


**16500**
**16500TIALN**
**16500ALCRN**
**Codice - Code**

Norma - Standard	DIN 327 D	DIN 327 D	DIN 327 D
Materiale - Material	HSSCO 8	HSSCO 8	PM HSS
N° taglienti - No. of flutes	2	2	2
Elica - Helix	30°	30°	30°
Tolleranza - Tolerance	e8	e8	e8
Rivestimento - Coating		TiAlN	AlCrN
Ampiezza gamma - Size range	2:32	2:32	1:25
Pagina - Page	<b>22</b>	<b>22</b>	<b>22</b>

**Impieghi - Applications**

Acciaio Steel	magnetico - magnetic	40 L	75 L	110 L
	costruzione - structural	30 L	55 L	90 L
	carbonio - carbon	25 I	45 I	80 L
	legato - alloys < 850 N/mm <sup>2</sup>	20 I	35 I	65 I
	legato/trattato - alloys/hardened >850<1150 N/mm <sup>2</sup>		25 F	45 F
Inox Stainless steel	alta resistenza - heat resistant			20 F
	automatico - automatic	20 I	35 I	50 I
	austenitico - austenitic			
	ferritico-aust., martensitico - ferritic-aust., martensitic < 850 N/mm <sup>2</sup>		20 I	35 I
Ghisa Cast iron	ferritico-aust., martensitico - ferritic-aust., martensitic >850<1150 N/mm <sup>2</sup>			20 I
	ghisa - cast iron < 700 N/mm <sup>2</sup>	25 I	45 I	80 I
	ghisa - cast iron > 700 N/mm <sup>2</sup>	20 H	35 I	65 I
Titanio Titanium	puro - pure	25 H	35 H	50 H
	leghe - alloys < 900 N/mm <sup>2</sup>	20 H	30 H	40 H
	leghe - alloys >900 <1250 N/mm <sup>2</sup>		10 H	20 H
Nichel Nickel	puro - pure	30 F	55 F	100 F
	leghe - alloys < 850 N/mm <sup>2</sup>	15 E	20 E	25 E
	leghe - alloys >850 <1150 N/mm <sup>2</sup>			12 H
Rame - Copper	puro - pure	110 F	180 F	200 F
	trucoli corti - short chips	90 F	150 F	180 F
	trucoli lunghi - long chips	70 F	130 F	150 F
Ottone, bronzo Brass, bronze	leghe - alloys Cu-Al-Fe		20 E	30 E
	puro - pure	300 N	550 N	650 N
	leghe - alloys Si < 1,5	300 N	550 N	650 N
Alluminio Aluminium	leghe - alloys Si > 1,5% <10%	70 M	130 N	200 N
	leghe - alloys Si >10%; leghe di magnesio - magnesium alloys			
	termoplastiche - thermoplastics	110 F	200 F	200 F
Materie plastiche Plastics	termoindurenti - thermosetting			
	rinforzate con fibre - reinforced fiberglass			

<b>16505</b>	<b>16505TIALN</b>	<b>16510</b>	<b>16510TIALN</b>	<b>16510ALCRN</b>	<b>16515</b>	<b>16515TIALN</b>	<b>16555</b>
≈ DIN 844 B	≈ DIN 844 B	DIN 327 D	DIN 327 D	DIN 327 D	DIN 844 B	DIN 844 B	DIN 844 B
HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	PM HSS	HSSCO 8	HSSCO 8	HSSCO 8
2	2	3	3	3	3	3	3
30°	30°	30°	30°	30°	30°	30°	55°
e8	e8	e8	e8	e8	e8	e8	js14
3:32	TAIN 3:32	2:32	TAIN 2:32	AICN 1:25	2:32	TAIN 2:32	6:20
<b>23</b>	<b>23</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>26</b>

neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable

numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter

35 L	65 L	40 L	75 L	110 L	35 L	65 L	35 L
25 L	50 L	30 L	55 L	90 L	25 L	50 L	25 L
20 I	40 I	25 I	45 I	80 L	20 I	40 I	20 I
15 I	30 I	20 I	35 I	65 I	15 I	30 I	15 I
	20 F		25 F	45 F		20 F	
				20 F			
15 I	30 I	20 I	35 I	50 I	15 I	30 I	15 I
	18 I		20 I	35 I		18 I	
				20 I			
20 I	40 I	25 I	45 I	80 I	20 I	40 I	20 I
15 H	30 I	20 H	35 I	65 I	15 H	30 I	15 H
20 H	30 H	25 H	35 H	50 H	20 H	30 H	20 H
15 H	25 H	20 H	30 H	40 H	15 H	25 H	15 H
	8 H		10 H	20 H		8 H	
25 F	50 F	30 F	55 F	100 F	25 F	50 F	25 F
12 E	18 E	15 E	20 E	25 E	12 E	18 E	12 E
				12 H			
100 F	160 F	110 F	180 F	200 F	100 F	160 F	100 F
80 F	130 F	90 F	150 F	180 F	80 F	130 F	80 F
65 F	110 F	70 F	130 F	150 F	65 F	110 F	65 F
	15 E		20 E	30 E		15 E	
280 N	500 N	300 N	550 N	650 N	280 N	500 N	280 N
280 N	500 N	300 N	550 N	650 N	280 N	500 N	280 N
65 M	110 N	70 M	130 N	200 N	65 M	110 N	65 M
100 F	180 F	110 F	200 F	200 F	100 F	180 F	100 F


**16555TIALN**
**16525**
**16525TIALN**
**Codice - Code**

Norma - Standard	DIN 844 B	DIN 844 B	DIN 844 B
Materiale - Material	HSSCO 8	HSSCO 8	HSSCO 8
N° taglienti - No. of flutes	3	4-6	4-6
Elica - Helix	55°	30°	30°
Tolleranza - Tolerance	js14	js14	js14
Rivestimento - Coating	TiAlN		TiAlN
Ampiezza gamma - Size range	6:20	2:32	2:32
Pagina - Page	26	27	27

