M

Répertoire — Tarauds à machine ISO DIN 13
Rubrica — Maschi a macchina ISO DIN 13

		N						
Caractéristiques **Caratteristiche**				V	TiN TiCN			V
Genre de trou **Tipo di foro**								
		N310-3	**N320-3 N320-4**	**N320V-3 N320V-4**	**N320TN-3/-4 N320TC-3/-4**	**N321-3 N321-4**	**N330-3 N330-4**	**N330V-3 N330V-4**
DIN longue **DIN lungo**	**DIN 371**	60 / 62	62 / 64	60 / 64	64	70	70	70
Extra-longue **Extra-lungo**	**DC**							
ISO courte **ISO corto**	**ISO 529**							
DIN courte **DIN corto**	**DIN 352**							
Tolérance **Tolleranza**	**ISO 2 6H**	60 / 62	62 / 64	60 / 64	64	70	70	70
Surcote **Maggiorazione**	**ISO 3 6G**		68	68				
Surcote **Maggiorazione**	**7G**		68					
Surcote **Maggiorazione**	**+ 0.10 mm + 0.20 mm**		68					
Tolérance fine **Tolleranza fine**	**ISO 1 4H**		66					
LH Filetage à gauche **LH Filettatura sinistra**	**ISO 2 6H**	62	66	66				
		N410-3	**N420-4**	**N420V-4**	**N420TN-4 N420TC-4**	**N421-4**	**N430-4**	**N430V-4**
DIN longue **DIN lungo**	**DIN 376**	63	65	65	65	71	71	71
Extra-longue **Extra-lungo**	**DC**							
ISO courte **ISO corto**	**ISO 529**							
DIN courte **DIN corto**	**DIN 352**							
Tolérance **Tolleranza**	**ISO 2 6H**	63	65	65	65	71	71	71
Surcote **Maggiorazione**	**ISO 3 6G**		69	69				
Surcote **Maggiorazione**	**7G**		69					
Surcote **Maggiorazione**	**+ 0.10 mm + 0.20 mm**		69 / 71					
Tolérance fine **Tolleranza fine**	**ISO 1 4H**		67					
LH Filetage à gauche **LH Filettatura sinistra**	**ISO 2 6H**	63	67	67				

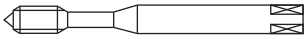
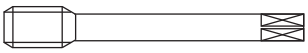
M *Répertoire — Tarauds à machine ISO DIN 13*
Rubrica — Maschi a macchina ISO DIN 13

N

R15 V	R40	R40 V	R40 TiN TiCN	R40 V E 1.5 x P	R40	R40 V		V
N350-3 N350V-3	**N360-3**	**N360V-3**	**N360TN-3 N360TC-3**	**N360-5 N360V-5**	**N361-3**	**N362V-3**	**N520-4**	**N520V-4**
72	74	60 / 74	74	80	80	80		
							82	82
72	74	60 / 74	74	80	80	80	82	82
	76	76						
	78	78						
	78	78						
	78							
	76	76						
N450-3 N450V-3	**N460-3**	**N460V-3**	**N460TN-3 N460TC-3**	**N460-5 N460V-5**	**N461-3**	**N462V-3**	**N620-4**	**N620V-4**
73	75	75	75	81	81	81		
							83	83
73	75	75	75	81	81	81	83	83
	77	77						
	79	79						
	79	79						
	79							
	77	77						

M

Répertoire — Tarauds à machine et à main ISO DIN 13
Rubrica — Maschi a macchina e a mano ISO DIN 13

		N						
Caractéristiques Caratteristiche		TiN	R40	R40 V	R40 TiN		R40	
Genre de trou Tipo di foro								
		N520TN-4	N560-3	N560V-3	N560TN-3	N1120-4	N1160-3	N1110 -1 -2 -3 -S
DIN longue DIN lungo	DIN 371							
Extra-longue Extra-lungo	DC	82	84	84	84			
ISO courte ISO corto	ISO 529					118	118	60 / 114
DIN courte DIN corto	DIN 352							
Tolérance Tolleranza	ISO 2 6H	82	84	84	84	118	118	60 / 114
Surcote Maggiorazione	ISO 3 6G							
Surcote Maggiorazione	7G							
Surcote Maggiorazione	+ 0.10 mm + 0.20 mm							
Tolérance fine Tolleranza fine	ISO 1 4H							
LH Filetage à gauche LH Filettatura sinistra	ISO 2 6H							
		N620TN-4	N660-3	N660V-3	N660TN-3	N1220-4	N1260-3	N1210 -1 -2 -3 -S
DIN longue DIN lungo	DIN 376							
Extra-longue Extra-lungo	DC	83	85	85	85			
ISO courte ISO corto	ISO 529					118	118	60 / 115
DIN courte DIN corto	DIN 352							
Tolérance Tolleranza	ISO 2 6H	83	85	85	85	118	118	60 / 115
Surcote Maggiorazione	ISO 3 6G							
Surcote Maggiorazione	7G							
Surcote Maggiorazione	+ 0.10 mm + 0.20 mm							
Tolérance fine Tolleranza fine	ISO 1 4H							
LH Filetage à gauche LH Filettatura sinistra	ISO 2 6H							

N	W				Z			
		DLC	R40	R40 DLC	V	VS	R40 V	R40 VS
NEW								
NP110-S -1 -2 -3 -S	W320-3 W320-4	W320DL-3 W320DL-4	W360-3	W360DL-3	Z320V-3 Z320V-4	Z320VS-4	Z360V-3 Z362V-3	Z360VS-3 Z362VS-3
	86	86	87	87	88	88	89	90
116								
116	86	86	87	87	88	88	89	90
NP210-S -1 -2 -3 -S	W420-4	W420DL-4	W460-3	W460DL-3	Z420V-4	Z420VS-4	Z462V-3	Z462VS-3
	86	86	87	87	88	88	89	91
117								
117	86	86	87	87	88	88	89	91

M *Répertoire — Tarauds à machine ISO DIN 13*
Rubrica — Maschi a macchina ISO DIN 13

	Z		ZX	H		S	
Caractéristiques Caratteristiche	R45 VS	R45 VS	B 4 x P	TiCN	R25 TiCN	VS	R35 VS
			NEW				
Genre de trou Tipo di foro							
	Z370VS-3	Z373VS-3	ZX320-4	H320-4 H320TC-4	H350-3 H350TC-3	S320VS-4	S360VS-3
DIN longue DIN lungo — DIN 371	90	90	93	94	96	98	99
Extra-longue Extra-lungo — DC							
ISO courte ISO corto — ISO 529							
DIN courte DIN corto — DIN 352							
Tolérance Tolleranza — ISO 2 6H	90	90	93	94	96	98	99
Surcote Maggiorazione — ISO 3 6G					96		
Surcote Maggiorazione — 7G							
Surcote Maggiorazione — + 0.10 mm + 0.20 mm							
Tolérance fine Tolleranza fine — ISO 1 4H	90					98	
LH Filetage à gauche LH Filettatura sinistra — ISO 2 6H							
	Z470VS-3	Z473VS-3	ZX420-4	H420-4 H420TC-4	H450-3 H450TC-3	S420VS-4	S460VS-3
DIN longue DIN lungo — DIN 376	91	91	93	95	97	98	99
Extra-longue Extra-lungo — DC							
ISO courte ISO corto — ISO 529							
DIN courte DIN corto — DIN 352							
Tolérance Tolleranza — ISO 2 6H	91	91	93	95	97	98	99
Surcote Maggiorazione — ISO 3 6G					97		
Surcote Maggiorazione — 7G							
Surcote Maggiorazione — + 0.10 mm + 0.20 mm							
Tolérance fine Tolleranza fine — ISO 1 4H							
LH Filetage à gauche LH Filettatura sinistra — ISO 2 6H							

M *Répertoire — Tarauds à machine ISO DIN 13*
Rubrica — Maschi a macchina ISO DIN 13

SA			TL		GG			
	R15	R10	VS	R15 VS	R15 NV	R15 TiCN	R15 TiCN	R15 NV
SA320-4	**SA350-3**	**SA390-3**	**TL320VS-4**	**TL351VS-3**	**GG350NV-3**	**GG350TC-3**	**GG353TC-3**	**GG550NV-3**
100	100	99	100	100	102	102	102	
								102
100	100	99	100	100	102	102	102	102
100	100	99	100	100				
SA420-4	**SA450-3**		**TL420VS-4**	**TL451VS-3**	**GG450NV-3**	**GG450TC-3**	**GG453TC-3**	**GG650NV-3**
101	101		101	101	103	103	103	
								103
101	101		101	101	103	103	103	103
101	101		101	101				

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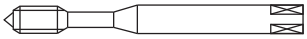
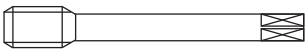
Répertoire — Tarauds à machine ISO DIN 13
Rubrica — Maschi a macchina ISO DIN 13

		K			QTAP			
Caractéristiques **Caratteristiche**		TiCN	TiCN	VS	VS	VS	R40 VS	R40 VS
					NEW	NEW	NEW	NEW
Genre de trou **Tipo di foro**								
		**K313TC-3**			**Q320VS-4**	**Q323VS-4**	**Q360VS-3**	**Q363VS-3**
DIN longue **DIN lungo**	**DIN 371**	104			61 / 106	106	61 / 107	107
Extra-longue **Extra-lungo**	**DC**							
ISO courte **ISO corto**	**ISO 529**							
DIN courte **DIN corto**	**DIN 352**							
Tolérance **Tolleranza**	**ISO 2 6H**	104			61 / 106	106	61 / 107	107
Surcote **Maggiorazione**	**ISO 3 6G**							
Surcote **Maggiorazione**	**7G**							
Surcote **Maggiorazione**	**+ 0.10 mm** **+ 0.20 mm**							
Tolérance fine **Tolleranza fine**	**ISO 1 4H**							
LH Filetage à gauche **LH Filettatura sinistra**	**ISO 2 6H**							
		**K413TC-3**	**K613TC-3**	**K613VS-3**	**Q420VS-4**	**Q423VS-4**	**Q460VS-3**	**Q463VS-3**
DIN longue **DIN lungo**	**DIN 376**	104			106	106	107	107
Extra-longue **Extra-lungo**	**DC**		105	105				
ISO courte **ISO corto**	**ISO 529**							
DIN courte **DIN corto**	**DIN 352**							
Tolérance **Tolleranza**	**ISO 2 6H**	104	105	105	106	106	107	107
Surcote **Maggiorazione**	**ISO 3 6G**							
Surcote **Maggiorazione**	**7G**							
Surcote **Maggiorazione**	**+ 0.10 mm** **+ 0.20 mm**							
Tolérance fine **Tolleranza fine**	**ISO 1 4H**							
LH Filetage à gauche **LH Filettatura sinistra**	**ISO 2 6H**							

M *Répertoire — Tarauds à machine ISO DIN 13*
Rubrica — Maschi a macchina ISO DIN 13

RTS

VS	VS	R40 VS	R40 VS	R40 E 1.5 x P VS	R40 E 1.5 x P VS	VS	R40 VS
RTS320VS-4	**RTS323VS-4**	**RTS360VS-3 RTS362VS-3**	**RTS365VS-3**	**RTS362VS-5**	**RTS365VS-5**	**RTS523VS-4**	**RTS565VS-3**
108	108	109	109	111	111		
						112	112
108	108	109	109	111	111	112	112
		110					
		110					
RTS420VS-4	**RTS423VS-4**	**RTS462VS-3**	**RTS465VS-3**			**RTS623VS-4**	**RTS665VS-3**
108	108	109	109				
						112	112
108	108	109	109			112	112
		110					
		110					

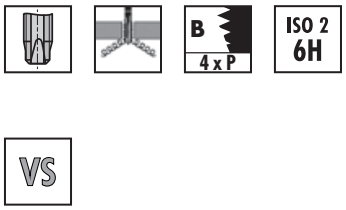
Assortiments de tarauds
Assortimenti di maschi

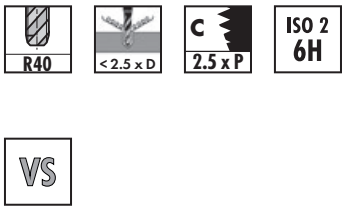
BOXSET					D5855	D5860	D5891
D5855		ISO 2 6H	N1110-S N1210-S	M3, M4, M5, M6, M8, M10, M12			
D5860		ISO 2 6H	N1110-S N1210-S	M3, M4, M5, M6, M8, M10, M12			
		HSS	FO DIN 338 FO DIN 338	D2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2			
D5891		ISO 2 6H	N310-3 N410-3	M3, M4, M5, M6, M8, M10, M12			
No D5855 / D5860 / D5891					ID	ID	ID
M3 - M12					● 118728	● 118733	● 170922

BOXSET					D5892
D5892	V	ISO 2 6H	N320V-4	M3, M4, M5, M6, M8, M10	
No D5892					ID
M3 - M10					● 170921

BOXSET					D5896
D5896	R40 V	< 2.5 x D	ISO 2 6H	N360V-3	M3, M4, M5, M6, M8, M10
No D5896					ID
M3 - M10					● 167599

CLASSIC | SYNCHRO | PM | DIN 371

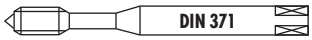
BOXSET	D5893
Q320VS-4  M3, M4, M5 M6, M8, M10	
No D5893	ID
M3 - M10	● 197104

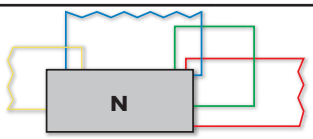
BOXSET	D5897
Q360VS-3  M3, M4, M5 M6, M8, M10	
No D5897	ID
M3 - M10	● 197105

