



APEX
TOOL GROUP

Recoules
Quackenbush®

Microstop Cages



Apex Tool Group, your partner for your manual drilling applications.

One supplier for the complete solution



Cutters



MicroStop Cage



Manual drill

Recoules MicroStop cage range





Quality

- Centring cone of the cutter (120°) for perfect concentricity
- Ball pivoting spindle to avoid any misalignment



Durability

- Microstop depth secured by locknut with seal
- Cemented, hardened and ground chrome-nickel steel spindle



Accuracy

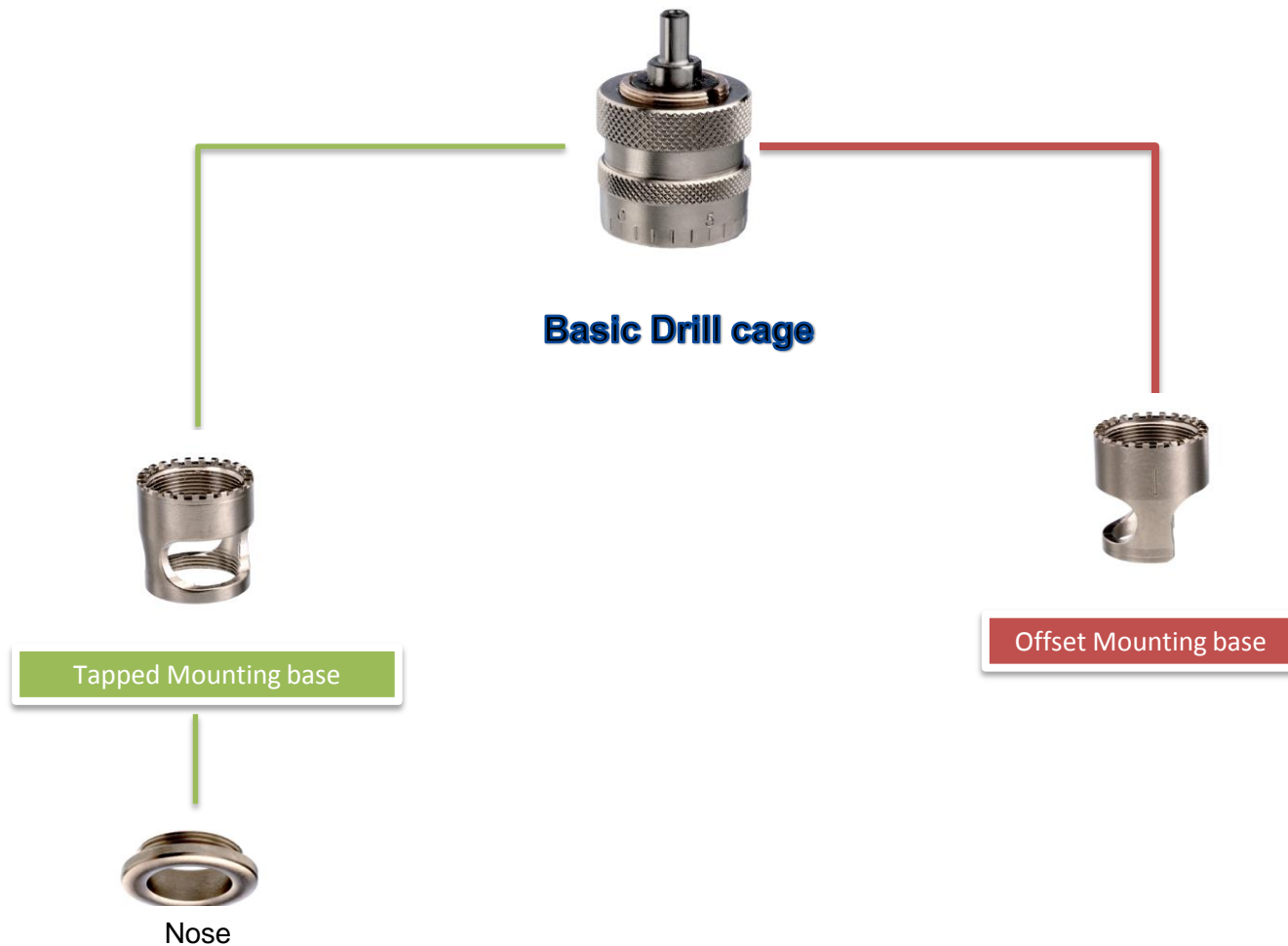
- Microstop depth adjustment
- Tripod for RB 356 HP ensures maximum stability while drilling



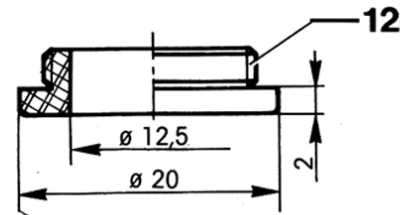
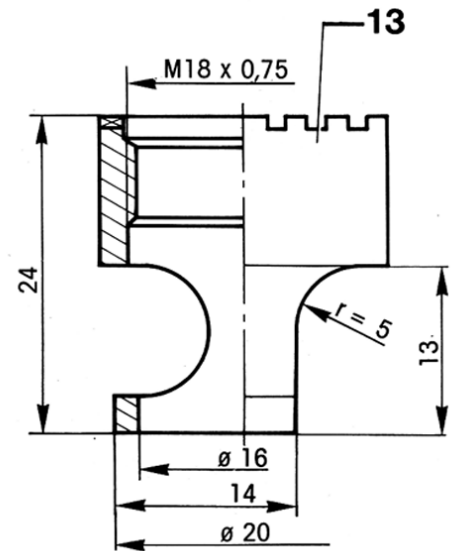
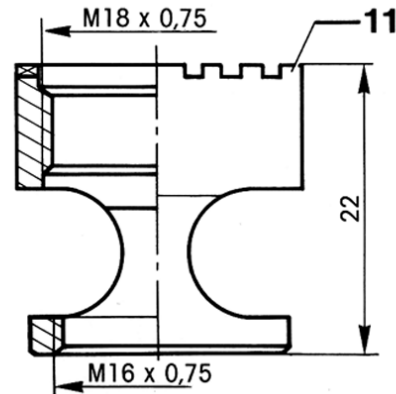
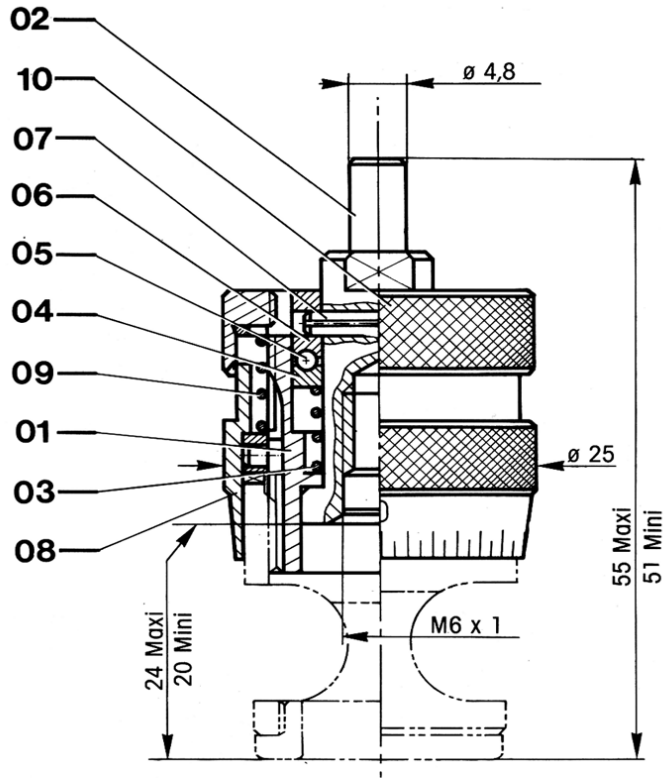
RB 156: Benefits

- ✓ Different mounting bases available
- ✓ Reduced dimensions for **limited access area**
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Centring cone of the cutter (120°) for **perfect concentricity**
- ✓ Microstop **depth secured by locknut** with seal allowing an easy loosening of the locknut without damage the drill cage





RB 156 – Dimensional Drawings



RB 206: Benefits

- ✓ Different mounting bases available
- ✓ Reduced dimensions for **limited access area**
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Centring cone of the cutter (120°) for **perfect concentricity**
- ✓ Microstop **depth secured by locknut** with seal allowing an easy loosening of the locknut without damage the drill cage





Basic Drill cage



Mounting base flat bearing



Mounting base offset bearing



Tapped mounting base



Mounting base flat bearing with vacuum



Mounting base with vacuum



Nose

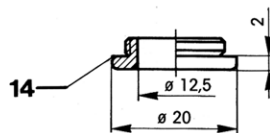
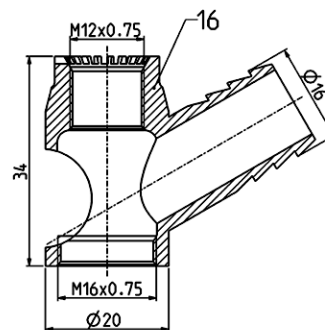
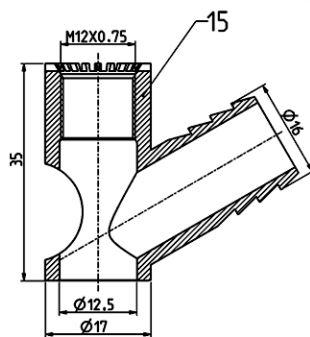
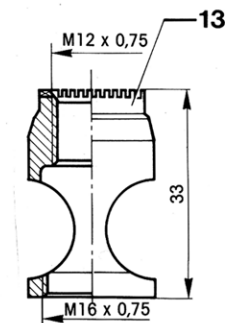
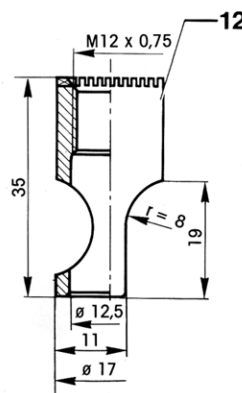
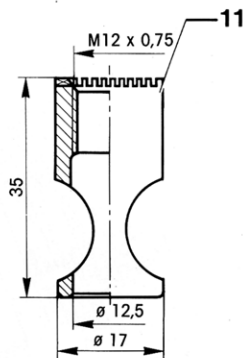
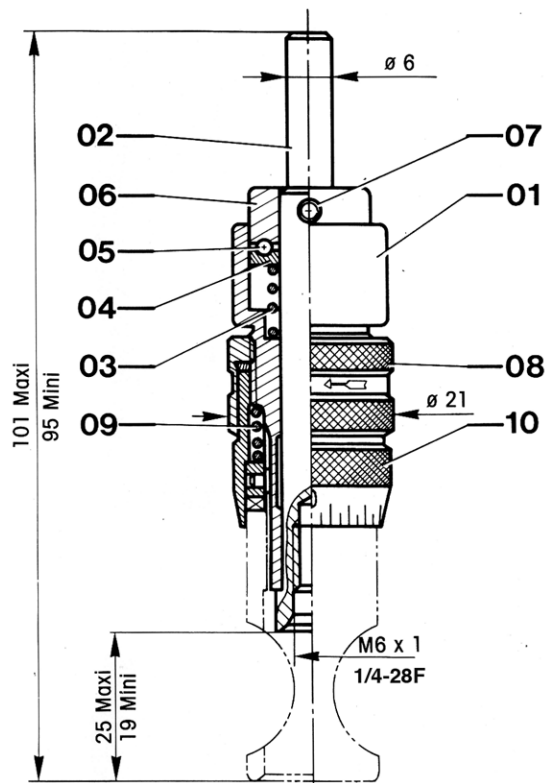