**Impieghi - Applications**

Acciaio Steel	magnetico - magnetic	65 L	35 L	65 L
	costruzione - structural	50 L	25 L	50 L
	carbonio - carbon	40 I	20 I	40 I
	legato - alloys < 850 N/mm <sup>2</sup>	30 I	15 I	30 I
	legato/trattato - alloys/hardened >850<1150 N/mm <sup>2</sup>	20 F		20 F
Inox Stainless steel	alta resistenza - heat resistant			
	automatico - automatic	30 I	15 I	30 I
	austenitico - austenitic			
	ferritico-aust., martensitico - ferritic-aust., martensitic < 850 N/mm <sup>2</sup>	18 I		18 I
Ghisa Cast iron	ferritico-aust., martensitico - ferritic-aust., martensitic >850<1150 N/mm <sup>2</sup>			
	ghisa - cast iron < 700 N/mm <sup>2</sup>	40 I	20 I	40 I
	ghisa - cast iron > 700 N/mm <sup>2</sup>	30 I	15 H	30 I
Titanio Titanium	puro - pure	30 H	20 H	30 H
	leghe - alloys < 900 N/mm <sup>2</sup>	25 H	15 H	25 H
	leghe - alloys >900 <1250 N/mm <sup>2</sup>	8 H		8 H
Nichel Nickel	puro - pure	50 F	25 F	50 F
	leghe - alloys < 850 N/mm <sup>2</sup>	18 E	12 E	18 E
	leghe - alloys >850 <1150 N/mm <sup>2</sup>			
Rame - Copper	puro - pure	160 F	100 F	160 F
	truciolli corti - short chips	130 F	80 F	130 F
	truciolli lunghi - long chips	110 F	65 F	110 F
Ottone, bronzo Brass, bronze	leghe - alloys Cu-Al-Fe	15 E		15 E
	puro - pure	500 N	280 N	500 N
	leghe - alloys Si < 1,5	500 N	280 N	500 N
Alluminio Aluminium	leghe - alloys Si > 1,5% <10%	110 N	65 M	110 N
	leghe - alloys Si >10%; leghe di magnesio - magnesium alloys			
	termoplastiche - thermoplastics	180 F	100 F	180 F
Materie plastiche Plastics	termoindurenti - thermosetting			
	rinforzate con fibre - reinforced fiberglass			

<b>16525ALCRN</b>	<b>16535</b>	<b>16535TIALN</b>	<b>16538</b>	<b>16538TIALN</b>	<b>16530</b>	<b>16530TIALN</b>	<b>16530ALCRN</b>
DIN 844 B	DIN 844 B	DIN 844 B	Norma NUI	Norma NUI	DIN 327 D	DIN 327 D	DIN 327 D
PM HSS	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	PM HSS
4	4-6	4-6	4	4	2	2	2
30°	30°	30°	30°	30°	30°	30°	30°
+0,03/0	js14	js14	js14	js14	e8	e8	e8
AICrN		TIALN		TIALN		TIALN	AICrN
1:25	3:22	3:22	6:20	6:20	3:20	3:20	1:25
<b>27</b>	<b>28</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>30</b>	<b>30</b>	<b>30</b>

neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable

numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter

110 L	30 L	55 L	25 L	50 L	40 L	75 L	110 L
90 L	20 L	35 L	18 L	30 L	30 L	55 L	90 L
80 L	18 l	30 l	15 l	25 l	25 l	45 l	80 L
65 l	12 l	20 l	10 l	18 l	20 l	35 l	65 l
45 F		18 F		15 F		25 F	45 F
20 F							20 F
50 l	12 l	20 l	10 l	18 l	20 l	35 l	50 l
35 l		15 l		12 l		20 l	35 l
20 l							20 l
80 l	18 l	30 l	15 l	25 l	25 l	45 l	80 l
65 l	12 H	20 l	10 H	18 l	20 H	35 l	65 l
50 H	18 H	25 H	15 H	25 H	25 H	35 H	50 H
40 H	12 H	20 H	10 H	18 H	20 H	30 H	40 H
20 H		6 H		4 H		10 H	20 H
100 F	20 F	40 F	18 F	30 F	30 F	55 F	100 F
25 E	10 E	15 E	8 E	12 E	15 E	20 E	25 E
12 H							12 H
200 F	80 F	130 F	70 F	120 F	110 F	180 F	200 F
180 F	70 F	110 F	60 F	100 F	90 F	150 F	180 F
150 F	55 F	90 F	50 F	80 F	70 F	130 F	150 F
30 E		12 E		10 E		20 E	30 E
650 N	230 N	450 N	200 N	400 N	300 N	550 N	650 N
650 N	230 N	450 N	200 N	400 N	300 N	550 N	650 N
200 N	55 M	90 N	50 M	80 N	70 M	130 N	200 N
200 F	80 F	150 F	70 F	130 F	110 F	200 F	250 F


**16550**
**16550TIALN**
**16501**
**Codice - Code**

<b>Norma - Standard</b>	≈ DIN 844 B	≈ DIN 844 B	Norma NUI
<b>Materiale - Material</b>	HSSCO 8	HSSCO 8	HSSCO 8
<b>N° taglienti - No. of flutes</b>	2	2	1
<b>Elica - Helix</b>	30°	30°	js14
<b>Tolleranza - Tolerance</b>	e8	e8	
<b>Rivestimento - Coating</b>		TIALN	
<b>Ampiezza gamma - Size range</b>	3:20	3:20	3:10
<b>Pagina - Page</b>	31	31	32

