

**ВИННСЛ** 

**V I N N S L** 



TiN

**TiN** – напыление из нитрида титана

Увеличивает термостойкость инструмента до 600° и микротвердость до 20-25 ГПа. Твердость поверхностного слоя увеличивается на 2300 HV. Напыление TiN оптимально подходит для метчиков общего назначения, улучшает трение и повышает износостойкость инструмента.

TiCN

**TiCN** – карбонитрид титана

Имеет твердость около 3000 HV, термоустойчивость до 400 °С. Поэтому необходимо качественное охлаждение при нарезании резьбы. Инструмент с напылением TiCN обычно используется для обработки отверстий в заготовках из труднообрабатываемой стали или в ступенчатых отверстиях.

VAP

**Vap** – отпуск в атмосфере пара (воронение)

Поверхность инструмента покрывается слоем оксида  $Fe_3O_4$ , что способствует снижению трения между метчиком и отверстием, улучшает отход стружки, а также позволяет предотвратить появление холодной сварки (фиксации материала на режущей кромке). Также благодаря вапоризации немного снижается твердость поверхности и улучшаются свойства скольжения инструмента.

# Метчики промышленного качества VINNSLA

HSS-E

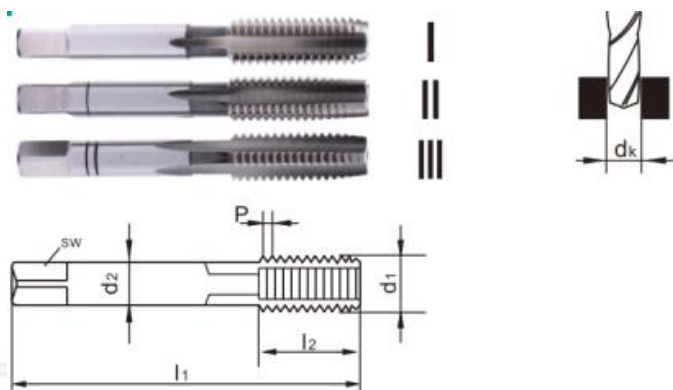
ISO  
2/6H



DIN  
352

Bright

VAP



Артикул		d1	P	d2	SW	dk	l1	l2
HSS-E	VAP							
3268204	3668204	M2	0.40	2.80	2.10	1.60	36.00	8.00
326822405	366822405	M2.2	0.45	2.80	2.10	1.75	36.00	9.00
32682304	36682304	M2.3	0.40	2.80	2.10	1.90	36.00	9.00
326825045	366825045	M2.5	0.45	2.80	2.10	2.05	40.00	9.00
326826045	366826045	M2.6	0.45	2.80	2.10	2.15	40.00	9.00
32683050	36683050	M3	0.5	3.50	2.70	2.50	40.00	10.00
326835060	366835060	M3.5	0.6	4.00	3.00	2.90	45.00	12.00
32684070	36684070	M4	0.7	4.50	3.40	3.30	45.00	12.00
326845075	366845075	M4.5	0.75	6.00	4.90	3.70	50.00	14.00
32685080	36685080	M5	0.8	6.00	4.90	4.20	50.00	14.00
32686100	36686100	M6	1.00	6.00	4.90	5.00	56.00	16.00
32688125	36688125	M8	1.25	6.00	4.90	6.80	63.00	17.00
326810175	366810175	M10	1.50	7.00	5.50	8.50	70.00	20.00
326812175	366812175	M12	1.75	9.00	7.00	10.20	75.00	24.00
326814200	366814200	M14	2.00	11.00	9.00	12.00	80.00	26.00
326816200	366816200	M16	2.00	12.00	9.00	14.00	80.00	26.00
326818250	366818250	M18	2.50	14.00	11.00	15.50	95.00	30.00
326820250	366820250	M20	2.50	16.00	12.00	17.50	95.00	32.00

HSS-E

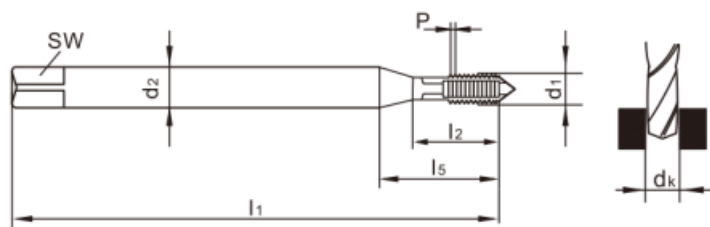
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2/6HDIN  
371DIN  
376

Bright

VAP



HSS-E



VAP



Артикул		d1	P	d2	SW	dk	l1	l2	l5
HSS-E	VAP								
3278204	3678204	M2	0.40	2.80	2.10	1.60	45.00	8.00	13.50
327822405	367822405	M2.2	0.45	2.80	2.10	1.75	45.00	9.00	14.50
32782304	36782304	M2.3	0.40	2.80	2.10	1.90	45.00	9.00	14.50
327825045	367825045	M2.5	0.45	2.80	2.10	2.05	50.00	9.00	14.50
327826045	367826045	M2.6	0.45	2.80	2.10	2.15	50.00	9.00	14.50
32783050	36783050	M3	0.5	3.50	2.70	2.50	56.00	10.00	18.00
327835060	367835060	M3.5	0.6	4.00	3.00	2.90	56.00	12.00	20.00
32784070	36784070	M4	0.7	4.50	3.40	3.30	63.00	12.00	21.00
32785080	36785080	M5	0.8	6.00	4.90	4.20	70.00	14.00	25.00
32786100	36786100	M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00
32787100	36787100	M7	1.00	7.00	5.50	6.00	80.00	16.00	30.00
32788125	36788125	M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00
327810175	367810175	M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00
327812175	367812175	M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00
327814200	367814200	M14	2.00	11.00	9.00	12.00	110.00	26.00	53.00
327816200	367816200	M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00
327818250	367818250	M18	2.50	14.00	11.00	15.50	125.00	30.00	62.00
327820250	367820250	M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00
327822250	367822250	M22	2.50	18.00	14.00	19.50	140.00	32.00	62.00
327824300	367824300	M24	3.00	18.00	14.00	21.00	160.00	36.00	73.00
327827300	367827300	M27	3.00	20.00	16.00	24.00	160.00	36.00	73.00
327830350	367830350	M30	3.50	22.00	18.00	26.50	180.00	40.00	85.00