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

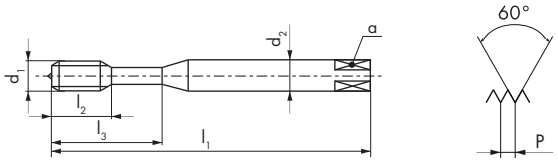
PM | HSSE





N310-3			31	62	73	74	91				
N310-3 LH		LH	31	62	73	74	91				
N320-3			62	63	64	72	73	74	81	91	

N310-3	N310-3 LH	N320-3
< 1.5 x D	< 1.5 x D	



N310-3	N310-3 LH	N320-3
C 2.5 x P	C 2.5 x P	2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
1	0.25	40	5.5		2.5	2.1	3	0.75	• 150167		
1.1	0.25	40	5.5		2.5	2.1	3	0.85	• 174745		
1.2	0.25	40	5.5		2.5	2.1	3	0.95	• 150168		
1.4	0.3	40	7		2.5	2.1	3	1.1	• 150169		
1.5	0.3	40	7		2.5	2.1	3	1.2	• 174752		
1.6	0.35	40	8		2.5	2.1	3	1.25	• 174753		
1.7	0.35	40	8		2.5	2.1	3	1.35	• 174754		
1.8	0.35	40	8		2.5	2.1	3	1.45	• 174755		
2	0.4	45	8		2.8	2.1	3	1.6	• 101439	• 111460	
2.2	0.45	45	9		2.8	2.1	3	1.75	• 174756		
2.3	0.4	45	9		2.8	2.1	3	1.9	• 174757		
2.5	0.45	50	10		2.8	2.1	3	2.05	• 101440	• 111461	
2.6	0.45	50	10		2.8	2.1	3	2.15	• 101441		
3	0.5	56	12	18	3.5	2.7	3	2.5	• 101442	• 111462	
3.5	0.6	56	13	20	4	3	3	2.9	• 101443		
4	0.7	63	14	21	4.5	3.4	3	3.3	• 101444	• 111464	
5	0.8	70	15	25	6	4.9	* 3	4.2	• 101445	• 111465	* 101465
6	1	80	17	30	6	4.9	* 3	5	• 101446	• 111466	* 101466
8	1.25	90	20	35	8	6.2	3	6.8	• 101447		
10	1.5	100	22	39	10	8	3	8.5	• 101438		

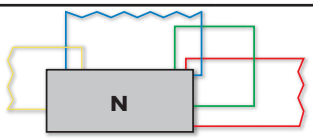
* N320-3 = 2

≤M1.5 ISO 1 4H

M ISO DIN 13

HSSE

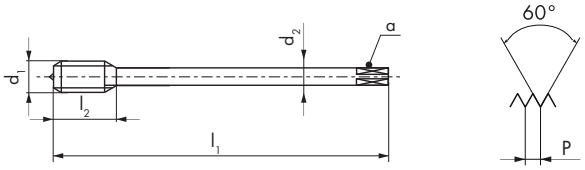
DIN 376



	N410-3	N410-3 LH		
	< 1.5 x D	< 1.5 x D		
	C 2.5 x P	C 2.5 x P		
	ISO 2 6H	ISO 2 6H		

N410-3 31 62 73 74 91

N410-3 LH LH 31 62 73 74 91

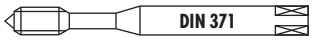


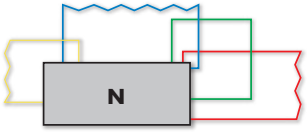
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
3	0.5	56	12	2.2	1.8	3	2.5	• 101897	
4	0.7	63	14	2.8	2.1	3	3.3	• 101924	
5	0.8	70	15	3.5	2.7	3	4.2	• 101942	
6	1	80	17	4.5	3.4	3	5	• 101953	
7	1	80	17	5.5	4.3	3	6	• 142645	• 111491
8	1.25	90	20	6	4.9	3	6.8	• 101958	• 111492
10	1.5	100	22	7	5.5	3	8.5	• 101866	• 111478
12	1.75	110	24	9	7	3	10.2	• 101870	• 111479
14	2	110	28	11	9	3	12	• 101874	• 111480
16	2	110	30	12	9	3	14	• 101880	• 111481
18	2.5	125	33	14	11	3	15.5	• 101883	• 111482
20	2.5	140	36	16	12	3	17.5	• 101885	• 125530
22	2.5	140	36	18	14.5	3	19.5	* 101888	
24	3	160	39	18	14.5	4	21	• 101891	• 111485
27	3	160	42	20	16	4	24	• 101895	• 111486
30	3.5	180	45	22	18	4	26.5	• 101901	• 111487
33	3.5	180	48	25	20	4	29.5	* 101907	
36	4	200	51	28	22	4	32	• 101915	• 111488
39	4	200	55	32	24	4	35	• 101922	
42	4.5	200	55	32	24	4	37.5	• 101932	
48	5	250	63	36	29	4	43	• 111489	
56	5.5	280	71	45	35	5	50.5	• 111447	

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

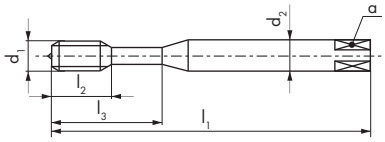
PM | HSSE

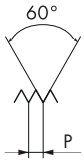




N320-4			62 63 64 72 73 74 81 91
N320V-4		V	11 12 31 32
N320TN-4		TiN	11 12 13 14 32
N320TC-4		TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

N320-4	N320V-4	N320TN-4	N320TC-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 1	0.25	40	5.5		2.5	2.1	2	0.75	● 111467			
* 1.1	0.25	40	5.5		2.5	2.1	2	0.85	● 111468			
* 1.2	0.25	40	5.5		2.5	2.1	2	0.95	● 111469			
* 1.4	0.3	40	7		2.5	2.1	2	1.1	● 111470			
* 1.5	0.3	40	7		2.5	2.1	2	1.2	● 111471			
* 1.6	0.35	40	8		2.5	2.1	2	1.25	● 101454			
* 1.7	0.35	40	8		2.5	2.1	2	1.35	● 101455			
* 1.8	0.35	40	8		2.5	2.1	2	1.45	● 101456			
* 2	0.4	45	8		2.8	2.1	2	1.6	● 101458	● 101536	● 101528	● 152900
* 2.2	0.45	45	9		2.8	2.1	2	1.75	● 101459			
* 2.3	0.4	45	9		2.8	2.1	2	1.9	● 101460			
2.5	0.45	50	10		2.8	2.1	3	2.05	● 101483	● 101545	● 101530	● 101522
2.6	0.45	50	10		2.8	2.1	3	2.15	● 101484			
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101485	● 101546	● 101531	● 101523
3.5	0.6	56	13	20	4	3	3	2.9	● 101491	● 101547		
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101495	● 101548	● 101532	● 101524
5	0.8	70	15	25	6	4.9	3	4.2	● 101499	● 101549	● 101533	● 101525
6	1	80	17	30	6	4.9	3	5	● 101503	● 101550	● 101534	● 101526
8	1.25	90	20	35	8	6.2	3	6.8	● 101506	● 101551	● 101535	● 101527
10	1.5	100	22	39	10	8	3	8.5	● 101481	● 101544	● 101529	● 101521

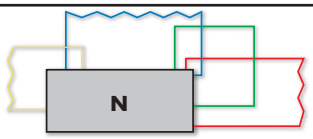
* N320-3 / N320V-3
N320TN-3 / N320TC-3 — 2.5 x P

≤M1.5 — ISO 1 4H

M ISO DIN 13

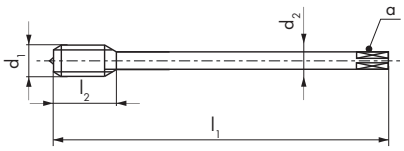
HSSE

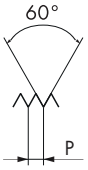
DIN 376



N420-4			62 63 64 72 73 74 81 91
N420V-4		V	11 12 31 32
N420TN-4		TiN	11 12 13 14 32
N420TC-4		TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

N420-4	N420V-4	N420TN-4	N420TC-4





N420-4	N420V-4	N420TN-4	N420TC-4
B 4xP	B 4xP	B 4xP	B 4xP
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

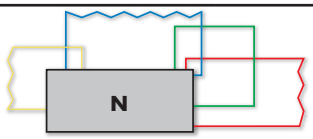
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N420-4 ID	N420V-4 ID	N420TN-4 ID	N420TC-4 ID
3	0.5	56	12	2.2	1.8	3	2.5	102119	143418		
4	0.7	63	14	2.8	2.1	3	3.3	102146	102279		
5	0.8	70	15	3.5	2.7	3	4.2	102171	102280	146297	
6	1	80	17	4.5	3.4	3	5	102182	102282	147439	
7	1	80	17	5.5	4.3	3	6	102189	144713		
8	1.25	90	20	6	4.9	3	6.8	102195	102285	102251	102233
9	1.25	90	20	7	5.5	3	7.8	102202			
10	1.5	100	22	7	5.5	3	8.5	102061	102263	102240	102228
11	1.5	100	19	8	6.2	3	9.5	162770			
12	1.75	110	24	9	7	3	10.2	102072	102265	102243	102229
14	2	110	28	11	9	3	12	102081	102267	102245	
16	2	110	30	12	9	3	14	102090	102269	102247	102231
18	2.5	125	33	14	11	3	15.5	102097	102271		
20	2.5	140	36	16	12	3	17.5	102101	102273	102248	102232
22	2.5	140	36	18	14.5	3	19.5	102106	102275		
24	3	160	39	18	14.5	4	21	102110	102278	144220	163736
27	3	160	42	20	16	4	24	102117	143856		
30	3.5	180	45	22	18	4	26.5	102124	105124		
33	3.5	180	48	25	20	4	29.5	102130	146968		
36	4	200	51	28	22	4	32	102137	143430		
39	4	200	55	32	24	4	35	102144	158724		
42	4.5	200	55	32	24	4	37.5	102158	143107		
45	4.5	220	59	36	29	4	40.5	110225	159565		
48	5	250	63	36	29	4	43	110226	157517		
56	5.5	280	71	45	35	5	50.5	110229	158178		

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

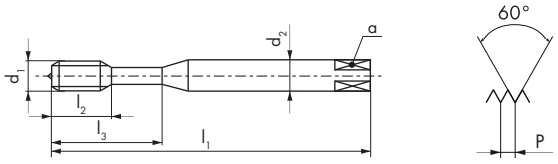
PM | HSSE

DIN 371



N320-4							62	63	64	72	73	74	81	91			
N320-4 LH			LH				62	63	64	72	73	74	81	91			
N320V-4 LH		V	LH				11	12	31	32							

N320-4	N320-4 LH	N320V-4 LH



N320-4	N320-4 LH	N320V-4 LH
B 4 x P	B 4 x P	B 4 x P
ISO 1 4H	ISO 2 6H	ISO 2 6H

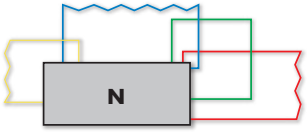
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	● 162503	● 111472	● 162771
2.5	0.45	50	10		2.8	2.1	3	2.05	● 159345		
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101487	● 111473	● 162772
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101493	● 111474	● 162773
5	0.8	70	15	25	6	4.9	3	4.2	● 101497	● 111475	● 162774
6	1	80	17	30	6	4.9	3	5	● 101501	● 111476	● 162775
10	1.5	100	22	39	10	8	3	8.5	★ 146484		

* N320-3 / N320V-3 2.5 x P

M ISO DIN 13

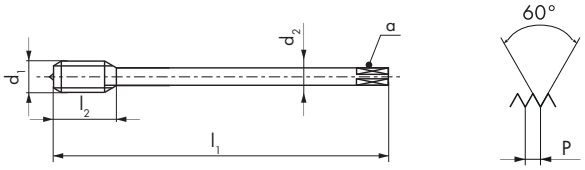
HSSE

DIN 376



N420-4				62	63	64	72	73	74	81	91						
N420-4 LH		LH		62	63	64	72	73	74	81	91						
N420V-4 LH		V	LH	11	12	31	32										

N420-4	N420-4 LH	N420V-4 LH



	N420-4	N420-4 LH	N420V-4 LH
	B 4 x P	B 4 x P	B 4 x P
	ISO 1 4H	ISO 2 6H	ISO 2 6H

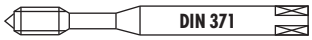
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
8	1.25	90	20	6	4.9	3	Δ6.8	● 102193	● 102198	● 142621
10	1.5	100	22	7	5.5	3	8.5	● 102059	● 102064	● 143287
12	1.75	110	24	9	7	3	10.2	● 102070	● 102040	● 146583
14	2	110	28	11	9	3	12		● 102084	● 146563
16	2	110	30	12	9	3	14		● 102093	● 143108
20	2.5	140	36	16	12	3	17.5		● 102103	● 145579
24	3	160	39	18	14.5	4	21		● 111493	● 145578

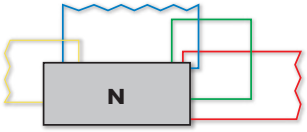
Δ ISO 1 4H = 6.70

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

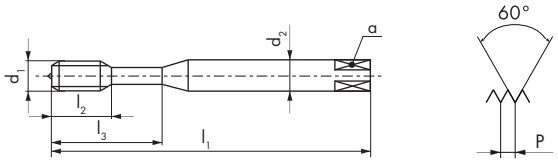




	N320-4	N320V-4	N320-4	N320-4
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 3 6G	ISO 3 6G	7G	6H +0.1 mm

N320-4 62 63 64 72 73 74 81 91

N320V-4 V 11 12 31 32

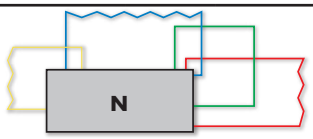


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	● 101457	0.019	● 143584	0.019			
2.5	0.45	50	10		2.8	2.1	3	2.05	● 101482	0.020	● 150522	0.020			
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101486	0.020	● 143116	0.020	● 101489	0.036	● 101488
3.5	0.6	56	13	20	4	3	3	2.95	● 101490	0.021					
4	0.7	63	14	21	4.5	3.4	3	3.35	● 101494	0.022	● 143087	0.022	● 101496	0.041	● 111522
5	0.8	70	15	25	6	4.9	3	4.25	● 101498	0.024	● 143088	0.024	● 101500	0.044	● 111523
6	1	80	17	30	6	4.9	3	5	● 101502	0.026	● 143089	0.026	● 101504	0.050	● 111524
8	1.25	90	20	35	8	6.2	3	6.8	● 101505	0.028	● 143604	0.028			

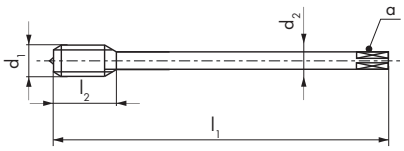
* N320-3 / N320V-3

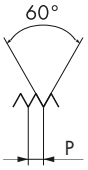
M ISO DIN 13

HSSE



	N420-4	N420V-4	N420-4	N420-4
N420-4	62 63 64 72 73 74 81 91			
N420V-4	11 12 31 32			





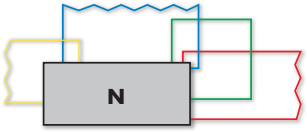
								B 4xP		B 4xP		B 4xP		B 4xP	
								ISO 3 6G		ISO 3 6G		7G		6H +0.1 mm	
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID
8	1.25	90	20	6	4.9	3	6.8	102194	0.028	145246	0.028	102199	0.052	102196
10	1.5	100	22	7	5.5	3	8.5	102060	0.032	143726	0.032	102065	0.060	102062
12	1.75	110	24	9	7	3	10.3	102071	0.034	145655	0.034	102076	0.066	102073
16	2	110	30	12	9	3	14	135531	0.038	162795	0.038	102094	0.072	102091