**Impieghi - Applications**

<b>Acciaio</b> <b>Steel</b>	magnetico - <i>magnetic</i> costruzione - <i>structural</i> carbonio - <i>carbon</i> legato - <i>alloys &lt; 850 N/mm²</i> legato/trattato - <i>alloys/hardened &gt;850&lt;1150 N/mm²</i> alta resistenza - <i>heat resistant</i>	35 L 25 L 20 I 15 I	65 L 50 L 40 I 30 I 20 F		
	<b>Inox</b> <b>Stainless steel</b>	automatico - <i>automatic</i> austenitico - <i>austenitic</i> ferritico-aust., martensitico - <i>ferritic-aust., martensitic &lt; 850 N/mm²</i> ferritico-aust., martensitico - <i>ferritic-aust., martensitic &gt;850&lt;1150 N/mm²</i>	15 I	30 I 18 I	
	<b>Ghisa</b> <b>Cast iron</b>	ghisa - <i>cast iron &lt; 700 N/mm²</i> ghisa - <i>cast iron &gt; 700 N/mm²</i>	20 I 15 H	40 I 30 I	
	<b>Titanio</b> <b>Titanium</b>	puro - <i>pure</i> leghe - <i>alloys &lt; 900 N/mm²</i> leghe - <i>alloys &gt;900 &lt;1250 N/mm²</i>	20 H 15 H	30 H 25 H 8 H	
	<b>Nichel</b> <b>Nickel</b>	puro - <i>pure</i> leghe - <i>alloys &lt; 850 N/mm²</i> leghe - <i>alloys &gt;850 &lt;1150 N/mm²</i>	25 F 12 E	50 F 18 E	
<b>Rame - Copper</b>	puro - <i>pure</i>	100 F	160 F		
<b>Ottone, bronzo</b> <b>Brass, bronze</b>	trucioli corti - <i>short chips</i> trucioli lunghi - <i>long chips</i> leghe - <i>alloys Cu-Al-Fe</i>	80 F 65 F	130 F 110 F		
	puro - <i>pure</i> leghe - <i>alloys Si &lt; 1,5</i> leghe - <i>alloys Si &gt; 1,5% &lt;10%</i> leghe - <i>alloys Si &gt;10%; leghe di magnesio - magnesium alloys</i>	280 N 280 N 65 M	500 N 500 N 110 N	400 N 400 N 200 M 120 M	
	<b>Materie plastiche</b> <b>Plastics</b>	termoplastiche - <i>thermoplastics</i> termoidurenti - <i>thermosetting</i> rinforzate con fibre - <i>reinforced fiberglass</i>	100 F	180 F	150 F 150 F 150 F

16502	16520	16520TIALN	16520ALCRN	16522	16522TIALN	16524	16524TIALN
Norma NUI	DIN 844 B	DIN 844 B	DIN 844 B	DIN 844 B	DIN 844 B	DIN 844 B	DIN 844 B
HSSCO 8	HSSCO 8	HSSCO 8	PM HSS	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8
2	3-6	3-6	3-6	4	4	4	4
js14	30°	30°	30°	30°	30°	30°	30°
	js14	js14	js14	js14	js14	js14	js14
		TiAlN	AlCrN		TiAlN		TiAlN
1:32	6:32	6:32	6:25	10:22	10:22	10:20	10:20
<b>33</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>35</b>	<b>35</b>	<b>36</b>	<b>36</b>
neretto - bold = molto indicato - very suitable; corsivo - <i>italico</i> = indicato - suitable numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter							
40 L	35 C	65 C	110 C	35 C	65 C	35 C	65 C
35 L	25 C	50 C	90 C	25 C	50 C	25 C	50 C
30 I	20 B	40 B	80 B	20 B	40 B	20 B	40 B
	15 B	30 B	65 B	15 B	30 B	15 B	30 B
		20 B	45 B		20 B		20 B
		20 B	20 B				
20 E	15 C	30 C	55 C	15 C	30 C	15 C	30 C
15 E		18 C	40 C		18 C		18 C
		30 C	20 C				
	20 B	40 B	80 C	20 B	40 B	20 B	40 B
	15 B	30 B	60 C	15 B	30 B	15 B	30 B
25 F	20 C	30 C	50 C	20 C	30 C	20 C	30 C
	15 C	25 C	35 C	15 C	25 C	15 C	25 C
		8 B	15 B		8 B		8 B
35 F	25 B	50 B	100 B	25 B	50 B	25 B	50 B
	12 B	18 B	25 B	12 B	18 B	12 B	18 B
		12 B	12 B				
100 F	100 B	160 B	250 B	100 B	160 B	100 B	160 B
	80 B	130 B	250 B	80 B	130 B	80 B	130 B
	65 B	110 B	250 B	65 B	110 B	65 B	110 B
		15 A	30 A		15 A		15 A
250 N	280 I	500 I		280 I	500 I	280 I	500 I
250 N	280 I	500 I		280 I	500 I	280 I	500 I
70 N	65 I	110 I	200 I	65 I	110 I	65 I	110 I
100 F	100 B	180 B		100 B	180 B	100 B	180 B



16532



16532TIALN



16526

Codice - Code

Norma - Standard	DIN 1889 BB	DIN 1889 BB	DIN 844 B
Materiale - Material	HSSCO 8	HSSCO 8	HSSCO 8
N° taglienti - No. of flutes	4	4	4
Elica - Helix	30°	30°	30°
Tolleranza - Tolerance	js14	js14	js14
Rivestimento - Coating		TiAlN	
Ampiezza gamma - Size range	10:20	10:20	10:22
Pagina - Page	37	37	38

**Impieghi - Applications**

Acciaio Steel	magnetico - magnetic	35 C	65 C	35 C
	costruzione - structural	25 C	50 C	25 C
	carbonio - carbon	20 B	40 B	20 B
	legato - alloys < 850 N/mm <sup>2</sup>	15 B	30 B	15 B
	legato/trattato - alloys/hardened >850<1150 N/mm <sup>2</sup>		20 B	
Inox Stainless steel	alta resistenza - heat resistant			
	automatico - automatic	15 C	30 C	15 C
	austenitico - austenitic			
	ferritico-aust., martensitico - ferritic-aust., martensitic < 850 N/mm <sup>2</sup>		18 C	
Ghisa Cast iron	ferritico-aust., martensitico - ferritic-aust., martensitic >850<1150 N/mm <sup>2</sup>			
	ghisa - cast iron < 700 N/mm <sup>2</sup>	20 B	40 B	20 B
	ghisa - cast iron > 700 N/mm <sup>2</sup>	15 B	30 B	15 B
Titanio Titanium	puro - pure	20 C	30 C	20 C
	leghe - alloys < 900 N/mm <sup>2</sup>	15 C	25 C	15 C
	leghe - alloys >900 <1250 N/mm <sup>2</sup>		8 B	
Nichel Nickel	puro - pure	25 B	50 B	25 B
	leghe - alloys < 850 N/mm <sup>2</sup>	12 B	18 B	12 B
	leghe - alloys >850 <1150 N/mm <sup>2</sup>			
Rame - Copper	puro - pure	100 B	160 B	100 B
	trucoli corti - short chips	80 B	130 B	80 B
	trucoli lunghi - long chips	65 B	110 B	65 B
Ottone, bronzo Brass, bronze	leghe - alloys Cu-Al-Fe		15 A	
	puro - pure	280 I	500 I	280 I
	leghe - alloys Si < 1,5	280 I	500 I	280 I
	leghe - alloys Si > 1,5% <10%	65 I	110 I	65 I
Alluminio Aluminium	leghe - alloys Si >10%; leghe di magnesio - magnesium alloys			
	termoplastiche - thermoplastics	100 B	180 B	100 B
	termoindurenti - thermosetting			
	rinforzate con fibre - reinforced fiberglass			