HSS-E

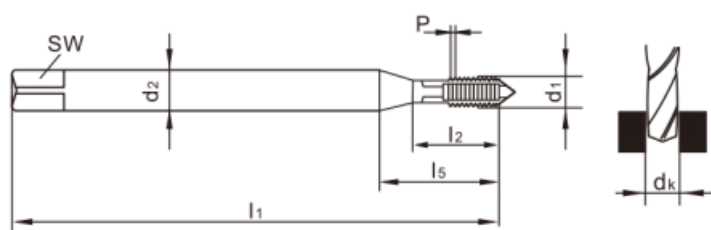
ISO  
2/6HDIN  
371DIN  
376

TiN

TiCN



TiN



TiCN

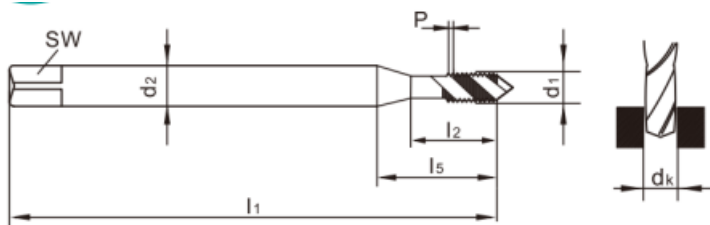


Артикул		d1	P	d2	SW	dk	l1	l2	l5
TiN	TiCN								
3778204	3878204	M2	0.40	2.80	2.10	1.60	45.00	8.00	13.50
377822405	387822405	M2.2	0.45	2.80	2.10	1.75	45.00	9.00	14.50
37782304	38782304	M2.3	0.40	2.80	2.10	1.90	45.00	9.00	14.50
377825045	387825045	M2.5	0.45	2.80	2.10	2.05	50.00	9.00	14.50
377826045	387826045	M2.6	0.45	2.80	2.10	2.15	50.00	9.00	14.50
37783050	38783050	M3	0.5	3.50	2.70	2.50	56.00	10.00	18.00
377835060	387835060	M3.5	0.6	4.00	3.00	2.90	56.00	12.00	20.00
37784070	38784070	M4	0.7	4.50	3.40	3.30	63.00	12.00	21.00
37785080	38785080	M5	0.8	6.00	4.90	4.20	70.00	14.00	25.00
37786100	38786100	M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00
37787100	38787100	M7	1.00	7.00	5.50	6.00	80.00	16.00	30.00
37788125	38788125	M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00
377810175	387810175	M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00
377812175	387812175	M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00
377814200	387814200	M14	2.00	11.00	9.00	12.00	110.00	26.00	53.00
377816200	387816200	M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00
377818250	387818250	M18	2.50	14.00	11.00	15.50	125.00	30.00	62.00
377820250	387820250	M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00
377822250	387822250	M22	2.50	18.00	14.00	19.50	140.00	32.00	62.00
377824300	387824300	M24	3.00	18.00	14.00	21.00	160.00	36.00	73.00
377827300	387827300	M27	3.00	20.00	16.00	24.00	160.00	36.00	73.00
377830350	387830350	M30	3.50	22.00	18.00	26.50	180.00	40.00	85.00





HSS-E



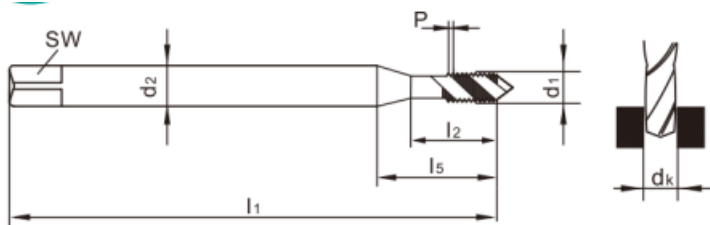
Артикул		d1	P	d2	SW	dk	l1	l2	l5
HSS-E	VAP								
3298204	3698204	M2	0.40	2.80	2.10	1.60	45.00	4.50	13.50
329822405	369822405	M2.2	0.45	2.80	2.10	1.75	45.00	5.00	14.50
32982304	36982304	M2.3	0.40	2.80	2.10	1.90	45.00	4.50	14.50
329825045	369825045	M2.5	0.45	2.80	2.10	2.05	50.00	5.00	14.50
329826045	369826045	M2.6	0.45	2.80	2.10	2.15	50.00	5.00	14.50
32983050	36983050	M3	0.5	3.50	2.70	2.50	56.00	6.00	18.00
329835060	369835060	M3.5	0.6	4.00	3.00	2.90	56.00	7.00	20.00
32984070	36984070	M4	0.7	4.50	3.40	3.30	63.00	7.50	21.00
32985080	36985080	M5	0.8	6.00	4.90	4.20	70.00	8.50	25.00
32986100	36986100	M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00
32988125	36988125	M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00
329810175	369810175	M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00
329812175	369812175	M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00
329814200	369814200	M14	2.00	11.00	9.00	12.00	110.00	20.00	53.00
329816200	369816200	M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00
329818250	369818250	M18	2.50	14.00	11.00	15.50	125.00	25.00	62.00
329820250	369820250	M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00
329822250	369822250	M22	2.50	18.00	14.00	19.50	140.00	27.00	62.00
329824300	369824300	M24	3.00	18.00	14.00	21.00	160.00	30.00	73.00
329827300	369827300	M27	3.00	20.00	16.00	24.00	160.00	30.00	73.00
329830350	369830350	M30	3.50	22.00	18.00	26.50	180.00	35.00	85.00



TiN



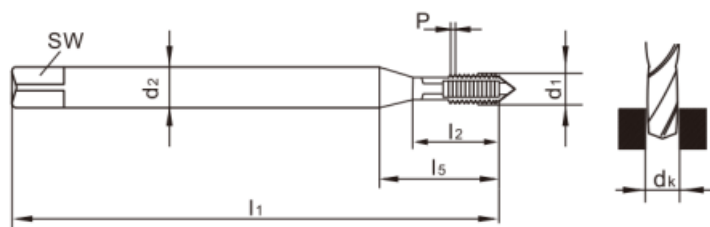
TiCN



Артикул		d1	P	d2	SW	dk	l1	l2	l5
TiN	TiCN								
3798204	3898204	M2	0.40	2.80	2.10	1.60	45.00	4.50	13.50
379822405	389822405	M2.2	0.45	2.80	2.10	1.75	45.00	5.00	14.50
37982304	38982304	M2.3	0.40	2.80	2.10	1.90	45.00	4.50	14.50
379825045	389825045	M2.5	0.45	2.80	2.10	2.05	50.00	5.00	14.50
379826045	389826045	M2.6	0.45	2.80	2.10	2.15	50.00	5.00	14.50
37983050	38983050	M3	0.5	3.50	2.70	2.50	56.00	6.00	18.00
379835060	389835060	M3.5	0.6	4.00	3.00	2.90	56.00	7.00	20.00
37984070	38984070	M4	0.7	4.50	3.40	3.30	63.00	7.50	21.00
37985080	38985080	M5	0.8	6.00	4.90	4.20	70.00	8.50	25.00
37986100	38986100	M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00
37988125	38988125	M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00
379810175	389810175	M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00
379812175	389812175	M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00
379814200	389814200	M14	2.00	11.00	9.00	12.00	110.00	20.00	53.00
379816200	389816200	M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00
379818250	389818250	M18	2.50	14.00	11.00	15.50	125.00	25.00	62.00
379820250	389820250	M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00
379822250	389822250	M22	2.50	18.00	14.00	19.50	140.00	27.00	62.00
379824300	389824300	M24	3.00	18.00	14.00	21.00	160.00	30.00	73.00
379827300	389827300	M27	3.00	20.00	16.00	24.00	160.00	30.00	73.00
379830350	389830350	M30	3.50	22.00	18.00	26.50	180.00	35.00	85.00



HSS-E

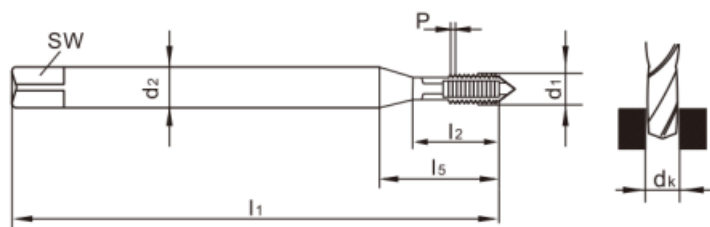


VAP



Артикул		d1	d2	SW	dk	l1	l2	l5
HSS-E	VAP							
32784050	36784050	M4x0.5	2.80	2.10	3.50	63.00	8.00	21.00
32785050	36785050	M5x0.5	3.50	2.70	4.50	70.00	10.00	25.00
32786050	36786050	M6x0.5	4.50	3.40	5.50	80.00	13.00	30.00
32786075	36786075	M6x0.75	4.50	3.40	5.20	80.00	13.00	30.00
327860751	367860751	M6X0.75	6.00	3.40	5.20	100.00	13.00	30.00
32788050	36788050	M8X0.5	6.00	4.90	7.50	80.00	14.00	30.00
32788075	36788075	M8X0.75	6.00	4.90	7.20	80.00	14.00	30.00
32788100	36788100	M8X1	6.00	4.90	7.00	90.00	16.00	35.00
327810075	367810075	M10X0.75	7.00	5.50	9.20	90.00	16.00	35.00
327810100	367810100	M10X1	7.00	5.50	9.00	90.00	16.00	35.00
327810125	367810125	M10X1.25	7.00	5.50	8.80	100.00	17.00	35.00
327812100	367812100	M12X1	9.00	7.00	11.00	100.00	20.00	39.00
327812125	367812125	M12X1.25	9.00	7.00	10.80	100.00	20.00	40.00
327812150	367812150	M12X1.5	9.00	7.00	10.50	100.00	20.00	40.00
327814100	367814100	M14X1	11.00	9.00	13.00	100.00	20.00	40.00
327814125	367814125	M14X1.25	11.00	9.00	12.80	100.00	20.00	40.00
327814150	367814150	M14X1.5	11.00	9.00	12.50	100.00	20.00	40.00
327815100	367815100	M15X1	12.00	9.00	14.00	100.00	20.00	40.00
327815150	367815150	M15X1.5	12.00	9.00	13.50	100.00	20.00	44.00
327816100	367816100	M16X1	12.00	9.00	15.00	100.00	22.00	44.00
327816150	367816150	M16X1.5	12.00	9.00	14.50	100.00	22.00	44.00
327818100	367818100	M18X1	14.00	11.00	17.00	110.00	25.00	44.00
327818150	367818150	M18X1.5	14.00	11.00	16.50	110.00	25.00	44.00
327818200	367818200	M18X2	14.00	11.00	16.00	125.00	30.00	58.00
327820100	367820100	M20X1	16.00	12.00	19.00	125.00	25.00	44.00
327820150	367820150	M20X1.5	16.00	12.00	18.50	125.00	25.00	44.00
327820200	367820200	M20X2	16.00	12.00	18.00	140.00	32.00	60.00





Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
37784050	38784050	M4x0.5	2.80	2.10	3.50	63.00	8.00	21.00
37785050	38785050	M5x0.5	3.50	2.70	4.50	70.00	10.00	25.00
37786050	38786050	M6x0.5	4.50	3.40	5.50	80.00	13.00	30.00
37786075	38786075	M6x0.75	4.50	3.40	5.20	80.00	13.00	30.00
377860751	387860751	M6X0.75	6.00	3.40	5.20	100.00	13.00	30.00
37788050	38788050	M8X0.5	6.00	4.90	7.50	80.00	14.00	30.00
37788075	38788075	M8X0.75	6.00	4.90	7.20	80.00	14.00	30.00
37788100	38788100	M8X1	6.00	4.90	7.00	90.00	16.00	35.00
377810075	387810075	M10X0.75	7.00	5.50	9.20	90.00	16.00	35.00
377810100	387810100	M10X1	7.00	5.50	9.00	90.00	16.00	35.00
377810125	387810125	M10X1.25	7.00	5.50	8.80	100.00	17.00	35.00
377812100	387812100	M12X1	9.00	7.00	11.00	100.00	20.00	39.00
377812125	387812125	M12X1.25	9.00	7.00	10.80	100.00	20.00	40.00
377812150	387812150	M12X1.5	9.00	7.00	10.50	100.00	20.00	40.00
377814100	387814100	M14X1	11.00	9.00	13.00	100.00	20.00	40.00
377814125	387814125	M14X1.25	11.00	9.00	12.80	100.00	20.00	40.00
377814150	387814150	M14X1.5	11.00	9.00	12.50	100.00	20.00	40.00
377815100	387815100	M15X1	12.00	9.00	14.00	100.00	20.00	40.00
377815150	387815150	M15X1.5	12.00	9.00	13.50	100.00	20.00	44.00
377816100	387816100	M16X1	12.00	9.00	15.00	100.00	22.00	44.00
377816150	387816150	M16X1.5	12.00	9.00	14.50	100.00	22.00	44.00
377818100	387818100	M18X1	14.00	11.00	17.00	110.00	25.00	44.00
377818150	387818150	M18X1.5	14.00	11.00	16.50	110.00	25.00	44.00
377818200	387818200	M18X2	14.00	11.00	16.00	125.00	30.00	58.00
377820100	387820100	M20X1	16.00	12.00	19.00	125.00	25.00	44.00
377820150	387820150	M20X1.5	16.00	12.00	18.50	125.00	25.00	44.00
377820200	387820200	M20X2	16.00	12.00	18.00	140.00	32.00	60.00

HSS-E

ISO  
2/6HDIN  
374

Bright

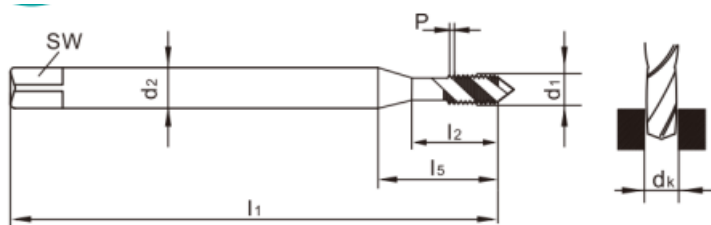
VAP



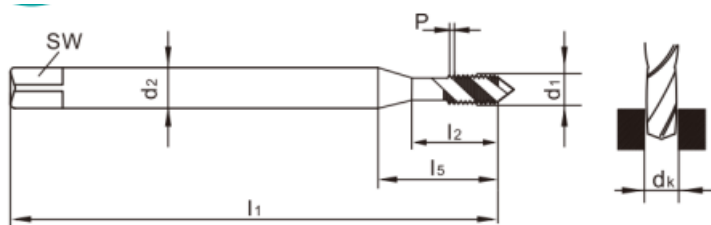
HSS-E



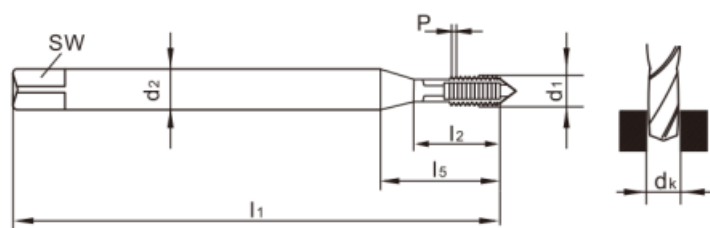
VAP



Артикул		d1	d2	SW	dk	l1	l2	l5
HSS-E	VAP							
32984050	36984050	M4x0.5	2.80	2.10	3.50	63.00	5.00	21.00
32985050	36985050	M5x0.5	3.50	2.70	4.50	70.00	5.00	25.00
32986075	36986075	M6x0.75	4.50	3.40	5.20	80.00	8.00	30.00
32988075	36988075	M8X0.75	6.00	4.90	7.20	80.00	8.00	30.00
32988100	36988100	M8X1	6.00	4.90	7.00	90.00	11.00	35.00
329810100	369810100	M10X1	7.00	5.50	9.00	90.00	11.00	35.00
329810125	369810125	M10X1.25	7.00	5.50	8.80	100.00	14.00	35.00
329812100	369812100	M12X1	9.00	7.00	11.00	100.00	11.00	39.00
329812125	369812125	M12X1.25	9.00	7.00	10.80	100.00	16.00	40.00
329812150	369812150	M12X1.5	9.00	7.00	10.50	100.00	16.00	40.00
329814100	369814100	M14X1	11.00	9.00	13.00	100.00	11.00	40.00
329814125	369814125	M14X1.25	11.00	9.00	12.80	100.00	15.00	40.00
329814150	369814150	M14X1.5	11.00	9.00	12.50	100.00	15.00	40.00
329816100	369816100	M16X1	12.00	9.00	15.00	100.00	11.00	44.00
329816150	369816150	M16X1.5	12.00	9.00	14.50	100.00	15.00	44.00
329818150	369818150	M18X1.5	14.00	11.00	16.50	110.00	16.00	44.00
329820100	369820100	M20X1	16.00	12.00	19.00	125.00	12.00	44.00
329820150	369820150	M20X1.5	16.00	12.00	18.50	125.00	16.00	44.00



Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
37984050	38984050	M4x0.5	2.80	2.10	3.50	63.00	5.00	21.00
37985050	38985050	M5x0.5	3.50	2.70	4.50	70.00	5.00	25.00
37986075	38986075	M6x0.75	4.50	3.40	5.20	80.00	8.00	30.00
37988075	38988075	M8x0.75	6.00	4.90	7.20	80.00	8.00	30.00
37988100	38988100	M8x1	6.00	4.90	7.00	90.00	11.00	35.00
379810100	389810100	M10x1	7.00	5.50	9.00	90.00	11.00	35.00
379810125	389810125	M10x1.25	7.00	5.50	8.80	100.00	14.00	35.00
379812100	389812100	M12x1	9.00	7.00	11.00	100.00	11.00	39.00
379812125	389812125	M12x1.25	9.00	7.00	10.80	100.00	16.00	40.00
379812150	389812150	M12x1.5	9.00	7.00	10.50	100.00	16.00	40.00
379814100	389814100	M14x1	11.00	9.00	13.00	100.00	11.00	40.00
379814125	389814125	M14x1.25	11.00	9.00	12.80	100.00	15.00	40.00
379814150	389814150	M14x1.5	11.00	9.00	12.50	100.00	15.00	40.00
379816100	389816100	M16x1	12.00	9.00	15.00	100.00	11.00	44.00
379816150	389816150	M16x1.5	12.00	9.00	14.50	100.00	15.00	44.00
379818150	389818150	M18x1.5	14.00	11.00	16.50	110.00	16.00	44.00
379820100	389820100	M20x1	16.00	12.00	19.00	125.00	12.00	44.00
379820150	389820150	M20x1.5	16.00	12.00	18.50	125.00	16.00	44.00



HSS-E



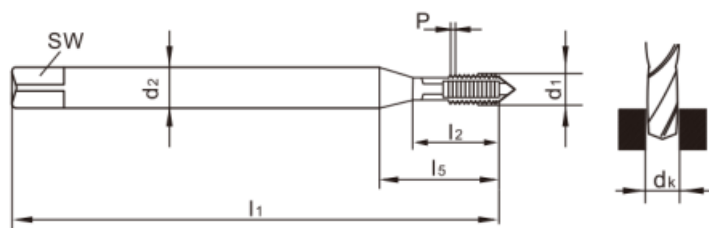
VAP



Артикул		d1	d2	SW	dk	l1	l2	l3
HSS-E	VAP							
3278440	3678440	4-40	2.20	1.80	2.35	56.00	7.00	18.00
3278632	3678632	6-32	2.50	2.10	2.85	56.00	8.00	20.00
3278832	3678832	8-32	2.80	2.10	3.50	63.00	8.00	21.00
32781024	36781024	10-24	3.50	2.70	3.90	70.00	11.00	25.00
32781224	36781224	12-24	4.00	3.00	4.50	80.00	11.00	30.00
32781420	36781420	1/4-20	4.50	3.40	5.10	90.00	15.00	30.00
327851618	367851618	5/16-18	6.00	4.90	6.50	100.00	18.00	35.00
32783816	36783816	3/8-16	7.00	5.50	7.90	100.00	20.00	39.00
327871614	367871614	7/16-14	8.00	6.20	9.30	110.00	23.00	42.00
32781213	36781213	1/2-13	9.00	7.00	10.80	110.00	25.00	49.00
327891612	367891612	9/16-12	11.00	9.00	12.30	110.00	25.00	53.00
32785811	36785811	5/8-11	12.00	9.00	13.50	110.00	25.00	53.00
32783410	36783410	3/4-10	14.00	11.00	16.50	125.00	30.00	62.00
3278789	3678789	7/8-9	18.00	14.50	19.50	140.00	34.00	62.00
327818	367818	1-8	20.00	16.00	22.25	160.00	38.00	73.00



Артикул		d1	d2	SW	dk	l1	l2	l3
HSS-E	VAP							
3278640	3678640	6-40	2.50	2.10	2.95	56.00	8.00	20.00
3278836	3678836	8-36	2.80	2.10	3.50	63.00	8.00	21.00
32781032	36781032	10-32	3.50	2.70	4.10	70.00	11.00	25.00
32781228	36781228	12-28	4.00	3.00	4.60	80.00	11.00	30.00
32781428	36781428	1/4-28	4.50	3.40	5.50	80.00	15.00	30.00
32785624	36785624	5/16-24	6.00	4.90	6.90	90.00	18.00	35.00
32783824	36783824	3/8-24	7.00	5.50	8.50	90.00	20.00	35.00
327871620	367871620	7/16-20	8.00	6.20	9.90	100.00	23.00	42.00
32781220	36781220	1/2-20	9.00	7.00	11.50	100.00	25.00	40.00
327891618	367891618	9/16-18	11.00	9.00	12.90	100.00	25.00	40.00
32785818	36785818	5/8-18	12.00	9.00	14.50	100.00	25.00	44.00
32783416	36783416	3/4-16	14.00	11.00	17.50	110.00	30.00	44.00
32781814	36781814	7/8-14	18.00	14.50	20.40	125.00	34.00	44.00
3278112	3678112	1-12	18.00	14.50	23.25	140.00	38.00	50.00

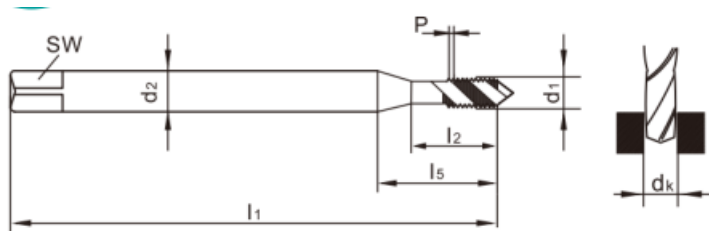


Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
3778440	3878440	4-40	2.20	1.80	2.35	56.00	7.00	18.00
3778632	3878632	6-32	2.50	2.10	2.85	56.00	8.00	20.00
3778832	3878832	8-32	2.80	2.10	3.50	63.00	8.00	21.00
37781024	38781024	10-24	3.50	2.70	3.90	70.00	11.00	25.00
37781224	38781224	12-24	4.00	3.00	4.50	80.00	11.00	30.00
37781420	38781420	1/4-20	4.50	3.40	5.10	90.00	15.00	30.00
377851618	387851618	5/16-18	6.00	4.90	6.50	100.00	18.00	35.00
37783816	38783816	3/8-16	7.00	5.50	7.90	100.00	20.00	39.00
377871614	387871614	7/16-14	8.00	6.20	9.30	110.00	23.00	42.00
37781213	38781213	1/2-13	9.00	7.00	10.80	110.00	25.00	49.00
377891612	387891612	9/16-12	11.00	9.00	12.30	110.00	25.00	53.00
37785811	38785811	5/8-11	12.00	9.00	13.50	110.00	25.00	53.00
37783410	38783410	3/4-10	14.00	11.00	16.50	125.00	30.00	62.00
3778789	3878789	7/8-9	18.00	14.50	19.50	140.00	34.00	62.00
377818	387818	1-8	20.00	16.00	22.25	160.00	38.00	73.00



Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
3778640	3878640	6-40	2.50	2.10	2.95	56.00	8.00	20.00
3778836	3878836	8-36	2.80	2.10	3.50	63.00	8.00	21.00
37781032	38781032	10-32	3.50	2.70	4.10	70.00	11.00	25.00
37781228	38781228	12-28	4.00	3.00	4.60	80.00	11.00	30.00
37781428	38781428	1/4-28	4.50	3.40	5.50	80.00	15.00	30.00
37785624	38785624	5/16-24	6.00	4.90	6.90	90.00	18.00	35.00
37783824	38783824	3/8-24	7.00	5.50	8.50	90.00	20.00	35.00
377871620	387871620	7/16-20	8.00	6.20	9.90	100.00	23.00	42.00
37781220	38781220	1/2-20	9.00	7.00	11.50	100.00	25.00	40.00
377891618	387891618	9/16-18	11.00	9.00	12.90	100.00	25.00	40.00
37785818	38785818	5/8-18	12.00	9.00	14.50	100.00	25.00	44.00
37783416	38783416	3/4-16	14.00	11.00	17.50	110.00	30.00	44.00
37781814	38781814	7/8-14	18.00	14.50	20.40	125.00	34.00	44.00
3778112	3878112	1-12	18.00	14.50	23.25	140.00	38.00	50.00