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

DIN 371

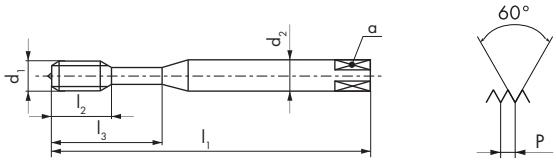


				N321-4	N330-4	N330V-4
N321-4			61 62 63 64 71 72 73 74 81 91			
N330-4			63 72			
N330V-4		V	11 12			

< 1.5 x D | < 1.5 x D

B 4 x P | B 4 x P | B 4 x P

ISO 2 6H | ISO 2 6H | ISO 2 6H



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID
* 1	0.25	40	5.5		2.5	2.1	2	0.75		● 101558	
* 1.1	0.25	40	5.5		2.5	2.1	2	0.85		* 101559	
* 1.2	0.25	40	5.5		2.5	2.1	2	0.95		● 101560	
* 1.4	0.3	40	7		2.5	2.1	2	1.1		● 101561	
* 1.6	0.35	40	8		2.5	2.1	2	1.25		● 101562	● 151246
* 2	0.4	45	8		2.8	2.1	2	1.6	● 101552	● 105125	● 101572
2.5	0.45	50	10		2.8	2.1	* 3	2.05	● 101553	● 101565	● 101573
3	0.5	56	12	18	3.5	2.7	* 3	2.5	● 101555	● 101567	● 101574
3.5	0.6	56	13	20	4	3	2	2.9		● 101568	
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101557	● 101569	● 101576
5	0.8	70	15	25	6	4.9	3	4.2		● 101570	● 101577
6	1	80	17	30	6	4.9	3	5		● 101571	● 101578

* N321-3 / N330-3 / N330V-3 2.5 x P

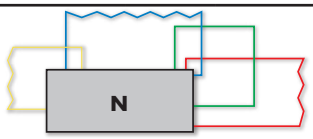
* N330-4 = 2

* N330V-4 = 2

≤M1.5 ISO 1 4H

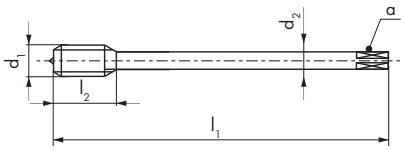
M ISO DIN 13

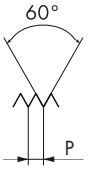
HSSE



N420-4		62 63 64 72 73 74 81 91
N421-4		61 62 63 64 71 72 73 74 81 91
N430-4		63 72
N430V-4	V	11 12

N420-4	N421-4	N430-4	N430V-4
		< 1.5 x D	< 1.5 x D
		X Y	X Y
B 4 x P	B 4 x P	B 4 x P	B 4 x P
6H +0.2mm	ISO 2 6H	ISO 2 6H	ISO 2 6H



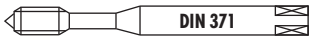


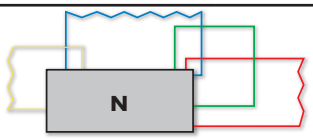
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	N420-4 ID	N421-4 ID	N430-4 ID	N430V-4 ID
4	0.7	63	14	2.8	2.1	3	3.3		102293		
5	0.8	70	15	3.5	2.7	3	4.2		102294		
6	1	80	17	4.5	3.4	3	5		102295		
8	1.25	90	20	6	4.9	3	6.8	102197	102296	102301	102306
10	1.5	100	22	7	5.5	3	8.5	102063	102286	102297	102302
12	1.75	110	24	9	7	3	10.2	102074	102287	102298	102303
16	2	110	30	12	9	3	14	102092	102289		

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

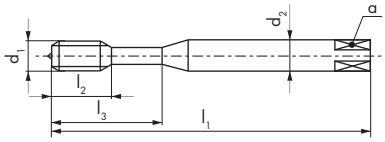


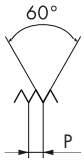


	N350-3	N350V-3
	< 1.5 x D	< 1.5 x D
	< 2.5 x D	
	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H

N350-3 R15 — 62 63 64 72 73 74 81 91

N350V-3 R15 V — 11 12 31 32

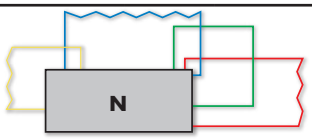




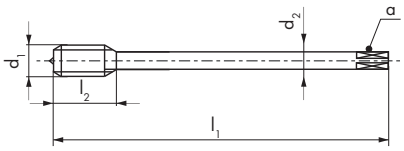
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
2	0.4	45	8		2.8	2.1	2	1.6	• 101580	• 101593
2.3	0.4	45	9		2.8	2.1	2	1.9	• 101581	
2.5	0.45	50	10		2.8	2.1	2	2.05	• 101582	• 101594
2.6	0.45	50	10		2.8	2.1	2	2.15	• 101583	
3	0.5	56	12	18	3.5	2.7	2	2.5	• 101584	• 101595
3.5	0.6	56	13	20	4	3	2	2.9	• 101585	
4	0.7	63	14	21	4.5	3.4	2	3.3	• 101587	• 101596
5	0.8	70	15	25	6	4.9	3	4.2	• 101589	• 101597
6	1	80	17	30	6	4.9	3	5	• 101591	• 101598
8	1.25	90	20	35	8	6.2	3	6.8	• 101592	• 146810
10	1.5	100	22	39	10	8	3	8.5	• 101579	• 147217

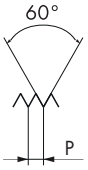
M ISO DIN 13

HSSE



	N450-3	N450V-3		
N450-3	R15	62 63 64 72 73 74 81 91		
N450V-3	R15 V	11 12 31 32		
	< 1.5 x D	< 1.5 x D		
	< 2.5 x D			
	C 2.5 x P	C 2.5 x P		
	ISO 2 6H	ISO 2 6H		





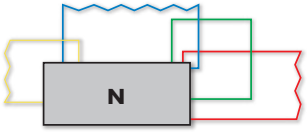
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20	6	4.9	3	6.8	102327	102334
10	1.5	100	22	7	5.5	3	8.5	102314	102329
12	1.75	110	24	9	7	3	10.2	102317	102330
14	2	110	28	11	9	3	12	102319	145487
16	2	110	30	12	9	3	14	102321	102331
20	2.5	140	36	16	12	4	17.5	102324	102332
24	3	160	39	18	14.5	4	21	102325	102333

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

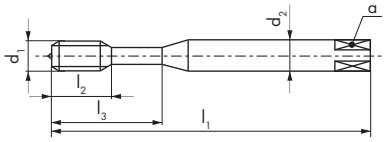
PM | HSSE

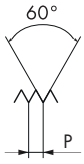
DIN 371



N360-3	R40		63 72 73 74 81 91
N360V-3	R40	V	11 12 32
N360TN-3	R40	TiN	11 12 13 14 32
N360TC-3	R40	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

N360-3	N360V-3	N360TN-3	N360TC-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

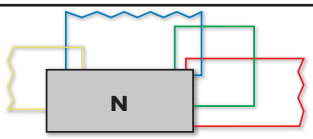




Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N360-3 ID	N360V-3 ID	N360TN-3 ID	N360TC-3 ID
2	0.4	45	7		2.8	2.1	2	1.6	101618	101708	101697	146842
2.2	0.45	45	8		2.8	2.1	2	1.75	101619			
2.3	0.4	45	8		2.8	2.1	2	1.9	101620			
2.5	0.45	50	9		2.8	2.1	2	2.05	101622	101709	101698	101689
2.6	0.45	50	9		2.8	2.1	2	2.15	101623	101710		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	101626	101711	101699	101690
3.5	0.6	56	6.5	20	4	3	3	2.9	101630	142625		
4	0.7	63	7.5	21	4.5	3.4	3	3.3	101635	101713	101700	101691
4.5	0.75	70	9	25	6	4.9	3	3.75	101639			
5	0.8	70	9	25	6	4.9	3	4.2	101644	101715	101701	101692
6	1	80	11	30	6	4.9	3	5	101652	101717	101703	101693
7	1	80	11	30	7	5.5	3	6	101656	101718		
8	1.25	90	12.5	35	8	6.2	3	6.8	101663	101721	101705	101694
9	1.25	90	12.5	35	9	7	3	7.8	101668			
10	1.5	100	14	39	10	8	3	8.5	101612	101707	101696	101688

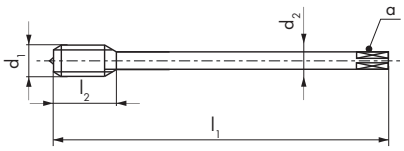
M ISO DIN 13

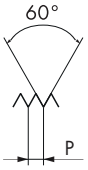
HSSE



N460-3	R40		63 72 73 74 81 91
N460V-3	R40	V	11 12 32
N460TN-3	R40	TiN	11 12 13 14 32
N460TC-3	R40	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

N460-3	N460V-3	N460TN-3	N460TC-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





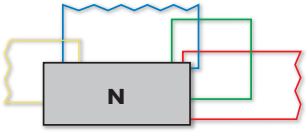
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
5	0.8	70	9	3.5	2.7	3	4.2	102410	102489	160682	
6	1	80	11	4.5	3.4	3	5	102411	102491	152850	
8	1.25	90	12.5	6	4.9	3	6.8	102412	102492	152849	
10	1.5	100	14	7	5.5	3	8.5	102351	102461	150242	158687
12	1.75	110	14	9	7	3	10.2	102359	102465	102449	102438
14	2	110	14	11	9	3	12	102369	102468	102451	111615
16	2	110	18	12	9	3	14	102376	102471	102453	102440
18	2.5	125	21	14	11	3	15.5	102383	102473		
20	2.5	140	24	16	12	4	17.5	102389	102475	102454	143280
22	2.5	140	24	18	14.5	4	19.5	102394	102477		
24	3	160	27	18	14.5	4	21	102398	102480	143119	150018
27	3	160	27	20	16	4	24	175423	102481		
30	3.5	180	30	22	18	4	26.5	150246	102482		
33	3.5	180	33	25	20	4	29.5	167621	102483		
36	4	200	36	28	22	5	32	143914	102484		
39	4	200	40	32	24	5	35	175424	102485		
42	4.5	200	40	32	24	5	37.5	169122	102486		
45	4.5	220	44	36	29	5	40.5		102487		
48	5	250	48	36	29	5	43		102488		
52	5	250	52	40	32	5	47		110228		
56	5.5	280	56	45	35	6	50.5		102490		
64	6	315	64	50	39	6	58		143805		

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

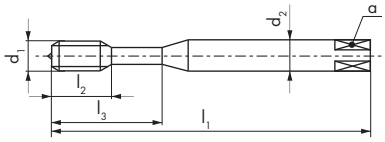
PM | HSSE

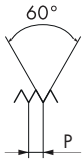
DIN 371



N360-3 LH	L40	LH	63 / 72 / 73 / 74 / 81 / 91	
N360V-3 LH	L40	V	LH	11 / 12 / 32
N360-3	R40		63 / 72 / 73 / 74 / 81 / 91	
N360V-3	R40	V		11 / 12 / 32

N360-3 LH	N360V-3 LH	N360-3	N360V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 3 6G	ISO 3 6G

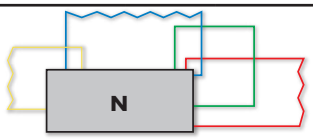




Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID	6H + mm	ID	6H + mm
2	0.4	45	7		2.8	2.1	2	1.6						
2.5	0.45	50	9		2.8	2.1	2	2.05						
3	0.5	56	5.5	18	3.5	2.7	3	2.5	101627	146811	101625	0.020	104816	0.020
3.5	0.6	56	6.5	20	4	3	3	2.95			101629	0.021	125829	0.021
4	0.7	63	7.5	21	4.5	3.4	3	3.3	101637	162540	101634	0.022	104817	0.022
5	0.8	70	9	25	6	4.9	3	4.2	101646	144003	101643	0.024	104818	0.024
6	1	80	11	30	6	4.9	3	5	101654	144004	101669	0.026	104819	0.026
8	1.25	90	12.5	35	8	6.2	3	6.8	101666	143925	101662	0.028	104820	0.028
10	1.5	100	14	39	10	8	3	8.5	101615	143587	101611	0.032	104821	0.032

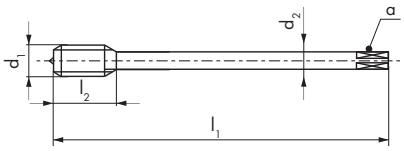
M ISO DIN 13

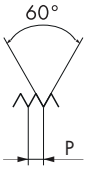
HSSE



N460-3 LH	L40	LH	63	72	73	74	81	91															
N460V-3 LH	L40	V	LH	11	12	32																	
N460-3	R40	63	72	73	74	81	91																
N460V-3	R40	V	11	12	32																		

N460-3 LH	N460V-3 LH	N460-3	N460V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D





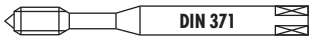
N460-3 LH	N460V-3 LH	N460-3	N460V-3
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 3 6G	ISO 3 6G

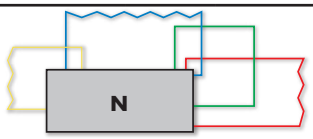
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	N460-3 LH ID	N460V-3 LH ID	N460-3 ID	6H + mm	N460V-3 ID	6H + mm
12	1.75	110	14	9	7	3	10.2	● 102362	● 146354	● 102358	0.034	● 143602	0.034
14	2	110	14	11	9	3	12			● 102368	0.038	● 144712	0.038
16	2	110	18	12	9	3	14	● 102378	● 143439	● 102375	0.038	● 150197	0.038
20	2.5	140	24	16	12	4	17.5	● 102390	● 146564	● 102388	0.042	● 145420	0.042

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

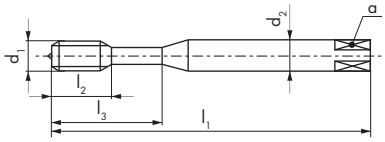


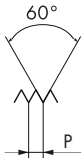


	N360-3	N360-3	N360V-3
	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 1 4H	7G	7G

