

MANDRIS SEM GUIA TIPO-D HUNGER - ACESSORIOS

Adjustable Expanding Hand Reamers Type D



Application:
The standard reamer for repair and assembly jobs.

Design:
Right-hand cutting reamer with expanding blades.
Due to the unique Hunger relief grinding operation the blades have a progressively increasing clearance angle giving a softer cutting action.
Starting with size D 12 the adjusting nut is marked with a circular scale. One graduation of the scale corresponds to a diameter alteration of 0,01 mm.



Size	Size Range		Length Overall L1 mm	Length Blades L2 mm	Size of Square a mm	No. of Blades	Weight kg
	mm	Inches					
D 6,4	6,4 - 7,2	1/4 - 9/32	111	32	3	4	0,015
D 7,2	7,2 - 8	9/32 - 5/16	111	32	3,5	4	0,015
D 8	8 - 9	5/16 - 23/64	111	32	4,3	5	0,025
D 9	9 - 10	23/64 - 25/64	115	32	4,3	5	0,035
D 10	10 - 11	25/64 - 7/16	120	35	4,9	5	0,040
D 11	11 - 12	7/16 - 15/32	125	35	6,2	5	0,045
D 12	12 - 13,5	15/32 - 17/32	130	42	6,2	5	0,075
D 13,5	13,5 - 15,5	17/32 - 39/64	145	50	7	5	0,100
D 15,5	15,5 - 18	39/64 - 45/64	165	60	8	5	0,155
D 18	18 - 21	45/64 - 53/64	180	65	9	5	0,225
D 21	21 - 24	53/64 - 15/16	190	70	10	5	0,320
D 24	24 - 27,5	15/16 - 1 5/64	205	75	11	5	0,430
D 27,5	27,5 - 31,5	1 5/64 - 1 15/64	225	80	12	6	0,600
D 31,5	31,5 - 37	1 15/64 - 1 29/64	240	90	14,5	6	0,870
D 37	37 - 45	1 29/64 - 1 49/64	285	100	16	6	1,410
D 45	45 - 55	1 49/64 - 2 5/32	320	109	20	6	2,320
D 55	55 - 65	2 5/32 - 2 9/16	350	120	24	8	3,830
D 65	65 - 80	2 9/16 - 3 5/32	460	145	29	10	6,800
D 80	80 - 95	3 5/32 - 3 47/64	490	150	32	10	10,250
D 95	95 - 110	3 47/64 - 4 21/64	490	150	36	10	13,700

Packing of the reamers:
From size D 6,4 to D 45 individually in clear plastic tube containers.
Size D 55 in a plastic net.
From size D 65 to D 95 individually in wooden boxes.

Sets of Reamers Type D in Wooden Cases

Symbol	Size Range mm	Inches	No. of Reamers	Weight kg
DAN	8 - 31,5	21/64 - 1 15/64	11	3,100
DEN	8 - 45	21/64 - 1 49/64	13	5,700

Adjustable Expanding Hand Reamers Type D

Order Information:
The reamers are available with standard blades made from high quality special steel to ensure superior cutting efficiency.

The reamers are also available with hard chromium coated blades.
The hard chromium coating has superior hardness in combination with a low friction coefficient. Thus reamers of the „hard chromium“ series are particularly suitable for reaming abrasive materials and materials with a tendency to adhere to and to build-up the cutting edge.