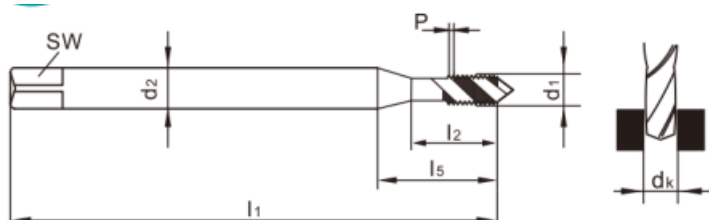




Артикул		d1	d2	SW	dk	l1	l2	l5
HSS-E	VAP							
3298440	3698440	4-40	2.20	1.80	2.35	56.00	7.00	18.00
3298632	3698632	6-32	2.50	2.10	2.85	56.00	8.00	20.00
3298832	3698832	8-32	2.80	2.10	3.50	63.00	8.00	21.00
32981024	36981024	10-24	3.50	2.70	3.90	70.00	11.00	25.00
32981224	36981224	12-24	4.00	3.00	4.50	80.00	11.00	30.00
32981420	36981420	1/4-20	4.50	3.40	5.10	90.00	15.00	30.00
329851618	369851618	5/16-18	6.00	4.90	6.50	100.00	18.00	35.00
32983816	36983816	3/8-16	7.00	5.50	7.90	100.00	20.00	39.00
329871614	369871614	7/16-14	8.00	6.20	9.30	110.00	23.00	42.00
32981213	36981213	1/2-13	9.00	7.00	10.80	110.00	25.00	49.00
329891612	369891612	9/16-12	11.00	9.00	12.30	110.00	25.00	53.00
32985811	36985811	5/8-11	12.00	9.00	13.50	110.00	25.00	53.00
32983410	36983410	3/4-10	14.00	11.00	16.50	125.00	30.00	62.00
3298789	3698789	7/8-9	18.00	14.50	19.50	140.00	34.00	62.00
329818	369818	1-8	20.00	16.00	22.25	160.00	38.00	73.00



Артикул		d1	d2	SW	dk	l1	l2	l5
HSS-E	VAP							
3298640	3698640	6-40	2.50	2.10	2.95	56.00	8.00	20.00
3298836	3698836	8-36	2.80	2.10	3.50	63.00	8.00	21.00
32981032	36981032	10-32	3.50	2.70	4.10	70.00	11.00	25.00
32981228	36981228	12-28	4.00	3.00	4.60	80.00	11.00	30.00
32981428	36981428	1/4-28	4.50	3.40	5.50	80.00	15.00	30.00
32985624	36985624	5/16-24	6.00	4.90	6.90	90.00	18.00	35.00
32983824	36983824	3/8-24	7.00	5.50	8.50	90.00	20.00	35.00
329871620	369871620	7/16-20	8.00	6.20	9.90	100.00	23.00	42.00
32981220	36981220	1/2-20	9.00	7.00	11.50	100.00	25.00	40.00
329891618	369891618	9/16-18	11.00	9.00	12.90	100.00	25.00	40.00
32985818	36985818	5/8-18	12.00	9.00	14.50	100.00	25.00	44.00
32983416	36983416	3/4-16	14.00	11.00	17.50	110.00	30.00	44.00
32981814	36981814	7/8-14	18.00	14.50	20.40	125.00	34.00	44.00
3298112	3698112	1-12	18.00	14.50	23.25	140.00	38.00	50.00

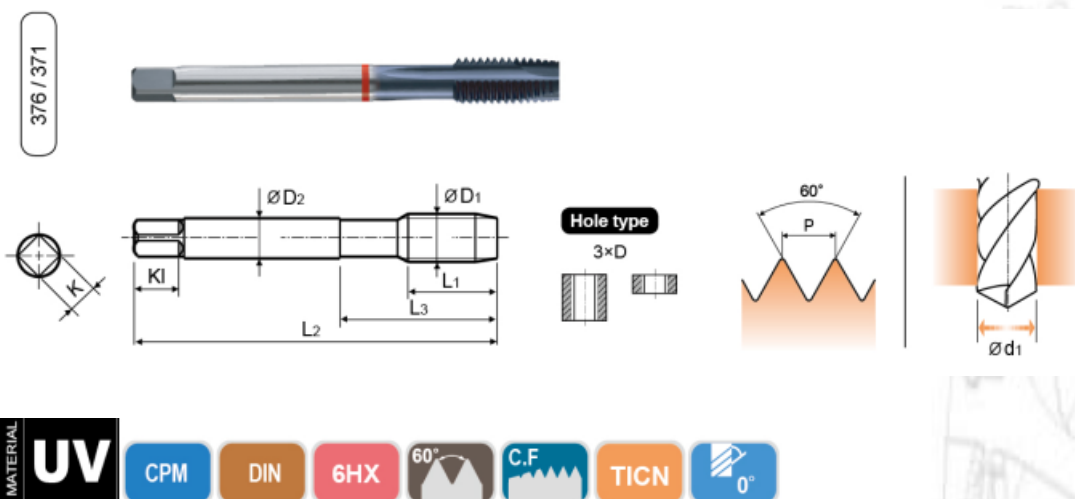


Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
3798440	3898440	4-40	2.20	1.80	2.35	56.00	7.00	18.00
3798632	3898632	6-32	2.50	2.10	2.85	56.00	8.00	20.00
3798832	3898832	8-32	2.80	2.10	3.50	63.00	8.00	21.00
37981024	38981024	10-24	3.50	2.70	3.90	70.00	11.00	25.00
37981224	38981224	12-24	4.00	3.00	4.50	80.00	11.00	30.00
37981420	38981420	1/4-20	4.50	3.40	5.10	90.00	15.00	30.00
379851618	389851618	5/16-18	6.00	4.90	6.50	100.00	18.00	35.00
37983816	38983816	3/8-16	7.00	5.50	7.90	100.00	20.00	39.00
379871614	389871614	7/16-14	8.00	6.20	9.30	110.00	23.00	42.00
37981213	38981213	1/2-13	9.00	7.00	10.80	110.00	25.00	49.00
379891612	389891612	9/16-12	11.00	9.00	12.30	110.00	25.00	53.00
37985811	38985811	5/8-11	12.00	9.00	13.50	110.00	25.00	53.00
37983410	38983410	3/4-10	14.00	11.00	16.50	125.00	30.00	62.00
3798789	3898789	7/8-9	18.00	14.50	19.50	140.00	34.00	62.00
379818	389818	1-8	20.00	16.00	22.25	160.00	38.00	73.00



Артикул		d1	d2	SW	dk	l1	l2	l5
TiN	TiCN							
3798640	3898640	6-40	2.50	2.10	2.95	56.00	8.00	20.00
3798836	3898836	8-36	2.80	2.10	3.50	63.00	8.00	21.00
37981032	38981032	10-32	3.50	2.70	4.10	70.00	11.00	25.00
37981228	38981228	12-28	4.00	3.00	4.60	80.00	11.00	30.00
37981428	38981428	1/4-28	4.50	3.40	5.50	80.00	15.00	30.00
37985624	38985624	5/16-24	6.00	4.90	6.90	90.00	18.00	35.00
37983824	38983824	3/8-24	7.00	5.50	8.50	90.00	20.00	35.00
379871620	389871620	7/16-20	8.00	6.20	9.90	100.00	23.00	42.00
37981220	38981220	1/2-20	9.00	7.00	11.50	100.00	25.00	40.00
379891618	389891618	9/16-18	11.00	9.00	12.90	100.00	25.00	40.00
37985818	38985818	5/8-18	12.00	9.00	14.50	100.00	25.00	44.00
37983416	38983416	3/4-16	14.00	11.00	17.50	110.00	30.00	44.00
37981814	38981814	7/8-14	18.00	14.50	20.40	125.00	34.00	44.00
3798112	3898112	1-12	18.00	14.50	23.25	140.00	38.00	50.00