N360-3 R40 — 63 / 72 / 73 / 74 / 81 / 91

N360V-3 R40 V — 11 / 12 / 32





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	N360-3 ID	N360-3 ID	6H + mm	N360V-3 ID	6H + mm
3	0.5	56	5.5	18	3.5	2.7	3	2.5	• 101624	• 101628	0.036	• 144311	0.036
4	0.7	63	7.5	21	4.5	3.4	3	3.3	• 101633	• 101638	0.041	• 144192	0.041
5	0.8	70	9	25	6	4.9	3	4.2	• 101642	• 101647	0.044	• 143208	0.044
6	1	80	11	30	6	4.9	3	5	• 101651	• 101655	0.050	• 146709	0.050
8	1.25	90	12.5	35	8	6.2	3	Δ6.8	• 101661	• 101667	0.052	• 146267	0.052
10	1.5	100	14	39	10	8	3	8.5	• 101610	• 101616	0.060	• 142547	0.060
										6H +0.1 mm		6H +0.1 mm	

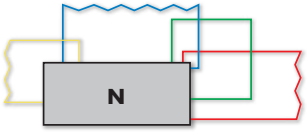
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H +0.1	N360-3 ID	N360V-3 ID
3	0.5	56	5.5	18	3.5	2.7	3	2.6	• 160847	
4	0.7	63	7.5	21	4.5	3.4	3	3.4	• 101636	• 146513
5	0.8	70	9	25	6	4.9	3	4.3	• 101645	• 146046
6	1	80	11	30	6	4.9	3	5.1	• 101653	• 145559
8	1.25	90	12.5	35	8	6.2	3	6.9	• 101664	• 143415
10	1.5	100	14	39	10	8	3	8.6	• 101613	• 124917

Δ ISO 1 4H = 6.70

M ISO DIN 13

HSSE

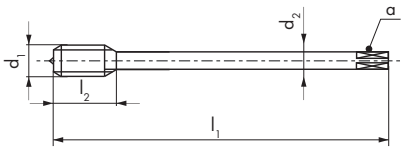
DIN 376

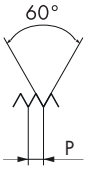


	N460-3	N460-3	N460V-3
	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 1 4H	7G	7G

N460-3 R40 — 63 / 72 / 73 / 74 / 81 / 91

N460V-3 R40 — V — 11 / 12 / 32



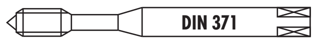


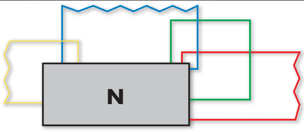
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID	6H + mm
12	1.75	110	14	9	7	3	10.2	* 124987	● 102363	0.066	● 142532	0.066
16	2	110	18	12	9	3	14		● 102379	0.072	● 144956	0.072
									6H +0.1 mm		6H +0.1 mm	

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H +0.1	ID	ID
12	1.75	110	14	9	7	3	10.3	● 102360	● 125044
16	2	110	18	12	9	3	14.1	● 102377	● 145311

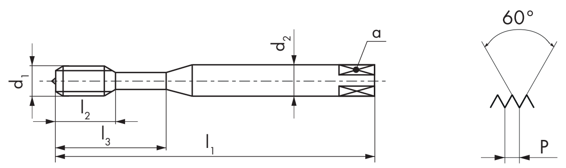
M ISO DIN 13

≤ Ø 2.8 PM > Ø 2.8 HSSE





	N360-5	N360V-5	N361-3	N362V-3
N360-5: R40 — 63 72 73 74 81 91				
N360V-5: R40, V — 11 12 32				
N361-3: R40 — 61 63 71 72 73 74 81 91				
N362V-3: R40, V — 11 12 32				
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

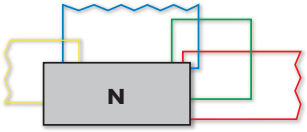


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID N360-5	ID N360V-5	ID N361-3	ID N362V-3
2	0.4	45	7		2.8	2.1	2	1.6	● 158079	● 150058		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 104809	● 142646	● 101735	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 104810	● 142647	● 101736	● 101741
5	0.8	70	9	25	6	4.9	3	4.2	● 104811	● 142648	● 101737	● 101742
6	1	80	11	30	6	4.9	3	5	● 104812	● 142649	● 101738	● 101743
8	1.25	90	12.5	35	8	6.2	3	6.8	● 104813	● 142650	● 101739	● 101744
10	1.5	100	14	39	10	8	3	8.5	● 104814	● 124899	● 101734	● 101740

M ISO DIN 13

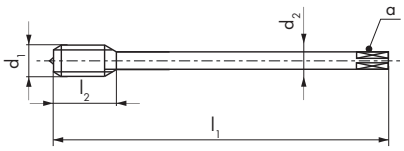
HSSE

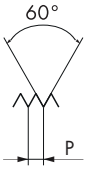
DIN 376



	N460-5	N460V-5	N461-3	N462V-3
	R40	R40, V	R40	R40, V
	63, 72, 73, 74, 81, 91	11, 12, 32	61, 63, 71, 72, 73, 74, 81, 91	11, 12, 32

< 2.5 x D | < 2.5 x D | < 2.5 x D | < 2.5 x D





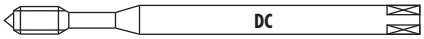
	N460-5	N460V-5	N461-3	N462V-3
	E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

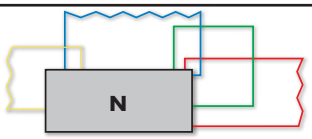
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	14	9	7	3	10.2	● 104815	● 142651	● 102506	● 102512
14	2	110	14	11	9	3	12				● 102513
16	2	110	18	12	9	3	14				● 102514
18	2.5	125	21	14	11	3	15.5			* 111614	● 102515
20	2.5	140	24	16	12	4	17.5				● 102516
24	3	160	27	18	14.5	4	21				● 102517
27	3	160	27	20	16	4	24				● 159244
30	3.5	180	30	22	18	4	26.5				● 143090

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

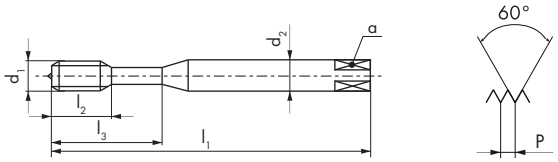
PM HSSE





N520-4			62 63 64 72 73 74 81 91
N520V-4		V	11 12 31 32
N520TN-4		TiN	11 12 13 14 32

N520-4	N520V-4	N520TN-4

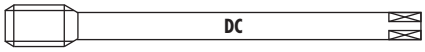


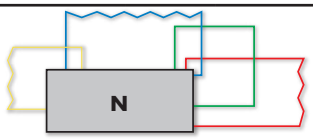
N520-4	N520V-4	N520TN-4
B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2.5	0.45	100	10		2.8	2.1	3	2.05	102594	142623	
3	0.5	112	12	18	3.5	2.7	3	2.5	102595	143399	162790
4	0.7	112	14	21	4.5	3.4	3	3.3	102596	143400	146837
5	0.8	125	15	25	6	4.9	3	4.2	102597	142654	150113
6	1	125	17	30	6	4.9	3	5	102598	143137	148821

M ISO DIN 13

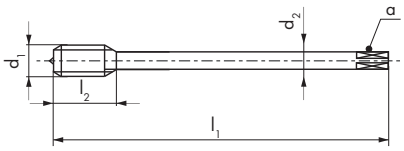
HSSE

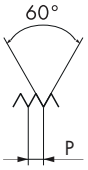




N620-4			62 63 64 72 73 74 81 91
N620V-4		V	11 12 31 32
N620TN-4		TiN	11 12 13 14 32

N620-4	N620V-4	N620TN-4





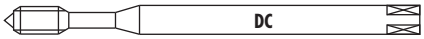
N620-4	N620V-4	N620TN-4
B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H

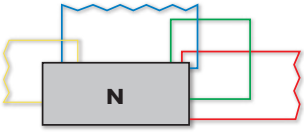
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
4	0.7	112	14	2.8	2.1	3	3.3	102619	142582	146442
5	0.8	125	15	3.5	2.7	3	4.2	102620	142657	146443
6	1	125	17	4.5	3.4	3	5	102621	142658	144591
8	1.25	140	20	6	4.9	3	6.8	102622	143401	146262
10	1.5	160	22	7	5.5	3	8.5	102614	142660	146849
12	1.75	180	24	9	7	3	10.2	102615	143127	146295
14	2	180	28	11	9	3	12	102616	151905	
16	2	200	30	12	9	3	14	102617	143106	143574
20	2.5	224	36	16	12	3	17.5	102618	143596	174317

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

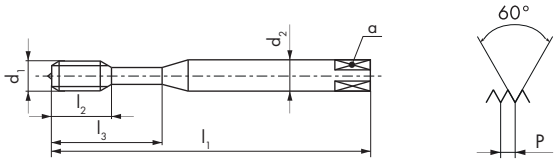
PM HSSE





N560-3	R40		63	72	73	74	81	91	N560-3	N560V-3	N560TN-3
N560V-3	R40	V	11	12	32						
N560TN-3	R40	TiN	11	12	13	14	32				

< 2.5 x D | < 2.5 x D | < 2.5 x D



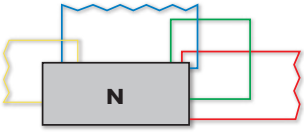
C 2.5 x P | C 2.5 x P | C 2.5 x P

ISO 2 6H | ISO 2 6H | ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2.5	0.45	100	9		2.8	2.1	2	2.05	102600	102607	
3	0.5	112	5.5	18	3.5	2.7	3	2.5	102601	102608	142663
4	0.7	112	7.5	21	4.5	3.4	3	3.3	102602	102609	142664
5	0.8	125	9	25	6	4.9	3	4.2	102603	102610	142665
6	1	125	11	30	6	4.9	3	5	102604	102611	142666
8	1.25	140	12.5	35	8	6.2	3	6.8	102605	102612	142667
10	1.5	160	14	39	10	8	3	8.5	102599	102606	142668

M ISO DIN 13

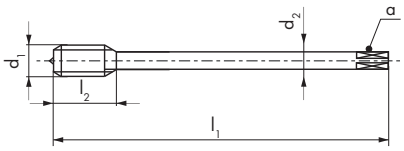
HSSE

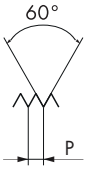


N660-3	R40		63 72 73 74 81 91
N660V-3	R40	V	11 12 32
N660TN-3	R40	TiN	11 12 13 14 32

N660-3	N660V-3	N660TN-3

< 2.5 x D | < 2.5 x D | < 2.5 x D





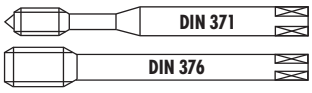
C 2.5 x P | C 2.5 x P | C 2.5 x P

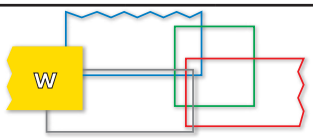
ISO 2 6H | ISO 2 6H | ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
6	1	125	11	4.5	3.4	3	5	162792	115657	
8	1.25	140	12.5	6	4.9	3	6.8	162793	115544	
10	1.5	160	14	7	5.5	3	8.5	162794	135539	173484
12	1.75	180	14	9	7	3	10.2	102623	102626	142669
14	2	180	14	11	9	3	12	162253	147500	
16	2	200	18	12	9	3	14	102624	102627	142670
20	2.5	224	24	16	12	4	17.5	102625	102628	178003

M ISO DIN 13

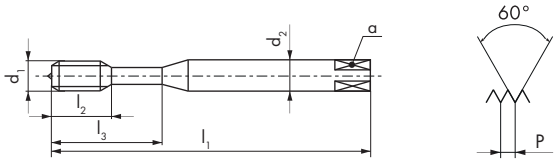
PM





W320-4			71 72 81
W420-4			71 72 81
W320DL-4		DLC	71 72 73
W420DL-4		DLC	71 72 73

W320-4	W420-4	W320DL-4	W420DL-4



B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

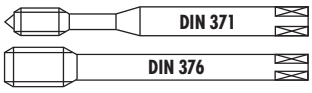
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	• 104612		• 176688	
2.5	0.45	50	10		2.8	2.1	2	2.05	• 104613		• 176689	
3	0.5	56	12	18	3.5	2.7	2	2.5	• 104615		• 176690	
4	0.7	63	14	21	4.5	3.4	2	3.3	• 104617		• 176691	
5	0.8	70	15	25	6	4.9	2	4.2	• 104618		• 176354	
6	1	80	17	30	6	4.9	2	5	• 104619		• 175590	
8	1.25	90	20		6	4.9	2	6.8		• 104636		• 176692
10	1.5	100	22		7	5.5	2	8.5		• 104632		• 176693
12	1.75	110	24		9	7	3	10.2		• 104633		• 176694
16	2	110	30		12	9	3	14		• 104634		• 176695

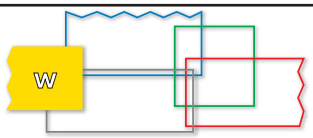
* W320-3
* W320DL-3 — 2.5 x P

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

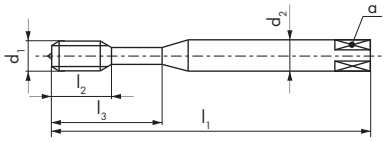
PM | HSSE

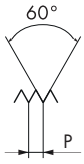




W360-3	R40		71 72 81	W360-3	W460-3	W360DL-3	W460DL-3
W460-3	R40		71 72 81				
W360DL-3	R40	DLC	71 72 73				
W460DL-3	R40	DLC	71 72 73				

< 2.5 x D | < 2.5 x D | < 2.5 x D | < 2.5 x D





C 2.5 x P | C 2.5 x P | C 2.5 x P | C 2.5 x P

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.4	45	7		2.8	2.1	2	1.6	• 104625		• 176719	
2.5	0.45	50	9		2.8	2.1	2	2.05	• 104626		• 176720	
3	0.5	56	5.5	18	3.5	2.7	2	2.5	• 104627		• 176721	
4	0.7	63	7.5	21	4.5	3.4	2	3.3	• 104628		• 176722	
5	0.8	70	9	25	6	4.9	2	4.2	• 104629		• 176723	
6	1	80	11	30	6	4.9	2	5	• 104630		• 176355	
8	1.25	90	12.5	35	8	6.2	2	6.8	• 104631		• 176724	
10	1.5	100	14	39	10	8	2	8.5	• 104624		• 176725	
12	1.75	110	14		9	7	3	10.2		• 104640		• 176726
16	2	110	18		12	9	3	14		• 104641		• 176727