Nose



Nose

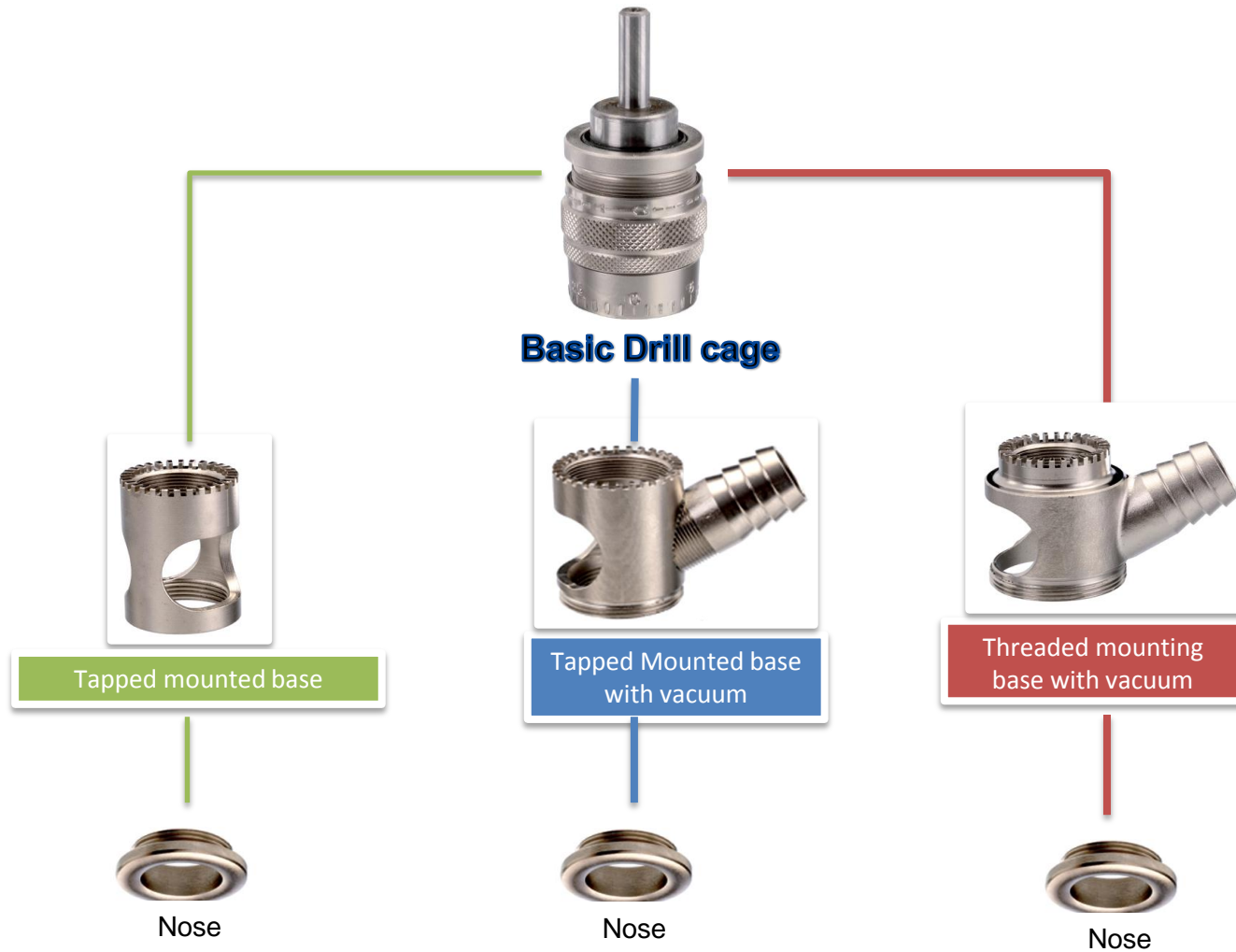
RB 206 – Dimensional Drawings



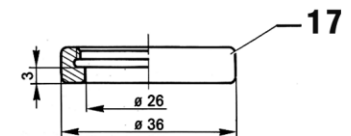
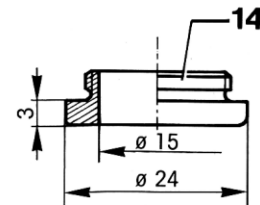
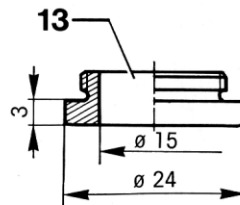
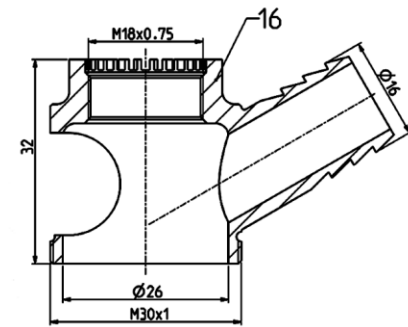
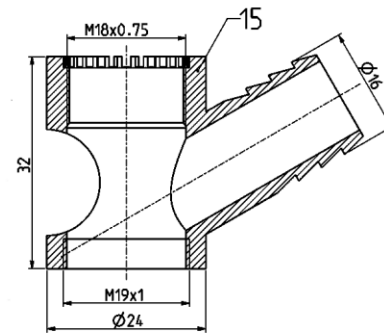
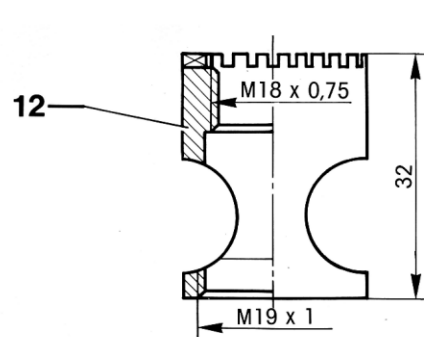
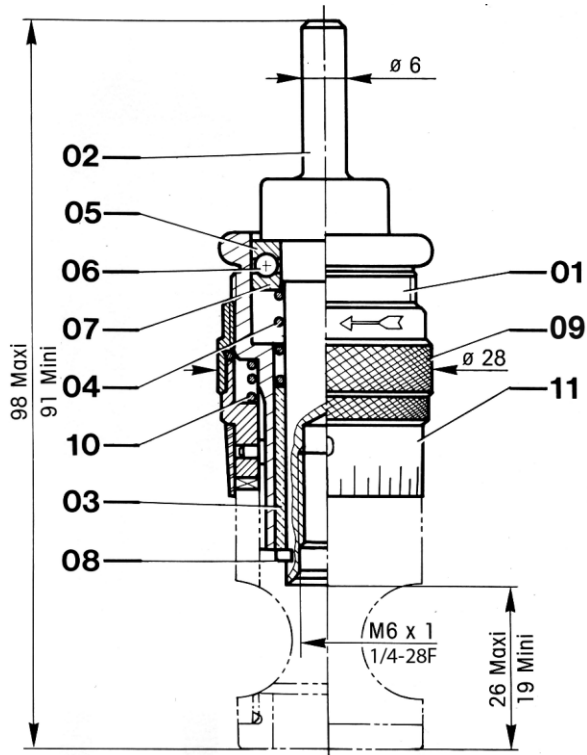
RB 256: Benefits

- ✓ Different mounting bases available
- ✓ Reduced dimensions for **limited access area**
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Ball pivoting spindle to avoid any misalignment
- ✓ Microstop **depth secured by locknut** with seal allowing an easy loosening of the locknut without damage the drill cage





RB 256 – Dimensional Drawings



RB 257/RB 258: Benefits

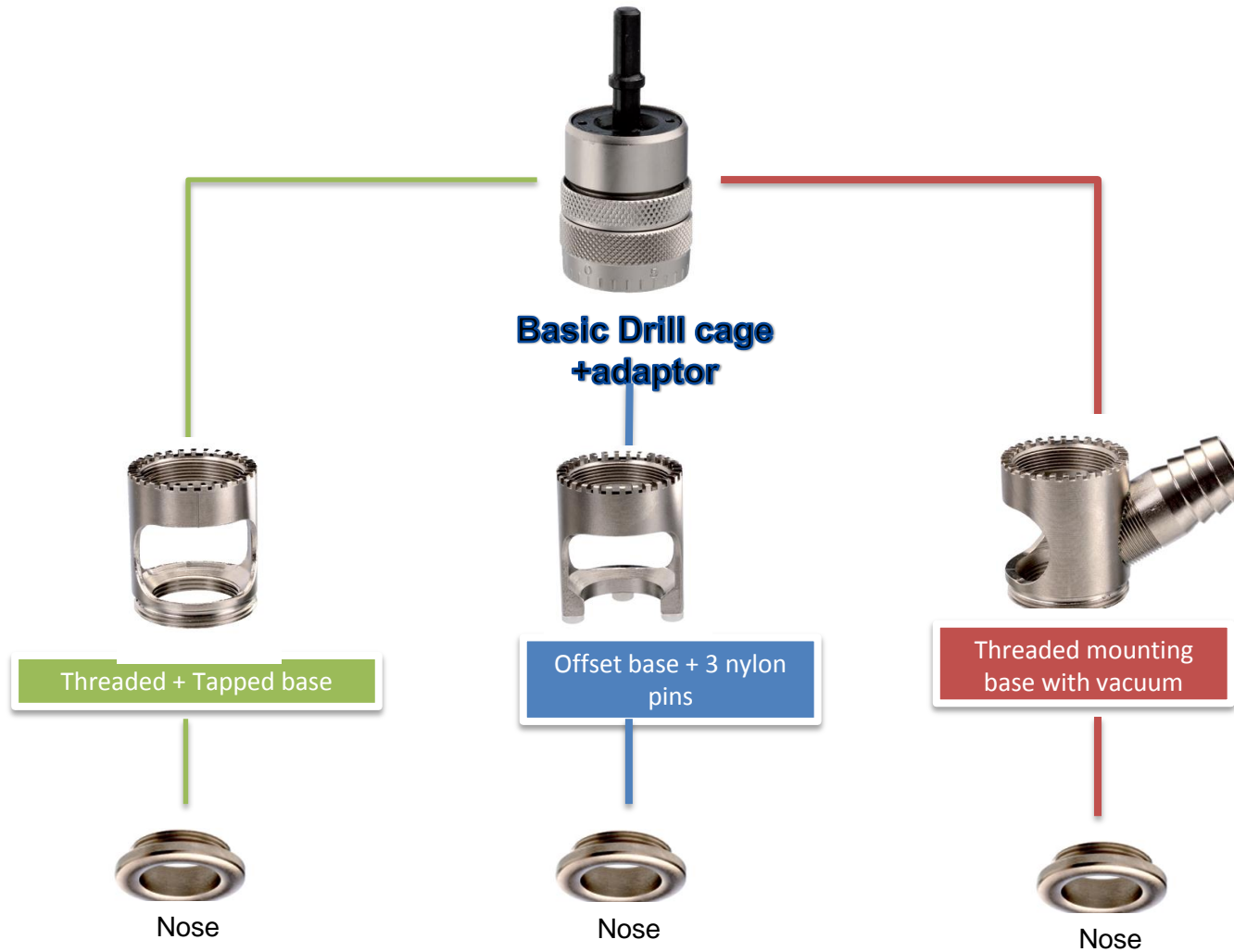
- ✓ Different mounting bases available
- ✓ Reduced dimensions for limited access area
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Ball pivoting spindle to avoid any misalignment ensuring
- ✓ perpendicularity during the operation
- ✓ **High precision** microstop cage
- ✓ Centring cone of the cutter (120°) for **perfect concentricity**
- ✓ Microstop depth secured by locknut with seal allowing an easy loosening of the locknut without damage the drill cage



