

AERONAUTICAL SOLUTIONS

BIJA Industrie®
Aerospace & Industry



2025



A COMPANY
THREE SKILLS
THREE BRANDS



DISTRIBUTION



DESIGN



INNOVATION

A PASSION
AERONAUTICS

BIJA Industrie is a French company based in France, specialized in the design, manufacture and distribution of specific tools and tooling for the aeronautical and industrial sectors.

More than twenty years dedicated to the aeronautical industry, and its high standards of quality, follow-up and support, allow BIJA Industrie to rank among the leaders in the sector, accompanying all civil and military aeronautical fields in the creation, development and operational implementation of their objectives.

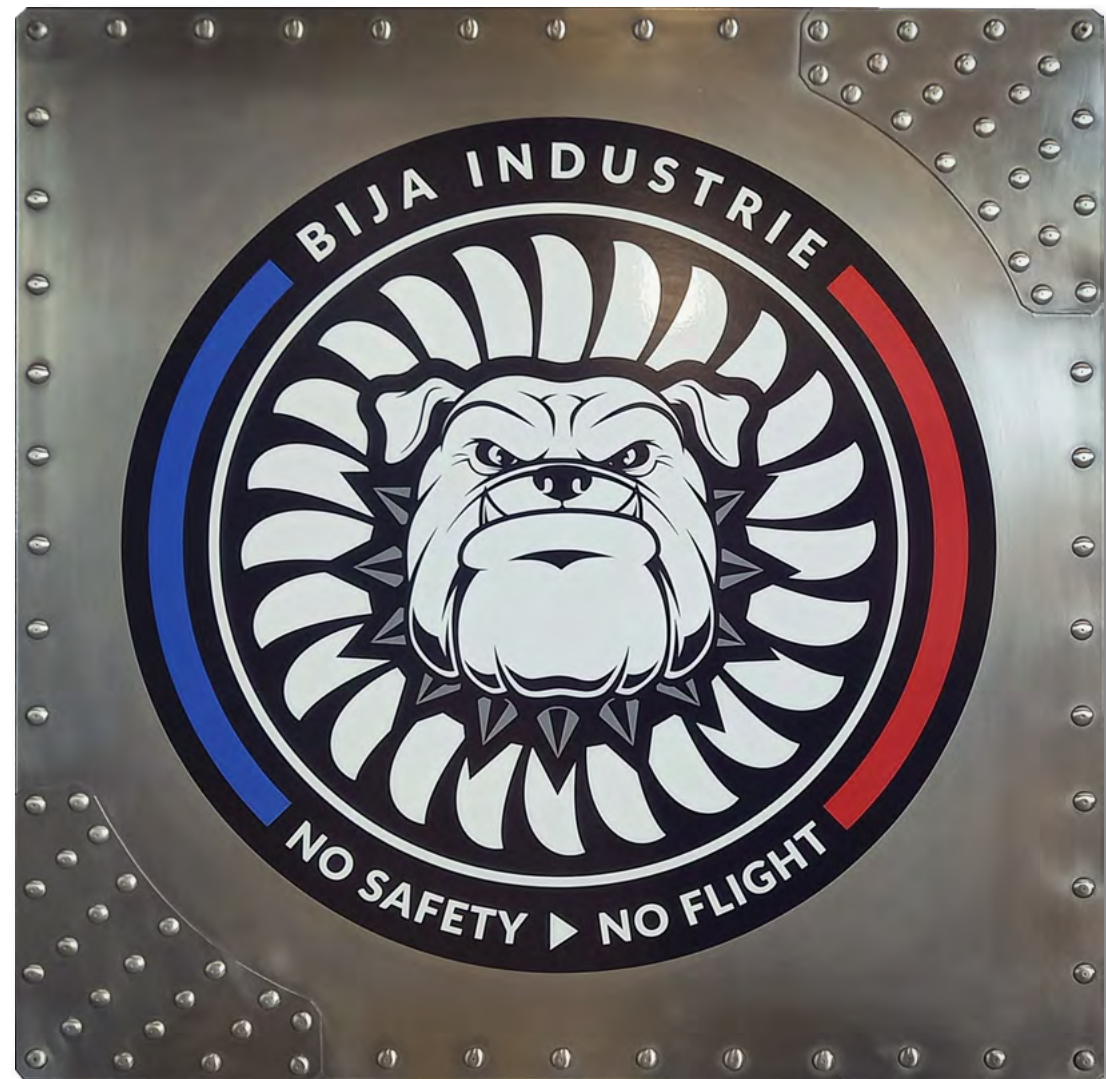
BIJA Industrie is a passionate team ready to meet the most stringent requirements of its customers. An innovative company on a human scale, combining responsiveness, flexibility and technical expertise on a national and international level.