# Метчики премиум качества Unico



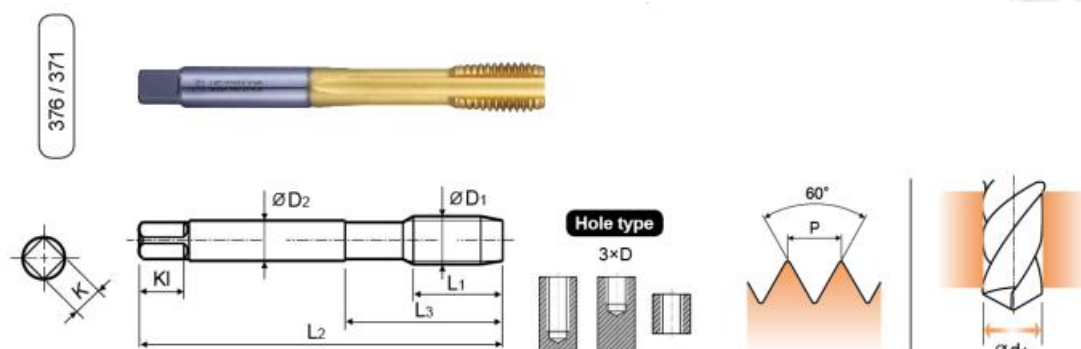
Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во Зубьев	d 1
XP020040045-028POT	M2	0.4	45	2.8	6	10	2.1	5	3	1.6
XP025045050-028POT	M2.5	0.45	50	2.8	8	13.5	2.1	5	3	2.1
XP030050056-035POT	M3	0.5	56	3.5	9	19	2.7	6	3	2.5
XP040070063-045POT	M4	0.7	63	4.5	12	22	3.4	6	3	3.3
XP050080070-06POT	M5	0.8	70	6	13	26	4.9	8	3	4.2
XP060100080-06POT	M6	1.0	80	6	15	31	4.9	8	3	5
XP080100090-08POT	M8	1.0	90	6	18	36	6.2	8	3	7
XP080125090-08POT	M8	1.25	90	8	18	36	6.2	9	3	6.8
XP100125100-10POT	M10	1.25	100	10	20	40	8	11	3	8.8
XP100150100-10POT	M10	1.5	100	10	20	40	8	11	3	8.5
XP120150110-09POT	M12	1.5	110	9	23	43	7	10	4	10.5
XP120175110-09POT	M12	1.75	110	9	23	43	7	10	4	10.3
XP140150110-11POT	M14	1.5	110	11	25	50	9	12	4	12.5
XP140200110-11POT	M14	2.0	110	11	25	50	9	12	4	12
XP160150110-12POT	M16	1.5	110	12	25	56	9	12	4	14.5
XP160200110-12POT	M16	2.0	110	12	25	56	9	12	4	14
XP180150125-14POT	M18	1.5	125	14	30	63.5	11	14	4	16.5
XP180250125-14POT	M18	2.5	125	14	30	63.5	11	14	4	15.5
XP200250140-16POT	M20	2.5	140	16	30	71	12	15	4	17.5
XP240200160-18POT	M24	2.0	160	18	36	80	14.5	17	4	22
XP240300160-18POT	M24	3.0	160	18	36	80	14.5	17	4	21
XP270300160-20POT	M27	3.0	160	20	36	80	16	19	4	24
XP300200180-22POT	M30	2.0	180	22	42	90	18	21	4	28
XP300350180-22POT	M30	3.5	180	22	42	90	18	21	4	26.5

●Excellent ○Good

●Excellent ○Good																					
ISO	P											M			K						
Material	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC		13	25	28	32		10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300		180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●			
ISO	N										S							H			
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
Description																					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended			●			●	●	●													

+7 (982) 718-09-83

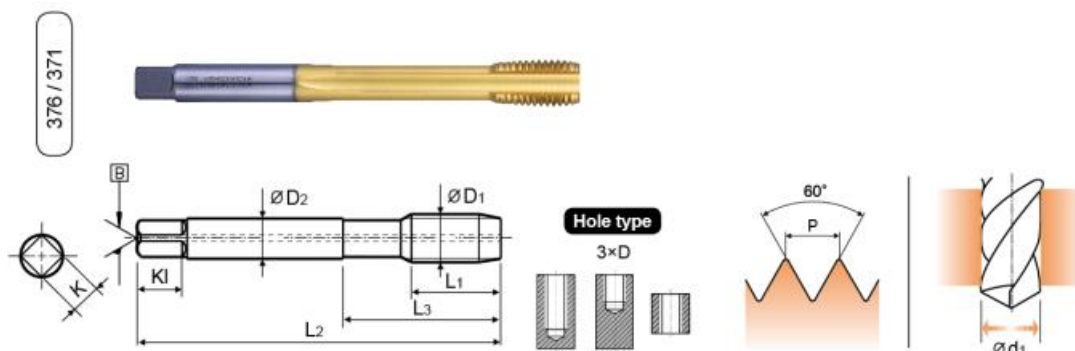
info@vinnsla.ru



Артикул	D1	Шаг	L2	D2	L1	L3	K	KI	Кол-во Зубьев	d 1
MNCS050080070-06HT	M5	0.8	70	6	13	26	4.9	8	3	4.2
MNCS060100080-06HT	M6	1.0	80	6	15	31	4.9	8	3	5
MNCS080125090-08HT	M8	1.25	90	8	18	36	6.2	9	4	6.8
MNCS100150100-10HT	M10	1.5	100	10	20	40	8	11	4	8.5
MNCS120175110-09HT	M12	1.75	110	9	23	43	7	10	4	10.3
MNCS160200110-12HT	M16	2.0	110	12	25	56	9	12	4	14
MNCS200250140-16HT	M20	2.5	140	16	30	71	12	15	4	17.5
MNCS240300160-18HT	M24	3.0	160	18	36	80	14.5	17	4	21
MNCS270300160-20HT	M27	3.0	160	20	36	80	16	19	4	24
MNCS300350180-22HT	M30	3.5	180	22	42	90	18	21	4	26.5
MNCS360400200-28HT	M36	4	200	28	48	100	22	25	5	32

●Excellent ○Good

●Excellent ○Good																					
ISO	P											M				K					
Material	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	●	●	●	●	●	●	●	●	○					●	●	●	●			
ISO	N									S							H				
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials	Heat Resistant Alloys						Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
Description																					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