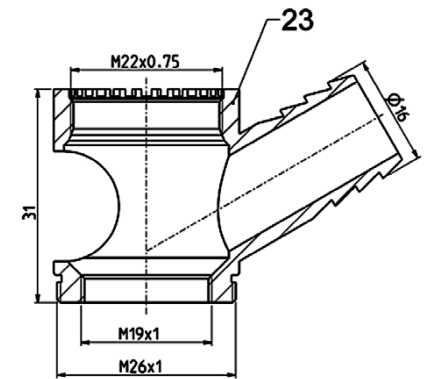
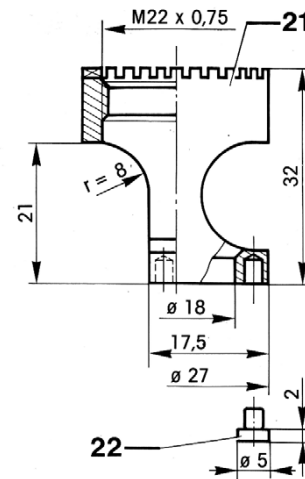
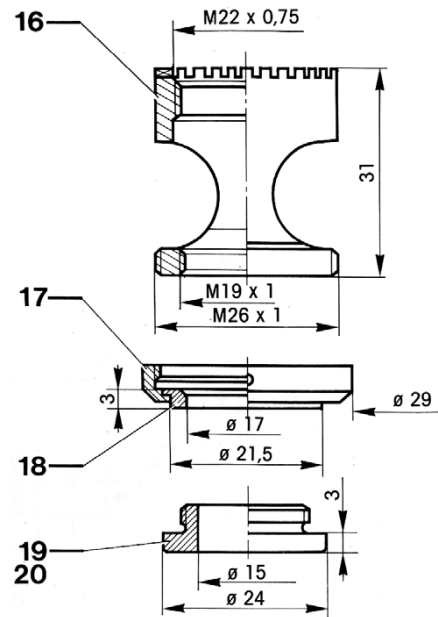
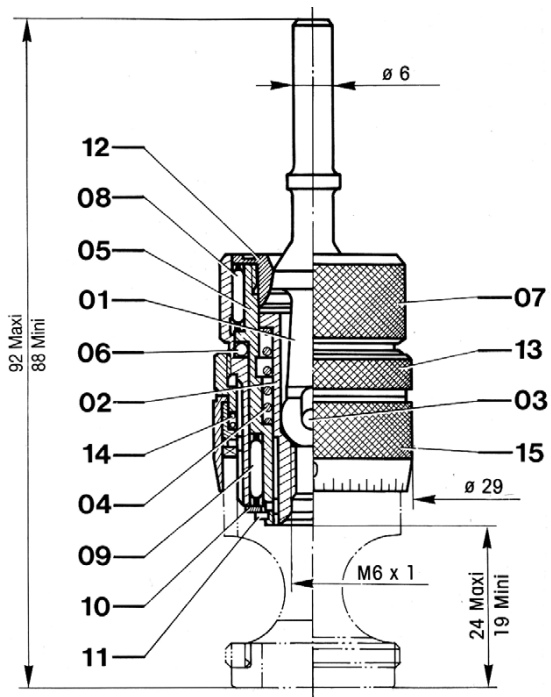
RB 257



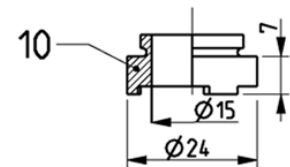
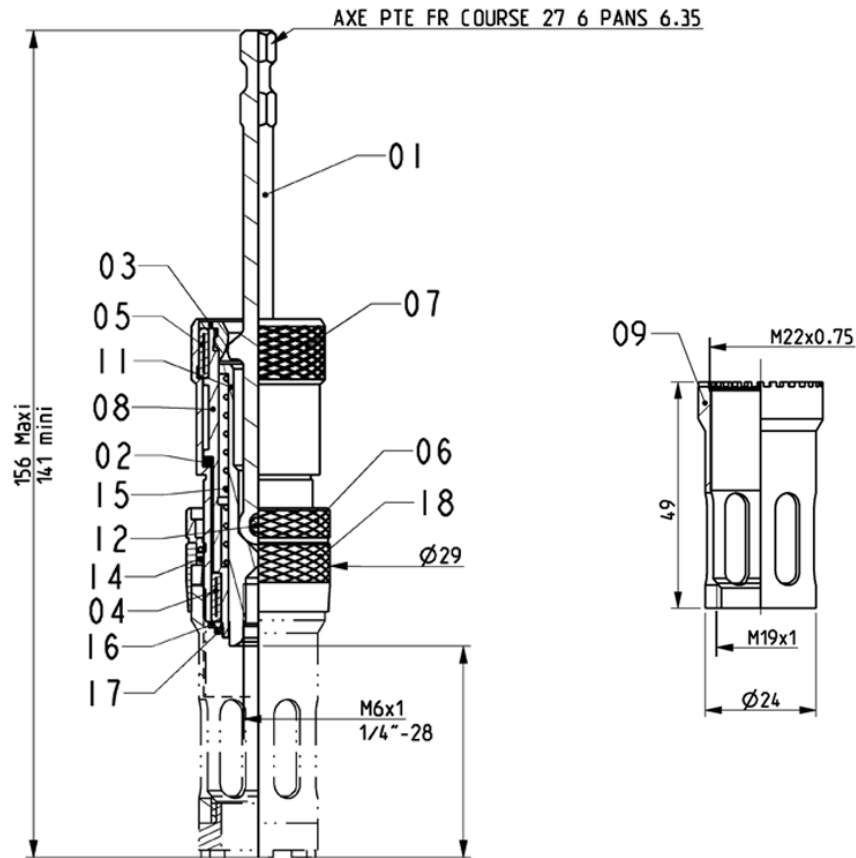
RB 258



RB 257–Dimensional Drawings



RB 258–Mounting base configuration



RB 306: Benefits

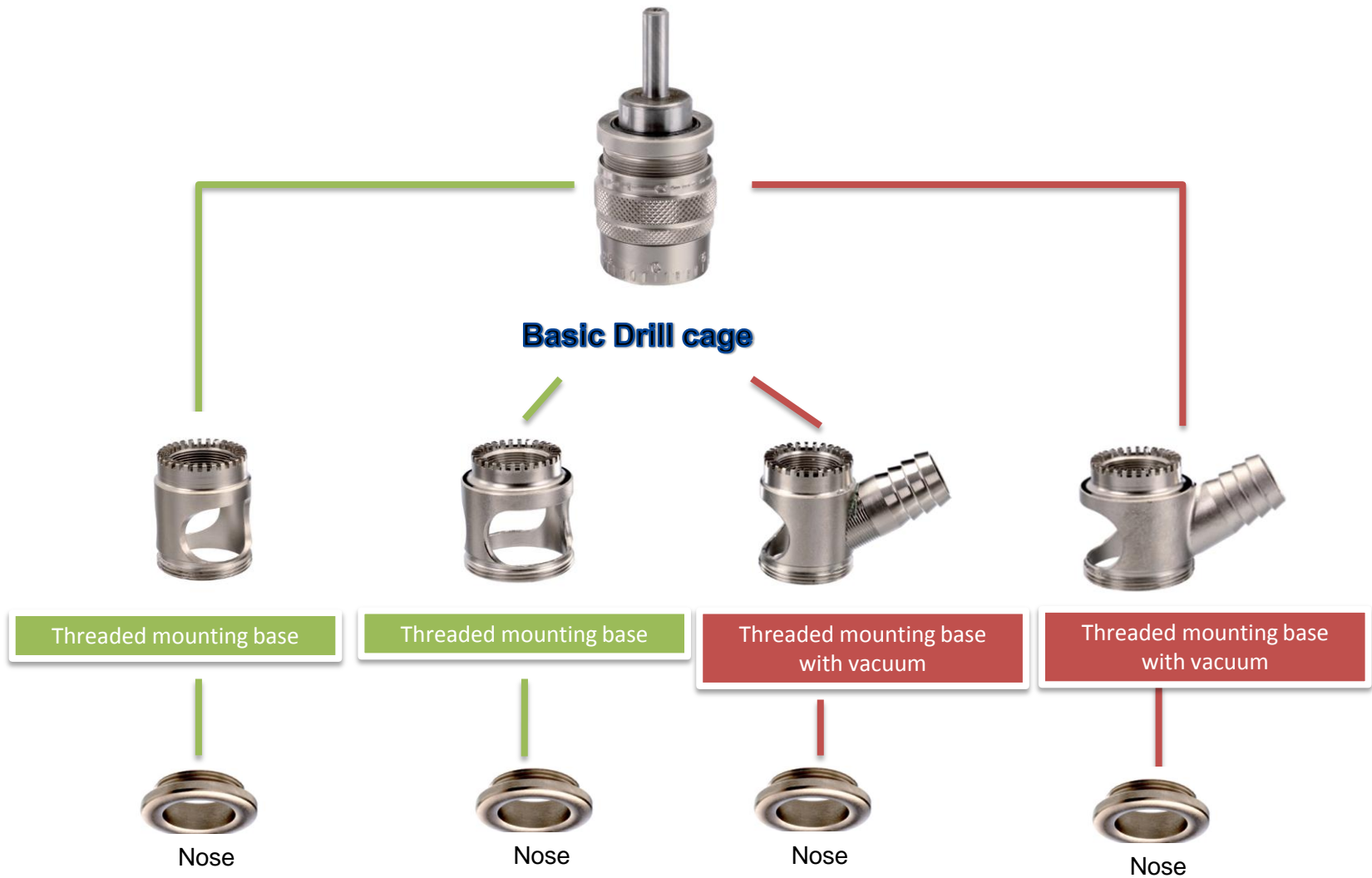
- ✓ Different mounting bases available
- ✓ Designed for cutters with dia > 10 mm
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Centring cone of the cutter (120°) for **perfect concentricity**
- ✓ Microstop depth secured by locknut with seal allowing an easy
- ✓ loosening of the locknut without damage the drill cage