OUR PARTNERS



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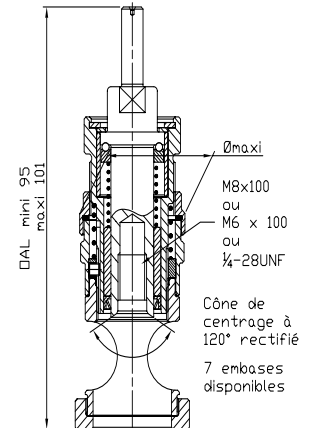


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MILLING, DRILLING AND BORING DEVICES

COMPLETE RANGE OF MICROSTOPS M6, M8 AND M10 WITH OR WITHOUT INTEGRATED VACUUM

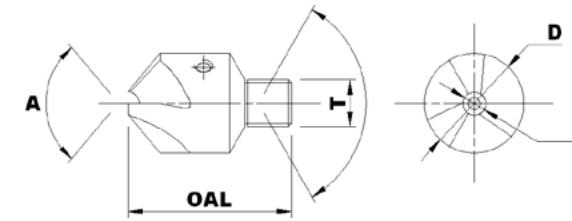


REACH SOLUTIONS FOR MANUAL DRILLING

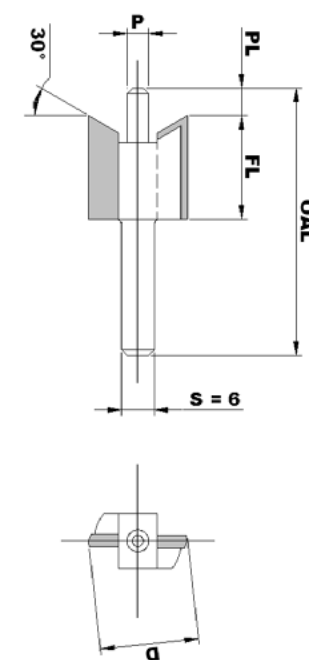
ASSEMBLY CUTTING TOOLS

COMPLETE RANGE OF
AERONAUTICAL ASSEMBLY CUTTING TOOLS

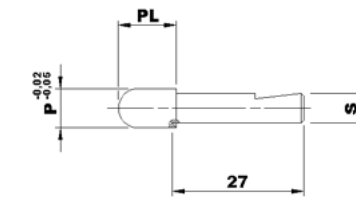
COUNTERSINKS



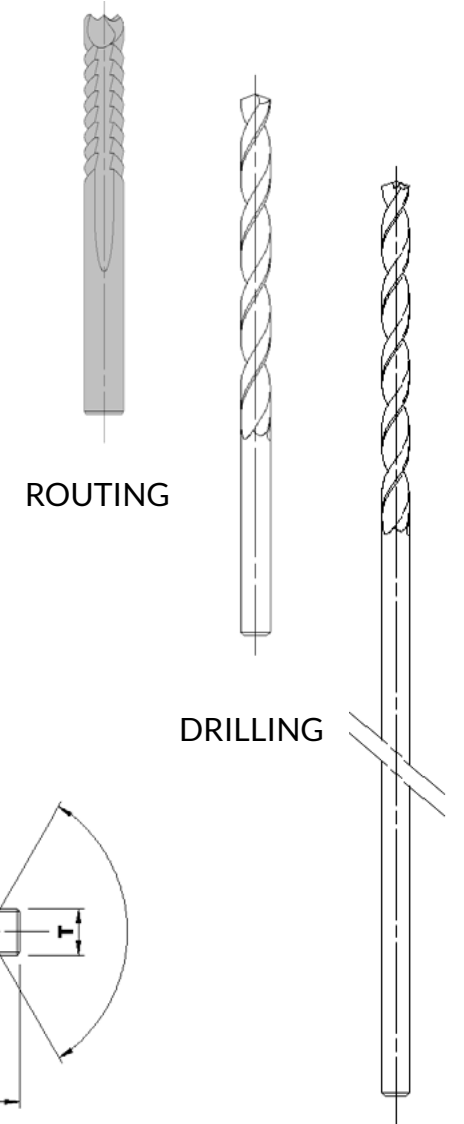
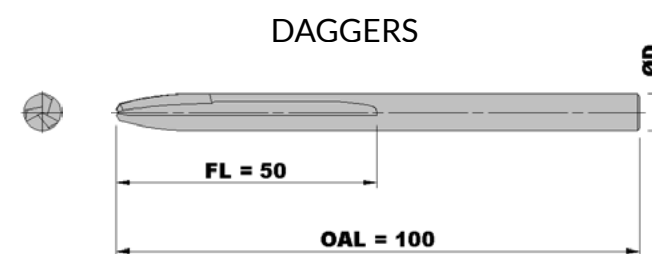
TREPANS



