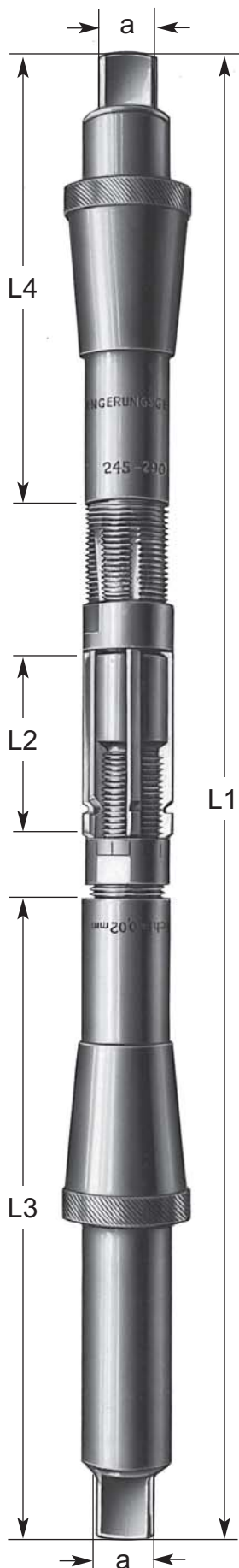


## Adjustable Reamers Type U



### Application Range

The universal reamer for all types of holes, especially for in-line reaming of two or more aligned holes.  
Two sliding guide sleeves provide accurate alignment between the hole to be reamed and the other mating hole.

### Description

Right-hand cutting reamer with expanding blades.  
Interchangeable pilots on both the front and back of the reamer.  
Each pilot has a square and a sliding guide sleeve.  
A special bayonet coupling between each pilot and the reamer body ensures proper alignment.  
The blades are ground to provide a rough cut followed by finish reaming.  
Due to the unique Hunger relief grinding process, the blades have a progressively increasing clearance angle, resulting in a softer cutting action.  
The front adjusting nut is marked with a circumferential scale.  
One graduation on the scale corresponds to a 0.01 mm change in cutting diameter.

Size	Range ∅ mm	Length Overall L1 mm	Length Blades L2 mm	Length Pilot L3 mm	Length Pilot L4 mm	Size of Square a mm	No. of Blades	Weight kg
U 12	12 - 13,5	250	30	110	82	8	5	0,170
U 13,5	13,5 - 15,5	270	33	116	84	9	5	0,245
U 15,5	15,5 - 18	295	36	127	88	10	5	0,360
U 18	18 - 21	330	40	140	100	12	5	0,545
U 19,5	19,5 - 22,5	352	44	150	110	13	5	0,700
U 21	21 - 24,5	352	44	150	110	13	5	0,800
U 24,5	24,5 - 29	385	48	157	118	13	6	1,140
U 29	29 - 34	418	52	170	130	16	6	1,670
U 34	34 - 39	440	54	180	140	18	6	2,430
U 39	39 - 45	475	60	190	150	18	6	3,310
U 45	45 - 52	500	60	200	162	18	6	4,700
U 52	52 - 59	500	60	200	162	18	6	5,700
U 59	59 - 66	500	60	200	162	18	6	6,700

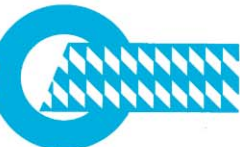
Packaging of the reamers:

From Size U 12 to U 39 individually in clear plastic tube containers.

From Size U 45 to U 59 individually in plastic nets.

### Sets of Reamers Type U in Wooden Cases

Symbol	Range		Number of Reamers	Weight kg
	mm	Inches		
USI	12 - 34	$15/32 - 1 11/32$	7	6,700
USE	12 - 45	$15/32 - 1 49/64$	9	13,100



## Adjustable Reamers Type U - Standard Version and Hard Chrome Version

The blades of the standard reamers type U are made of a special steel with excellent cutting properties.

Hunger has also manufactured a "hard chrome" version in which the blades are coated with hard chrome. The hard chrome coating has a low coefficient of friction.

Hard chrome reamers are therefore particularly suitable for reaming materials with a high wear tendency and materials that tend to stick and form built-up edges.

Hard chrome reamers and hard chrome replacement blades have been discontinued. Remaining stocks of nearly all reamer sizes are available while supplies last.

As an advanced alternative to the hard chrome version, Hunger now offers the DLC version, in which the blades are coated with diamond-like carbon (DLC), See page 3 for details.