<b>16526TIALN</b>	<b>16528</b>	<b>16528TIALN</b>	<b>16534</b>	<b>16534TIALN</b>	<b>16545</b>	<b>16560</b>	<b>16570</b>
DIN 844 B HSSCO 8	DIN 844 B HSSCO 8	DIN 844 B HSSCO 8	DIN 1889 BB HSSCO 8	DIN 1889 BB HSSCO 8	DIN 1833 C HSSCO 8	DIN 1833 C HSSCO 8	DIN 1833 C HSSCO 8
4	4	4	4	4	8-10	8-10	8-10
30°	30°	30°	30°	30°	45°	60°	70°
js14	js14	js14	js14	js14	js16	js16	js16
TIALN	TIALN	TIALN	TIALN	TIALN			
10:22	10:20	10:20	10:20	10:20	16:25	16:25	16:25
<b>38</b>	<b>39</b>	<b>39</b>	<b>40</b>	<b>40</b>	<b>41</b>	<b>41</b>	<b>41</b>

neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable

numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter

65 C	35 C	65 C	35 C	65 C	35 F	35 F	35 F
50 C	25 C	50 C	25 C	50 C	30 F	30 F	30 F
40 B	20 B	40 B	20 B	40 B	25 E	25 E	25 E
30 B	15 B	30 B	15 B	30 B	20 E	20 E	20 E
20 B		20 B		20 B	15 D	15 D	15 D
					12 C	12 C	12 C
30 C	15 C	30 C	15 C	30 C	18 D	18 D	18 D
					15 C	15 C	15 C
18 C		18 C		18 C	12 C	12 C	12 C
					10 B	10 B	10 B
40 B	20 B	40 B	20 B	40 B	20 E	20 E	20 E
30 B	15 B	30 B	15 B	30 B	15 C	15 C	15 C
30 C	20 C	30 C	20 C	30 C	25 E	25 E	25 E
25 C	15 C	25 C	15 C	25 C	15 C	15 C	15 C
8 B		8 B		8 B	10 B	10 B	10 B
50 B	25 B	50 B	25 B	50 B	20 D	20 D	20 D
18 B	12 B	18 B	12 B	18 B	12 C	12 C	12 C
					10 B	10 B	10 B
160 B	100 B	160 B	100 B	160 B	75 F	75 F	75 F
130 B	80 B	130 B	80 B	130 B	75 F	75 F	75 F
110 B	65 B	110 B	65 B	110 B	65 F	65 F	65 F
15 A		15 A		15 A	15 C	15 C	15 C
500 I	280 I	500 I	280 I	500 I	150 I	150 I	150 I
500 I	280 I	500 I	280 I	500 I	150 I	150 I	150 I
110 I	65 I	110 I	65 I	110 I	55 H	55 H	55 H
					40 G	40 G	40 G
180 B	100 B	180 B	100 B	180 B			


**16546**
**16561**
**16571**
**Codice - Code**

Norma - Standard	DIN 1833 D	DIN 1833 D	DIN 1833 D
Materiale - Material	HSSCO 8	HSSCO 8	HSSCO 8
N° taglienti - No. of flutes	8-10	8-10	8-10
Elica - Helix	45°	60°	70°
Tolleranza - Tolerance	js16	js16	js16
Rivestimento - Coating			
Ampiezza gamma - Size range	6:25	6:25	6:25
Pagina - Page	42	42	42

**Impieghi - Applications**

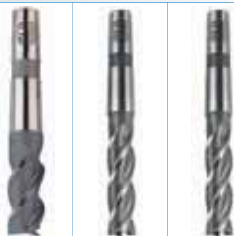
Acciaio Steel	magnetico - magnetic	35 F	35 F	35 F
	costruzione - structural	30 F	30 F	30 F
	carbonio - carbon	25 E	25 E	25 E
	legato - alloys < 850 N/mm <sup>2</sup>	20 E	20 E	20 E
	legato/trattato - alloys/hardened >850<1150 N/mm <sup>2</sup>	15 D	15 D	15 D
	alta resistenza - heat resistant	12 C	12 C	12 C
Inox Stainless steel	automatico - automatic	18 D	18 D	18 D
	austenitico - austenitic	15 C	15 C	15 C
	ferritico-aust., martensitico - ferritic-aust., martensitic < 850 N/mm <sup>2</sup>	12 C	12 C	12 C
	ferritico-aust., martensitico - ferritic-aust., martensitic >850<1150 N/mm <sup>2</sup>	10 B	10 B	10 B
Ghisa Cast iron	ghisa - cast iron < 700 N/mm <sup>2</sup>	20 E	20 E	20 E
	ghisa - cast iron > 700 N/mm <sup>2</sup>	15 C	15 C	15 C
Titanio Titanium	puro - pure	25 E	25 E	25 E
	leghe - alloys < 900 N/mm <sup>2</sup>	15 C	15 C	15 C
	leghe - alloys >900 <1250 N/mm <sup>2</sup>	10 B	10 B	10 B
Nichel Nickel	puro - pure	20 D	20 D	20 D
	leghe - alloys < 850 N/mm <sup>2</sup>	12 C	12 C	12 C
	leghe - alloys >850 <1150 N/mm <sup>2</sup>	10 B	10 B	10 B
Rame - Copper	puro - pure	75 F	75 F	75 F
Ottone, bronzo Brass, bronze	trucoli corti - short chips	75 F	75 F	75 F
	trucoli lunghi - long chips	65 F	65 F	65 F
	leghe - alloys Cu-Al-Fe	15 C	15 C	15 C
Alluminio Aluminium	puro - pure	150 I	150 I	150 I
	leghe - alloys Si < 1,5	150 I	150 I	150 I
	leghe - alloys Si > 1,5% <10%	55 H	55 H	55 H
	leghe - alloys Si >10%; leghe di magnesio - magnesium alloys	40 G	40 G	40 G
Materie plastiche Plastics	termoplastiche - thermoplastics			
	termoindurenti - thermosetting			
	rinforzate con fibre - reinforced fiberglass			