PILOTS



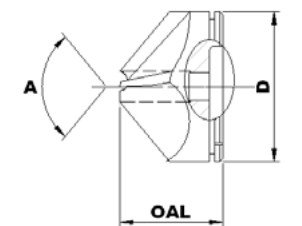
GEAR



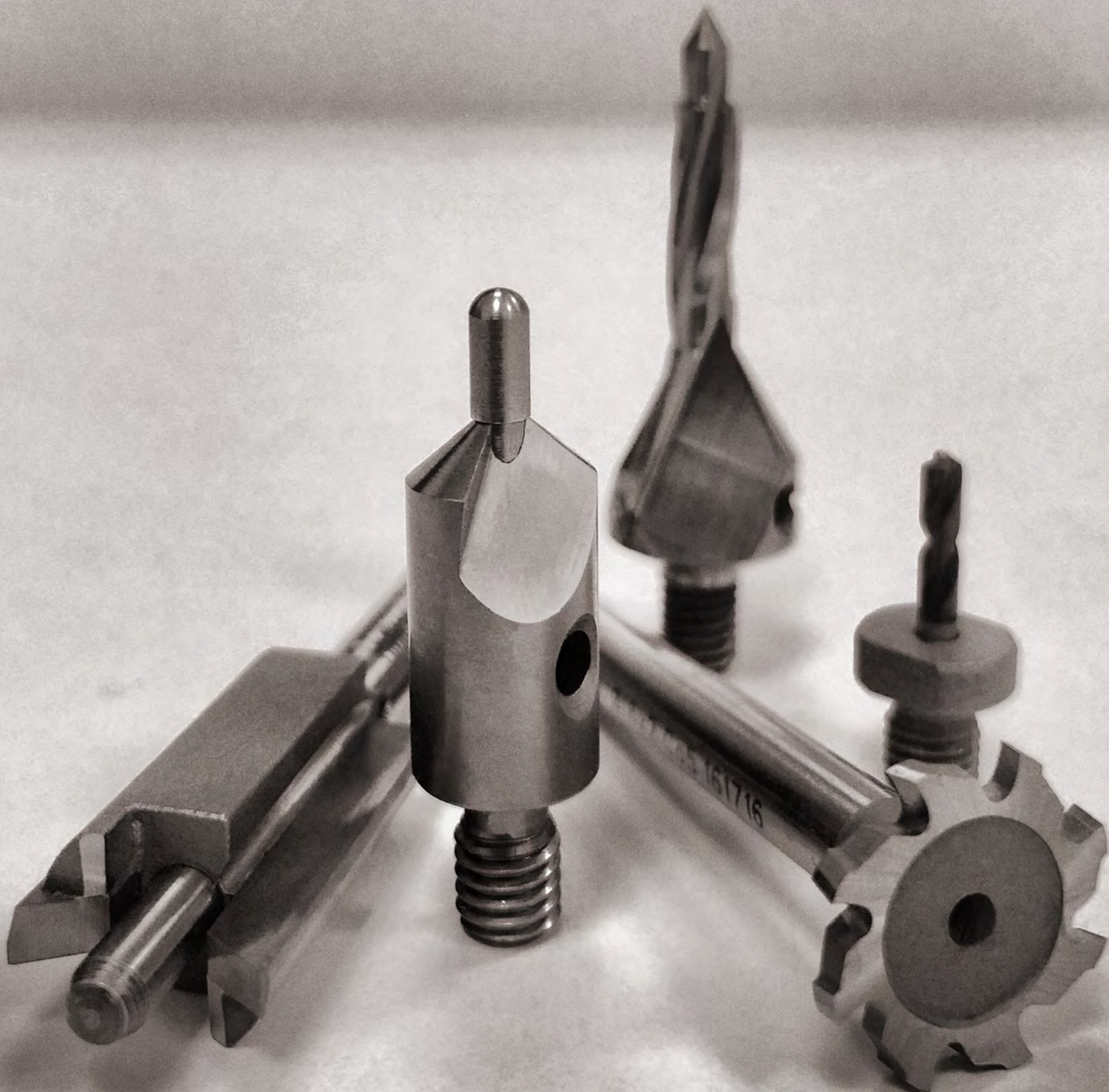
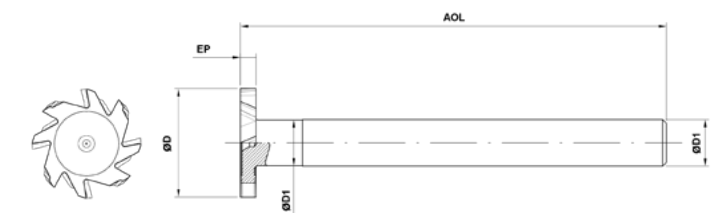
ROUTING