Small or wide window
to better eliminate chips

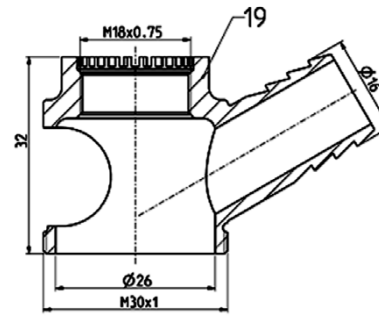
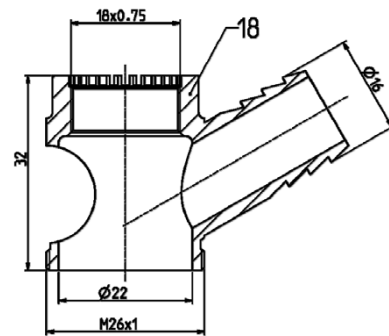
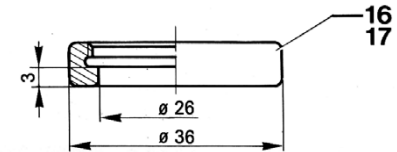
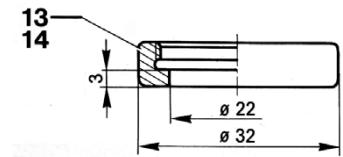
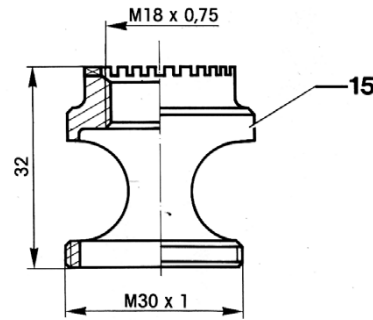
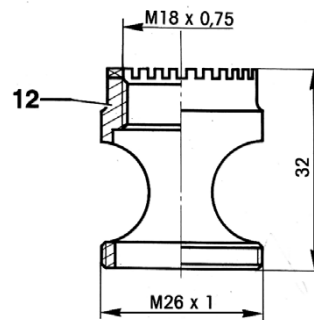
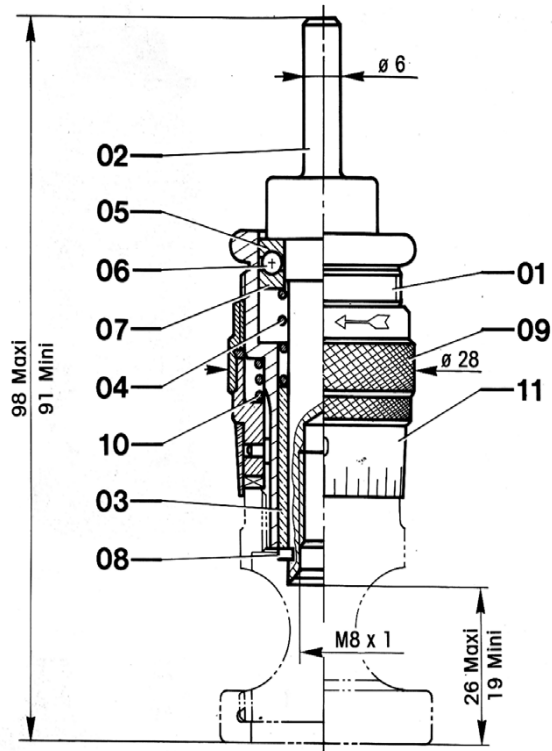


Microstop depth adjustment
(1 scale division = 0,025 mm)

RB 306



RB 306—Dimensional Drawings

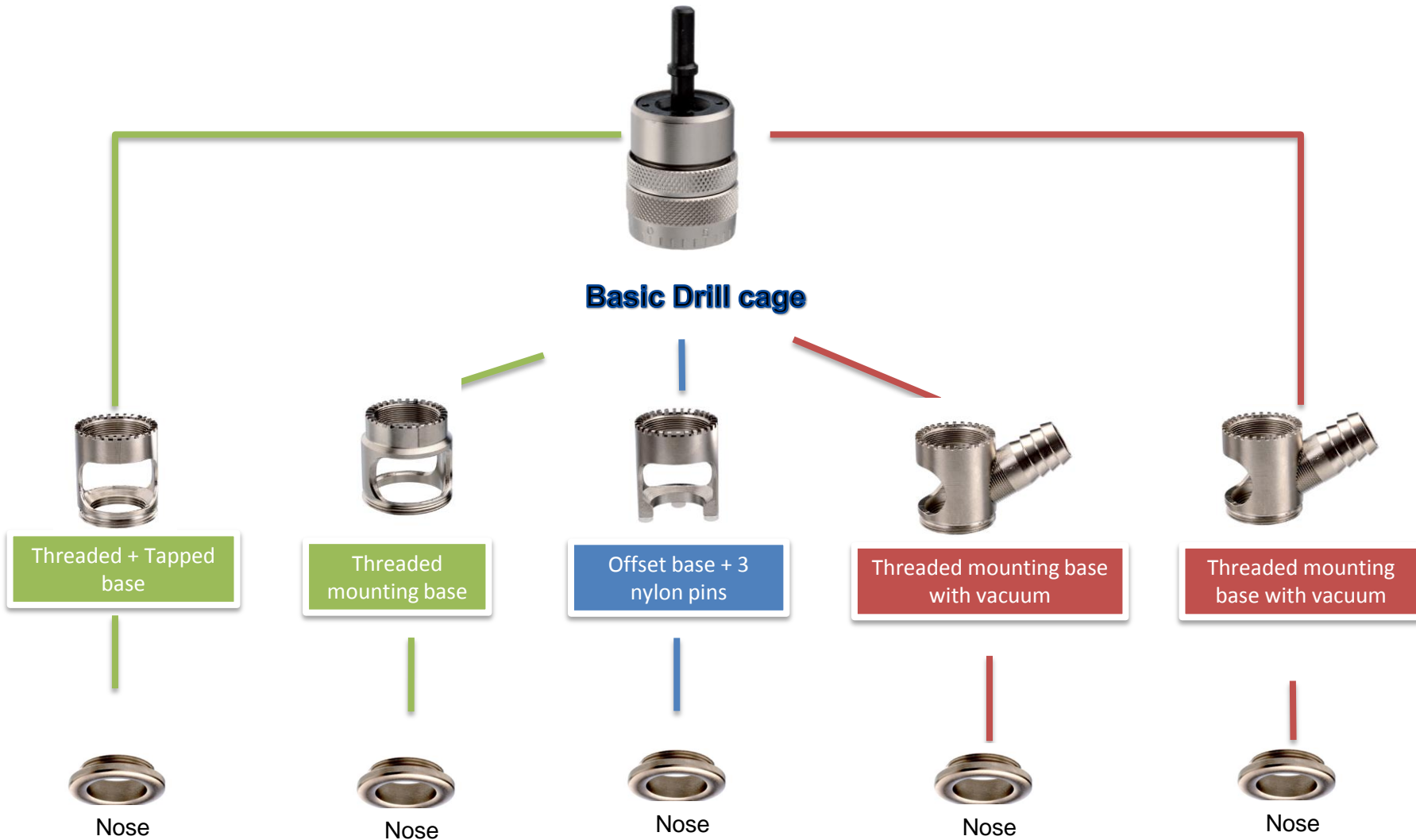


RB 307: Benefits

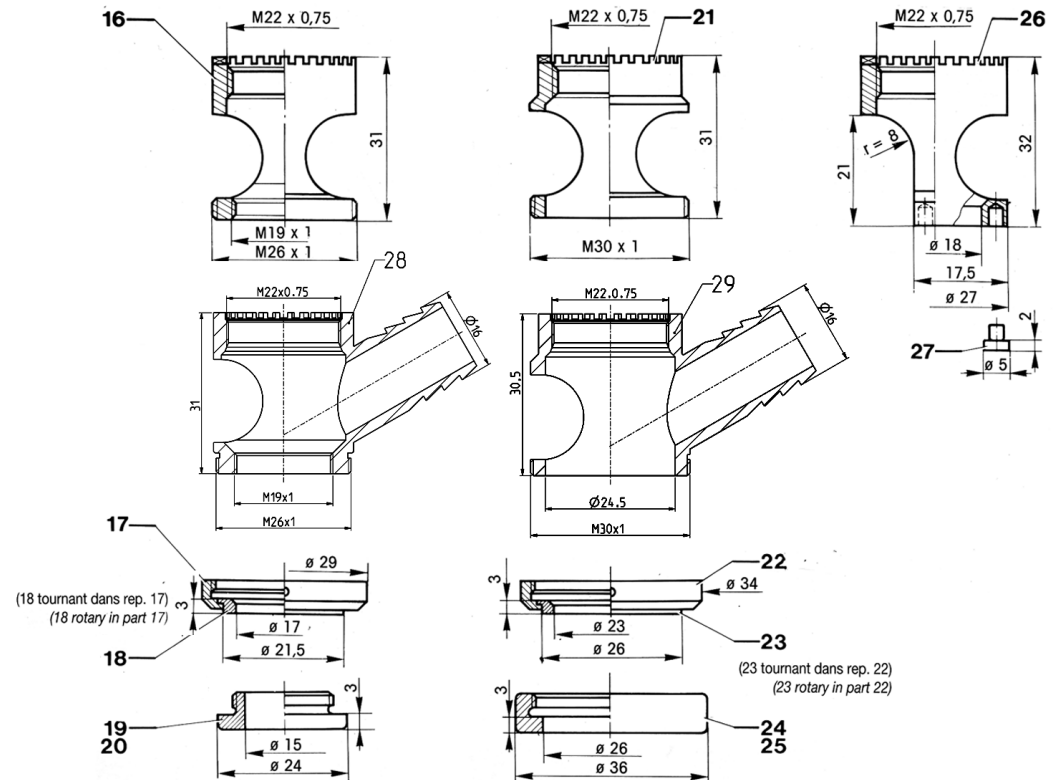
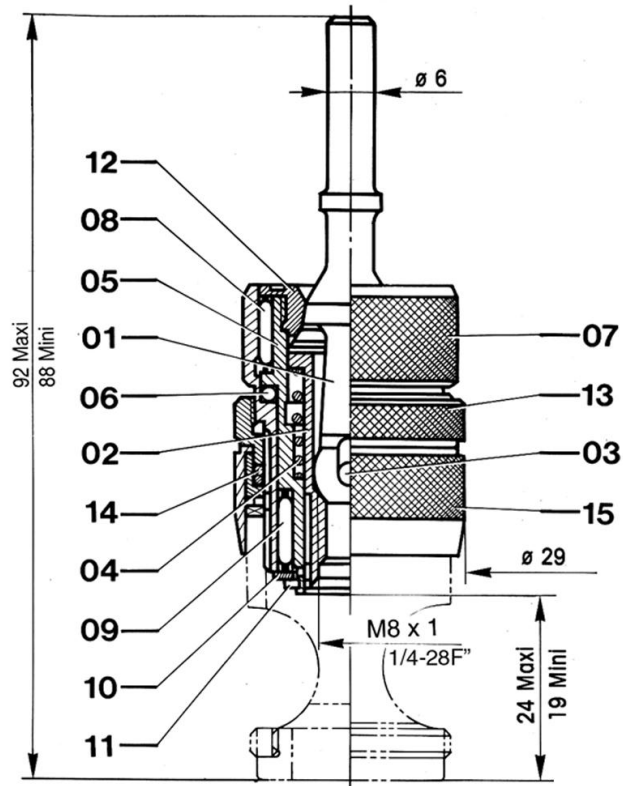
- ✓ Different mounting bases available
- ✓ Reduced dimensions for limited access area
- ✓ Mounting Base with Vacuum to be used in Carbon Fiber
- ✓ Centring cone of the cutter (120°) for **perfect concentricity**
- ✓ Ball pivoting spindle to avoid any misalignment ensuring perpendicularity during the operation
- ✓ **High precision** microstop cage
- ✓ Microstop depth secured by locknut with seal allowing an easy loosening of the locknut without damage the drill cage