Size	Size Range mm	Reamers		Replacement Blades*		Nuts Part No.
		Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.	
D 6,4	6,4 - 7,2	100 06 000	101 06 000	100 06 400	101 06 400	140 02 510
D 7,2	7,2 - 8	100 07 000	101 07 000	100 06 400	101 06 400	140 04 510
D 8	8 - 9	100 08 000	101 08 000	100 08 400	101 08 400	100 08 510
D 9	9 - 10	100 09 000	101 09 000	100 09 400	101 09 400	100 09 510
D 10	10 - 11	100 10 000	101 10 000	100 10 400	101 10 400	100 10 510
D 11	11 - 12	100 11 000	101 11 000	100 11 400	101 11 400	100 11 510
D 12	12 - 13,5	100 12 000	101 12 000	100 12 400	101 12 400	100 12 520
D 13,5	13,5 - 15,5	100 13 000	101 13 000	100 13 400	101 13 400	100 13 520
D 15,5	15,5 - 18	100 15 000	101 15 000	100 15 400	101 15 400	100 15 520
D 18	18 - 21	100 18 000	101 18 000	100 18 400	101 18 400	100 18 520
D 21	21 - 24	100 21 000	101 21 000	100 21 400	101 21 400	100 21 520
D 24	24 - 27,5	100 24 000	101 24 000	100 24 400	101 24 400	100 24 520
D 27,5	27,5 - 31,5	100 27 000	101 27 000	100 27 400	101 27 400	100 27 520
D 31,5	31,5 - 37	100 31 000	101 31 000	100 31 400	101 31 400	100 31 520
D 37	37 - 45	100 37 000	101 37 000	100 37 400	101 37 400	100 37 520
D 45	45 - 55	100 45 000	101 45 000	100 45 400	101 45 400	100 45 520
D 55	55 - 65	100 55 000	101 55 000	100 55 400	101 55 400	100 55 520
D 65	65 - 80	100 65 000	101 65 000	100 65 400	101 65 400	100 65 520
D 80	80 - 95	100 80 000	101 80 000	100 80 400	101 80 400	100 80 520
D 95	95 - 110	100 95 000	101 95 000	100 95 400	101 95 400	100 95 520

* Replacement blades are furnished in matched sets. The blades are finish-ground and, therefore, no grinding is needed after the blades have been inserted in the reamer body.

Sets of Reamers Type D in Wooden Cases

Symbol	Size Range mm	Special Steel Part No.	Hard Chromium Part No.
DAN	8 - 31,5	100 00 100	101 00 100
DEN	8 - 45	100 00 200	101 00 200



MANDRIS SEM GUIA TIPO-E HUNGER - ACESSORIOS

Adjustable Expanding Hand Reamers Type E

Application:
The reamer for reaming longer holes and adjacent inline holes.

Design:
Right-hand cutting hand reamer with expanding blades. Extra long blades.
The blades are approximately 2/3 longer than the blades of reamer type D. Due to the unique Hunger relief grinding operation the blades have a progressively increasing clearance angle giving a softer cutting action.



Size	Size Range		Length Overall L1 mm	Length Blades L2 mm	Size of Square a mm	No. of Blades	Weight kg
	mm	Inches					
E 10,5	10,5 - 12	27/64 - 15/32	180	65	5,5	5	0,070
E 12	12 - 13,5	15/32 - 17/32	170	70	8,2	5	0,100
E 13,5	13,5 - 15,5	17/32 - 39/64	195	80	7	5	0,140
E 15,5	15,5 - 17,5	39/64 - 11/16	215	90	8	5	0,210
E 17,5	17,5 - 19,5	11/16 - 49/64	230	100	9	5	0,280
E 19,5	19,5 - 21,5	49/64 - 27/32	240	110	10	5	0,370
E 21,5	21,5 - 24,5	27/32 - 31/32	260	120	10	5	0,470
E 24,5	24,5 - 27,5	31/32 - 1 3/64	280	130	11	5	0,640
E 27,5	27,5 - 31,5	1 3/64 - 1 15/64	310	140	12	6	0,880
E 31,5	31,5 - 37	1 15/64 - 1 29/64	320	150	14,5	6	1,240
E 37	37 - 45	1 29/64 - 1 49/64	370	165	16	6	1,970
E 45	45 - 55	1 49/64 - 2 5/32	425	180	20	6	3,240

Packing of the reamers:
Individually in clear plastic tube containers.

Sets of Reamers Type E in Wooden Cases

Symbol	Size Range mm	Inches	No. of Reamers	Weight kg
EA	10,5 - 31,5	27/64 - 1 15/64	9	3,100
ESO	10,5 - 45	27/64 - 1 49/64	11	5,700

Adjustable Expanding Hand Reamers Type E

Order Information:
The reamers are available with standard blades made from high quality special steel to ensure superior cutting efficiency.