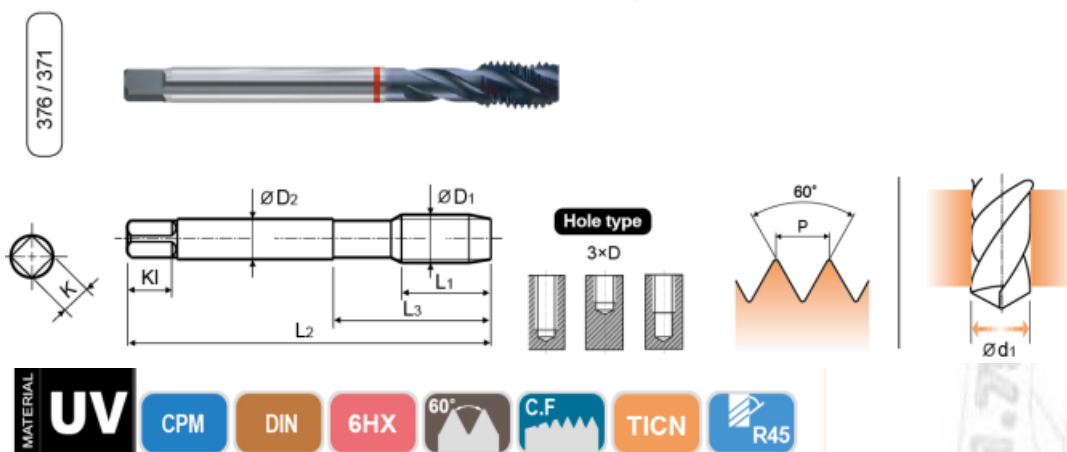


Артикул	D1	Шаг	L2	D2	L1	L3	K	KI	Кол-во Зубьев	Диаметр под резьбу
MNC080125110-06HT	M8	1.25	110	8	18	50	4.9	8	3	6.8
MNC100150125-07HT	M10	1.5	125	10	20	60	5.5	8	3	8.5
MNC120175140-09HT	M12	1.75	140	9	23	80	7	10	3	10.3
MNC160200160-12HT	M16	2.0	160	12	25	100	9	12	3	14
MXC180200165-14HT	M18	2.0	165	14	25	100	11	14	3	16
MNC200250180-16HT	M20	2.5	180	16	30	120	12	15	3	17.5
MNC240300200-18HT	M24	3.0	200	18	36	120	14.5	17	4	21
MNC270300225-20HT	M27	3.0	225	20	36	145	16	19	4	24
MNC300350250-22HT	M30	3.5	250	22	42	160	18	21	4	26.5
MNC330350275-25HT	M33	3.5	275	25	42	160	20	23	4	29.5
MNC360400300-28HT	M36	4	300	28	48	180	22	25	5	32
MNC390400300-32HT	M39	4	300	32	48	180	24	27	5	35
MNC420450300-32HT	M42	4.5	300	32	54	180	24	27	6	37.5
MNC450450300-36HT	M45	4.5	300	36	60	180	29	32	6	40.5
MNC480500300-36HT	M48	5	300	36	60	180	29	32	6	43
MNC520500300-40HT	M52	5	300	40	50	205	32	35	6	47
MNC560550300-45HT	M56	5.5	300	45	55	205	35	42	6	50.5
MNC640600350-50HT	M64	6	350	50	60	205	38	48	6	58

●Excellent ○Good

●Excellent ○Good																						
ISO	P											M				K						
Material	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																						
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	○	●	●	●	●	●	●	●	●	○					●	●	●	●				
ISO	N										S							H				
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron	
Description																						
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRC											15	30	25	38	34			55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommended																						

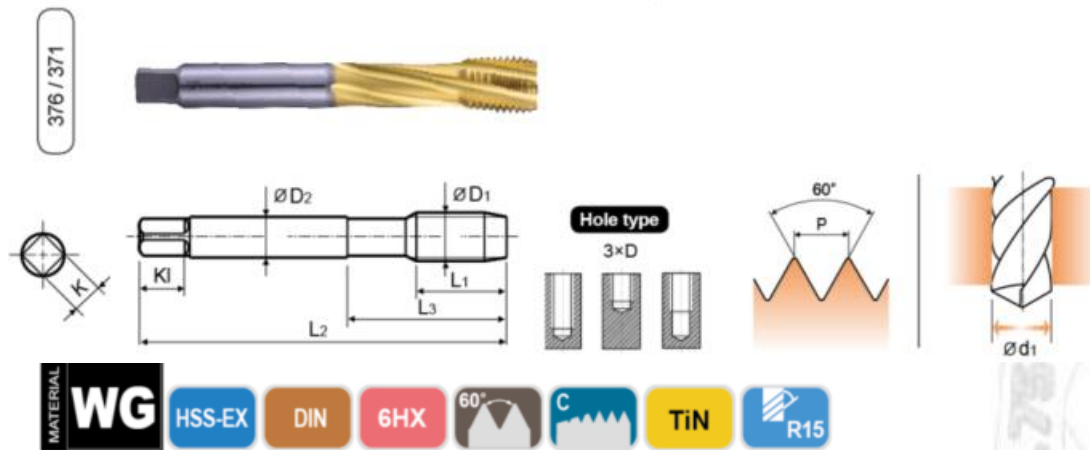




Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во зубьев	d 1
XP020040045-028SFT	M2	0.4	45	2.8	4	7.6	2.1	5	3	1.6
XP025045050-028SFT	M2.5	0.45	50	2.8	4	9.3	2.1	5	3	2.1
XP030050056-035SFT	M3	0.5	56	3.5	6	11	2.7	6	3	2.5
XP040070063-045SFT	M4	0.7	63	4.5	7	14.8	3.4	6	3	3.3
XP050080070-06SFT	M5	0.8	70	6	8	20.7	4.9	8	3	4.2
XP060100080-06SFT	M6	1.0	80	6	10	25	4.9	8	3	5
XP080100090-08SFT	M8	1.25	90	8	12	35	6.2	9	3	6.8
XP080125090-08SFT	M10	1.0	100	10	15	39	8	11	3	9.0
XP100100100-10SFT	M10	1.25	100	10	15	39	8	11	3	8.8
XP100125100-10SFT	M10	1.5	100	10	15	39	8	11	3	8.5
XP100150100-10SFT	M12	1.75	110	9	16	42	7	10	4	10.3
XP120150110-09SFT	M14	1.5	110	11	20	50	9	12	4	12.5
XP120175110-09SFT	M14	2.0	110	11	20	50	9	12	4	12
XP140150110-11SFT	M16	1.5	110	12	20	55	9	12	4	14.5
XP140200110-11SFT	M16	2.0	110	12	20	55	9	12	4	14
XP160150110-12SFT	M18	1.5	125	14	25	63.5	11	14	4	15.5
XP160200110-12SFT	M18	2.5	125	14	25	63.5	11	14	4	15.5
XP180150125-14SFT	M20	1.5	140	16	25	70	12	15	4	18.5
XP180250125-14SFT	M20	2.5	140	16	25	70	12	15	4	17.5
XP200150140-16SFT	M24	2.0	160	18	30	80	14.5	17	4	22
XP200250140-16SFT	M24	3.0	160	18	30	80	14.5	17	4	21
XP240200160-18SFT	M27	3.0	160	20	30	80	16	19	4	24
XP240300160-18SFT	M30	2.0	180	22	35	90	18	21	4	28
XP270300160-20SFT	M30	3.5	180	22	35	90	18	21	4	26.5
XP300200180-22SFT	M36	4.0	200	28	40	100	22	25	4	32
XP300350180-22SFT	M42	4.5	200	32	45	100	24	27	5	37.5

●Excellent ○Good

●Excellent ○Good																								
ISO	P										M				K									
Material	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron					
Description																								
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRC		13	25	28	32		10	29	32	38	15	35	15	23	10	10	26	3	25	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	○	●	●	●	●	●	●	●	●	○		●	●	●	●	●	●	●						
ISO	N										S										H			
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron			
Description																								
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRC											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended			●			●	●	●																

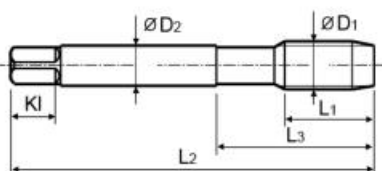
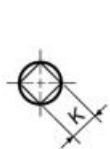


Артикул	D1	Шаг	L2	D2	L1	L3	K	K1	Кол-во зубьев	d 1
MNS04007063-06LSFT	M4	0.7	63	6	7	21	4.9	8	3	3.3
MNS05008070-06LSFT	M5	0.8	70	6	8	25	4.9	8	3	4.2
MNS060100080-06LSFT	M6	1.0	80	6	10	30	4.9	8	3	5
MNS080125090-08LSFT	M8	1.25	90	8	12	35	6.2	9	4	6.8
MNS100150100-10LSFT	M10	1.5	100	10	15	39	8	11	4	8.5
MNS120175110-09LSFT	M12	1.75	110	9	16	42	7	10	4	10.3
MNS140200110-12LSFT	M14	2.0	110	11	20	55	9	12	4	12
MNS160200110-12LSFT	M16	2.0	110	12	20	55	9	12	4	14
MNS180250110-16LSFT	M18	2.5	125	14	25	70	12	15	4	15.5
MNS200250140-16LSFT	M20	2.5	140	16	25	70	12	15	4	17.5
MNS240300160-18LSFT	M24	3.0	160	18	30	80	14.5	17	4	21
MNS270300160-20LSFT	M27	3.0	160	20	30	80	16	19	4	24
MNS300350180-22LSFT	M30	3.5	180	22	35	90	18	21	5	26.5
MNS360400200-28LSFT	M36	4.0	200	28	40	100	22	25	5	32

