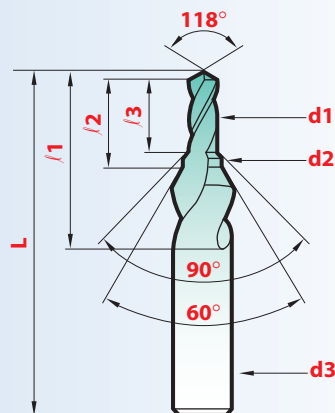
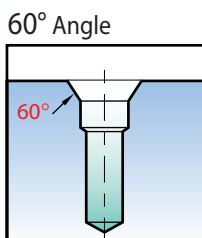


METRIC CENTER DRILLS for threaded holes



d1	d2	d3	L	Angles	
				60°	90°
h8	+0,1	h7	±1	-30'	±1°

Tolerances



DIN 332/2 • FORM D

Ø SCREW	d1	d2	d3	L	\1	\2	\3	Without flat	With flat	
								Cobalt 0285	P -0,1	Cobalt 0280
M3	2,5	3,2	6,0	55	18	9,0	8	0285030		
M4	3,3	4,3	8,0	63	23	12,6	11	0285040	6,75	0280040
M5	4,2	5,3	10,0	67	27	15,1	13	0285050	8,45	0280050
M6	5,0	6,4	12,5	71	33	18,9	16	0285060	10,45	0280060
M8	6,8	8,4	14,0	88	41	23,0	19	0285080	12,50	0280080
M10	8,5	10,5	16,0	90	47	27,7	23	0285100	14,85	0280100
M12	10,2	13,0	20,0	105	59	34,5	28	0285120	18,45	0280120
M16	14,0	17,0	25,0	132	67	41,3	33		23,40	0280160
M20	17,5	21,0	31,5	145	77	48,3	38		29,35	0280200
M24	21,0	25,0	40,0	160	90	57,0	45		36,50	0280240

Center drills for threaded spindles are designed to do the following in a single operation :

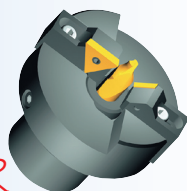
- make the preliminary tap hole,
- make the tap entrance,
- do the centering.

Main use : to center or to bore the shafts of electric motors, pumps, speed-reducing gear.

The drills **0280** and **0288** have also the following :

- a flat area for carbide insert,
- two grooves for oil.

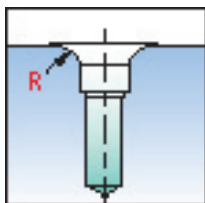
Can be used with **modul-R**



MODUL-R

Center drills with flat for the combination of centering-facing.
Pages 13-14

WITH RADIUS



DIN 332/2 • FORM DR

Ø SCREW	d1	d2	d3	L	\1	\2	\3	R*	Without flat	With flat	
									Cobalt 0287	P -0,1	Cobalt 0288
M4	3,3	4,3	8,0	63	23	12,6	11	4	0287040	6,75	0288040
M5	4,2	5,3	10,0	67	27	15,1	13	6	0287050	8,45	0288050
M6	5,0	6,4	12,5	71	33	18,9	16	8	0287060	10,45	0288060
M8	6,8	8,4	14,0	88	41	23,0	19	10	0287080	12,50	0288080
M10	8,5	10,5	16,0	90	47	27,7	23	14	0287100	14,85	0288100
M12	10,2	13,0	20,0	105	59	34,5	28	16	0287120	18,45	0288120

* R max = 1,25 R

NOTE:

all metric center drills are available within 2 weeks.
Call for information.

modul-R

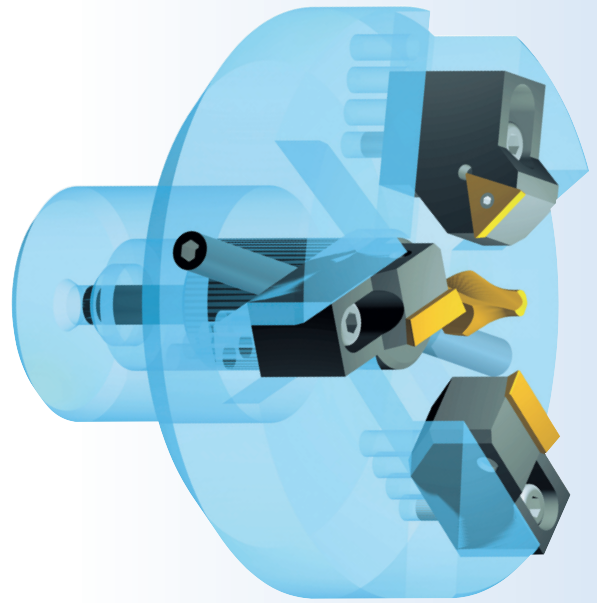
CENTERING HEADS

The new **modul-R** center head allows to center, to face and to chamfer the surface at the same time :

- constant depth of the centers,
- reduced machining times,
- less tools and change of tools,
- simple, rigid concept designed for middle and large series,
- inexpensive even for small series.

