHT (ROLLED) ALUMINIUM ALLUMINIO LAMINATO GEWALZTES ALUMINIUM ALUMINIUM LAMINÉ	1200	3.0205	Al 99	1C	4010
	1050	3.0255	Al 99,5	1B	4007
	1350	3.0257	E-Al	E1E	-
	1070	3.0275	Al 99,7	-	-
	1080	3.0285	Al 99,8	1A	-
	1099	3.0385	AL99,98R	1	-
	3105	3.0505	AlMn0,5Mg0,5	N31	-
	3103	3.0515	AlMn1	N3	4054
	3003	3.0517	AlMn	N3	-
	3005	3.0525	AlMn1Mg0,5	-	-
	3004	3.0526	AlMn1Mg1	-	-
	6012	3.0615	AlMgSiPb	-	-
	2014	3.1255	AlCuSiMn	H15	4338
	2117	3.1305	AlCuMg0,5	L86	-
	2017	3.1325	AlCuMg 1	(H14)	-
	2024	3.1355	AlCuMg 2	DTD5090	-
	2030	3.1645	AlCuMgPb	-	4335
	2011	3.1655	AlCuBiPb	FC1	4355
	6082	3.2315	AlMgSi 1	H30	4212
	6060	3.3206	AlMgSi0,5	H9	4103/4104
	6005	3.3210	AlMgSi0,7	-	-
	6061	3.3211	AlMg1SiCu	H20	-
	5005	3.3315	AlMg1	N41	4106
	5050	3.3316	AlMg1,5	-	-
	5052	3.3523	AlMg2,5	-	4120
	5251	3.3525	AlMg2Mn0,3	N4	-
	5154	3.3535	AlMg3	N5/N56	-
	5454	3.3537	AlMg2,7Mn	N51	-
	5086	3.3545	AlMg4Mn	-	-
	5083	3.3547	AlMg4,5Mn	N8	4140
	5056	3.3555	AlMg5	N6	-
	7020	3.4335	AlZn4,5Mg1	H17	4425
7075	3.4365	AlZnMgCu1,5	2L95	-	
3304	-	AlMgMn	-	-	
7010	-	AlZn6MgCu	DTD5130	-	
16 DIE-CAST ALUMINIUM (SI<12%) ALLUMINIO PRESSOFUSO (SI<12%) AL-GUSSLEGIERUNGEN (SI<12%) ALUMINIUM MOULÉ SOUS PRESSION (SI<12%)	A356	3.2371	G-AlSi7Mg	LM25	4244
	-	3.2373	G-AlSi9Mg	-	-
	A360	3.2381	G-AlSi10Mg	LM9	4253
	A413.2	3.2581	G-AlSi12	LM6	4261
	A413.0	3.2582	GD-AlSi12	-	4247
	A413.1	3.2583	G-AlSi12(Cu)	LM20	4260
	-	3.3561	G-AlMg5	LM5	4252
	-	3.5101	G-MgZn4SE1Zr1	MAG5	-
	-	3.5103	MgSE3Zn2Zr1	MAG6	-
	-	3.5106	G-MgAg3SE2Zr1	MAG 12	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
Z3 CND 25.06 Az	-	-	-	-	-	-
Z2 CND 18.05.03	-	-	-	-	-	-
Z 3 CND 22.05 (Az)	-	-	-	-	-	-
Z 3 CND 25.06 Az	-	-	-	-	-	ZERON 100
-	-	-	-	-	-	-
-	-	-	-	-	-	17/4 PH
-	-	FC 100	G 10	-	-	-
Ft 15 D	FG 15	FC 150	G 15	-	-	-
Ft 20 D	FG 20	FC 200	G 20	-	-	-
Ft 25 D	FG 25	FC 250	G 25	-	-	-
Ft 30 D	FG 30	FC 300	G 30	-	-	-
Ft 35 D	FG 35	FC 350	G 35	-	-	-
Ft 40 D	-	FC 40	-	-	-	-
MN 35-10	-	FCMW 330	-	-	-	-