<b>16580</b>	<b>16590</b>	<b>16690</b>	<b>16600</b>	<b>16610</b>	<b>16625</b>	<b>16625TIALN</b>	<b>16645</b>
DIN 850 D	DIN 851 AB	DIN 851 B	DIN 326 D	DIN 845 B	DIN 845 B	DIN 845 B	DIN 845 B
HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8
8-12	6	8-10	2	3	4-8	4-8	4-8
			30°	30°	30°	30°	45°
h12	d11	d11	e8	js14	js14	js14	js14
10,5x2-45,5x10	16:32	16:56	14:40	14:45	14:63	14:63	16:40
43	44	45	46	47	48	48	49

neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable

numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter

30 C	35 C	35 C	30 L	35 C	35 L	65 L	40 L
25 C	30 C	30 C	20 L	25 C	25 L	50 L	30 L
20 B	25 B	25 B	18 I	20 B	20 I	40 I	25 I
15 B	20 B	20 B	12 I	15 B	15 I	30 I	20 I
10 B	15 B	15 B				20 F	12 F
15 C	18 C	18 C	12 I	15 C	15 I	30 I	20 I
10 B	15 B	15 B					18 I
8 A	12 A	12 A				18 I	10 I
10 A	10 A	10 A					
20 B	20 B	20 B	18 I	20 B	20 I	40 I	25 I
15 B	15 B	15 B	12 H	15 B	15 H	30 I	20 H
30 C	25 B	25 B	18 H	20 C	20 H	30 H	25 H
20 B	15 B	15 B	12 H	15 C	15 H	25 H	20 H
10 A	10 A	10 A				8 H	5 H
30 C	25 C	25 C	20 F	25 B	25 F	50 F	30 F
6 A	12 A	12 A	10 E	12 B	12 E	18 E	15 E
6 A	6 A	6 A					4 E
25 C	90 D	90 D	80 F	100 B	100 F	160 F	
25 C	90 D	90 D	70 F	80 B	80 F	130 F	90 F
35 C	35 C	35 C	55 F	65 B	65 F	110 F	
10 A						15 E	
60 H	150 I	150 I	230 N	280 I	280 N	500 N	
60 H	150 I	150 I	230 N	280 I	280 N	500 N	
30 D	55 H	55 H	55 M	65 I	65 M	110 N	
15 B	40 G	40 G					
30 D	90 D	90 D	80 F	100 B	100 F	180 F	40 N


**16645TIALN**
**16635**
**16638**
**Codice - Code**

Norma - Standard	DIN 845 B	DIN 845 B	Norma NUI
Materiale - Material	HSSCO 8	HSSCO 8	HSSCO 8
N° taglienti - No. of flutes	4-8	4-8	4-10
Elica - Helix	45°	30°	30°
Tolleranza - Tolerance	js16	js14	js14
Rivestimento - Coating	TiAlN		
Ampiezza gamma - Size range	16:40	14:40	16:63
Pagina - Page	49	50	51

**Impieghi - Applications**

		75 L	30 L	25 L
Acciaio Steel	magnetico - magnetic			
	costruzione - structural	55 L	20 L	18 L
	carbonio - carbon	45 I	18 I	15 I
	legato - alloys < 850 N/mm <sup>2</sup>	35 I	12 I	10 I
	legato/trattato - alloys/hardened >850<1150 N/mm <sup>2</sup>	25 F		
Inox Stainless steel	alta resistenza - heat resistant			
	automatico - automatic	35 I	12 I	10 I
	austenitico - austenitic			
	ferritico-aust., martensitico - ferritic-aust., martensitic < 850 N/mm <sup>2</sup>	20 I		
Ghisa Cast iron	ferritico-aust., martensitico - ferritic-aust., martensitic >850<1150 N/mm <sup>2</sup>			
	ghisa - cast iron < 700 N/mm <sup>2</sup>	45 I	18 I	15 I
	ghisa - cast iron > 700 N/mm <sup>2</sup>	35 I	12 H	10 H
Titanio Titanium	puro - pure	35 H	18 H	15 H
	leghe - alloys < 900 N/mm <sup>2</sup>	30 H	12 H	10 H
	leghe - alloys >900 <1250 N/mm <sup>2</sup>	10 H		
Nichel Nickel	puro - pure	55 F	20 F	18 F
	leghe - alloys < 850 N/mm <sup>2</sup>	20 E	10 E	8 E
	leghe - alloys >850 <1150 N/mm <sup>2</sup>			
Rame - Copper	puro - pure	180 F	80 F	70 F
	trucioli corti - short chips	150 F	70 F	60 F
	trucioli lunghi - long chips	130 F	55 F	50 F
Ottone, bronzo Brass, bronze	leghe - alloys Cu-Al-Fe	20 E		
	puro - pure	550 N	230 N	200 N
	leghe - alloys Si < 1,5	550 N	230 N	200 N
	leghe - alloys Si > 1,5% <10%	130 N	55 M	50 M
Alluminio Aluminium	leghe - alloys Si >10%; leghe di magnesio - magnesium alloys			
	termoplastiche - thermoplastics	200 F	80 F	70 F
	termoindurenti - thermosetting			
Materie plastiche Plastics	rinforzate con fibre - reinforced fiberglass			