DRILLING

COUNTERBORES



NIDA MILLS

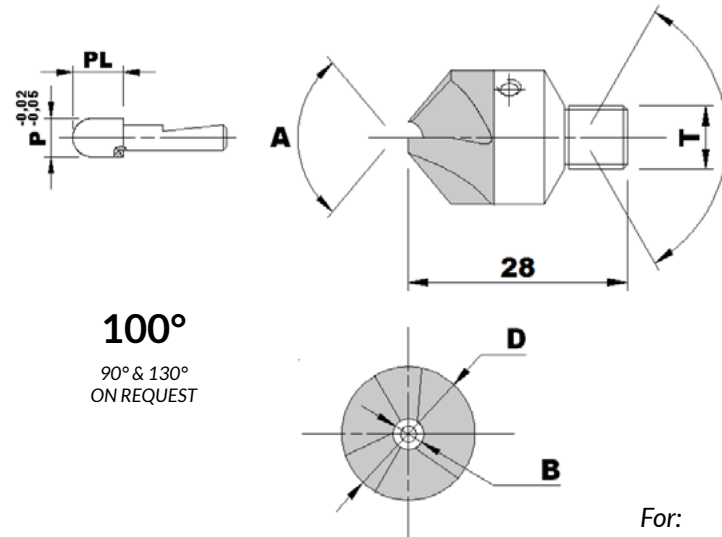


ASSEMBLY CUTTING TOOLS

THE INDISPENSABLE

CARBIDE Countersinks with pilot

- FC200 - Pilot Ø 2.00
- FC240 - Pilot Ø 2.40
- FC250 - Pilot Ø 2.50
- FC280 - Pilot Ø 2.80
- FC300 - Pilot Ø 3.00
- FC317 - Pilot Ø 3.17
- FC350 - Pilot Ø 3.50
- FC400 - Pilot Ø 4.00
- FC415 - Pilot Ø 4.15
- FC476 - Pilot Ø 4.76
- FC480 - Pilot Ø 4.80
- FC500 - Pilot Ø 5.00
- FC560 - Pilot Ø 5.60
- FC600 - Pilot Ø 6.00
- FC794 - Pilot Ø 7.94
- FC800 - Pilot Ø 8.00
- FC952 - Pilot Ø 9.52
- FC100 - Pilot Ø 10.0