MN 450	-	FCMP 440/490	GMN 45	-	-	-
MP 50-5	-	FCMP 490	GMN 55	-	-	-
MN 650-3	-	FCMP 590	GMN 65	-	-	-
MN 60-3	-	FCMP 540	-	-	-	-
MN 700-2	-	FCMP 690	GMN 70	-	-	-
FGS 370/17	-	-	-	-	-	-
FGS 400/12	FGE 38-17	FCD 400	GS 400-12	-	-	-
FGS 370/17	-	-	GSO 42-12	-	-	-
FGS 500/7	FGE 50-7	FCD 500	GS 500-7	-	-	-
FGS 600/3	FGE 60-2	FCD 600	GS 600-3	-	-	-
FGS 700/2	FGS 70-2	FCD 700	GS 700-2	-	-	-
FGS 800/2	-	-	GS-800/2	-	-	-
A4	L-3001	A1x3	9001/1	-	-	-
A5	L-3051	A1x1	9001/2	-	-	-
-	-	-	-	-	-	-
A7	-	-	-	-	-	-
A8	-	-	-	-	-	-
A99	-	-	-	-	-	-
-	-	-	-	-	-	-
-	L-3811	-	9003/3	-	-	-
AM1	L-3810	A2x3	9003/1	-	-	Aluman 100
AMG0,5	-	-	9003/4	-	-	-
AM1G	L-3820	-	9003/2	-	-	-
ASGPB	-	-	-	-	-	-
AU4SG	L-3130	A3x1	9002/3	-	-	Avional 660
AU2G	-	-	9002/1	-	-	Avional 050
AU4G	L-3120	A3x2	9002/2	-	-	Avional 100
AU4G1	L-3140	A3x4	9002/4	-	-	Avional 150
AU4Pb	L-3121	-	9002/8	-	-	-
AU5PbBi	L-3192	-	9002/5	-	-	Recidal 11
ASGM 0,7	L-3451	-	9006/4	-	-	Anticorodal 100
AGS	L-3441	A2x5	9006/1	-	-	Anticorodal 063
ASG0,5	L-3454	A6NO1	9006/6	-	-	-
AGSUC	L-3420	A2x4	9006/2	-	-	Anticorodal 061
AG0,6	L-3350	A2x8	9005/1	-	-	Peraluman 080
-	-	-	9005/7	-	-	Peraluman 150
AG2,5C	L-3360	A2x1	9005/2	-	-	Peraluman 250
AG2M	L-3361	-	-	-	-	-
AG3	-	-	9005/8	-	-	Peraluman 350
AG2,5MC	L-3391	A2x9	9005/3	-	-	-
AG4MC	L-3322	-	9005/4	-	-	-
AG4,5MC	L-3321	A2x7	9005/5	-	-	Peraluman 440
A-G5	-	-	-	-	-	Peraluman 500
AZ5G	L-3741	-	9007/1	-	-	-
AZ5GU	L-3710	A34x6	9007/2	-	-	Ergal 55
AM1G	-	-	-	-	-	-
-	-	-	9007/4	-	-	-
A-S7G	-	AC4C	-	42000	AlSi7Mg	-
-	-	-	-	-	-	-
A-S10G	-	-	-	43100	Al Si 10 Mg	-
A-S12U	-	AC3A	-	44100	Al Si 12	-
-	-	-	-	-	-	-
A-S12	-	-	-	47000	Al Si 12 (Cu)	-
A-SU12	-	AC4A	-	51300	ALMg 6	-
G-Z4TR	-	-	-	-	-	-
G-TR3Z2	-	-	-	-	-	-
G-Ag22,5	-	-	-	-	-	-

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
16 DIE-CAST ALUMINIUM (SI<12%) ALLUMINIO PRESSOFUSO (SI<12%) AL-GUSSLEGIERUNGEN (SI<12%) ALUMINIUM MOULÉ SOUS PRESSION (SI<12%)	-	3.5812	G-MgAl8Zn1	MAG1	-
	-	3.5912	G-MgAl9Zn1	MAG7	-