The reamers are also available with hard chromium coated blades.
The hard chromium coating has superior hardness in combination with a low friction coefficient. Thus reamers of the „hard chromium“ series are particularly suitable for reaming abrasive materials and materials with a tendency to adhere to and to build-up the cutting edge.

Size	Size Range mm	Reamers		Replacement Blades*		Nuts Part No.
		Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.	
E 10,5	10,5 - 12	110 10 000	111 10 000	110 10 400	111 10 400	140 10 510
E 12	12 - 13,5	110 12 000	111 12 000	110 12 400	111 12 400	100 12 510
E 13,5	13,5 - 15,5	110 13 000	111 13 000	110 13 400	111 13 400	100 13 510
E 15,5	15,5 - 17,5	110 15 000	111 15 000	110 15 400	111 15 400	100 15 510
E 17,5	17,5 - 19,5	110 17 000	111 17 000	110 17 400	111 17 400	110 17 510
E 19,5	19,5 - 21,5	110 19 000	111 19 000	110 19 400	111 19 400	110 19 510
E 21,5	21,5 - 24,5	110 21 000	111 21 000	110 21 400	111 21 400	100 21 510
E 24,5	24,5 - 27,5	110 24 000	111 24 000	110 24 400	111 24 400	100 24 510
E 27,5	27,5 - 31,5	110 27 000	111 27 000	110 27 400	111 27 400	100 27 510
E 31,5	31,5 - 37	110 31 000	111 31 000	110 31 400	111 31 400	100 31 510
E 37	37 - 45	110 37 000	111 37 000	110 37 400	111 37 400	100 37 510
E 45	45 - 55	110 45 000	111 45 000	110 45 400	111 45 400	100 45 510

* Replacement blades are furnished in matched sets. The blades are finish-ground and, therefore, no grinding is needed after the blades have been inserted in the reamer body.

Sets of Reamers Type E in Wooden Cases

Symbol	Size Range mm	Special Steel Part No.	Hard Chromium Part No.
EA	10,5 - 31,5	110 00 100	111 00 100
ESO	10,5 - 45	110 00 200	111 00 200



HUNGER

Adjustable Expanding Hand Reamers Type K

Application:
The precision reamer for inline reaming of holes...

Design:
Right-hand cutting reamer with expanding blades. Parallel shank with square at the back and integral pilot with sliding cone bush at the front of the reamer.

Due to the unique Hunger relief grinding operation the blades have a progressively increasing clearance angle giving a softer cutting action. Starting with size K 12 the adjusting nut is marked with a circular scale. One graduation of the scale corresponds to an alteration of the reaming diameter by 0,01 mm.