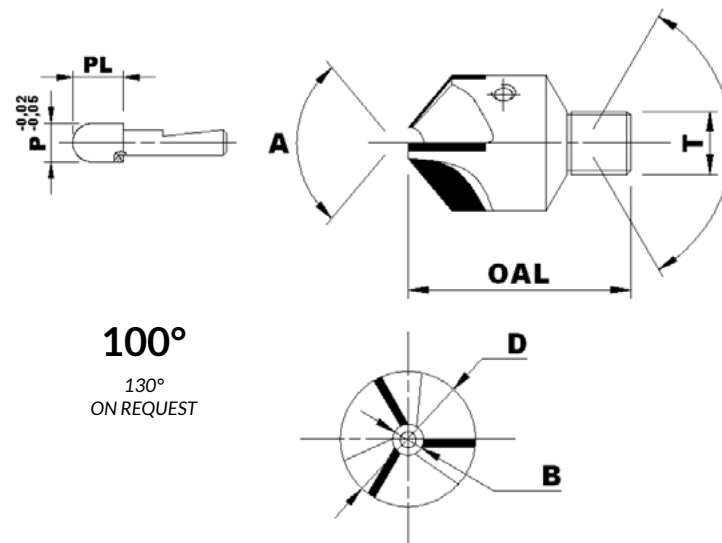
100°
90° & 130°
ON REQUEST

For:
Aluminium,
Titanium, (Composite)

PCD Countersinks with pilot

Polycrystalline diamond

- FP240 - Pilot Ø 2.40
- FP250 - Pilot Ø 2.50
- FP300 - Pilot Ø 3.00
- FP317 - Pilot Ø 3.17
- FP320 - Pilot Ø 3.20
- FP350 - Pilot Ø 3.50
- FP400 - Pilot Ø 4.00
- FP415 - Pilot Ø 4.15
- FP476 - Pilot Ø 4.76
- FP480 - Pilot Ø 4.80
- FP500 - Pilot Ø 5.00
- FP560 - Pilot Ø 5.60
- FP600 - Pilot Ø 6.00
- FP635 - Pilot Ø 6.35
- FP794 - Pilot Ø 7.94
- FP800 - Pilot Ø 8.00
- FP952 - Pilot Ø 9.52
- FP100 - Pilot Ø 10.0



100°
130°
ON REQUEST

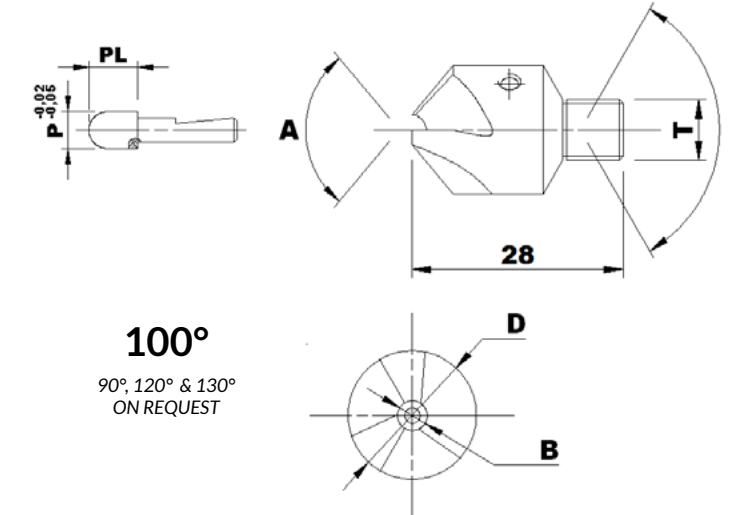
For:
Composite, CFRP

ASSEMBLY CUTTING TOOLS

THE INDISPENSABLE

HSS-E Co8 Countersinks with pilot

- FH200 - Pilot Ø 2.00
- FH238 - Pilot Ø 2.38
- FH240 - Pilot Ø 2.40
- FH250 - Pilot Ø 2.50
- FH280 - Pilot Ø 2.80
- FH300 - Pilot Ø 3.00
- FH317 - Pilot Ø 3.17
- FH320 - Pilot Ø 3.20
- FH350 - Pilot Ø 3.50
- FH400 - Pilot Ø 4.00
- FH415 - Pilot Ø 4.15
- FH476 - Pilot Ø 4.76
- FH480 - Pilot Ø 4.80
- FH500 - Pilot Ø 5.00
- FH560 - Pilot Ø 5.60
- FH600 - Pilot Ø 6.00
- FH635 - Pilot Ø 6.35
- FH794 - Pilot Ø 7.94
- FH800 - Pilot Ø 8.00
- FH952 - Pilot Ø 9.52
- FH100 - Pilot Ø 10.0