	355.1	-	G-AISI5	LM16	-
	A380	-	G-AISI8Cu3	LM24	4250
	319	-	G-AISI6Cu4	LM21	-
	319.2	-	G-AISI6Cu4	LM22	-
17 COPPER RAME KUPFER CUIVRE	C10200	2.0040	OF Cu	C103	-
	C11000	2.0060	E-Cu57	C101	-
	-	2.0065	E-Cu58	-	-
	C10300	2.0070	SE Cu	-	-
	C12200	2.0090	SF Cu	C106	-
	C12500	-	Cu-FRTP	C104	-
	C70320	2.0857	-	-	-
	C14200	2.1202	SB Cu	C107	-
	-	2.1356	Cu Mn 3	-	-
	-	2.1522	Cu Si2 Mn	-	-
	C16200	-	-	C108	-
	C18200	-	-	CC101	-
	C191010	-	-	-	-
	C70250	-	-	CC102	-
	C17200	-	-	CB101	-
	C17300	-	-	-	-
	C17510	-	-	-	-
	C17500	-	-	C112	-
	C15000	-	-	-	-
	C65100	-	-	-	-
C65500	-	-	CS101	-	
C14500	-	-	C109	-	
C14700	-	-	C111	-	
C18700	-	-	-	-	
18 BRASS OTTONE MESSING LAITON	C21000	2.0220	CuZn5	CZ125	-
	C22000	2.0230	CuZn10	Cz101	-
	C23000	2.0240	CuZn15	CZ102	-
	C24000	2.0250	CuZn20	CZ103	-
	C25600	-	CuZn28	-	-
	C26000	2.0265	CuZn30	CZ106	-
	C26800	2.0280	CuZn33	-	-
	C27200	-	CuZn36	-	-
	C27200	2.0321	CuZn37	CZ108	-
	C27000	2.0335	CuZn36	CZ107	-
C28000	2.0360	CuZn40	CZ109	-	
19 DIE-CAST BRASS OTTONE DA FUSIONE GUSSMESSING LAITON MOULÉ SOUS PRESSION	C33500	-	CuZn37Pb0.5	-	-
	C34000	-	CuZn35Pb1	CZ118	-
	C34500	2.0331	CuZn36Pb1,5	CZ119	-
	C34000	2.0331	CuZn36Pb1,5	CZ119	-
	C35300	2.0371	CuZn38Pb1,5	CZ128	-
	C36500	2.0372	CuZn39Pb0,5	CZ123	-
	C36000	2.0375	CuZn36Pb3	CZ124	-
	C37700	2.0380	CuZn39Pb2	CZ 131 / (CZ128)	-
	C38500	2.0401	CuZn39Pb3	CZ121	-
	C38000	2.0402	CuZn40Pb2	CZ122	-
	-	2.0410	CuZn44Pb2	CZ130	-
	C68700	2.0460	CuZn20Al2	CZ110	-
	C44300	2.0470	CuZn28Sn1	CZ111	-
	-	2.0530	CuZn38Sn1	-	-
	-	2.0550	CuZn40Al2	-	-
	-	2.0561	CuZn40Al1	-	-
	-	2.0572	CuZn40Mn2	CZ136	-
C61400	2.0932	CuAl8Fe3	-	-	
C63000	2.0966	CuAl10Ni5Fe4	CA104	-	
20 BRONZE BRONZO BRONZE BRONZE	C50700	2.1010	CuSn2	-	-
	C51100	2.1016	CuSn4	PB101	-
	C51000	-	CuSn5	PB102	-
	C51900	2.1020	CuSn6	PB103	-
	C52100	2.1030	CuSn8	PB104	-
	-	-	CuSn10	-	-
	-	-	CUSn11	-	-
21 AMPCO	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

GROUPS / GRUPPI / GRUPE / GROUPES	AISI	W-stoff	DIN	BS	SS