<b>16630</b>	<b>16650</b>	<b>16622</b>	<b>16624</b>	<b>16626</b>	<b>16626TIALN</b>	<b>16628</b>	<b>16634</b>
DIN 1889 D	DIN 1889 D	DIN 845 B	DIN 845 B	DIN 845 B	DIN 845 B	DIN 845 B	DIN 1889 D
HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8
4-8	4-8	4-8	4-8	4-8	4-8	4-8	4-8
30°	30°	30°	30°	30°	30°	30°	30°
js14	js14	js14	js14	js14	js14	js14	js14
16:40	16:40	14:63	16:63	14:63	16:63	16:63	16:40
<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>56</b>	<b>57</b>	<b>58</b>
neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter							
35 L	30 L	35 C	35 C	35 C	65 C	35 C	35 C
25 L	20 L	25 C	25 C	25 C	50 C	25 C	25 C
20 I	18 I	20 B	20 B	20 B	40 B	20 B	20 B
15 I	12 I	15 B	15 B	15 B	30 B	15 B	15 B
					20 B		
15 I	12 I	15 C	15 C	15 C	30 C	15 C	15 C
					18 C		
20 I	18 I	20 B	20 B	20 B	40 B	20 B	20 B
15 H	12 H	15 B	15 B	15 B	30 B	15 B	15 B
20 H	18 H	20 C	20 C	20 C	30 C	20 C	20 C
15 H	12 H	15 C	15 C	15 C	25 C	15 C	15 C
					8 B		
25 F	20 F	25 B	25 B	25 B	50 B	25 B	25 B
12 E	10 E	12 B	12 B	12 B	18 B	12 B	12 B
100 F	80 F	100 B	100 B	100 B	160 B	100 B	100 B
80 F	70 F	80 B	80 B	80 B	130 B	80 B	80 B
65 F	55 F	65 B	65 B	65 B	110 B	65 B	65 B
					15 A		
280 N	230 N	280 I	280 I	280 I	500 I	280 I	280 I
280 N	230 N	280 I	280 I	280 I	500 I	280 I	280 I
65 M	55 M	65 I	65 I	65 I	110 I	65 I	65 I
100 F	80 F	100 B	100 B	100 B	180 B	100 B	100 B


**16636**

**16700**

**16722**
**Codice - Code**

<b>Norma - Standard</b>	<b>DIN 1889 D</b>	<b>DIN 841</b>	<b>DIN 841</b>
<b>Materiale - Material</b>	HSSCO 8	HSSCO 8	HSSCO 8
<b>N° taglienti - No. of flutes</b>	4-6	6-10	6-10
<b>Elica - Helix</b>	30°	25°	25°
<b>Tolleranza - Tolerance</b>	js14	js16	js16
<b>Rivestimento - Coating</b>			
<b>Ampiezza gamma - Size range</b>	16:40	30:75	30:75
<b>Pagina - Page</b>	<b>59</b>	<b>60</b>	<b>60</b>

**Impieghi - Applications**

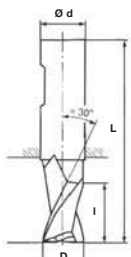
<b>Acciaio</b> <i>Steel</i>	magnetico - <i>magnetic</i>	35 C	30 D	30 D
	costruzione - <i>structural</i>	25 C	25 D	25 D
	carbonio - <i>carbon</i>	20 B	20 C	20 C
	legato - <i>alloys &lt; 850 N/mm²</i>	15 B	15 C	15 C
	legato/trattato - <i>alloys/hardened &gt;850&lt;1150 N/mm²</i>		10 B	10 B
<b>Inox</b> <i>Stainless steel</i>	alta resistenza - <i>heat resistant</i>			
	automatico - <i>automatic</i>	15 C	20 C	20 C
	austenitico - <i>austenitic</i>		15 C	15 C
	ferritico-aust., martensitico - <i>ferritic-aust., martensitic &lt; 850 N/mm²</i>		8 A	8 A
<b>Ghisa</b> <i>Cast iron</i>	ferritico-aust., martensitico - <i>ferritic-aust., martensitic &gt;850&lt;1150 N/mm²</i>		6 A	6 A
	ghisa - <i>cast iron &lt; 700 N/mm²</i>	20 B	20 B	20 B
	ghisa - <i>cast iron &gt; 700 N/mm²</i>	15 B	15 B	15 B
<b>Titanio</b> <i>Titanium</i>	puro - <i>pure</i>	20 C	30 C	30 C
	leghe - <i>alloys &lt; 900 N/mm²</i>	15 C	20 B	20 B
	leghe - <i>alloys &gt;900 &lt;1250 N/mm²</i>		10 A	10 A
<b>Nichel</b> <i>Nickel</i>	puro - <i>pure</i>	25 B	30 C	30 C
	leghe - <i>alloys &lt; 850 N/mm²</i>	12 B	12 A	12 A
	leghe - <i>alloys &gt;850 &lt;1150 N/mm²</i>		6 A	6 A
<b>Rame - Copper</b>	puro - <i>pure</i>	100 B	70 G	70 G
	trucili corti - <i>short chips</i>	80 B	70 G	70 G
<b>Ottone, bronzo</b> <i>Brass, bronze</i>	trucili lunghi - <i>long chips</i>	65 B	35 F	35 F
	leghe - <i>alloys Cu-Al-Fe</i>		12 A	12 A
	puro - <i>pure</i>	280 I	200 H	200 H
<b>Alluminio</b> <i>Aluminium</i>	leghe - <i>alloys Si &lt; 1,5</i>	280 I	200 H	200 H
	leghe - <i>alloys Si &gt; 1,5% &lt;10%</i>	65 I	60 E	60 E
	leghe - <i>alloys Si &gt;10%; leghe di magnesio - magnesium alloys</i>		35 D	35 D
	termoplastiche - <i>thermoplastics</i>	100 B	90 H	90 H
<b>Materie plastiche</b> <i>Plastics</i>	termoindurenti - <i>thermosetting</i>		30 H	30 H
	rinforzate con fibre - <i>reinforced fiberglass</i>		6 D	6 D