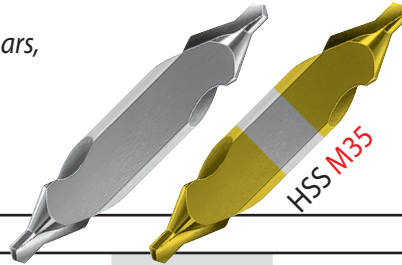
Application : for machining the ends of bars, axles, shafts and tubes.

Capacity : flexible modular system for centers into bars from 1/4" to 2".



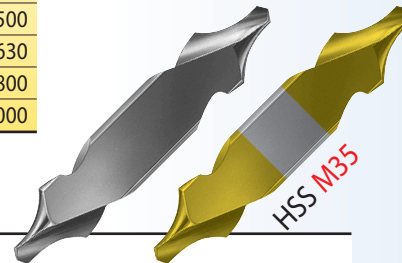
METRIC PLAIN TYPE CENTER DRILLS

D x d	L	\	FLAT	Cobalt 0290	TIN 0890
4,0 x 1,6	35	1,0 - 2,4	3,25	02900400160	08900400160
5,0 x 2,0	40	2,5 - 2,9	4,20	02900500200	08900500200
6,3 x 2,5	45	3,1 - 3,6	5,35	02900630250	08900630250
8,0 x 3,15	50	3,9 - 4,4	6,95	02900800315	08900800315
10,0 x 4,0	55	5,0 - 5,6	8,40	02901000400	08901000400
12,5 x 5,0	63	6,3 - 6,9	10,95	02901250500	08901250500
16,0 x 6,3	71	8,0 - 8,6	14,00	02901600630	08901600630
20,0 x 8,0	80	10,1 - 10,8	17,90	02902000800	08902000800
25,0 x 10,0	100	12,8 - 13,5	22,50	02902501000	08902501000



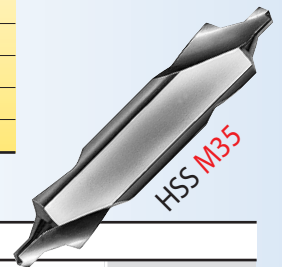
METRIC RADIUS TYPE CENTER DRILLS

D x d	L	R	\	FLAT	Cobalt 0291	TIN 0891
4,0 x 1,6	35	4,0	4,2 - 4,7	3,25	0291040160	0891040160
5,0 x 2,0	40	5,0	5,0 - 5,4	4,20	0291050200	0891050200
6,3 x 2,5	45	6,3	6,3 - 6,8	5,35	0291063250	0891063250
8,0 x 3,15	50	8,0	8,0 - 8,5	6,95	0291080315	0891080315
10,0 x 4,0	55	10,0	10,0 - 10,6	8,40	0291100400	0891100400
12,5 x 5,0	63	12,5	12,5 - 13,1	10,95	0291125500	0891125500
16,0 x 6,3	71	16,0	16,0 - 16,6	14,00	0291160630	0891160630
20,0 x 8,0	80	20,0	20,0 - 20,7	17,90	0291200800	0891200800



METRIC BELL TYPE CENTER DRILLS

D x d	L	K	\	FLAT	Cobalt 0292
6,3 x 1,6	45	3,3	2,0 - 2,4	5,35	02920630160
8,0 x 2,0	50	4,2	2,5 - 2,9	6,95	02920800200
10,0 x 2,5	55	5,3	3,1 - 3,6	8,40	02921000250
11,2 x 3,15	63	6,7	3,9 - 4,4	10,00	02921120315
14,0 x 4,0	69	8,5	5,0 - 5,6	12,65	02921400400
18,0 x 5,0	77	10,6	6,3 - 6,9	16,40	02921800500
20,0 x 6,3	80	13,2	8,0 - 8,6	17,90	02922000630
25,0 x 8,0	100	17,0	10,1 - 10,8	22,50	02922500800
31,5 x 10,0	125	21,2	12,8 - 13,5	28,40	02923151000