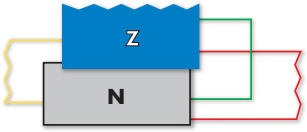
M ISO DIN 13

≤ Ø 25.4 > Ø 25.4

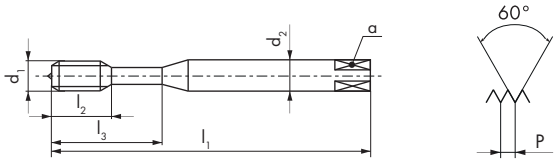
PM | HSSE

DIN 371

DIN 376



Z320V-4	V	11 12 13 21 32	
Z420V-4	V	11 12 13 21 32	
Z320VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	
Z420VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	



Z320V-4	Z420V-4	Z320VS-4	Z420VS-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

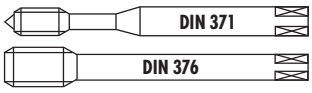
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Z320V-4 ID	Z420V-4 ID	Z320VS-4 ID	Z420VS-4 ID
* 1.6	0.35	40	8		2.5	2.1	2	1.25	142671			
* 2	0.4	45	8		2.8	2.1	2	1.6	111613			
2.5	0.45	50	10		2.8	2.1	3	2.05	111455		143683	
2.6	0.45	50	10		2.8	2.1	3	2.15	142672			
3	0.5	56	12	18	3.5	2.7	3	2.5	104669		104830	
4	0.7	63	14	21	4.5	3.4	3	3.3	104670		104831	
5	0.8	70	15	25	6	4.9	3	4.2	104671		104832	
6	1	80	17	30	6	4.9	3	5	104672		104833	
8	1.25	90	20	35	8	6.2	3	6.8	104673		104834	
10	1.5	100	22	39	10	8	3	8.5	104668		104835	
12	1.75	110	24		9	7	3	10.2		104723		104836
14	2	110	28		11	9	3	12		142673		143684
16	2	110	30		12	9	3	14		105068		111569
18	2.5	125	33		14	11	4	15.5		142674		
20	2.5	140	36		16	12	4	17.5		105069		111570
22	2.5	140	36		18	14.5	4	19.5		146003		
24	3	160	39		18	14.5	4	21		142675		150017
30	3.5	180	45		22	18	4	26.5		142676		

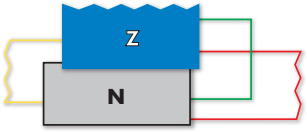
* Z320V-3 2.5 x P

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

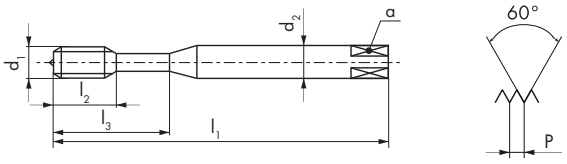
PM | HSSE





	Z360V-3	Z362V-3	Z462V-3
	R40, V, 12/21/32	R40, V, 12/21/32	R40, V, 12/21/32

< 2.5 x D | < 2.5 x D | < 2.5 x D



C 2.5 x P | C 2.5 x P | C 2.5 x P

ISO 2 6H | ISO 2 6H | ISO 2 6H

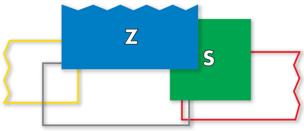
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Z360V-3 ID	Z362V-3 ID	Z462V-3 ID
2	0.4	45	7		2.8	2.1	2	1.6	104684		
2.5	0.45	50	9		2.8	2.1	2	2.05	104685		
2.6	0.45	50	9		2.8	2.1	2	2.15	104686		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	104687		
3.5	0.6	56	6.5	20	4	3	3	2.9		104688	
4	0.7	63	7.5	21	4.5	3.4	3	3.3		104689	
5	0.8	70	9	25	6	4.9	3	4.2		104690	
6	1	80	11	30	6	4.9	3	5		104691	
8	1.25	90	12.5	35	8	6.2	3	6.8		104692	
10	1.5	100	14	39	10	8	3	8.5		104683	
12	1.75	110	14		9	7	3	10.2			104742
14	2	110	14		11	9	3	12			104743
16	2	110	18		12	9	3	14			104744
18	2.5	125	21		14	11	3	15.5			104745
20	2.5	140	24		16	12	3	17.5			104746
22	2.5	140	24		18	14.5	3	19.5			104752
24	3	160	27		18	14.5	4	21			104747
27	3	160	27		20	16	4	24			104748
30	3.5	180	30		22	18	4	26.5			104749
36	4	200	36		28	22	4	32			104750
42	4.5	200	40		32	24	4	37.5			104751

M ISO DIN 13

HSSE

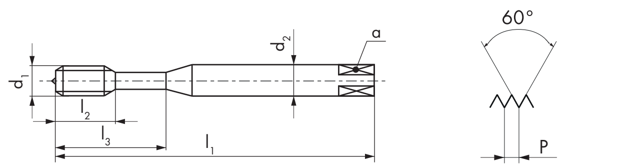
DIN 371

~DIN 371 (d_2 h6)



	R				Materials
Z362VS-3	R40		VS		12 14 21 22 23 32 61 63
Z370VS-3	R45	VS	CLASSIC		14 15 21 22 23 24 51 61 94
Z373VS-3	R45		VS	CLASSIC	
Z370VS-3	R45	VS	SYNCHRO		13 14 15 21 22 23 24 51 52
Z373VS-3	R45		VS	SYNCHRO	

Z362VS-3	Z370VS-3	Z370VS-3	Z373VS-3
< 2.5 x D	< 3 x D	< 3 x D	< 3 x D
	PM	PM	PM
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	4HX	6HX



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	Flutes	Drill	ID
* 3	0.5	56	5.5	18	3.5	2.7	3	2.5	• 111504
4	0.7	63	7.5	21	4.5	3.4	3	3.3	• 111505
5	0.8	70	9	25	6	4.9	3	4.2	• 111506
6	1	80	11	30	6	4.9	3	5	• 111507
8	1.25	90	12.5	35	8	6.2	3	6.8	• 111508
10	1.5	100	14	39	10	8	3	8.5	• 111509

* Z360VS-3

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm	Flutes	Drill	ID (Z370VS-3)	ID (Z370VS-3)	ID (Z373VS-3)
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	• 162776	• 165324	• 165236
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	• 162777	• 165325	• 165237
5	0.8	70	9	25	6	4.9	3	4.2	• 162778	• 165326	• 165238
6	1	80	11	30	6	4.9	3	5	• 162779	• 165327	• 165239
8	1.25	90	12.5	35	8	6.2	3	∆ 6.8	• 162780	• 165328	• 165240
10	1.5	100	14	39	10	8	3	8.5	• 162781	• 165438	• 165241

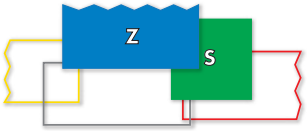
∆ 4HX = 6.7

M ISO DIN 13

HSSE

DIN 376

~DIN 376 (d_2 h6)



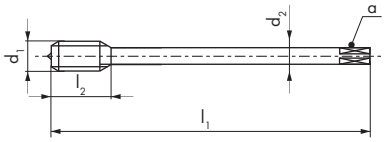
Z462VS-3	R40		VS																				
Z470VS-3	R45	VS	CLASSIC																				
Z473VS-3	R45		VS	CLASSIC																			
Z470VS-3	R45	VS	SYNCHRO																				
Z473VS-3	R45		VS	SYNCHRO																			

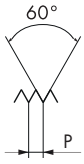
12 14 21 22 23 32 61 63

14 15 21 22 23 24 51 61 94

13 14 15 21 22 23 24 51 52

	Z462VS-3	Z470VS-3	Z473VS-3
	< 2.5 x D	< 3 x D	< 3 x D
		PM	PM
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.75	110	14	9	7	4	10.2	• 111510
14	2	110	14	11	9	4	12	* 148169
16	2	110	18	12	9	4	14	• 111511
20	2.5	140	24	16	12	4	17.5	• 111512
24	3	160	27	18	14.5	4	21	* 111620

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID	ID
12	1.75	110	14	* 10	* 8	4	10.2	• 162782	• 165242
14	2	110	14	* 12	* 9	4	12	• 162783	
16	2	110	18	12	9	4	14	• 162784	• 165244
18	2.5	125	21	14	11	4	15.5	• 170643	
20	2.5	140	24	16	12	4	17.5	• 162785	• 165234
22	2.5	140	24	16	12	4	19.5	• 175190	
24	3	160	27	16	12	4	21	• 162786	• 165235

* Norme DC / * DC Norm/ * Norma DC

ZX AMPCO®

ALLIAGES D'ALU-BRONZE
LEGHE DI ALLUMINIO-BRONZO

ZX - Tarauds à machine DC avec une géométrie de coupe spécialement adaptée

Pour trous traversants et borgnes < 1.5 x D

Optimale
pour AMPCO® 21 / 22
Dureté HB > 280 - < 330

Fonctionnelle
pour AMPCO® 18
Dureté HB < 420

Fonctionnelle
pour AMPCO® 25 / 26
Dureté HB < 420

Recommandation
Pour AMPCO® 25 / 26 : *Ø de perçage + 0.2 mm*

Autres options pour travailler de l'AMPCO® :

Optimale
Pour trous traversants

Tarauds à machine DC type H320-4 / H420-4
pour AMPCO® 18
Dureté HB < 200

Optimale
Pour trous traversants et borgnes < 2 x D

pour AMPCO® 25 / 26
Dureté HB > 380 - < 420
Lubrifiant : huile de coupe / émulsion

Fraise à fileter en carbure monobloc, type DC GF6165VS
Vitesse de coupe Vc : 30 - 50 m/min
Avance fraisage fz : 0.01 - 0.05 mm/dent

Optimale
Pour trous traversants et borgnes < 4 x D

pour AMPCO® 25 / 26
Dureté HB > 380 - < 420
Lubrifiant : huile de coupe / émulsion

Fraises à tourbillonner en carbure monobloc, type DC GW301.VS / GWi306.VS
Vitesse de coupe Vc : 30 - 50 m/min
Avance fraisage fz : 0.01 - 0.08 mm/dent

ZX - Maschi a macchina DC con geometria di taglio appositamente adattata

Per fori passanti e ciechi < 1.5 x D

Ottimale
per AMPCO® 21 / 22
Durezza HB > 280 - < 330

Funzionale
per AMPCO® 18
Durezza HB < 420

Funzionale
per AMPCO® 25 / 26
Durezza HB < 420

Raccomandazione
Per AMPCO® 25 / 26: Ø del preforo + 0.2 mm

Ulteriori opzioni per la lavorazione dell'AMPCO®:

Ottimale
Per fori passanti

Maschi a macchina DC tipo H320-4 / H420-4
per AMPCO® 18
Durezza HB < 200

Ottimale
Per fori passanti e ciechi < 2 x D

per AMPCO® 25 / 26
Durezza HB > 380 - < 420
Lubrificante: olio da taglio / emulsione

Frese a filettare in metallo duro integrale, tipo DC GF6165VS
Velocità di taglio Vc: 30 - 50 m/min
Avanzamento fz: 0.01 - 0.05 mm/dente

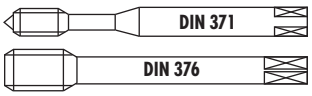
Ottimale
Per fori passanti e ciechi < 4 x D

per AMPCO® 25 / 26
Durezza HB > 380 - < 420
Lubrificante: olio da taglio / emulsione

Frese a filettare vorticoso in metallo duro integrale, tipo GW301.VS / GWi306.VS
Velocità di taglio Vc: 30 - 50 m/min
Avanzamento fz: 0.01 - 0.08 mm/dente

M ISO DIN 13

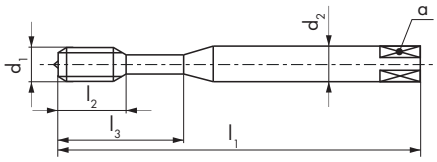
PM

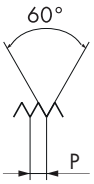


ZX

ZX320-4		AMPCO® 21 22
ZX420-4		AMPCO® 21 22
ZX320-4		AMPCO® 18 25 26
ZX420-4		AMPCO® 18 25 26

ZX320-4	ZX420-4
NEW	NEW
< 1.5 x D	< 1.5 x D
B 4 x P	B 4 x P
6HX	6HX





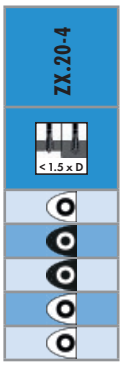
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.7	63	14	21	4.5	3.4	3	* 3.3	143599
5	0.8	70	15	25	6	4.9	3	* 4.2	145458
6	1	80	17	30	6	4.9	3	* 5	110232
8	1.25	90	20	35	8	6.2	3	* 6.8	110233
10	1.5	100	22	39	10	8	3	* 8.5	124905

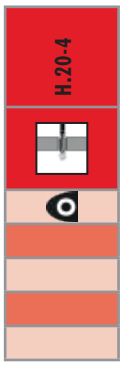
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.75	110	24	9	7	3	* 10.2	110208
16	2	110	30	12	9	3	* 14	110207

*Ampco® 25 / Ampco® 26 + 0.2 mm

TABELLE D'UTILISATION POUR ALLIAGES D'ALU-BRONZE
TABELLA D'IMPIEGO PER LEGHE DI ALLUMINIO-BRONZO

Groupes de matières Gruppi di materiali	*Dureté* Durezza (HB)	*Vitesse de coupe* Velocità di taglio Vc (m/min) Guide Line
AMPCO® 18	< 290	6 - 10
AMPCO® 21	> 280 - < 330	2 - 3
AMPCO® 22	> 280 - < 330	2 - 3
AMPCO® 25	< 420	2 - 3
AMPCO® 26	< 420	2 - 3



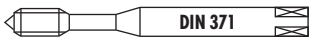


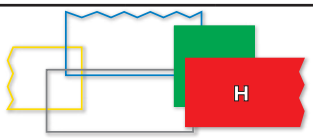
Optimale avec huile de coupe
Ottimale con olio da taglio