Size	Size Range mm	Size Range Inches	Length Overall L1 mm	Length Blades L2 mm	Length Pilot L3 mm	Size of Square a mm	No. of Blades	Weight kg
K 7	7 - 8	0 ¹ / ₃₂ - 5 ¹ / ₁₆	175	32	65	3,5	4	0,030
K 8	8 - 9	5 ¹ / ₁₆ - 2 ¹ / ₁₆	175	32	65	4,3	5	0,055
K 9	9 - 10	2 ¹ / ₁₆ - 2 ¹ / ₈	175	32	65	4,3	5	0,065
K 10	10 - 11	2 ⁵ / ₁₆ - 7 ¹ / ₁₆	185	35	68	4,9	5	0,085
K 11	11 - 12	7 ¹ / ₁₆ - 1 ¹ / ₂	195	35	72	6,2	5	0,100
K 12	12 - 13,5	1 ¹ / ₂ - 1 ¹ / ₁₆	215	42	84	6,2	5	0,130
K 13,5	13,5 - 15,5	1 ¹ / ₁₆ - 3 ¹ / ₁₆	235	50	89	7	5	0,180
K 15,5	15,5 - 18	3 ¹ / ₁₆ - 4 ⁵ / ₁₆	265	60	98	8	5	0,280
K 18	18 - 21	4 ⁵ / ₁₆ - 5 ¹ / ₈	290	65	109	9	5	0,410
K 21	21 - 24	5 ¹ / ₈ - 1 ¹ / ₂	310	70	119	10	5	0,570
K 24	24 - 27,5	1 ¹ / ₂ - 1 ¹ / ₁₆	335	75	129	11	5	0,770
K 27,5	27,5 - 31,5	1 ¹ / ₁₆ - 1 ¹ / ₈	365	80	137	12	6	1,040
K 31,5	31,5 - 37	1 ¹ / ₈ - 1 ¹ / ₄	400	90	159	14,5	6	1,550
K 37	37 - 45	1 ¹ / ₄ - 1 ¹ / ₂	465	100	180	16	6	2,550
K 45	45 - 55	1 ¹ / ₂ - 2 ¹ / ₁₆	530	109	198	20	6	5,000
K 55	55 - 65	2 - 2 ¹ / ₁₆	570	120	213	24	8	6,450
K 65	65 - 80	2 ¹ / ₁₆ - 3 ¹ / ₁₆	670	145	250	29	10	11,900
K 80	80 - 95	3 ¹ / ₁₆ - 3 ¹ / ₈	700	150	250	32	10	13,700
K 95	95 - 110	3 ¹ / ₈ - 4 ¹ / ₁₆	700	150	250	36	10	23,900

Packing of the reamers:
From size K 7 to K 37 individually in clear plastic tube containers.
From size K 45 to K 55 individually in plastic nets.
From size K 65 to K 95 individually in wooden boxes.

Sets of Reamers Type K in Wooden Cases

Symbol	mm	Size Range Inches	No. of Reamers	Weight kg
KAN	8 - 31,5	2 ¹ / ₁₆ - 1 ¹ / ₈	11	5,200
KEN	8 - 45	2 ¹ / ₁₆ - 1 ¹ / ₂	13	10,700

Adjustable Expanding Hand Reamers Type K

Order Information:

The reamers are available with standard blades made from high quality special steel to ensure superior cutting efficiency.

The reamers are also available with hard chromium coated blades.

The hard chromium coating has superior hardness in combination with a low friction coefficient. Thus reamers of the „hard chromium“ series are particularly suitable for reaming abrasive materials and materials with a tendency to adhere to and to build-up the cutting edge.

Size	Size Range mm	Reamers		Replacement Blades*		Nuts Part No.	Cone Bushes Part No.
		Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.		
K 7	7 - 8	120 07 000	121 07 000	100 06 400	101 06 400	140 04 510	120 07 600
K 8	8 - 9	120 08 000	121 08 000	120 08 400	121 08 400	100 08 510	120 08 600
K 9	9 - 10	120 09 000	121 09 000	120 09 400	121 09 400	100 09 510	120 09 600
K 10	10 - 11	120 10 000	121 10 000	120 10 400	121 10 400	100 10 510	120 10 600
K 11	11 - 12	120 11 000	121 11 000	120 11 400	121 11 400	100 11 510	120 11 600
K 12	12 - 13,5	120 12 000	121 12 000	120 12 400	121 12 400	100 12 520	120 12 600
K 13,5	13,5 - 15,5	120 13 000	121 13 000	120 13 400	121 13 400	100 13 520	120 13 600
K 15,5	15,5 - 18	120 15 000	121 15 000	120 15 400	121 15 400	100 15 520	120 15 600
K 18	18 - 21	120 18 000	121 18 000	120 18 400	121 18 400	100 18 520	120 18 600
K 21	21 - 24	120 21 000	121 21 000	120 21 400	121 21 400	100 21 520	120 21 600
K 24	24 - 27,5	120 24 000	121 24 000	120 24 400	121 24 400	100 24 520	120 24 600
K 27,5	27,5 - 31,5	120 27 000	121 27 000	120 27 400	121 27 400	100 27 520	120 27 600
K 31,5	31,5 - 37	120 31 000	121 31 000	120 31 400	121 31 400	100 31 520	120 31 600
K 37	37 - 45	120 37 000	121 37 000	120 37 400	121 37 400	100 37 520	120 37 600
K 45	45 - 55	120 45 000	121 45 000	120 45 400	121 45 400	100 45 520	120 45 600
K 55	55 - 65	120 55 000	121 55 000	120 55 400	121 55 400	100 55 520	120 55 600
K 65	65 - 80	120 65 000	121 65 000	100 65 400	101 65 400	100 65 520	120 65 600
K 80	80 - 95	120 80 000	121 80 000	100 80 400	101 80 400	100 80 520	120 80 600
K 95	95 - 110	120 95 000	121 95 000	100 95 400	101 95 400	100 95 520	120 95 600