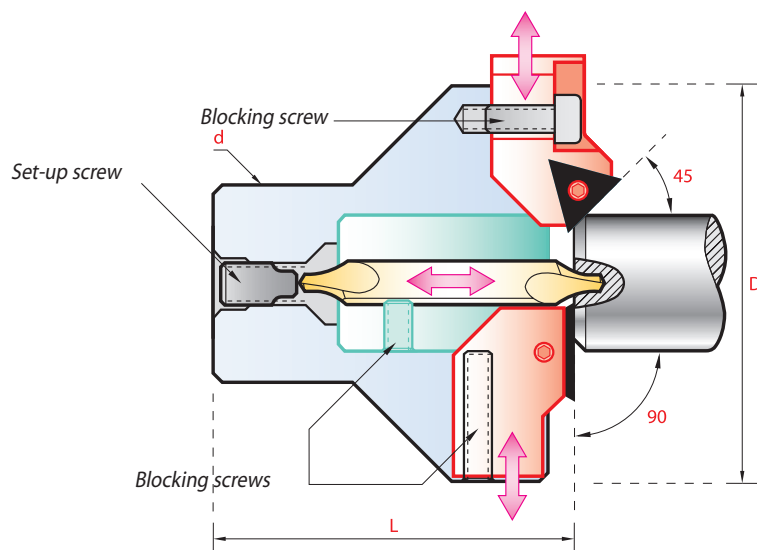
NOTE :
all metric center drills are available
within 2 weeks.
Call for information.

NOTE :
call for further
information on
the **modul-R**.

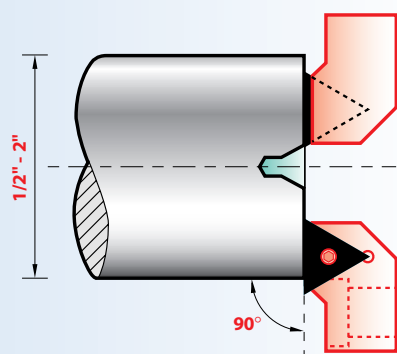
R-04 CENTERING HEAD

CAPACITY: 1/4" to 2"

modul-R Code R-04	D	d	L
	3.540	1-1/4	2.715

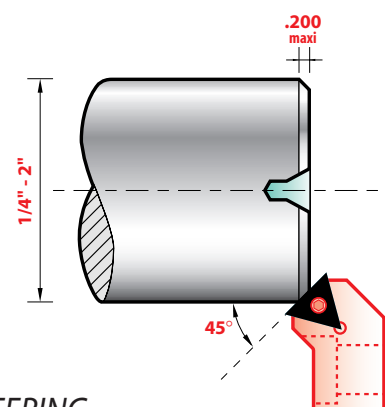
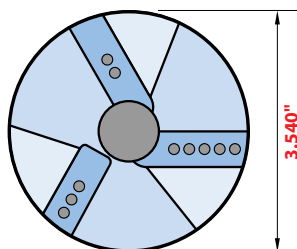


Insert-holders and inserts



FACING

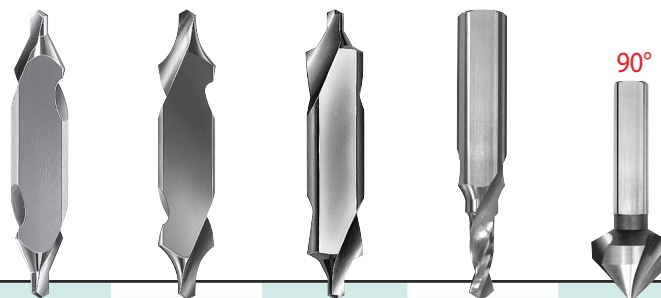
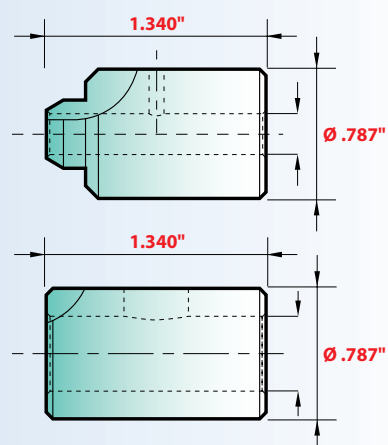
INSERT-HOLDER	R-10
CARBIDE INSERT	R-15



CHAMFERING

INSERT-HOLDER	R-11
CARBIDE INSERT	R-16

Tool-holders and tools



Ø	R-20	Pages 7 - 13	Page 13	Page 13	Page 12	Pages 24-25 *
4,0	R20040	4,0 x 1,6	4,0 x 1,6			4,3
5,0	R20050	5,0 x 2,0	5,0 x 2,0			6,3
6,0	R20060				M3	10,4
6,3	R20063	6,3 x 2,5	6,3 x 2,5	6,3 x 1,6		
8,0	R20080	8,0 x 3,15	8,0 x 3,15	8,0 x 2,0	M4	14,4
10,0	R20100	10,0 x 4,0	10,0 x 4,0	10,0 x 2,5	M5	19,0 & 25,0
11,2	R20112			11,2 x 3,15		
12,0	R20120					31,0
12,5	R20125	12,5 x 5,0	12,5 x 5,0		M6	
14,0	R20140			14,0 x 4,0	M8	
16,0	R20160	16,0 x 6,3	16,0 x 6,3		M10	

* Call for information