22 <30HRC NICKEL-BASE ALLOYS LEGHE DI NICKEL NICKELLEGIERUNGEN ALLIAGES DE NICKEL	N08800	1.4876	X10NiCrAlTi32-21	3075(NA15)	-
	N06075	2.4630	NiCr20Ti	HR5,203-4	-
	N07080	2.4631	NiCr20TiAl	HR401,601	-
	N06617	2.4663	-	-	-
	N06002	2.4665	NiCr22FeMo	HR6,204	-
	N06600	2.4816	-	-	-
	N06601	2.4851	NiCr23Fe	-	-
	N06625	2.4856	NiCr22Mo9Nb	-	-
23 >30HRC NICKEL-BASE ALLOYS LEGHE DI NICKEL NICKELLEGIERUNGEN ALLIAGES DE NICKEL	N08825	2.4858	NiCr21Mo	3072-76	-
	N10665	2.4617	NiMo28	-	-
	N10002	-	NiCr17Mo17FeW	-	-
	N10003	-	-	-	-
	-	2.4642	-	-	-
	-	-	NiCo29Cr15MOAlTi	-	-
	N07718	2.4668	NiCr19Fe19NbMo	Hr8	-
	-	-	NiCr16FeTi	-	-
	N07725	-	-	-	-
	N07750	2.4669	NiCr 15 Fe 7 TiAl	HR505	-
N07751	2.4694	-	-	-	
24 HARDOX 400, STAVAX, RAMAX	-	-	-	-	-
	-	1.2365	-	-	-
	-	-	-	-	-
25 HARDOX 500	-	-	-	-	-
	-	-	-	-	-
26 TITANIUM ALLOYS LEGHE DI TITANIO TITAN-LEGIERUNGEN ALLIAGES DE TITANE	-	3.7025	Ti 99,8	-	-
	-	3.7035	Ti 99,7a	-	-
	-	3.7055	Ti 99,6	-	-
	-	3.7065	Ti 99,5	-	-
	-	3.7115	TiAl5Sn2.5	TA14/17	-
	-	3.7164	TiAl6V4	TA10-13/TA29	-
	-	3.7175	TiAl6V6Sn2	-	-
-	3.7185	TiAl4Mo4Sn2	-	-	

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
-	-	-	-	-	-	Incoloy 800
NC20T	-	-	-	-	-	Nimonic 75
NC20TA	-	-	-	-	-	Nimonic 80A
-	-	-	-	-	-	Inconel 617
NC22FeD	-	-	-	-	-	Hastelloy X
NC15Fe	-	-	-	-	-	Inconel 600
-	-	-	-	-	-	Inconel 601
NC22DNb	-	-	-	-	-	Inconel 625
NC21FeDU	-	-	-	-	-	Incoloy 825
-	-	-	-	-	-	Hastelloy B
NC17DWY	-	-	-	-	-	Hastelloy C
-	-	-	-	-	-	Hastelloy N
-	-	-	-	-	-	Inconel 690
NK27CADT	-	-	-	-	-	Inconel 700
Nc19FeNb	-	-	-	-	-	Inconel 718
Nc16FeTi	-	-	-	-	-	Inconel 722
-	-	-	-	-	-	Inconel 725
NC19FeNB	-	-	-	-	-	Inconel 750-X
-	-	-	-	-	-	Inconel 751
-	-	-	-	-	-	Hardox 400
-	-	-	-	-	-	Ramax
-	-	-	-	-	-	Stavax
-	-	-	-	-	-	Hardox 500
TA 1	-	-	-	-	-	-
TA 2-5	-	-	-	-	-	-
-	-	-	-	-	-	-
TA 6	-	-	-	-	-	-
-A6V	-	-	-	-	-	-
T-A5E	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

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