* Replacement blades are furnished in matched sets. The blades are finish-ground and, therefore, no grinding is needed after the blades have been inserted in the reamer body.



Sets of Reamers Type K in Wooden Cases

Symbol	Size Range mm	Special Steel Part No.	Hard Chromium Part No.
KAN	8 - 31,5	120 00 100	121 00 100
KEN	8 - 45	120 00 200	121 00 200

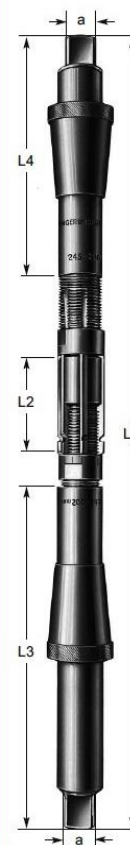
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HUNGER

Adjustable Expanding Hand Reamers Type U

Application:
The universal reamer for all types of holes, particularly for inline reaming of two or more aligned holes. Two bushes provide for exact alignment between the hole being reamed and the other mating hole.

Design:
Right-hand cutting reamer with expanding blades. Exchangeable pilots at the front as well as at the back of the reamer. Each pilot is provided with a square and a sliding cone bush. A special bayonet coupling with mating cones between each pilot and the reamer body ensures correct alignment. The blades are ground for taking a rough cut followed by finish reaming. Due to the unique Hunger relief grinding operation the blades have a progressively increasing clearance angle giving a softer cutting action. The adjusting nut is marked with a circular scale. One graduation of the scale corresponds to an alteration of the reamer diameter by 0,02 mm.



Size	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

Packing 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	mm	Size Range Inches	No. of Reamers	Weight kg
USI	12 - 34	1 ¹ / ₂ - 1 ¹ / ₂	7	6,700
USE	12 - 45	1 ¹ / ₂ - 1 ¹ / ₂	9	13,100

Adjustable Expanding Hand Reamers Type U

Order Information:

The reamers are available with standard blades made from high quality special steel to ensure superior cutting efficiency.

The reamers are also available with hard chromium coated blades.

The hard chromium coating has superior hardness in combination with a low friction coefficient. Thus reamers of the „hard chromium“ series are particularly suitable for reaming abrasive materials and materials with a tendency to adhere to and to build-up the cutting edge.

The reamers are fitted with standard pilots which can be replaced by extension pilots.

Size	Reamers		Replacement Blades*		Front Nut with Scale Part No.	Back Nut Part No.	Cone Bush Part No.
	Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.			
U 12	130 12 000	131 12 000	130 12 400	131 12 400	130 12 520	100 12 510	130 12 600
U 13,5	130 13 000	131 13 000	130 13 400	131 13 400	100 12 520	100 13 510	130 13 600
U 15,5	130 15 000	131 15 000	130 15 400	131 15 400	130 15 520	100 15 510	130 15 600
U 18	130 18 000	131 18 000	130 18 400	131 18 400	130 18 520	100 18 510	130 18 600
U 19,5	130 19 000	131 19 000	130 19 400	131 19 400	100 18 520	130 19 510	130 19 600
U 21	130 21 000	131 21 000	130 21 400	131 21 400	130 21 520	100 21 510	130 21 600
U 24,5	130 24 000	131 24 000	130 24 400	131 24 400	130 24 520	130 24 510	130 24 600
U 29	130 29 000	131 29 000	130 29 400	131 29 400	130 29 520	130 29 510	130 29 600
U 34	130 34 000	131 34 000	130 34 400	131 34 400	130 34 520	130 34 510	130 34 600
U 39	130 39 000	131 39 000	130 39 400	131 39 400	130 39 520	130 39 510	130 39 600
U 45	130 45 000	131 45 000	130 45 400	131 45 400	130 45 520	100 45 510	130 45 600
U 52	130 52 000	131 52 000	130 45 400	131 45 400	130 52 520	130 52 510	130 52 600
U 59	130 59 000	131 59 000	130 45 400	131 45 400	130 52 520	130 52 510	130 59 600