RB 307



RB 307–Dimensional Drawings



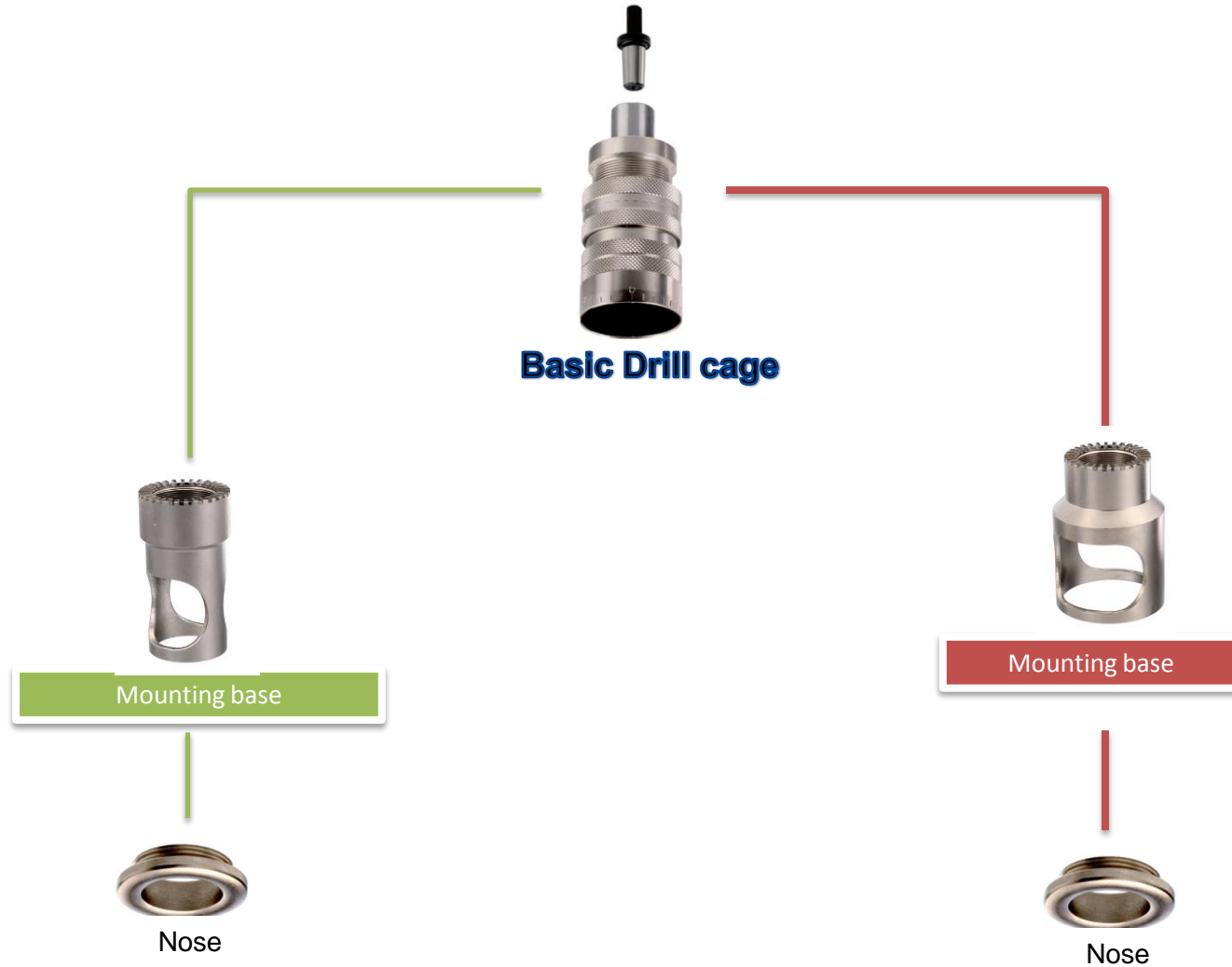
RB 406: Benefits

- ✓ Detachable spindle adaptor provides alternative methods for use:
 - ✓ With 3 jaw chuck
 - ✓ Or mounting direct onto the machine spindle. (this method increases level of concentricity while reducing length and weight of the drill tool assembly) => **Better performance and less operator fatigue**
 - ✓ Microstop depth adjustment (1 scale division = 0,025 mm)
- ✓ Microstop depth secured by locknut with seal allowing an easy loosening of the locknut without damage the drill cage

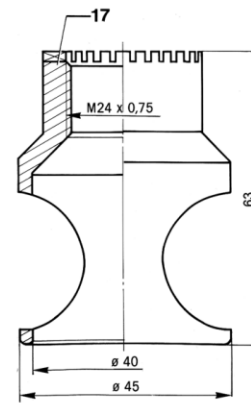
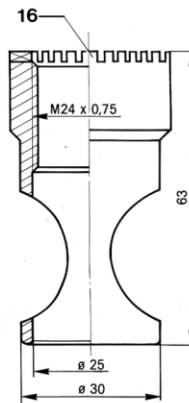
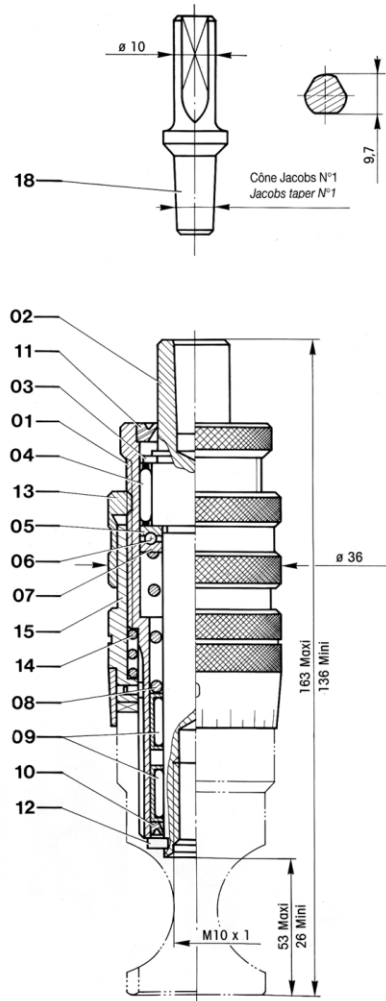


RB 406

RB 406—Mounting base configuration



RB 406–Dimensional Drawings



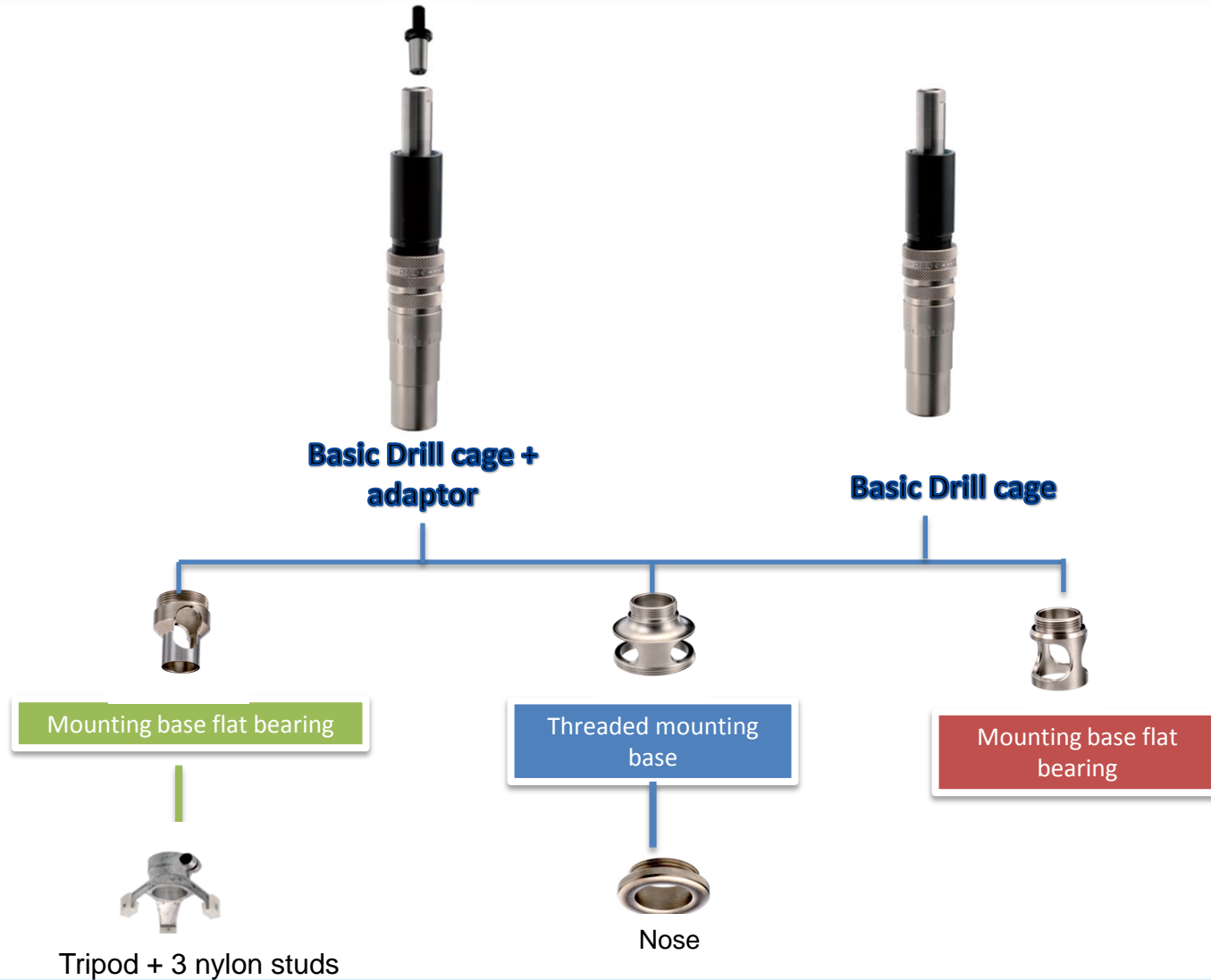
RB 356 HP: Benefits

- ✓ Detachable spindle adaptor provides alternative methods for use:
 - ✓ With 3 jaw chuck
 - ✓ Or mounting direct onto the machine spindle. (this method increases level of concentricity while reducing length and weight of the drill tool assembly) => **Better performance and less operator fatigue**
 - ✓ Microstop depth adjustment (1 scale division = 0,025 mm)
- ✓ Microstop depth secured by locknut with seal allowing an easy loosening of the locknut without damage the drill cage