### Ordering Information

Size	Reamers		Replacement Blades*		Front Nut with Scale Part No.	Back Nut Part No.	Guide Sleeve Part No.
	Special Steel Part No.	Hard Chrome Part No.	Special Steel Part No.	Hard Chrome Part No.			
<b>U 12</b>	130 12 000	131 12 000	130 12 400	131 12 400	130 12 520	100 12 510	130 12 600
<b>U 13,5</b>	130 13 000	131 13 000	130 13 400	131 13 400	100 12 520	100 13 510	130 13 600
<b>U 15,5</b>	130 15 000	131 15 000	130 15 400	131 15 400	130 15 520	100 15 510	130 15 600
<b>U 18</b>	130 18 000	131 18 000	130 18 400	131 18 400	130 18 520	100 18 510	130 18 600
<b>U 19,5<sup>+</sup></b>	130 19 000	131 19 000	130 19 400	131 19 400	100 18 520	130 19 510	130 18 600
<b>U 21</b>	130 21 000	131 21 000	130 21 400	131 21 400	130 21 520	100 21 510	130 21 600
<b>U 24,5</b>	130 24 000	131 24 000	130 24 400	131 29 400	130 24 520	130 24 510	130 24 600
<b>U 29</b>	130 29 000	131 29 000	130 29 400	131 27 400	130 29 520	130 29 510	130 29 600
<b>U 34</b>	130 34 000	131 34 000	130 34 400	131 34 400	130 34 520	130 34 510	130 31 600
<b>U 39</b>	130 39 000	131 39 000	130 39 400	131 39 400	130 39 520	130 39 510	130 37 600
<b>U 45</b>	130 45 000	131 45 000	130 45 400	131 45 400	130 45 520	100 45 510	130 45 600
<b>U 52</b>	130 52 000	131 52 000	130 45 400	131 45 400	130 52 520	130 52 510	130 52 600
<b>U 59</b>	130 59 000	131 59 000	130 45 400	131 45 400	130 52 520	130 52 510	130 65 600

\*Replacement blades are supplied in matched sets.

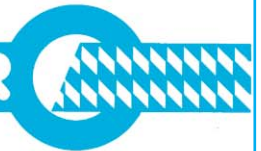
The blades are finish ground, so no grinding is required after the blades are inserted into the reamer body.

### Sets of Reamers Type U in Wooden Cases

Symbol	Size Range mm	Special Steel Part No.	Hard Chrome Part No.
<b>USI</b>	12 - 34	130 00 100	131 00 100
<b>USE</b>	12 - 45	130 00 200	131 00 200

<sup>+</sup>The intermediate size U 19,5 is not included in the sets.





## Adjustable Reamers Type U - Version DLD

The blades of the reamers type D version DLC are coated with a diamond-like hard material layer, which is applied by a complex PVD process.

The DLC coating is characterized by extreme hardness, wear resistance and smoothness (very low friction). At the same time, the sharpness of the cutting edges is maintained because the DLC coating is extremely thin.

The DLC version of the reamers type is therefore ideal for reaming aluminum alloys, titanium alloys, copper alloys (bronze and brass) as well as materials with a high wear effect and materials that tend to stick and form built-up edges.

### Ordering Information

Size	Reamers Part No.	Replacement Blades* Special Steel Part No.	SpareFront Nut wish scale Part No.	Spare Back Nut Part No.	Spare Guide Sleeve Part No.
<b>U 12</b>	138 12 000	138 12 400	130 12 520	100 12 510	130 12 600
<b>U 13,5</b>	138 13 000	138 13 400	100 12 520	100 13 510	130 13 600
<b>U 15,5</b>	138 15 000	138 15 400	130 15 520	100 15 510	130 15 600
<b>U 18</b>	138 18 000	138 18 400	130 18 520	100 18 510	130 18 600
<b>U 19,5<sup>+</sup></b>	138 19 000	138 19 400	100 18 520	130 19 510	130 18 600
<b>U 21</b>	138 21 000	138 21 400	130 21 520	100 21 510	130 21 600
<b>U 24,5</b>	138 24 000	138 24 400	130 24 520	130 24 510	130 24 600
<b>U 29</b>	138 29 000	138 29 400	130 29 520	130 29 510	130 29 600
<b>U 34</b>	138 34 000	138 34 400	130 34 520	130 34 510	130 31 600
<b>U 39</b>	138 39 000	138 39 400	130 39 520	130 39 510	130 37 600
<b>U 45</b>	138 45 000	138 45 400	130 45 520	100 45 510	130 45 600
<b>U 52</b>	138 52 000	138 45 400	130 52 520	130 52 510	130 52 600
<b>U 59</b>	138 59 000	138 45 400	130 52 520	130 52 510	130 65 600