* Replacement blades are furnished in matched sets. The blades are finish-ground and, therefore, no grinding is needed after the blades have been inserted in the reamer body.

Sets of Reamers Type U in Wooden Cases

Symbol	Size Range mm	Special Steel Part No.	Hard Chromium Part No.
USI	12 - 34	130 00 100	131 00 100
USE	12 - 45	130 00 200	131 00 200

*The intermediate size U 19,5 is not included in the sets.



MANDRIS PARA GUIAS DE VALULAS TIPO-V HUNGER



Adjustable Valve Guide Reamers Type V

Application:
The special reamer for reaming the valve guide of engines.
The optional seat bush centers firmly in the valve seat so that the reamer aligns perfectly in the valve guide.

Design:
Right-hand cutting reamer with expanding blades.
Extra long shank with square and an optional sliding seat bush.
Due to the unique Hunger relief grinding operation the blades have a progressively increasing clearance angle giving a softer cutting action.

Size	Size Range		Length Overall L1 mm	Length Blades L2 mm	Size of Square a mm	No. of Blades	Weight kg	Seat Bush	
	mm	Inches						mm	kg
V 5,4	5,4 - 6	7/32 - 15/64	160	28	4	3	0,025	14-21	0,030
V 5,9	5,9 - 6,5	15/64 - 1/4	160	28	4,3	3	0,030	17-28	0,050
V 6,4	6,4 - 7	1/4 - 17/64	160	28	4,9	3	0,035	16-28	0,050
V 6,9	6,9 - 7,5	17/64 - 1/2	160	28	5,5	3	0,040	21-38	0,070
V 7,4	7,4 - 8	1/2 - 5/16	165	28	5,5	3	0,045	22-36	0,065
V 7,9	7,9 - 8,5	5/16 - 23/64	170	28	6,2	3	0,055	23-47	0,150
V 8,4	8,4 - 9	23/64 - 3/8	175	28	6,2	3	0,065	28-44	0,155
V 8,9	8,9 - 9,5	3/8 - 29/64	180	32	7	4	0,075	25-53	0,190
V 9,4	9,4 - 10	29/64 - 7/16	190	32	7	4	0,085	26-52	0,180
V 9,9	9,9 - 11	7/16 - 1/2	200	36	8	5	0,100	25-53	0,190
V10,9	10,9 - 12	1/2 - 15/32	220	36	8	5	0,130	33-61	0,270

Order Information

Size	Reamers		Seat Bushes		Replacement Blades		Nuts	
	Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.
V 5,4	140 01 000	141 01 000	140 01 600	140 01 400	141 01 400	141 01 400	140 01 510	140 01 510
V 5,9	140 02 000	141 02 000	140 02 600	140 02 400	141 02 400	141 02 400	140 02 510	140 02 510
V 6,4	140 03 000	141 03 000	140 03 600	140 03 400	141 03 400	141 03 400	140 03 510	140 03 510
V 6,9	140 04 000	141 04 000	140 04 600	140 04 400	141 04 400	141 04 400	140 04 510	140 04 510
V 7,4	140 05 000	141 05 000	140 05 600	140 05 400	141 05 400	141 05 400	140 05 510	140 05 510
V 7,9	140 06 000	141 06 000	140 06 600	140 06 400	141 06 400	141 06 400	140 06 510	140 06 510
V 8,4	140 07 000	141 07 000	140 07 600	140 07 400	141 07 400	141 07 400	140 07 510	140 07 510
V 8,9	140 08 000	141 08 000	140 08 600	140 08 400	141 08 400	141 08 400	140 08 510	140 08 510
V 9,4	140 09 000	141 09 000	140 09 600	140 09 400	141 09 400	141 09 400	140 09 510	140 09 510
V 9,9	140 10 000	141 10 000	140 10 600	140 10 400	141 10 400	141 10 400	140 10 510	140 10 510
V10,9	140 11 000	141 11 000	140 11 600	140 11 400	141 11 400	141 11 400	140 11 510	140 11 510