<b>16726</b>	<b>16705</b>	<b>16724</b>	<b>16728</b>	<b>16800</b>	<b>15400</b>	<b>15410</b>	<b>15420</b>
DIN 841	DIN 1880	DIN 1880	DIN 1880	DIN 885 A	DIN 6527 B	DIN 6527 B	DIN 6527 B
HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HSSCO 8	HM	HM	HM
6-10	8-10	6-14	6-14	14-22	2	3	4
25°	25°	25°	25°		30°	30°	30°
js16	js16	js16	js16	js16	e8	h10	h10
					TIAIN	TIAIN	TIAIN
30:75	40:80	40:160	40:160	50x5:125x20	2:20	2:20	2:20
<b>60</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>62</b>	<b>64</b>	<b>64</b>	<b>64</b>

neretto - bold = molto indicato - very suitable; corsivo - italic = indicato - suitable

numero - number = m/min.; lettera - letter = avanzamenti - feeds; consultare tabelle in fondo al capitolo - see tables at the end of the chapter

30 D	30 D	30 D	30 D	40 C	200 F	200 F	200 L
25 D	25 D	25 D	25 D	35 C	180 F	180 F	180 L
20 C	20 C	20 C	20 C	30 C	130 E	130 E	130 I
15 C	15 C	15 C	15 C	25 C	130 E	130 E	130 I
10 B	10 B	10 B	10 B	20 C	80 C	80 C	80 H
				10 C	50 C	50 C	50 H
20 C	20 C	20 C	20 C	25 C	90 D		60 F
15 C	15 C	15 C	15 C	20 C	60 C		45 E
8 A	8 A	8 A	8 A	15 C	45 C		35 E
6 A	6 A	6 A	6 A	10 C	35 C		
20 B	20 B	20 B	20 B	25 D	150 G	150 G	150 M
15 B	15 B	15 B	15 B	15 D	100 F	100 F	100 M
30 C	30 C	30 C	30 C	25 A	150 D	150 D	150 F
20 B	20 B	20 B	20 B	15 B	100 C	100 C	100 E
10 A	10 A	10 A	10 A	12 B	50 B	50 B	50 D
30 C	30 C	30 C	30 C	35 C	150 C	150 C	150 F
12 A	12 A	12 A	12 A	12 B	30 C	30 C	30 D
6 A	6 A	6 A	6 A	6 A	20 B	20 B	20 D
70 G	70 G	70 G	70 G	120 C	300 I	300 I	300 M
70 G	70 G	70 G	70 G	120 C	250 I	250 I	250 M
35 F	35 F	35 F	35 F	120 C	230 I	230 I	230 M
12 A	12 A	12 A	12 A	12 A	60 B	60 B	60 D
200 H	200 H	200 H	200 H	350 D	800 M	800 M	800 N
200 H	200 H	200 H	200 H	350 D	800 M	800 M	800 N
60 E	60 E	60 E	60 E	100 D	600 M	600 M	600 N
35 D	35 D	35 D	35 D	70 D	350 G	350 G	350 I
90 H	90 H	90 H	90 H	120 A	300 M	300 M	300 N
30 H	30 H	30 H	30 H		300 M	300 M	300 N
6 D	6 D	6 D	6 D		300 F	300 F	300 H



DIN  
327 D



16500

16500TIALN

16500ALCRN

Codice - Code

Materiale - Material	HSSCO 8	HSSCO 8	PM HSS
N° taglienti - No. of flutes	2	2	2
Elica - Helix	30°	30°	30°
Tolleranza - Tolerance	e8	e8	e8
Rivestimento - Coating		TiAlN	AlCrN

D mm	L mm	I mm	d h6 mm	z	Prezzo Euro	Prezzo Euro	Prezzo Euro
1	47	4	6	2			30,75
2	48	4	6	2	13,17	19,74	27,25
2,5	49	5	6	2	13,17	19,74	
3	49	5	6	2	11,85	18,43	27,25
3,5	50	6	6	2	11,93	18,51	
4	51	7	6	2	11,48	18,06	27,25
4,5	51	7	6	2	11,93	18,51	
5	52	8	6	2	11,27	17,85	27,25
5,5	52	8	6	2	11,56	18,12	
6	52	8	6	2	10,93	17,51	27,25
6,5	60	10	10	2	15,07	26,40	
7	60	10	10	2	15,07	26,40	43,07
7,5	60	10	10	2	15,07	26,40	
8	61	11	10	2	14,63	25,95	43,07
8,5	61	11	10	2	17,49	28,80	
9	61	11	10	2	16,94	28,26	44,58
9,5	61	11	10	2	16,94	28,26	
10	63	13	10	2	16,59	27,91	44,58
11	70	13	12	2	20,08	31,91	
12	73	16	12	2	20,62	32,45	56,51
13	73	16	12	2	22,19	34,58	
14	73	16	12	2	23,78	36,17	61,34
15	73	16	12	2	26,77	39,16	
16	79	19	16	2	28,33	44,39	74,23
17	79	19	16	2	31,70	51,34	
18	79	19	16	2	35,16	54,78	92,67
19	79	19	16	2	44,65	64,27	
20	88	22	20	2	43,30	67,26	121,49
21	88	22	20	2	52,57	80,21	
22	88	22	20	2	57,83	85,46	136,86
24	102	26	25	2	80,10	115,63	
25	102	26	25	2	80,10	115,63	179,49
26	102	26	25	2	88,52	126,46	
28	102	26	25	2	95,37	133,31	
30	102	26	25	2	105,11	143,05	
32	112	32	32	2	116,31	160,56	











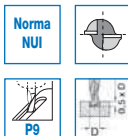
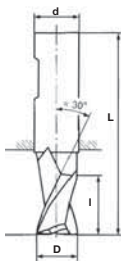