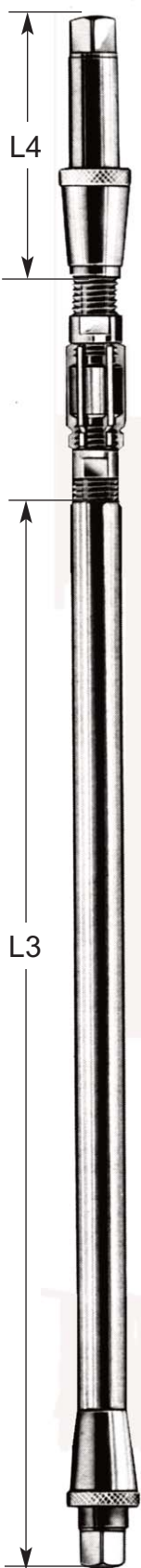
\* Replacement blades are supplied in matched sets.

## Pilots for Reamers Type U

### Description

Each pilot has a square at one end and a female taper at the other end. The female taper in the pilot is designed to receive the mating male taper on the reamer body. The pilot and reamer body are interlocked by a bayonet type coupling. Since the mating tapers are usually tightly bonded, it is recommended that a plastic hammer be used to loosen the tight contact before removing the pilot from the reamer body. Lightly tap the pilot around the female taper. With the contact loosened, rotate the pilot clockwise with respect to the reamer body until the triangular projection on the male taper is centered in the recess in the female taper. Then remove the pilot from the reamer body.

### Ordering Information



Size of Reamer	Standard Front Pilots		Standard Back Pilots		Extension Pilots Size I	
	Length L3 mm	Part No.	Length L4 mm	Part No.	Length mm	Part No.
U 12	110	130 12 701	82	130 12 702	210	132 12 711
U 13,5	116	130 13 701	84	130 13 702	220	132 13 712
U 15,5	127	130 15 701	88	130 15 702	230	132 15 713
U 18	140	130 18 701	100	130 18 702	240	132 18 714
U 19,5	150	130 19 701	110	130 19 702	250	132 19 715
U 21	150	130 21 701	110	130 21 702	250	132 21 715
U 24,5	157	130 24 701	118	130 24 702	260	132 24 716
U 29	170	130 29 701	130	130 29 702	270	132 29 717
U 34	180	130 34 701	140	130 34 702	280	132 34 718
U 39	190	130 39 701	150	130 39 702	290	132 39 719
U 45	200	130 45 701	162	130 45702	400	132 45 730
U 52	200	130 52 701	162	130 52 702	400	132 52 730
U 59	200	130 52 701	162	130 59 702	400	132 52 730

Size of Reamer	Extension Pilots Size II		Extension Pilots Size III		Extension Pilots Size IV	
	Length mm	Part No.	Length mm	Part No.	Length mm	Part No.
U 12	410	132 12 731	610	132 12 751	810	132 12 771
U 13,5	420	132 13 732	620	132 13 752	820	132 13 772
U 15,5	430	132 15 733	630	132 15 753	830	132 15 773
U 18	440	132 18 734	640	132 18 754	840	132 18 774
U 19,5	450	132 19 735	650	132 19 755	-	-
U 21	450	132 21 735	650	132 21 755	850	132 21 775
U 24,5	460	132 24 736	660	132 24 756	860	132 24 776
U 29	470	132 29 737	670	132 29 757	870	132 29 777
U 34	480	132 34 738	680	132 34 758	880	132 34 778
U 39	490	132 39 739	690	132 39 759	890	132 39 779
U 45	600	132 45 750	800	132 45 770	900	132 45 780
U 52	600	132 52 750	800	132 52 770	900	132 52 780
U 59	600	132 52 750	800	132 59 770	900	132 52 780

Customized extension pilots are available in any length.

### Ludwig Hunger GmbH

Graefelfinger Str. 146  
81375 Munich/Germany

Tel.: +49 89 7091-0  
Fax: +49 89 7091-26

sales@ludwig-hunger.de  
www.ludwig-hunger.de