Packing of the reamers: Individually in clear plastic tube containers.

Sets of Reamers Type V in Wooden Cases

Symbol	Size Range		No. of Reamers	No. of Bushes	Special Steel Part No.	Hard Chromium Part No.	Weight kg
	mm	Inches					
VR	5,9 - 12	15/64 - 15/32	10	-	140 00 100	141 00 100	1,140
VRB	5,9 - 12	15/64 - 15/32	10	10	140 00 200	141 00 200	3,500



MANDRIS TIPO-H HUNGER



Description: Expanding Reamers Type H

Right-hand cutting shell reamer with expanding blades.
The reamer fits on a tool bar and may be positioned along the tool bar at any desired position.
The reamer is automatically locked in place on the tool bar by an expanding spring coupling as soon as the reamer blades are brought into engagement with the bore.
Expanding tool bar guides and supporting fixtures for the tool bar are available to ensure exact alignment of the tool bar when reaming a series of aligned holes.
The adjusting nut is marked with a circular scale. One graduation of the scale corresponds to an alteration of the reamer diameter by 0,02 mm.

Application:

The reamer for inline reaming of a series of holes, particularly the holes of crankshaft and camshaft bearings.



Size	Size Range mm	Takes Tool Bar d mm	Length Overall L1 mm	Length Blades L2 mm	Nut SW mm	No. of Blades	Weight kg
H 36	36 - 38	20	96	44	32	6	0,370
H 38	38 - 41	20	99	44	34	6	0,450
H 41	41 - 44	20	104	48	38	6	0,590
H 44	44 - 47	25	104	48	40	6	0,590
H 47	47 - 51	25	108	48	43	6	0,760
H 51	51 - 54	30	108	52	47	5	0,830
H 54	54 - 58	30	113	52	47	6	0,930
H 58	58 - 62	30	113	52	53	6	1,180
H 62	62 - 65	35	114	52	58	8	1,290
H 65	65 - 69	35	118	57	58	8	1,490
H 69	69 - 73	40	118	57	64	8	1,790
H 73	73 - 78	40	123	57	68	8	1,990
H 78	78 - 83	45	124	57	70	8	2,110
H 83	83 - 88	45	124	60	78	8	2,750
H 88	88 - 93	50	124	60	83	8	3,000
H 93	93 - 99	50	127	60	83	10	3,490
H 99	99 - 105	50	127	60	*	10	4,200
H 105	105 - 111	50	127	60	*	10	5,400

Reamers type H with size range over 111 mm on application.

* Adjustment of the nut with hook wrench.

CABEÇAS DE MANDRIS TIPO-H HUNGER - ACESSORIOS

Adjustable Expanding Shell Reamers Type H

Order Information:

The reamers are available with standard blades made from high quality special steel to ensure superior cutting efficiency.

The reamers are also available with hard chromium coated blades.
The hard chromium coating has superior hardness in combination with a low friction coefficient. Thus reamers of the „hard chromium“ series are particularly suitable for reaming abrasive materials and materials with a tendency to adhere to and to build-up the cutting edge.