100°
90°, 120° & 130°
ON REQUEST

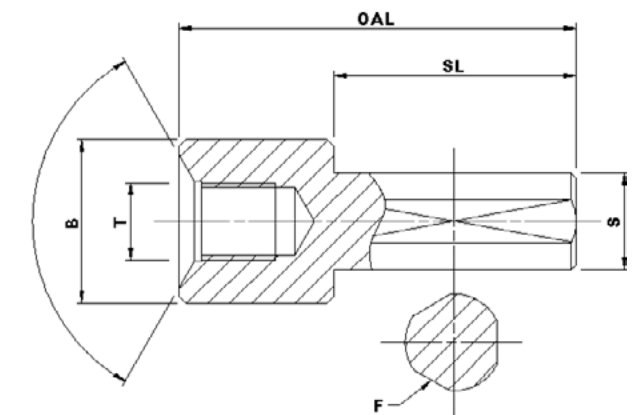
For:
Aluminium, (Titanium)

Adapters for countersinks

- AD4M6 - M6x100 shank Ø 4.00
- AD6M6 - M6x100 shank Ø 6.00
- AD8M6L - M6x100 shank Ø 8.00 long

- AD6M8 - M8x100 shank Ø 6.00
- AD8M8 - M8x100 shank Ø 8.00
- AD8M8L - M8x100 shank Ø 8.00 long

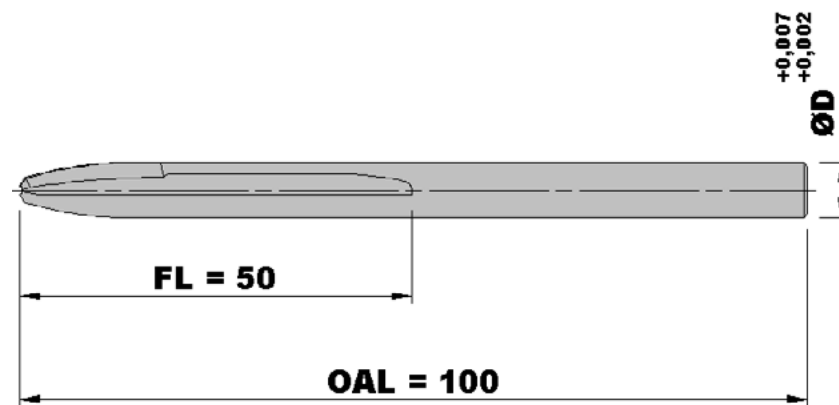
- AD10M10 - M10x100 shank Ø 10.00



THE INDISPENSABLE

CARBIDE 3 flutes dagger drills

- DC250 - Ø 2.50
- DC317 - Ø 3.17
- DC320 - Ø 3.20
- DC330 - Ø 3.30
- DC400 - Ø 4.00
- DC410 - Ø 4.10
- DC413 - Ø 4.13
- DC416 - Ø 4.16
- DC420 - Ø 4.20
- DC480 - Ø 4.80
- DC481 - Ø 4.81
- DC482 - Ø 4.82
- DC494 - Ø 4.94
- DC510 - Ø 5.10
- DC600 - Ø 6.00
- DC620 - Ø 6.20
- DC650 - Ø 6.50



For:
Aluminium,
Composite, Titanium



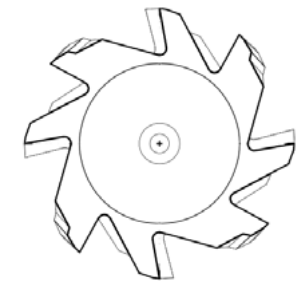
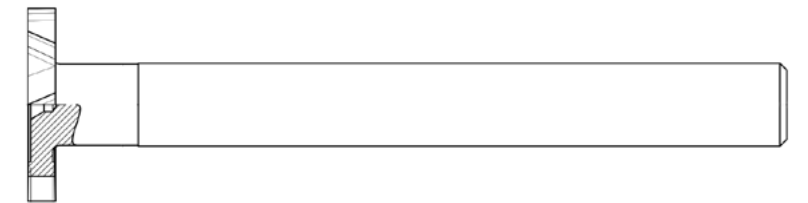
Hole Cutter Kit HCK12M