Fonctionnelle avec huile de coupe
Funzionale con olio da taglio

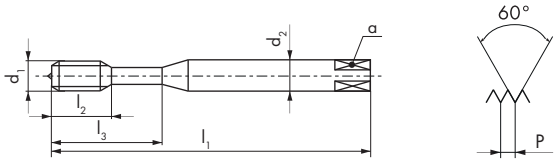
M ISO DIN 13

PM





	H320-4	H320TC-4
	15 16 62 64 82	15 16 24 31 82 83 92 93
		TiCN



	H320-4	H320TC-4
	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H

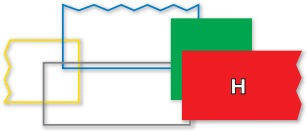
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
2	0.4	45	8		2.8	2.1	2	1.6	101206	151836
2.2	0.45	45	9		2.8	2.1	2	1.75	111801	
2.5	0.45	50	10		2.8	2.1	3	2.05	101207	148603
3	0.5	56	12	18	3.5	2.7	3	2.5	101209	111836
3.5	0.6	56	13	20	4	3	3	2.9	101210	
4	0.7	63	14	21	4.5	3.4	3	3.3	101211	111502
4.5	0.75	70	15	25	6	4.9	3	3.75	101212	
5	0.8	70	15	25	6	4.9	3	4.2	101213	111458
6	1	80	17	30	6	4.9	3	5	101215	111456
8	1.25	90	20	35	8	6.2	3	6.8	101218	111453
10	1.5	100	22	39	10	8	3	8.5	101205	110911

M ISO DIN 13

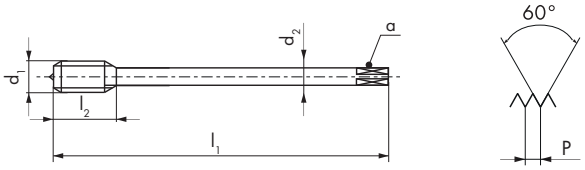
≤ Ø 25.4 > Ø 25.4

PM HSSE

DIN 376



	H420-4	H420TC-4
	15 16 62 64 82	15 16 24 31 82 83 92 93
		TiCN

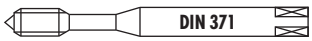


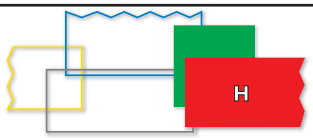
	H420-4	H420TC-4
	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
12	1.75	110	24	9	7	4	10.2	101275	110912
14	2	110	28	11	9	4	12	101277	145461
16	2	110	30	12	9	4	14	101279	111612
18	2.5	125	33	14	11	4	15.5	101281	
20	2.5	140	36	16	12	4	17.5	101284	144606
22	2.5	140	36	18	14.5	4	19.5	157752	
24	3	160	39	18	14.5	4	21	101286	143588
27	3	160	42	20	16	4	24	101287	
30	3.5	180	45	22	18	4	26.5	101288	
36	4	200	51	28	22	4	32	101289	

M ISO DIN 13

PM

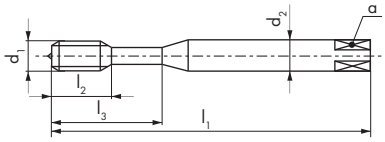


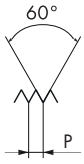


	H350-3	H350-3	H350TC-3
	< 1.5 x D	< 1.5 x D	< 1.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 3 6G	ISO 2 6H

H350-3 R25 — 15 16 62 64 82

H350TC-3 R25 TiCN — 15 16 24 31 82 83 92 93





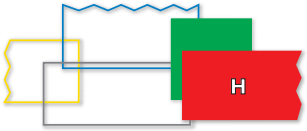
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID
2	0.4	45	7		2.8	2.1	2	1.6	• 101238			• 146451
2.5	0.45	50	9		2.8	2.1	3	2.05	• 101239			• 144957
3	0.5	56	5.5	18	3.5	2.7	3	2.5	• 101242	• 101241	0.020	• 111835
3.5	0.6	56	6.5	20	4	3	3	2.9	• 101243			
4	0.7	63	7.5	21	4.5	3.4	3	3.3	• 101245	• 101244	0.022	• 111607
4.5	0.75	70	9	25	6	4.9	3	3.75	• 101246			
5	0.8	70	9	25	6	4.9	3	4.2	• 101248	• 101247	0.024	• 111610
6	1	80	11	30	6	4.9	3	5	• 101251	• 101250	0.026	• 111500
8	1.25	90	12.5	35	8	6.2	3	6.8	• 101255	• 101254	0.028	• 110963
10	1.5	100	14	39	10	8	3	8.5	• 101237	• 101236	0.032	• 111454

M ISO DIN 13

≤ Ø 25.4 > Ø 25.4

PM | HSSE

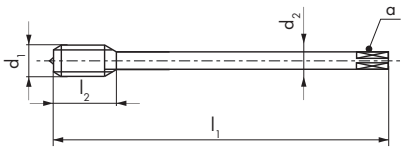
DIN 376

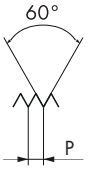


	H450-3	H450-3	H450TC-3
	< 1.5 x D	< 1.5 x D	< 1.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 3 6G	ISO 2 6H

H450-3 R25 — 15 16 62 64 82

H450TC-3 R25 TiCN — 15 16 24 31 82 83 92 93

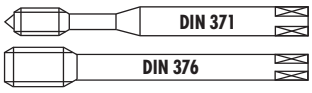


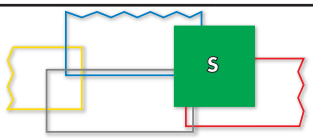


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID
12	1.75	110	14	9	7	4	10.2	● 101305	✶ 101304	0.034	● 111501
14	2	110	14	11	9	4	12	● 101307			● 146151
16	2	110	18	12	9	4	14	● 101309			● 111605
18	2.5	125	21	14	11	4	15.5	● 101311			
20	2.5	140	24	16	12	4	17.5	● 101313			● 144986
22	2.5	140	24	18	14.5	4	19.5	● 101315			
24	3	160	27	18	14.5	4	21	● 101318			● 144987
27	3	160	27	20	16	4	24	● 101320			
30	3.5	180	30	22	18	4	26.5	● 101323			
36	4	200	36	28	22	4	32	● 101324			
42	4.5	200	40	32	24	4	37.5	● 101325			

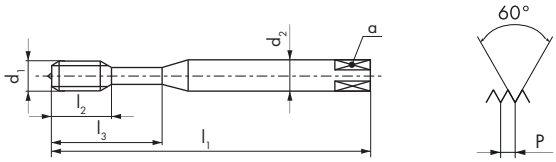
M ISO DIN 13

PM





S320VS-4	VS	13	15	16	22	23	24	52	S320VS-4	S320VS-4	S420VS-4
S420VS-4	VS	13	15	16	22	23	24	52			



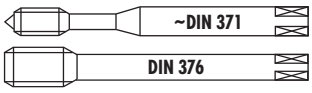
B 4xP	B 4xP	B 4xP
6HX	4HX	6HX

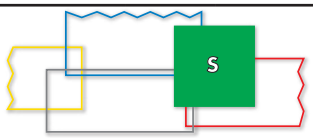
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
3	0.5	56	12	18	3.5	2.7	3	2.5	● 111596	✶ 165318	
4	0.7	63	14	21	4.5	3.4	3	3.3	● 111597	✶ 165319	
5	0.8	70	15	25	6	4.9	3	4.2	● 111598	✶ 165320	
6	1	80	17	30	6	4.9	3	5	● 111599	✶ 165321	
8	1.25	90	20	35	8	6.2	3	△ 6.8	● 111600	✶ 165322	
10	1.5	100	22	39	10	8	3	8.5	● 111601	✶ 165323	
12	1.75	110	24		9	7	4	10.2			● 111602
16	2	110	30		12	9	4	14			● 111603
20	2.5	140	36		16	12	4	17.5			● 111604

△ 4HX = 6.7

M ISO DIN 13

PM





	S360VS-3	S460VS-3	SA390-3	SA390-3

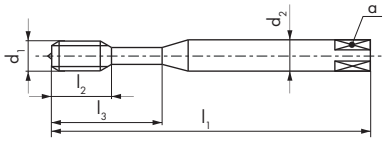
S360VS-3 — R35 — VS — 13 15 16 22 23 24 52

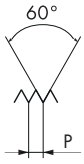
S460VS-3 — R35 — VS — 13 15 16 22 23 24 52

aero

SA390-3 — R10 — 16 53

	S360VS-3	S460VS-3	SA390-3	SA390-3
	< 2 x D	< 2 x D	< 1.5 x D	< 1.5 x D
			< 1.5 x D	< 1.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	4HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 111513	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 111514	
5	0.8	70	9	25	6	4.9	3	4.2	● 111515	
6	1	80	11	30	6	4.9	3	5	● 111516	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 111517	
10	1.5	100	14	39	10	8	3	8.5	● 111518	
12	1.75	110	14		9	7	4	10.2		● 111519
14	2	110	14		11	9	4	12		✶ 148171
16	2	110	18		12	9	4	14		● 111520
20	2.5	140	24		16	12	4	17.5		● 111521
24	3	160	27		18	14.5	4	21		● 111606

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
4	0.7	63	14	4.5	3.4	3	3.3	● 149673	● 149674
5	0.8	70	15	6	4.9	3	4.2	● 149693	● 149694
6	1	80	20	6	4.9	3	5	● 149707	● 149708
8	1.25	90	25	8	6.2	3	△ 6.8	● 149736	● 149737
10	1.5	100	30	10	8	3	8.5	✶ 149754	● 149755
12	1.75	110	35	12	9	4	10.2		● 149775
14	2	110	40	16	12	4	12		✶ 149792

△ 4HX = 6.7

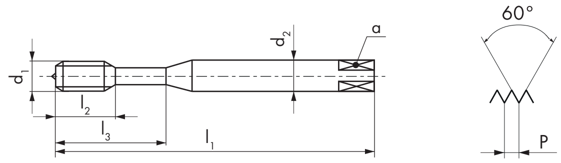
PM

~DIN 371

aero

SA320-4			15 16 52 64
SA350-3	R15		15 16 52 64
TL320VS-4	VS		41 42
TL351VS-3	R15	VS	41 42

SA320-4	SA350-3	TL320VS-4	TL351VS-3
	< 1.5 x D		< 2 x D / < 2 x D
B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			4HX SA320-4 ID	4HX SA350-3 ID	4HX TL320VS-4 ID	4HX TL351VS-3 ID
3	0.5	56	12		3.5	2.7	3	2.5	• 147975	• 147987	• 152006	• 152012
4	0.7	63	14		4.5	3.4	3	3.3	• 147976	• 147988	• 152007	• 152013
5	0.8	70	15		6	4.9	3	4.2	• 147977	• 147989	• 152008	• 152014
6	1	80	15	23	6	4.9	3	5	• 147978	• 147990	• 152009	• 152015
8	1.25	90	18	29	8	6.2	3	6.7	• 147979	• 147991	• 152010	• 152016
10	1.5	100	20	33	10	8	3	8.5	• 147980	• 147992	• 152011	• 152017

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			6HX SA320-4 ID	6HX SA350-3 ID	6HX TL320VS-4 ID	6HX TL351VS-3 ID
3	0.5	56	12		3.5	2.7	3	2.5	• 147981	• 147993	• 148001	• 148000
4	0.7	63	14		4.5	3.4	3	3.3	• 147982	• 147994	• 148003	• 148002
5	0.8	70	15		6	4.9	3	4.2	• 147983	• 147995	• 148007	• 148006
6	1	80	15	23	6	4.9	3	5	• 147984	• 147996	• 148011	• 148010
8	1.25	90	18	29	8	6.2	3	6.8	• 147985	• 147997	• 148020	• 148018
10	1.5	100	20	33	10	8	3	8.5	• 147986	• 147998	• 148027	• 148025

M ISO DIN 13

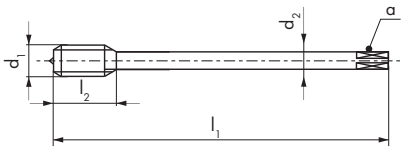
PM

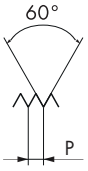
aero

SA420-4		15 16 52 64	
SA450-3	R15	15 16 52 64	
TL420VS-4	VS	41 42	
TL451VS-3	R15	VS 41 42	

SA420-4	SA450-3	TL420VS-4	TL451VS-3

	< 1.5 x D		< 2 x D
			< 2 x D





B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
4HX	4HX	4HX	4HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	24	9	7	4	10.2	* 148096	* 152189	* 152192	* 152195
14	2	110	28	11	9	4	12	* 152187			
16	2	110	30	12	9	4	14	* 152188			* 152197

6HX	6HX	6HX	6HX

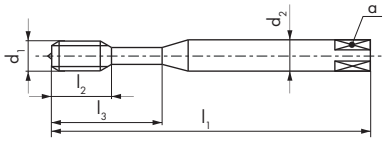
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	24	9	7	4	10.2	* 152198	* 152201	* 152204	• 148028
14	2	110	28	11	9	4	12	* 152199			• 152207
16	2	110	30	12	9	4	14		* 152203		• 148029

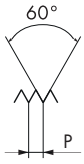
M ISO DIN 13

PM — DIN 371 | HSSE — DC

	GG350NV-3	GG350TC-3	GG353TC-3	GG550NV-3
	R15	R15	R15	R15
	NV	TiCN	TiCN	NV
	31	31 / 62 / 74	31 / 62 / 74	31

	GG350NV-3	GG350TC-3	GG353TC-3	GG550NV-3
	< 2.5 x D	< 2.5 x D	< 3 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	56	12	18	3.5	2.7	3	2.5	101172	101178
4	0.7	63	14	21	4.5	3.4	3	3.3	101173	101179
5	0.8	70	15	25	6	4.9	3	4.2	101174	101180
6	1	80	17	30	6	4.9	3	5	101175	101181
8	1.25	90	20	35	8	6.2	4	6.8	101076	101182
10	1.5	100	22	39	10	8	4	8.5	101171	101177

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
5	0.8	70	15	25	6	4.9	3	4.2	144947
6	1	80	17	30	6	4.9	3	5	147710
8	1.25	90	20	35	8	6.2	4	6.8	147711
10	1.5	100	22	39	10	8	4	8.5	146708

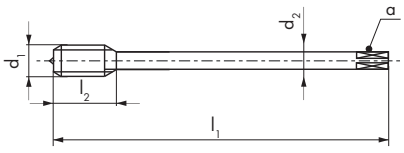
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.7	112	14	21	4.5	3.4	3	3.3	101196
5	0.8	125	15	25	6	4.9	3	4.2	101197
6	1	125	17	30	6	4.9	3	5	101198