Size	Reamers		Replacement Blades*		Front Nuts with Scale Part No.	Back Nuts Part No.	Replacement Springs Part No.
	Special Steel Part No.	Hard Chromium Part No.	Special Steel Part No.	Hard Chromium Part No.			
H 36	150 36 000	151 36 000	150 36 400	151 36 400	150 36 520	150 36 510	150 20 600
H 38	150 38 000	151 38 000	150 38 400	151 38 400	150 38 520	150 38 510	150 20 600
H 41	150 41 000	151 41 000	150 41 400	151 41 400	150 41 520	150 41 510	150 20 600
H 44	150 44 000	151 44 000	150 44 400	151 44 400	150 44 520	150 44 510	150 25 600
H 47	150 47 000	151 47 000	150 47 400	151 47 400	150 47 520	150 47 510	150 25 600
H 51	150 51 000	151 51 000	150 51 400	151 51 400	150 51 520	150 51 510	150 30 600
H 54	150 54 000	151 54 000	150 54 400	151 54 400	150 54 520	150 54 510	150 30 600
H 58	150 58 000	151 58 000	150 58 400	151 58 400	150 58 520	150 58 510	150 30 600
H 62	150 62 000	151 62 000	150 62 400	151 62 400	150 62 520	150 62 510	150 35 600
H 65	150 65 000	151 65 000	150 65 400	151 65 400	150 65 520	150 65 510	150 35 600
H 69	150 69 000	151 69 000	150 69 400	151 69 400	150 69 520	150 69 510	150 40 600
H 73	150 73 000	151 73 000	150 73 400	151 73 400	150 73 520	150 73 510	150 40 600
H 78	150 78 000	151 78 000	150 78 400	151 78 400	150 78 520	150 78 510	150 45 600
H 83	150 81 000	151 81 000	150 81 400	151 81 400	150 81 520	150 81 510	150 45 600
H 88	150 82 000	151 82 000	150 82 400	151 82 400	150 82 520	150 82 510	150 50 600
H 93	-	151 83 000	-	151 83 400	150 83 520	150 83 510	150 50 600
H 99	-	151 84 000	-	151 83 400	150 84 520	150 84 510	150 50 600
H 105	-	151 85 000	-	151 83 400	150 85 520	150 85 510	150 50 600

* Replacement blades are furnished in matched sets.
The blades are finish-ground and, therefore, no grinding is needed after the blades have been inserted in the reamer body.

Tool Bars for Reamers Type H

Application:

The tool bars are required to guide the shell reamer types H.

Design:

The tool bars are provided with squares at both ends so that a tap wrench may be applied at each end.
The tool bars are precision ground bars so that the reamers are precisely guided at each position along the bars.

Order Information:

Part No.	for Reamer Size	Diameter D mm	Length L mm	Square SW mm	Weight kg
152 20 101	H 36 - H 41	20	1000	13	2,420
152 25 101	H 44 - H 47	25	1000	13	3,740
152 30 121	H 51 - H 58	30	1200	16	6,540
152 30 151	H 51 - H 58	30	1500	16	12,000
152 35 121	H 62 - H 65	35	1200	18	8,750
152 40 151	H 69 - H 73	40	1500	18	14,400
152 45 151	H 78 - H 83	45	1500	22	18,110
152 50 171	H 88 - H 105	50	1700	22	25,200

Special length tool bars on request.



Expanding Tool Bar Guides

Application:

The tool bar guides are damped into the holes of bearing tunnels to guide the tool bar.

Design:

The tool bar guides are provided with wedges which can be forced outward against the hole to lock the tool bar guide in the hole.
The wedges are actuated by an adjusting nut.

Order Information:

Part No.	for Reamer Size	Bore d mm	Expansion Range mm	Weight kg
153 20 000	H 36 - H 41	20	35,5 - 54	0,200
153 25 000	H 44 - H 47	25	43,5 - 62	0,300
153 30 000	H 51 - H 58	30	49,5 - 74	0,410
153 35 000	H 62 - H 65	35	61,5 - 83	0,620
153 40 000	H 69 - H 73	40	68,5 - 93	0,800
153 45 000	H 78 - H 83	45	77,5 - 105	1,100
153 50 000	H 88 - H 105	50	87,5 - 127	1,550