●Excellent ○Good

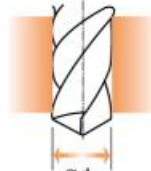
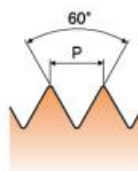
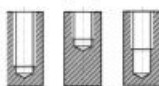
●Excellent ○Good																						
ISO	P											M					K					
Material	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																						
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	○	●	●	●	●	●	●	●	●	○		●	●	●	●	●	●	●				
ISO	N										S							H				
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials	Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron		
Description																						
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRC											15	30	25	38	34			55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommended			●			●	●	●														

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Hole type

3×D

MATERIAL **WG**

HSS-EX

DIN

6HX



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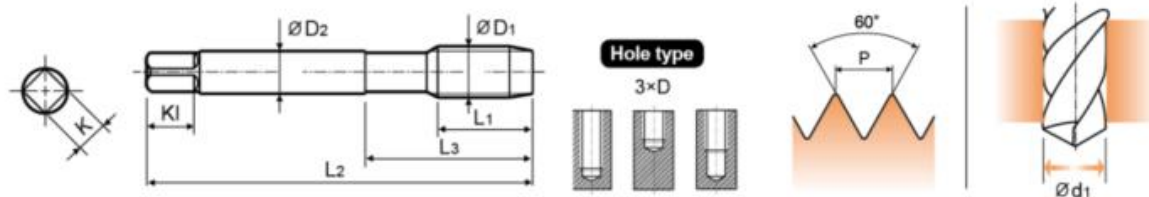


Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во зубьев	d 1
MN240300250-18LSFT	M24	3.0	250	18	35	160	14.5	17	4	21
MN300350250-22LSFT	M30	3.5	250	22	35	160	18	21	5	26.5
MN330350250-25LSFT	M33	3.5	250	25	35	160	20	23	5	29.5
MN360400250-28LSFT	M36	4.0	250	28	40	130	22	25	5	32
MN390400300-32LSFT	M39	4.0	300	32	40	190	24	27	5	35
MN420450300-32LSFT	M42	4.5	300	32	45	190	29	27	6	38.5
MN450450300-36LSFT	M45	4.5	300	36	45	190	29	32	6	40.5
MN480500300-36LSFT	M48	5.0	300	36	50	190	29	32	6	43
MN520500300-40LSFT	M52	5.0	300	40	50	190	32	35	6	47

●Excellent ○Good

●Excellent ○Good																					
ISO	P											M				K					
Material	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	●	●	●	●	●	●	●	●	○	○				●	●	●	●			
ISO	N										S						H				
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
Description																					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

DIN



MATERIAL UV

CPM

DIN

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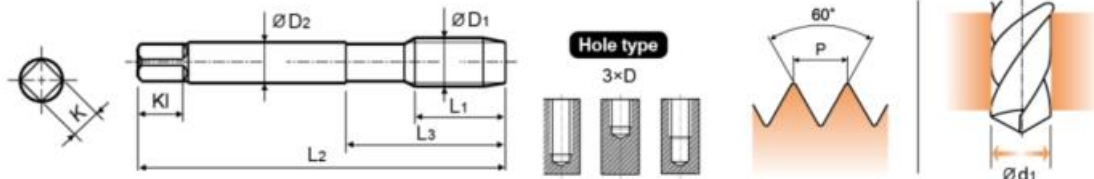
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Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во Зубьев	d 1
APB030050056-035LSFT	M3	0.5	56	3.5	11	19	2.7	6	3	2.5
APB040070063-045LSFT	M4	0.7	63	4.5	13	21	3.4	6	3	3.3
APB050080070-06LSFT	M5	0.8	70	6	16	26	4.9	8	3	4.2
APB060100080-06LSFT	M6	1	80	6	19	30	4.9	8	3	5
APB080125090-08LSFT	M8	1.25	90	8	22	36	6.2	9	3	6.8
APB100150100-10LSFT	M10	1.5	100	10	24	38	8	11	3	8.5
APB120175110-10LSFT	M12	1.75	110	10	25	40	8	11	3	10.3
APB140200110-11LSFT	M14	2	110	11	29	45	9	11.8	3	12
APB160200110-12LSFT	M16	2	110	12	29	45	9	11.8	4	14

●Excellent ○Good

ISO	P										M					K				
Material	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
Description																				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended									○						●	●	●	●		
ISO	N										S							H		
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)				Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel	
Description																				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC											15	30	25	38	34			55	60	42
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommended											○	○	○	○	○	●	●	●	●	●

DIN376

MATERIAL **WG**

HSS-EX

DIN

6HX



TiN



Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во Зубьев	d 1
APB030050056-035LSFT	M3	0.5	56	3.5	11	19	2.7	6	3	2.5
APB040070063-045LSFT	M4	0.7	63	4.5	13	21	3.4	6	3	3.3
APB050080070-06LSFT	M5	0.8	70	6	16	26	4.9	8	3	4.2
APB060100080-06LSFT	M6	1	80	6	19	30	4.9	8	3	5
APB080125090-08LSFT	M8	1.25	90	8	22	36	6.2	9	3	6.8
APB100150100-10LSFT	M10	1.5	100	10	24	38	8	11	3	8.5
APB120175110-10LSFT	M12	1.75	110	10	25	40	8	11	3	10.3
APB140200110-11LSFT	M14	2	110	11	29	45	9	11.8	3	12
APB160200110-12LSFT	M16	2	110	12	29	45	9	11.8	4	14

●Excellent ○Good

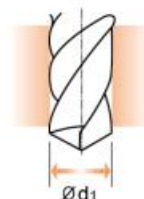
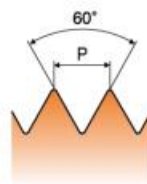
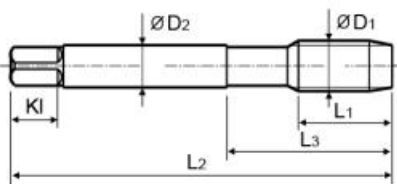
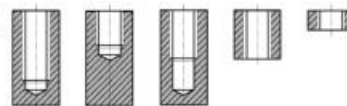
ISO	P										M					K				
Material	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323																				
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	●	●	●	●	●	●	●	○						●	●	●	●		
ISO	N										S					H				
Material	Aluminum-wrought alloy					Aluminum-cast alloyed					Copper and Copper Alloys (Bronze/Brass)					Non Metallic Materials				
Description	21	22	23	24	25	26	27	28	29	30	Heat Resistant Alloys					Titanium Alloys				
VDI 3323											31	32	33	34	35	36	37	38	39	40
HRC											15	30	25	38	34			55	60	42
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommended			●																	



DIN 371



DIN 376

Hole type  
2.0×D

CPM

DIN  
371/376

6HX



TiCN

Артикул	D1	Шар	L2	D2	L1	L3	K	KI	Кол-во Зубьев	d 1
AP040070063-045RT-BP	M4	0.7	63	4.5	13	21	3.4	8	4	3.7
AP050080070-06RT-BP	M5	0.8	70	6	15	25	4.9	8	4	4.65
AP060100080-06RT-BP	M6	1	80	6	17	30	4.9	8	4	5.55
AP080125090-08RT-BP	M8	1.25	90	8	20	35	6.2	9	6	7.40
AP100125100-07RT-BP	M10	1.25	100	10	22	39	8	11	8	9,40
AP100150100-10RT-BP	M10	1.5	100	10	22	39	8	11	8	9.28
AP120150100-09RT-BP	M12	1.5	110	9	24	44	7	10	8	11.35
AP120175110-09RT-BP	M12	1.75	110	9	24	44	7	10	8	11.15
AP140150100-11RT-BP	M14	1.5	110	11	26	44	9	12	8	13.30
AP160150100-12RT-BP	M16	1.5	110	12	27	44	9	12	8	15.30
APC160200110-12RT-BP	M16	2.0	110	12	24	44	9	12	8	15.04

●Excellent ○Good

●Excellent ○Good																					
ISO	P											M				K					
Material	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
Description																					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	36	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	●	●	●	●	○	●	●					●	●	●	●	●	●	●			
ISO	N									S						H					
Material	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze/Brass)			Non Metallic Materials		Heat Resistant Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
Description																					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	●	●	●	●	○			●													

**ВИННСЛА**



**V I N N S L**