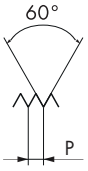
M ISO DIN 13

PM — DIN 376 — HSSE — DC

GG450NV-3	R15	NV	31			
GG450TC-3	R15	TiCN	31	62	74	
GG453TC-3	R15		TiCN	31	62	74
GG650NV-3	R15	NV	31			

GG450NV-3	GG450TC-3	GG453TC-3	GG650NV-3
< 2.5 x D	< 2.5 x D	< 3 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20	6	4.9	4	6.8	● 101189	● 101194
10	1.5	100	22	7	5.5	4	8.5	● 101183	● 101195
12	1.75	110	24	9	7	4	10.2	● 101184	● 101190
14	2	110	28	11	9	4	12	● 101185	● 101191
16	2	110	30	12	9	4	14	● 101186	● 101192
20	2.5	140	36	16	12	4	17.5	● 101187	● 101193
24	3	160	39	18	14.5	4	21	● 101188	

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
12	1.75	110	24	* 10	* 8	4	10.2	● 146707
16	2	110	30	12	9	4	14	● 162796

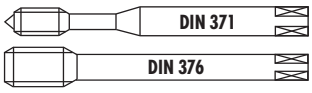
* Norme DC / * DC Norm/ * Norma DC

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
8	1.25	140	20	6	4.9	4	6.8	● 101203
10	1.5	160	22	7	5.5	4	8.5	● 101199
12	1.75	180	24	9	7	4	10.2	● 101200
16	2	200	30	12	9	4	14	● 101201
20	2.5	224	36	16	12	4	17.5	● 101202

M ISO DIN 13

CLASSIC | SYNCHRO

PM



K

	K313TC-3	K413TC-3		
	< 3 x D	< 3 x D		
	C 2.5 x P	C 2.5 x P		
	6HX	6HX		

K313TC-3

TiCN

> 20 bar

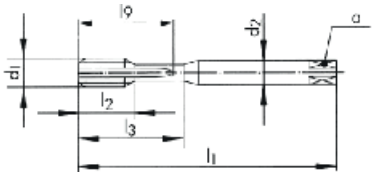
11 12 13 14 15 16 31 32 62 63 64 74 83

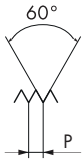
K413TC-3

TiCN

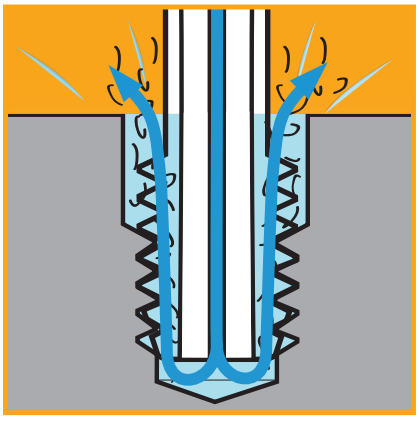
> 20 bar

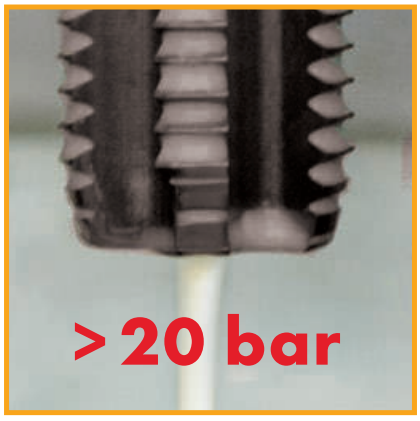
11 12 13 14 15 16 31 32 62 63 64 74 83





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	l_9 mm	d_2 mm	a mm			ID	ID
5	0.8	70	15	25	23	6	4.9	3	4.2	• 175961	
6	1	80	17	30	28	6	4.9	3	5	• 170766	
8	1.25	90	20	35	33	8	6.2	3	6.8	• 170769	
10	1.5	100	22	39	37	10	8	3	8.5	• 170772	
12	1.75	110	24		42	9	7	3	10.2		• 165838
14	2	110	28		49	11	9	3	12		• 170778
16	2	110	30		56	12	9	4	14		• 170783
20	2.5	140	36		70	16	12	5	17.5		• 170786
24	3	160	39		84	18	14.5	5	21		• 170775





M ISO DIN 13

CLASSIC | SYNCHRO

≤ Ø 25.4 > Ø 25.4

PM | HSSE

DC

K

K613TC-3	K613VS-3		

K613TC-3

TiCN

> 20 bar

11 12 13 14 15 16 31 32 62 63 64 74 83

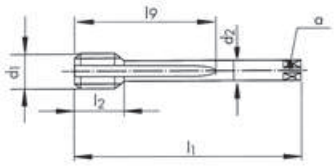
K613VS-3

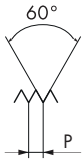
VS

> 20 bar

11 12 13 14 15 16 31 32 62 63 64 74 83

< 4 x D | < 4 x D





C 2.5 x P | C 2.5 x P

6HX | 6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_9 mm	d_2 mm	a mm			ID	ID
6	1	110	17	30	4.5	3.4	3	5	• 170646	• 172699
8	1.25	110	20	40	6	4.9	3	6.8	• 170649	• 172700
10	1.5	125	22	50	7	5.5	3	8.5	• 170652	• 172701
12	1.75	140	24	60	9	7	3	10.2	• 167982	• 172702
14	2	140	28	70	11	9	4	12	• 167983	
16	2	160	30	80	12	9	4	14	• 167984	• 170573
20	2.5	180	36	100	16	12	5	17.5	• 167985	• 170576
24	3	200	39	120	18	14.5	5	21	• 167986	• 172704
27	3	225	42	135	20	16	5	24	• 167987	
30	3.5	250	45	150	22	18	5	26.5	• 165542	
33	3.5	280	48	165	25	20	5	29.5	• 167988	
36	4	300	51	180	28	22	6	32	• 167989	
39	4	300	55	195	32	24	6	35	• 167990	
42	4.5	355	55	210	32	24	6	37.5	• 167999	

Vc (m/min) Guide Line

	M5 - M10	M12 - M16	M20 - M30	M33 - M42
11 12 13 32 64	30 - 40	20 - 30	20 - 30	20 - 30
31 62 63 74 83	30 - 40	30 - 40	30 - 40	30 - 40
14	20 - 30	15 - 25	15 - 25	15 - 25
15	15 - 20	10 - 15	8 - 12	5 - 8
16	8 - 12	5 - 8	5 - 8	5 - 8

M ISO DIN 13

CLASSIC | SYNCHRO

PM

DIN 371

DIN 376

QTAP

Q320VS-4 VS

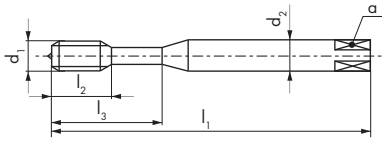
Q420VS-4 VS

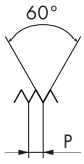
Q323VS-4 VS

Q423VS-4 VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q320VS-4	Q420VS-4	Q323VS-4	Q423VS-4
NEW	NEW	NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Q320VS-4 ID	Q420VS-4 ID	Q323VS-4 ID	Q423VS-4 ID
3	0.5	56	12	18	3.5	2.7	3	2.5	• 195494		• 195505	
4	0.7	63	14	21	4.5	3.4	3	3.3	• 195495		• 195506	
5	0.8	70	15	25	6	4.9	3	4.2	• 195496		• 195507	
6	1	80	17	30	6	4.9	3	5	• 195497		• 195508	
8	1.25	90	20	35	8	6.2	3	6.8	• 195498		• 195509	
10	1.5	100	22	39	10	8	3	8.5	• 195499		• 195510	
12	1.75	110	24		9	7	3	10.2		• 195500		• 195511
14	2	110	28		11	9	3	12		• 195501		• 195512
16	2	110	30		12	9	3	14		• 195502		• 195513
20	2.5	140	36		16	12	4	17.5		• 195503		• 195514
24	3	160	39		18	14.5	4	21		• 195504		• 195515

M ISO DIN 13

CLASSIC | SYNCHRO

≤ Ø 16 > Ø 16

PM | HSSE

DIN 371

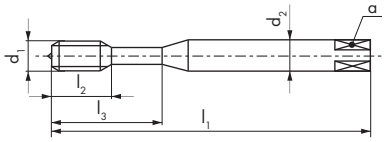
DIN 376

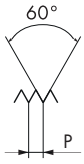
QTAP

Q360VS-3	R40	VS	
Q460VS-3	R40	VS	
Q363VS-3	R40		VS
Q463VS-3	R40		VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q360VS-3	Q460VS-3	Q363VS-3	Q463VS-3
NEW	NEW	NEW	NEW
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D





C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	5.5	18	3.5	2.7	3	2.5	195516		195527	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	195517		195528	
5	0.8	70	9	25	6	4.9	3	4.2	195518		195529	
6	1	80	11	30	6	4.9	3	5	195519		195530	
8	1.25	90	12.5	35	8	6.2	3	6.8	195520		195531	
10	1.5	100	14	39	10	8	3	8.5	195521		195532	
12	1.75	110	14		9	7	3	10.2		195522		195533
14	2	110	14		11	9	3	12		195523		195534
16	2	110	18		12	9	3	14		195524		195535
20	2.5	140	24		16	12	3	17.5		195525		195536
24	3	160	27		18	14.5	4	21		195526		195537

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

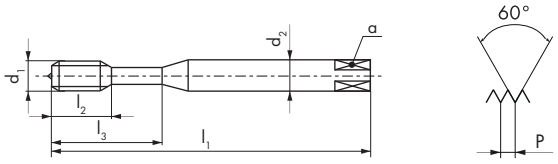
PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

RTS320VS-4	VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94	RTS320VS-4	RTS420VS-4
RTS420VS-4	VS		RTS323VS-4	RTS423VS-4
RTS323VS-4	VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94		
RTS423VS-4	VS			



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			RTS320VS-4 ID	RTS420VS-4 ID	RTS323VS-4 ID	RTS423VS-4 ID
* 2	0.4	45	8		2.8(h9)	2.1	2	1.6	● 143532			
2.5	0.45	50	10		2.8(h9)	2.1	3	2.05	● 143534			
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 150601			
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	● 150603			
5	0.8	70	9	25	6	4.9	3	4.2	● 150605		● 150606	
6	1	80	11	30	6	4.9	3	5	● 150610		● 150611	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 150620		● 150621	
10	1.5	100	14	39	10	8	3	8.5	● 150635		● 150636	
12	1.75	110	14		* 10	* 8	3	10.2		● 151863		● 151864
14	2	110	14		* 12	* 9	3	12		● 162535		
16	2	110	18		12	9	3	14		● 150670		● 150671
20	2.5	140	24		16	12	4	17.5		● 150679		
24	3	160	27		16	12	4	21		● 162787		

B 4 x P — 6HX

* Norme DC / * DC Norm/ * Norma DC

* RTS320VS-3 2.5 x P

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

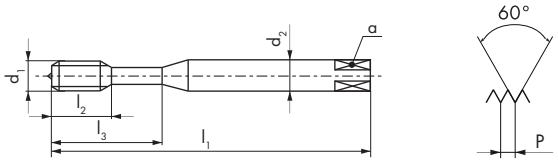
M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM — ~DIN 371 (d_2 h6) / ~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

	R40		VS	
RTS362VS-3	R40		VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94
RTS462VS-3	R40		VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94
RTS365VS-3	R40		VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94
RTS465VS-3	R40		VS	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94



RTS362VS-3	RTS462VS-3	RTS365VS-3	RTS465VS-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			RTS362VS-3 ID	RTS462VS-3 ID	RTS365VS-3 ID	RTS465VS-3 ID
* 2	0.4	45	7		2.8(h9)	2.1	3	1.6	• 143536			
* 2.5	0.45	50	9		2.8(h9)	2.1	3	2.05	• 143538			
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	• 150602		• 160477	
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	• 150604		• 160478	
5	0.8	70	9	25	6	4.9	3	4.2	• 150607		• 150608	
6	1	80	11	30	6	4.9	3	5	• 150612		• 150613	
8	1.25	90	12.5	35	8	6.2	3	6.8	• 150622		• 150623	
10	1.5	100	14	39	10	8	3	8.5	• 150637		• 150638	
12	1.75	110	14		* 10	* 8	3	10.2		• 151865		• 151866
14	2	110	14		* 12	* 9	3	12		• 151870		• 150663
16	2	110	18		12	9	3	14		• 150672		• 150673
20	2.5	140	24		16	12	4	17.5		• 150681		• 150682
24	3	160	27		16	12	4	21		• 151873		• 150690

* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

* RTS360VS-3

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

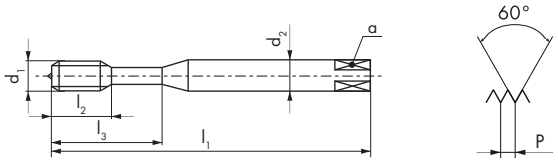
RTS362VS-3 — R40 — VS

RTS462VS-3 — R40 — VS

11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94

RTS362VS-3	RTS462VS-3	RTS362VS-3	RTS462VS-3

< 2.5 x D | < 2.5 x D | < 2.5 x D | < 2.5 x D



C 2.5 x P | C 2.5 x P | C 2.5 x P | C 2.5 x P

6GX | 6GX | 7GX | 7GX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		6G	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID	6H + mm
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 162797	0.020			● 184689	0.036		
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.35	● 162798	0.022			● 184691	0.041		
5	0.8	70	9	25	6	4.9	3	4.25	● 162799	0.024			● 184693	0.044		
6	1	80	11	30	6	4.9	3	5	● 162800	0.026			● 184695	0.050		
8	1.25	90	12.5	35	8	6.2	3	6.8	● 162801	0.028			● 184697	0.052		
10	1.5	100	14	39	10	8	3	8.5	● 162802	0.032			● 184699	0.060		
12	1.75	110	14		* 10	* 8	3	10.3			● 163253	0.034			● 184701	0.066
16	2	110	18		12	9	3	14			● 172037	0.038			● 184703	0.072

* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

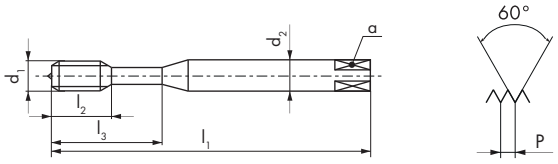
PM

~DIN 371 (d_2 h6)

RTS
Rigid Tapping Synchro

	RTS362VS-5	RTS365VS-5
	R40	R40
	VS	VS
	11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94	