**16502**

Codice - Code

Materiale - Material

N° taglienti - No. of flutes

Elica - Helix

Tolleranza - Tolerance

Rivestimento - Coating

HSSCO 8

2

30°

js14

D mm	L mm	l mm	d h6 mm	z	Prezzo Euro
1	49	3	6	2	14,77
1,5	49	5	6	2	14,77
2	51	7	6	2	14,77
2,5	52	8	6	2	14,77
3	52	8	6	2	14,08
3,5	54	10	6	2	14,77
4	55	11	6	2	14,08
4,5	55	11	6	2	14,77
5	57	13	6	2	14,08
5,5	57	13	6	2	14,77
6	57	13	6	2	14,08
6,5	66	16	10	2	20,00
7	66	16	10	2	20,00
7,5	66	16	10	2	20,00
8	69	19	10	2	19,05
8,5	69	19	10	2	20,00
9	69	19	10	2	20,00
10	72	22	10	2	20,00
11	79	22	12	2	26,60
12	83	26	12	2	25,31
13	83	26	12	2	29,31
14	83	26	12	2	28,79
15	83	26	12	2	35,79
16	92	32	16	2	35,16
17	92	32	16	2	44,28
18	92	32	16	2	44,28
19	92	32	16	2	52,84
20	104	38	20	2	52,84
21	104	38	20	2	64,71
22	104	38	20	2	80,62
23	104	38	20	2	84,65
24	121	45	25	2	84,65
25	121	45	25	2	84,71
26	121	45	25	2	112,61
28	121	45	25	2	133,63
30	121	45	25	2	143,04
32	133	53	32	2	161,31

NUOVO - NEW









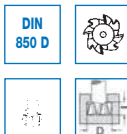












**16580**

Codice - Code

Materiale - Material

N° taglienti - No. of flutes

Elica - Helix

Tolleranza - Tolerance

Rivestimento - Coating

HSSCO 8

8-12

h12

D mm	L mm	I mm	d h6 mm	z	Prezzo Euro
10,5	50	2	6	8	34,43
10,5	50	2,5	6	8	34,43
10,5	50	3	6	8	34,43
13,5	56	2	10	8	40,02
13,5	56	3	10	8	40,02
13,5	56	4	10	8	40,02
16,5	56	3	10	8	44,71
16,5	56	4	10	8	45,84
16,5	56	5	10	8	45,84
16,5	56	6	10	8	45,84
19,5	63	3	10	8	54,62
19,5	63	4	10	8	54,62
19,5	63	5	10	8	54,62
19,5	63	6	10	8	54,62
22,5	63	4	10	10	60,42
22,5	63	5	10	10	60,42
22,5	63	6	10	10	60,42
22,5	63	7	10	10	60,42
22,5	63	8	10	10	60,42
25,5	63	5	10	10	71,50
25,5	63	6	10	10	70,84
25,5	63	7	10	10	70,84
25,5	63	8	10	10	70,84
28,5	63	6	10	10	81,41
28,5	63	7	10	10	81,41
28,5	63	8	10	10	81,41
28,5	71	10	12	10	81,41
32,5	71	6	12	10	93,15
32,5	71	7	12	10	93,15
32,5	71	8	12	10	93,15
32,5	71	10	12	10	93,15
45,5	71	10	12	12	136,51





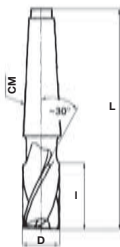












Norma  
Nui



**16638**

Codice - Code

Materiale - Material

N° taglienti - No. of flutes

Elica - Helix

Tolleranza - Tolerance

Rivestimento - Coating

HSSCO 8

4-10

30°

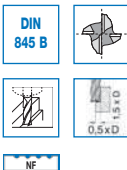
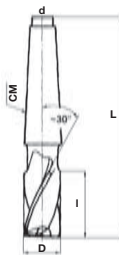
js14

D mm	L mm	I mm	CM	z	Prezzo Euro
16	170	90	2	4	94,25
18	200	100	3	4	140,71
20	210	110	3	4	160,34
22	210	110	3	4	162,56
25	225	125	4	5	197,21
26	225	125	4	5	202,06
28	265	140	4	5	233,76
30	265	140	4	6	244,49
32	285	160	4	6	297,69
35	305	180	4	6	345,63
40	352	200	4	8	416,40
50	372	200	5	8	728,40
63	402	250	5	10	1.301,45









**16624**

Codice - Code

Materiale - Material

N° taglienti - No. of flutes

Elica - Helix

Tolleranza - Tolerance

Rivestimento - Coating

HSSCO 8

4-8

30°

js14

D mm	L mm	I mm	CM	z	Prezzo Euro
16	148	63	2	4	112,23
18	148	63	2	4	111,20
20	160	75	2	4	134,44
22	160	75	2	4	155,47
25	192	90	3	5	177,29
26	192	90	3	5	183,31
28	192	90	3	5	195,65
30	192	90	3	5	216,43
32	231	106	4	5	260,51
35	231	106	4	6	287,11
40	250	125	4	6	423,15
50	308	150	5	7	784,95
63	338	180	5	8	1.302,32



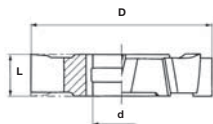












DIN  
885 A



16800

Codice - Code

Materiale - Material

N° taglienti - No. of flutes

Elica - Helix

Tolleranza - Tolerance

Rivestimento - Coating

HSSCO 8

14-22

js16

D mm	L k11 mm	d H7 mm	z	Prezzo Euro
50	5	16	14	71,22
50	6	16	14	74,14
50	7	16	14	74,14
50	8	16	14	78,17
50	9	16	14	81,30
50	10	16	14	81,30
63	5	22	16	85,43
63	6	22	16	85,43
63	7	22	16	90,85
63	8	22	16	90,43
63	9	22	16	92,37
63	10	22	16	101,90
63	12	22	16	107,05
63	14	22	16	113,77
63	16	22	16	123,43
63	18	22	16	128,21
63	20	22	16	136,18
80	5	22	18	107,05
80	6	22	18	106,06
80	7	22	18	119,58
80	8	22	18	119,66
80	9	22	18	124,52
80	10	22	18	128,13
80	12	22	18	138,81
80	14	22	18	146,62
80	16	22	18	157,78
80	18	22	18	166,47
80	20	22	18	175,27
100	5	27	20	142,36
100	6	27	20	146,62
100	7	27	20	146,62
100	8	27	20	161,30
100	9	27	20	164,85