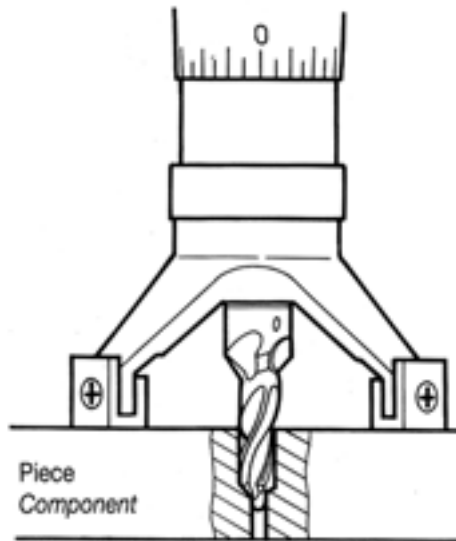


RB 356 HP 21

RB 356 HP –Mounting base configuration

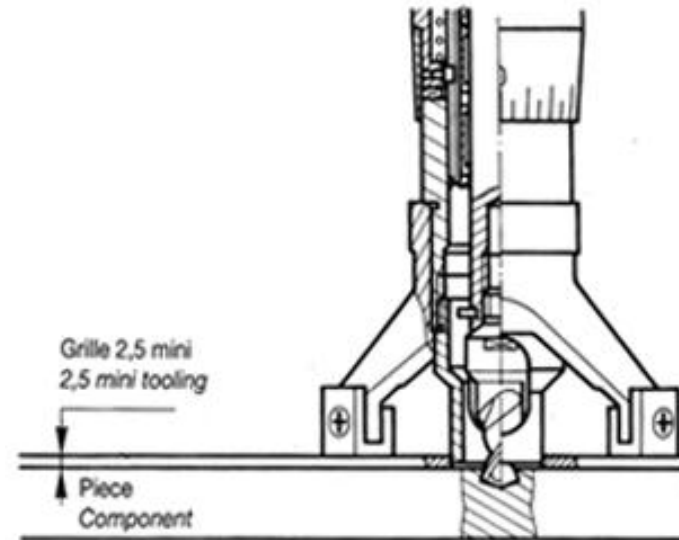


Reaming + countersinking application



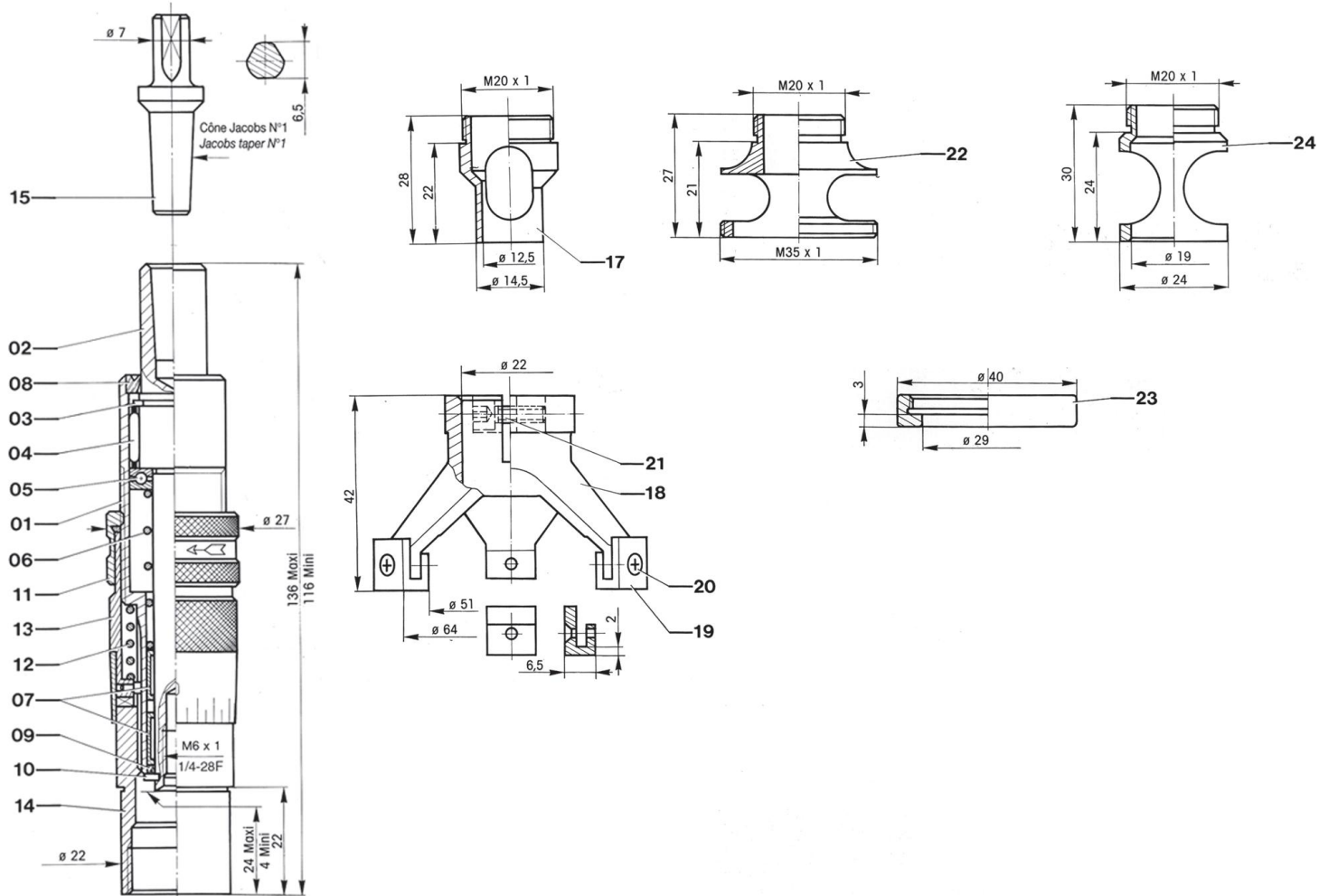
The tripod is used with cutter RB 022. Positioning of the cutter with pilot into the pilot hole

Drilling + countersinking application

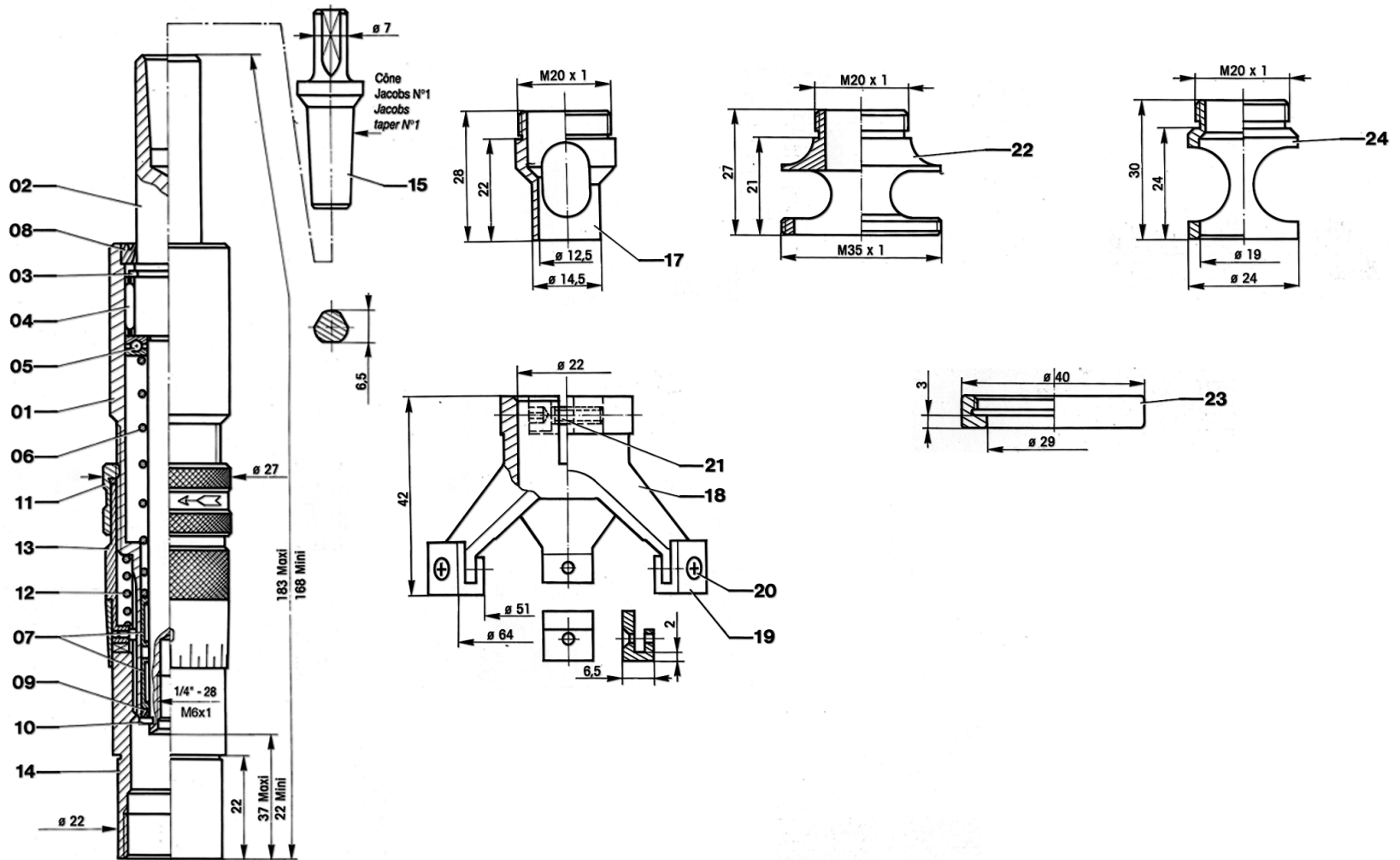


The mounting base is commonly used with strip templates. The tripod ensures **maximum stability**. Can be used with cutter type RB 018