	RTS362VS-5	RTS365VS-5
	< 2.5 x D	< 2.5 x D
	E 1.5 x P	E 1.5 x P
	6HX	6HX



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	157648	
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	157650	
5	0.8	70	9	25	6	4.9	3	4.2	157652	162791
6	1	80	11	30	6	4.9	3	5	158074	151803
8	1.25	90	12.5	35	8	6.2	3	6.8	158076	157821
10	1.5	100	14	39	10	8	3	8.5	153286	157823

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

M ISO DIN 13

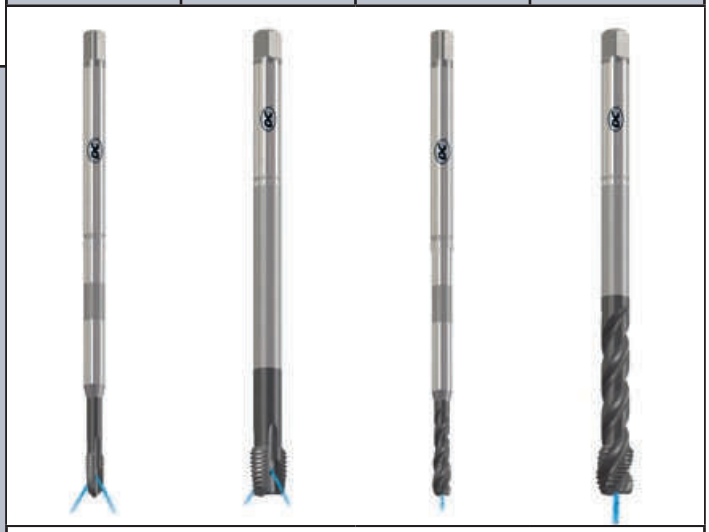
SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM — DC ~DIN 371 (d_2 h6) / DC ~DIN 376 (d_2 h6)

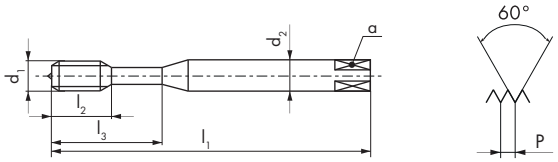
RTS
Rigid Tapping Synchro

RTS523VS-4	VS	11	12	13	14	15	21	31	32	51	61	63	64	72	73	74	81	82	83	91	92	94
RTS623VS-4	VS	11	12	13	14	15	21	31	32	51	61	63	64	72	73	74	81	82	83	91	92	94
RTS565VS-3	R40	VS	11	12	13	14	15	21	31	32	51	61	63	64	72	73	74	81	82	83	91	92	94
RTS665VS-3	R40	VS	11	12	13	14	15	21	31	32	51	61	63	64	72	73	74	81	82	83	91	92	94

RTS523VS-4	RTS623VS-4	RTS565VS-3	RTS665VS-3



		< 2.5 x D	< 2.5 x D
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
5	0.8	125	9	25	6	4.9	3	4.2	● 161038	
6	1	125	11	30	6	4.9	3	5	● 161041	
8	1.25	140	12.5	35	8	6.2	3	6.8	● 161044	
10	1.5	160	14	39	10	8	3	8.5	● 161047	
12	1.75	180	14		* 10	* 8	3	10.2		● 161050
16	2	200	18		12	9	3	14		● 161053

* Norme DC / * DC Norm/ * Norma DC

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
6	1	125	11	30	6	4.9	3	5	● 150614	
8	1.25	140	12.5	35	8	6.2	3	6.8	● 150624	
10	1.5	160	14	39	10	8	3	8.5	● 150639	
12	1.75	180	14		* 10	* 8	3	10.2		● 151867
16	2	200	18		12	9	3	14		● 150674

* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

TARAUDS À REFOULER

Dans ce catalogue, vous trouverez le programme des tarauds à refouler FS - FPS - FAS dans un chapitre séparé qui commence à la page 244.

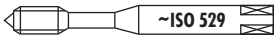
MASCHI A RULLARE

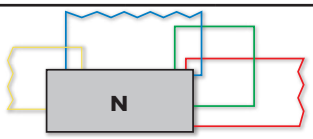
In questo catalogo troverete il programma di maschi a rullare FS - FPS - FAS in un capitolo separato a partire da pagina 244.

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSS



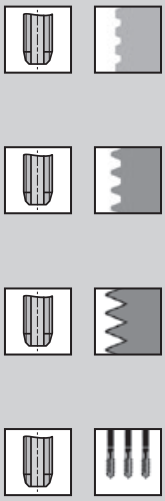


N1110-1

N1110-2

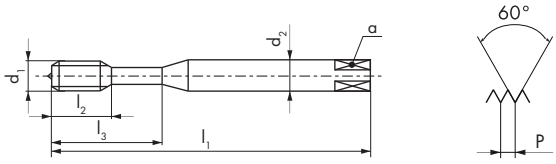
N1110-3

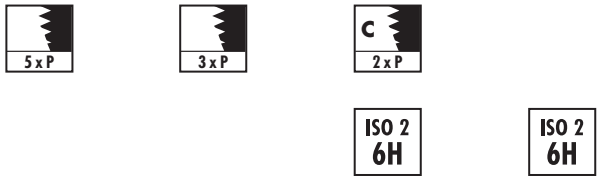
N1110-S



31 62 73 74 91

N1110-1	N1110-2	N1110-3	N1110-S





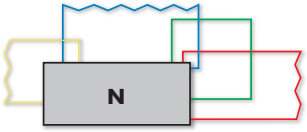
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
1	0.25	40	5.5		2.5	2.1	3	0.75	• 102744	• 102844	• 102917	• 111015
1.2	0.25	40	5.5		2.5	2.1	3	0.95	• 102746	• 102846	• 102919	• 111017
1.4	0.3	40	7		2.5	2.1	3	1.1	• 102747	• 102847	• 102920	• 111018
1.6	0.35	40	8		2.5	2.1	3	1.25	• 102749	• 102849	• 102922	• 111020
1.7	0.35	40	8		2.5	2.1	3	1.35	• 102750	• 102850	• 102923	• 111021
1.8	0.35	40	8		2.5	2.1	3	1.45	• 102751	• 102851	• 102924	• 111022
2	0.4	45	8		2.8	2.1	3	1.6	• 102759	• 102854	• 102934	• 111028
2.2	0.45	45	9.5		2.8	2.1	3	1.75	• 102761	• 102856	• 102937	• 111030
2.5	0.45	45	9.5		2.8	2.1	3	2.05	• 102763	• 102858	• 102941	• 111032
2.6	0.45	45	9.5		2.8	2.1	3	2.15	• 102765	• 102860	• 102944	• 111034
3	0.5	48	11	18	3.15	2.5	3	2.5	• 102766	• 102861	• 102947	• 111036
3.5	0.6	50	13	20	3.55	2.8	3	2.9	• 102769	• 102864	• 102950	• 111038
4	0.7	53	13	21	4	3.15	3	3.3	• 102771	• 102866	• 102956	• 111042
4.5	0.75	53	13	21	4.5	3.55	3	3.75	* 102775	* 102869	* 102959	* 111044
5	0.8	58	16	25	5	4	3	4.2	• 102776	• 102870	• 102965	• 111047
6	1	66	19	30	6.3	5	3	5	• 102781	• 102874	• 102973	• 111053
7	1	66	19	30	7.1	5.6	3	6	* 102786	* 102876	* 102978	* 111055
8	1.25	72	22	35	8	6.3	3	6.8	• 102788	• 102878	• 102986	• 111059
9	1.25	72	22	36	9	7.1	3	7.8	* 102792	* 102880	* 102991	* 111061
10	1.5	80	24	39	10	8	3	8.5	• 102752	• 102852	• 102931	• 111026

≤M1.5 ISO 1 4H

M ISO DIN 13

HSS

ISO 529



N1210-1

N1210-2

N1210-3

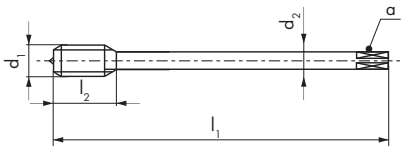
N1210-S

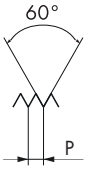
31 62 73 74 91

N1210-1	N1210-2	N1210-3	N1210-S

< 1.5 x D

< 2.5 x D





5 x P

3 x P

C 2 x P

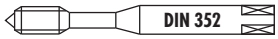
ISO 2 6H

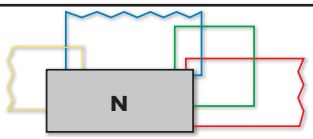
ISO 2 6H

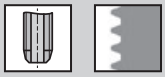
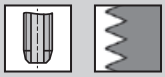
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
11	1.5	85	22	8	6.3	3	9.5	✶ 103302	✶ 103427	● 103489	✶ 111168
12	1.75	89	24	9	7.1	3	10.2	● 103303	● 103428	● 103499	● 111173
14	2	95	24	11.2	9	3	12	● 103310	● 103430	● 103510	● 111179
16	2	102	32	12.5	10	3	14	● 103319	● 103432	● 103522	● 111185
18	2.5	112	30	14	11.2	3	15.5	● 103324	● 103434	● 103534	● 111191
20	2.5	112	37	14	11.2	3	17.5	● 103330	● 103436	● 103543	● 111196
22	2.5	115	32	16	12.5	3	19.5	✶ 103337	✶ 103438	✶ 103550	✶ 125567
24	3	130	45	18	14	4	21	● 103341	● 103440	● 103557	● 111204
27	3	135	45	20	16	4	24	✶ 103347	✶ 103442	✶ 103568	✶ 111211
30	3.5	138	48	20	16	4	26.5	● 103353	● 103444	● 103579	● 111216
33	3.5	151	51	22.4	18	4	29.5	✶ 103357	✶ 103446	✶ 103581	✶ 111218
36	4	162	57	25	20	4	32	✶ 103359	✶ 103448	✶ 103583	✶ 111220

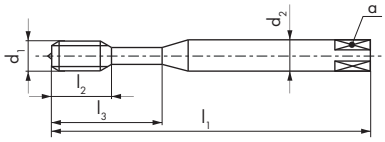
M ISO DIN 13

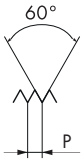
HSSE





	NP110-1	NP110-2	NP110-3	NP110-S
			 31 62 73 74 91	
	NEW	NEW	NEW	NEW
			< 1.5 x D	< 2.5 x D
	3 x P	3 x P	C 3 x P ISO 2 6H	ISO 2 6H



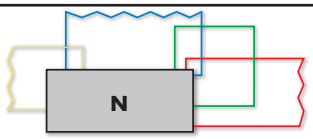


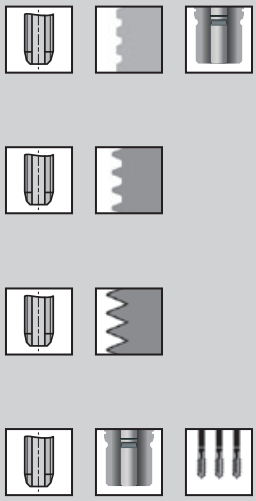
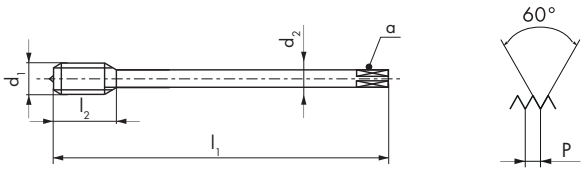
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	40	11	18	3.5	2.7	3	2.5	174678	174687	174696	173676
4	0.7	45	13	21	4.5	3.4	3	3.3	174679	174688	174697	173644
5	0.8	50	16	24	6	4.9	3	4.2	174680	174689	174698	173677
6	1	56	19	27	6	4.9	3	5	174681	174690	174699	173394

M ISO DIN 13

HSSE

DIN 352

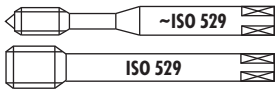


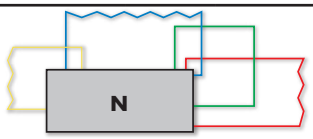
	NP210-1	NP210-2	NP210-3	NP210-S
				
	NEW	NEW	NEW	NEW
			< 1.5 x D	< 2.5 x D
				
	3 x P	3 x P	C 3 x P	
			ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
8	1.25	63	22	6	4.9	3	6.8	174682	174691	174700	173645
10	1.5	70	24	7	5.5	3	8.5	174683	174692	174701	173646
12	1.75	75	28	9	7	3	10.2	174684	174693	174702	173647
14	2	80	30	11	9	3	12	174685	174694	174703	173648
16	2	80	32	12	9	3	14	180705	180706	180707	174677

M ISO DIN 13

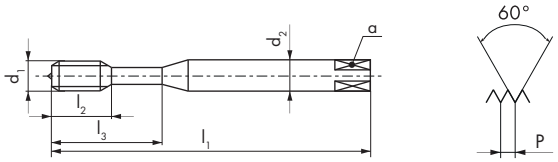
HSS





N1120-4		62 63 64 72 73 74 81 91
N1220-4		62 63 64 72 73 74 81 91
N1160-3	R40	63 72 73 74 81 91
N1260-3	R40	63 72 73 74 81 91

N1120-4	N1220-4	N1160-3	N1260-3
		< 2.5 x D	< 2.5 x D
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	48	11	18	3.15	2.5	3	2.5	● 103068	
4	0.7	53	13	21	4	3.15	3	3.3	● 103075	
5	0.8	58	16	25	5	4	3	4.2	● 103082	
6	1	66	19	30	6.3	5	3	5	● 103090	
8	1.25	72	22	35	8	6.3	3	6.8	● 103102	
10	1.5	80	24	39	10	8	3	8.5	● 103060	
12	1.75	89	24		9	7.1	3	10.2		● 103670
14	2	95	24		11.2	9	3	12		● 103680
16	2	102	32		12.5	10	3	14		● 103690

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	48	5.5	18	3.15	2.5	3	2.5	* 103177	
4	0.7	53	7.5	21	4	3.15	3	3.3	* 103178	
5	0.8	58	9	25	5	4	3	4.2	* 103179	
6	1	66	11	30	6.3	5	3	5	* 103180	
8	1.25	72	12.5	35	8	6.3	3	6.8	* 103181	
10	1.5	80	14	39	10	8	3	8.5	* 103174	
12	1.75	89	14		9	7.1	3	10.2		* 103781
16	2	102	18		12.5	10	3	14		* 103782