- 7 Cutters:
5/16" - 3/8" - 7/16"
1/2" - 9/16" - 5/8" - 3/4"
- 1 Arbor Assembly
 - 2 Pilots
 - 3 Adjusting Wrenches
 - 1 Center Punch

THE INDISPENSABLE

HSS-E Co5 Honeycomb Mills

- NY09 - Nida Mill Ø 9.00
- NY10 - Nida Mill Ø 10.00
- NY11 - Nida Mill Ø 11.00
- NY12 - Nida Mill Ø 12.00
- NY13 - Nida Mill Ø 13.00
- NY14 - Nida Mill Ø 14.00
- NY15 - Nida Mill Ø 15.00
- NY16 - Nida Mill Ø 16.00
- NY17 - Nida Mill Ø 17.00
- NY18 - Nida Mill Ø 18.00
- NY19 - Nida Mill Ø 19.00
- NY20 - Nida Mill Ø 20.00
- NY25 - Nida Mill Ø 25.00



Microstops

- BMF6S - M6x100 - Safety base
- BMF6S-N - With black identification ring
- BMF6S-B - With blue identification ring
- BMF6S-R - With red identification ring
- BMF6S-V - With green identification ring



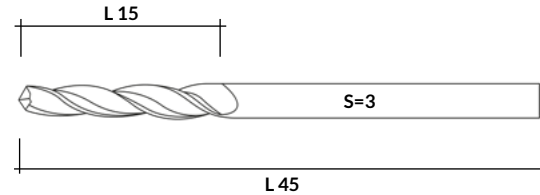
- BMF8S - M8x100 - Safety base
- BMF8S-N - With black identification ring
- BMF8S-B - With blue identification ring
- BMF8S-R - With red identification ring
- BMF8S-V - With green identification ring