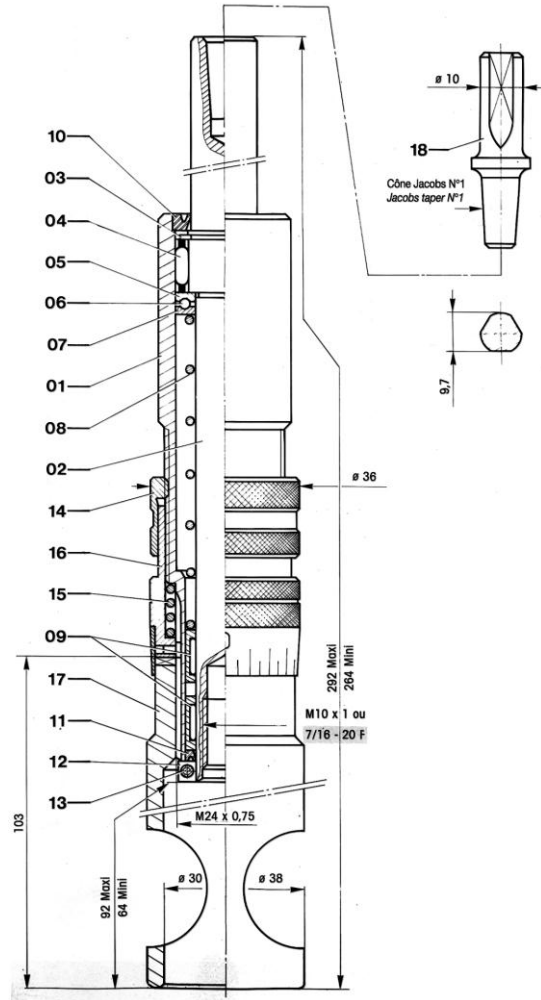
APEX TOOL GROUP RB 356 HP 21-Dimensional Drawings



RB 356 HP 38 – Dimensional Drawings



APEX TOOL GROUP RB 356 HP 58—Dimensional Drawings





RB 356 HP 21



RB 156



RB 406

Appareil à fraiser Microstop cage	Ø Queue Shank dia.	Attachement outil Cutter thread	Course Stroke	Ø Ext. Maxi	Longue ur totale / Total length		Poids Weight
					Mini	Maxi	
RB 156	Ø 4,8 mm - .188" dia	M 6 X 1	3,5 mm - .14"	Ø 25 mm - 1" dia	51 mm - 2"	55 mm - 2.16"	75 g.
RB 206	Ø 6 mm - .236" dia	M 6 X 1	6 mm - .236"	Ø 21 mm - .826" dia	95 mm - 3.74"	101 mm - 3.97"	110 - 120 g.
RBI 206	Ø 6 mm - .236" dia	1/4" - 28 F	6 mm - .236"	Ø 21 mm - .826" dia	95 mm - 3.74"	101 mm - 3.97"	110 - 120 g.
RB 256	Ø 6 mm - .236" dia	M 6 X 1	7,5 mm - .3"	Ø 28 mm - 1.1" dia	91 mm - 3.58"	98 mm - 3.85"	165 - 175 g.
RBI 256	Ø 6 mm - .236" dia	1/4" - 28 F	7,5 mm - .3"	Ø 28 mm - 1.1" dia	91 mm - 3.58"	98 mm - 3.85"	165 - 175 g.
RB 257	Ø 6 mm - .236" dia	M 6 X 1	6 mm - .236"	Ø 29 mm - 1.141" dia	88 mm - 3.46"	92 mm - 3.62"	155 - 165 g.
RB 258	Ø 6,35 mm - 1/4" dia	M 6 X 1	27 mm - 1.06"	Ø 29 mm - 1.141" dia	141 mm - 5.55"	156 mm - 6.14"	250 g.
RBI 258	Ø 6,35 mm - 1/4" dia	1/4" - 28 F	27 mm - 1.06"	Ø 29 mm - 1.141" dia	141 mm - 5.55"	156 mm - 6.14"	250 g.
RB 306	Ø 6 mm - .236" dia	M 8 X 1	7,5 mm - .3"	Ø 28 mm - 1.1" dia	91 mm - 3.58"	98 mm - 3.85"	175 - 185 g.
RB 307	Ø 6 mm - .236" dia	M 8 X 1	7 mm - .275"	Ø 29 mm - 1.141" dia	88 mm - 3.46"	98 mm - 3.62"	155 - 165 g.
RBI 307	Ø 6 mm - .236" dia	1/4" - 28 F	7 mm - .275"	Ø 29 mm - 1.141" dia	88 mm - 3.46"	98 mm - 3.62"	155 - 165 g.
RB 406		M 10 X 1	14 mm - .551"	Ø 36 mm - 1.417" dia	136 mm - 5.354"	163 mm - 6.417"	545 g.
RB 356 HP 21		M 6 X 1	21 mm - .826"	Ø 27 mm - 1.063" dia	116 mm - 4.567"	136 mm - 5.354"	300 g.
RB 356 HPI 21		1/4" - 28 F	21 mm - .826"	Ø 27 mm - 1.063" dia	116 mm - 4.567"	136 mm - 5.354"	300 g.
RB 356 HP 38		M 6 X 1	38 mm - 1.500"	Ø 27 mm - 1.063" dia	183 mm - 7.204"	168 mm - 6.614"	375 g.
RB 356 HPI 38		1/4" - 28 F	38 mm - 1.500"	Ø 27 mm - 1.063" dia	183 mm - 7.204"	168 mm - 6.614"	375 g.
RB 356 HP 58		M 10 X 1	58 mm - 2.283"	Ø 38 mm - 1.5" dia	264 mm - 10.4"	292 mm - 11.5"	970 g.
RB 356 HPI 58		7/16" - 20 F	58 mm - 2.283"	Ø 38 mm - 1.5" dia	264 mm - 10.4"	292 mm - 11.5"	970 g.

- ✓ Apex Tool group offers 3 type of cutter materials :
- ✓ HSS-E (High Speed Steel) cutters
- ✓ PCD (Poly-Crystalline Diamond) cutters
- ✓ Carbide cutters

For use with	Aluminium	Steel	Titanium	Composite
CARBURE CARBIDE				
HSS-E				
PCD*				

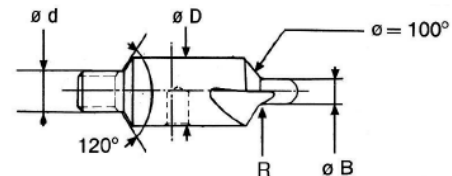


HSS-E Cutters with Solid Pilot



Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Pilote / Pilot Ø B		Rayon Radius R mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Ref. Fraise Cutter ref. HSS-E
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.				
RB 156 RB 206 RB 256 RB 257 RB 258	10	2,38	.0937	0,2 - 0,4	3	M6 x 1	31206000
	10	3,17	.1248	0,2 - 0,4	3	M6 x 1	31206005
	10	3,50	.1377	0,2 - 0,4	3	M6 x 1	31206010
	10	3,60	.1417	0,2 - 0,4	3	M6 x 1	31206015
	10	3,97	.1563	0,2 - 0,4	3	M6 x 1	31206020
	10	4,00	.1574	0,2 - 0,4	3	M6 x 1	31206025
	10	4,15	.1633	0,2 - 0,4	3	M6 x 1	31206030
	10	4,76	.1874	0,4 - 0,75	3	M6 x 1	31206035
	10	4,80	.1890	0,4 - 0,75	3	M6 x 1	31206040
	10	5,60	.2204	0,4 - 0,75	3	M6 x 1	31206045
RB 306 RB 307	14	4,76	.1874	0,4 - 0,75	3	M8 x 1	31206100
	14	5,00	.1968	0,4 - 0,75	3	M8 x 1	31206105
	14	5,60	.2204	0,4 - 0,75	3	M8 x 1	31206110
	14	6,00	.2362	0,4 - 0,75	3	M8 x 1	31206120
	14	6,35	.2500	0,4 - 0,75	3	M8 x 1	31206125
	17	8,00	.3149	0,75 - 1,25	3	M8 x 1	31206200
	21	9,52	.3748	0,75 - 1,25	3	M8 x 1	31206300
	21	10,00	.3937	0,75 - 1,25	3	M8 x 1	31206305

Cône de centrage
Centring cone

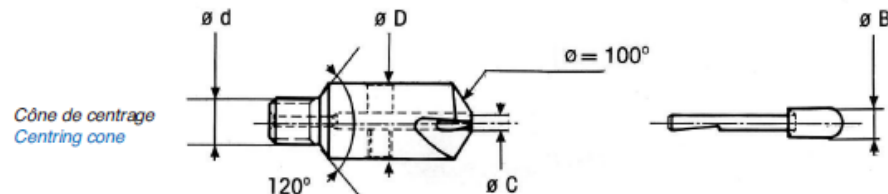


HSS-E Cutters with Inserted Pilot



- ✓ Unique cutter geometry
- ✓ Excellent surface finish
- ✓ Avoid tearing of fibers

Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Pilote / Pilot Tête / Head Ø B		Queue Shank Ø C mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Ref. Fraise + pilote Cutter + pilot ref. HSS-E	Ref. Fraise seule Cutter only ref. HSS-E
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.					
RB 156 RB 206 RB 256 RB 257 RB 258	10	2,00	.0787	2	2	M6 x 1	30220005	30220001
	10	2,38	.0937	2	2	M6 x 1	30220010	30220001
	10	2,50	.0984	2	2	M6 x 1	30220015	30220001
	10	2,80	.1102	2,5	2	M6 x 1	30220110	30220101
	10	3,00	.1181	2,5	2	M6 x 1	30220115	30220101
	10	3,17	.1248	2,5	2	M6 x 1	30220120	30220101
	10	3,50	.1377	2,5	2	M6 x 1	30220215	30220101
	10	4,00	.1574	3,5	2	M6 x 1	30220310	30220301
RB 306 RB 307	10	4,15	.1634	3,5	2	M6 x 1	30220315	30220301
	14	4,76	.1874	4	2	M8 x 1	30222015	30222001
	14	4,80	.1890	4	2	M8 x 1	30222025	30222001
	14	5,00	.1968	4	2	M8 x 1	30222030	30222001
	14	5,60	.2204	4	2	M8 x 1	30222040	30222001
	14	6,00	.2362	4	2	M8 x 1	30222050	30222001
	14	6,35	.2500	4	2	M8 x 1	30222055	30222001
	17	7,94	.3126	5	3	M8 x 1	30223035	30223001
	17	8,00	.3149	5	3	M8 x 1	30223040	30223001
	21	9,52	.3748	5	3	M8 x 1	30224045	30224001
21	10,00	.3937	5	3	M8 x 1	30224050	30224001	



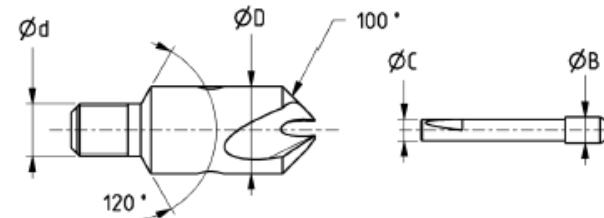
HSS-E Cutters with Inserted Pilot



Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Pilote / Pilot		Queue Shank Ø C mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Ref. Fraise + pilote Cutter + pilot ref. HSS-E	Ref. Fraise seule Cutter only ref. HSS-E
		Tête / Head Ø B						
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.					
RB 156	10	3,00	.1181	2,5	2	M6 x 1	30600010	30600001
RB 206	10	3,17	.1248	2,5	2	M6 x 1	30600015	30600001
RB 256	10	3,50	.1377	2,5	2	M6 x 1	30600020	30600001
RB 257	10	4,00	.1574	2,5	2	M6 x 1	30600025	30600001
RB 258	10	4,15	.1634	2,5	2	M6 x 1	30600030	30600001
	14	4,80	.1890	4	2	M8 x 1	30600110	30600101
RB 306	14	5,00	.1968	4	2	M8 x 1	30600115	30600101
RB 307	14	6,00	.2362	4	2	M8 x 1	30600120	30600101
	14	6,35	.2500	4	2	M8 x 1	30600125	30600101

- ✓ Unique cutter geometry
- ✓ Excellent surface finish
- ✓ Avoid tearing of fibers

Cône de centrage
Centring cone

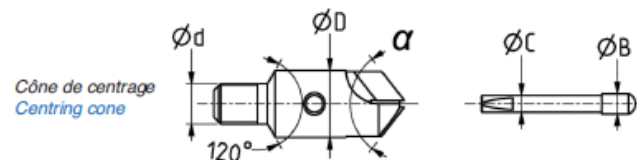


PCD Cutters with Inserted Pilot



- ✓ Better surface finish
- ✓ Less effort for the operator
- ✓ Extended cutter life

Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Tête / Head Ø B		Queue Shank Ø C mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Angle de fraisure Countersinking angle α	Ref. Fraise + pilote Cutter + pilot ref. PCD*	Ref. Fraise Cutter ref. PCD*
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.						
RB 156 RB 206 RB 256 RB 257 RB 258	10	2,40	.0945	2	2	M6 x 1	100°	30500311	30500300
	10	3,00	.1181	2,5	2	M6 x 1	100°	30500055	30500000
	10	3,17	.1248	2,5	2	M6 x 1	100°	30500060	30500000
	10	3,50	.1377	2,5	2	M6 x 1	100°	30500065	30500000
	10	4,00	.1574	2,5	2	M6 x 1	100°	30500070	30500000
	10	4,00	.1574	2,5	2	M6 x 1	130°	30503060	30503060
	10	4,15	.1634	2,5	2	M6 x 1	100°	30500075	30500000
	14	-	-	2,5	2	M6 x 1	130°	-	02500591PT
	14	-	-	3,5	2	M6 x 1	130°	-	02500592PT
	14	-	-	2,5	2	M8 x 1	130°	-	02500593PT
RB 306 RB 307	14	-	-	3,5	2	M8 x 1	130°	-	02500586PT
	14	4,10	.0614	4	2	M8 x 1	130°	30503166	30503160
	14	4,76	.1874	4	2	M8 x 1	100°	30500105	30500100
	14	4,80	.1890	4	2	M8 x 1	100°	30500110	30500100
	14	4,80	.1890	4	2	M8 x 1	130°	30502160	30503160
	14	5,00	.1968	4	2	M8 x 1	100°	30500115	30500100
	14	5,10	.2007	4	2	M8 x 1	130°	30503165	30503160
	14	5,60	.2204	4	2	M8 x 1	100°	30500120	30500100
	14	6,00	.2362	4	2	M8 x 1	100°	30500125	30500100
	14	6,35	.2500	4	2	M8 x 1	100°	30500130	30500100
	21	7,00	.2756	5	3	M8 x 1	100°	30500203	30500200
	21	7,94	.3126	5	3	M8 x 1	100°	30500205	30500200
	21	8,00	.3149	5	3	M8 x 1	100°	30500210	30500200
	21	9,52	.3748	5	3	M8 x 1	100°	30500215	30500200
	21	10,00	.3937	5	3	M8 x 1	100°	30500220	30500200
21	-	-	5	3	M8 x 1	130°	-	30503260	



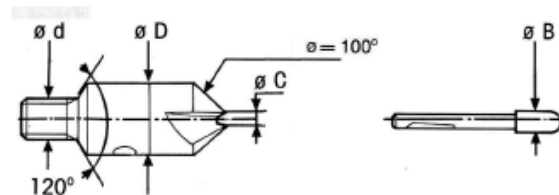
Carbide Cutters with Pilot insert



- ✓ Unique cutter geometry
- ✓ Excellent surface finish
- ✓ Avoid tearing of fibers

Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Pilote / Pilot Tête / Head Ø B		Queue Shank Ø C mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Ref. Fraise + pilote Cutter + pilot ref. Carbure/Carbide	Ref. Fraise seule Cutter only ref. Carbure/Carbide
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.					
		RB 156 RB 206 RB 256 RB 257 RB 258	10 10 10 10 10 10 10					
RB 306 RB 307	14 14 14 14 14 14 17 17 21 21	4,76 4,80 5,00 5,60 6,00 6,35 7,94 8,00 9,52 10,00	.1874 .1890 .1968 .2204 .2362 .2500 .3126 .3149 .3748 .3937	4 4 4 4 4 4 5 5 5 5	3 3 3 3 3 3 3 3 2 2	M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1 M8 x 1	30322015 30322025 30322030 30322040 30322050 30322055 30323035 30323040 30324045 30324050	30322000 30322000 30322000 30322000 30322000 30322000 30323000 30323000 30324000 30324000

Cône de centrage
Centring cone



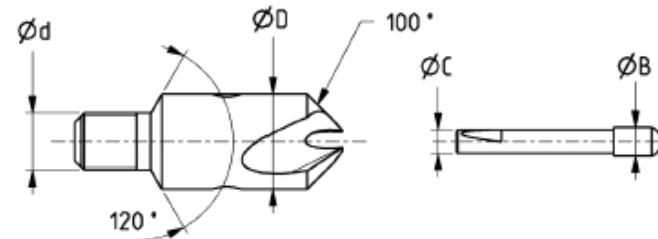
Carbide Cutters with Pilot insert



- ✓ Unique cutter geometry
- ✓ Excellent surface finish
- ✓ Avoid tearing of fibers








Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Fraise Cutter Ø D ± 0,1 mm	Pilote / Pilot		Queue Shank Ø C mm	Nombre de dents Numbers of flutes	Filetage Thread Ø d	Ref. Fraise + pilote Cutter + pilot ref. Carbure/Carbide	Ref. Fraise seule Cutter only ref. Carbure/Carbide
		Tête / Head Ø B						
		-0,02 mm -0,05 mm	-.0007 in. -.0020 in.					
RB 156	10	3,00	.1181	2,5	2	M6 x 1	30601010	30601001
RB 206	10	3,17	.1248	2,5	2	M6 x 1	30601015	30601001
RB 256	10	3,50	.1377	2,5	2	M6 x 1	30601020	30601001
RB 257	10	4,00	.1574	2,5	2	M6 x 1	30601025	30601001
RB 258	10	4,15	.1634	2,5	2	M6 x 1	30601030	30601001
RB 306	14	4,80	.1890	4	2	M8 x 1	30601110	30601101
RB 307	14	5,00	.1968	4	2	M8 x 1	30601115	30601101
	14	6,00	.2362	4	2	M8 x 1	30601120	30601101
	14	6,35	.2500	4	2	M8 x 1	30601125	30601101

Cône de centrage
Centring cone

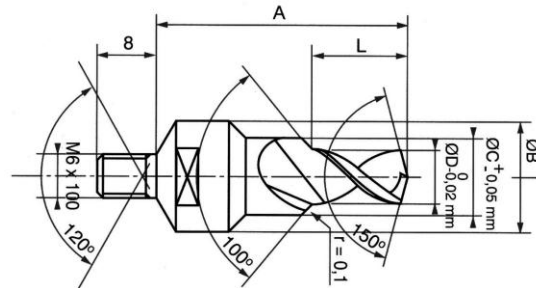


RB 018 – Drill and countersink cutter



For use with	Aluminium	Steel	Titanium	Composite
CARBURE CARBIDE				
HSS-E				
PCD*				

✓ Dilling and countersinking in one operation



✓ To be used with RB 356 HP range



RB 356 HP 21

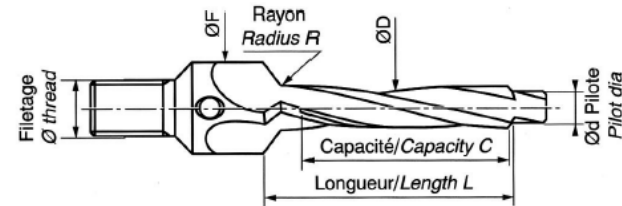
RB 356 HP 38

RB 356 HP 58

RB 022 – Drill, Ream and countersink cutter



Appareil à fraiser Chapitre A Microstop cage ref Chapter A	Filetage Thread Ø d	Ø outil / Reamer dia Ø D		L Maxi		Dia corps maxi Maxi body dia F		Cap. perçage Drill capacity C maxi	
		mm	Inch	mm	Inch	mm	Inch	mm	Inch
RB 356 HP 21	M6 x 1	3,20 - 4,20	0.125 - 0.165	20	.787	10	.393	12	1/2
RB 356 HP 38	M6 x 1	3,20 - 4,21	0.125 - 0.165	36	1.417	10	.393	25	1
RB 356 HP 21	M6 x 1	4,30 - 6,35	0.169 - 1/4	20	.787	14	.551	12	1/2
RB 356 HP 38	M6 x 1	4,30 - 6,35	0.169 - 1/4	36	1.417	14	.551	25	1
RB 356 HP 58	M10 x 1	6,35 - 8,00	1/4 - 0.315	40	1.574	17	.669	30	1.181
RB 356 HP 58	M10 x 1	8,00 - 10,00	0.315 - 0.393	40	1.574	21	.826	30	1.181



- ✓ One shot operation
- ✓ Non cutting rear for a perfect concentricity of the countersink
- ✓ No elongation of the reamed holes



To be used with RB 356 HP range



RB 356 HP 21



RB 356 HP 38



RB 356 HP 58