THE INDISPENSABLE

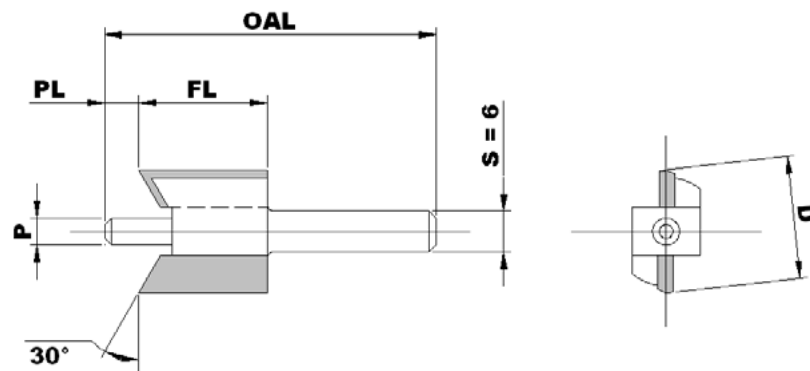
Cutting drill

B-FDCZ3 - Ø 3 HSS-Co8 3 flutes



CARBIDE 2 flutes trepans with pilot

- TPC100 - Ø 10.0 Pilot Ø 4
- TPC105 - Ø 10.5 Pilot Ø 4
- TPC110 - Ø 11.0 Pilot Ø 4
- TPC112 - Ø 11.2 Pilot Ø 4
- TPC115 - Ø 11.5 Pilot Ø 4
- TPC120 - Ø 12.0 Pilot Ø 4
- TPC125 - Ø 12.5 Pilot Ø 4
- TPC127 - Ø 12.7 Pilot Ø 4
- TPC130 - Ø 13.0 Pilot Ø 4
- TPC140 - Ø 14.0 Pilot Ø 4
- TPC142 - Ø 14.2 Pilot Ø 4
- TPC150 - Ø 15.0 Pilot Ø 4
- TPC160 - Ø 16.0 Pilot Ø 4
- TPC162 - Ø 16.2 Pilot Ø 4
- TPC164 - Ø 16.4 Pilot Ø 4
- TPC174 - Ø 17.4 Pilot Ø 4
- TPC180 - Ø 18.0 Pilot Ø 4
- TPC190 - Ø 19.0 Pilot Ø 4
- TPC200 - Ø 20.0 Pilot Ø 4
- TPC210 - Ø 21.0 Pilot Ø 4
- TPC220 - Ø 22.0 Pilot Ø 4
- TPC230 - Ø 23.0 Pilot Ø 4
- TPC240 - Ø 24.0 Pilot Ø 4
- TPC250 - Ø 25.0 Pilot Ø 4



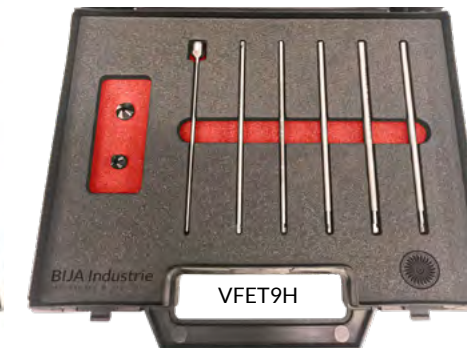
For:
Composite,
CFRP, Kevlar

THE INDISPENSABLE

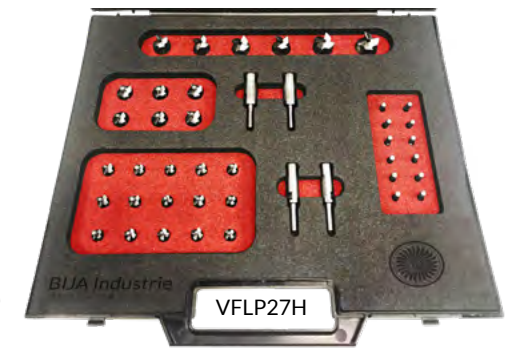
OUR CASES



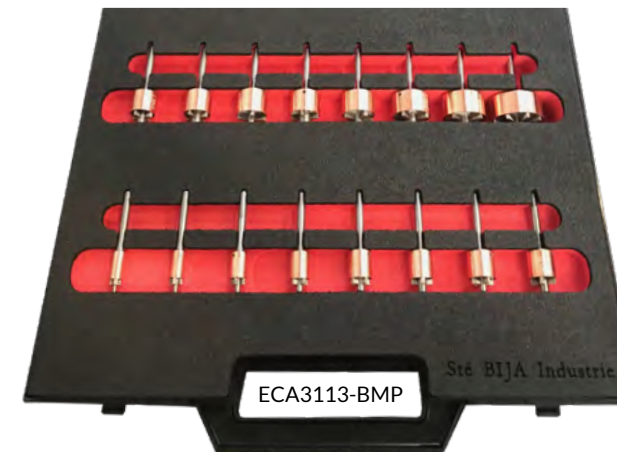
Countersinks & Microstops



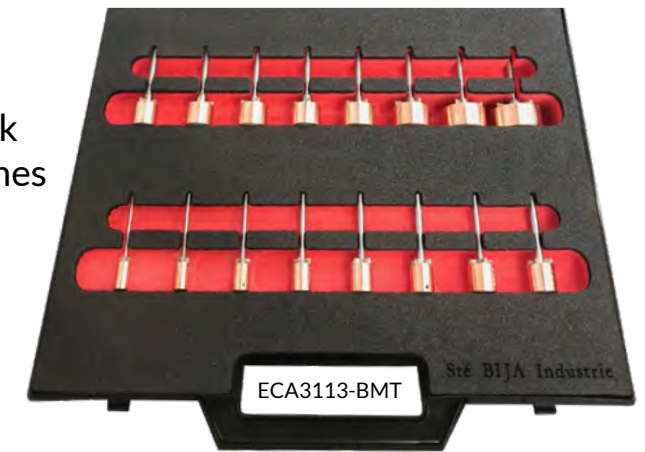
Countersinks & Pilots for back countersinks



Counterbores & Pilots for counterbores

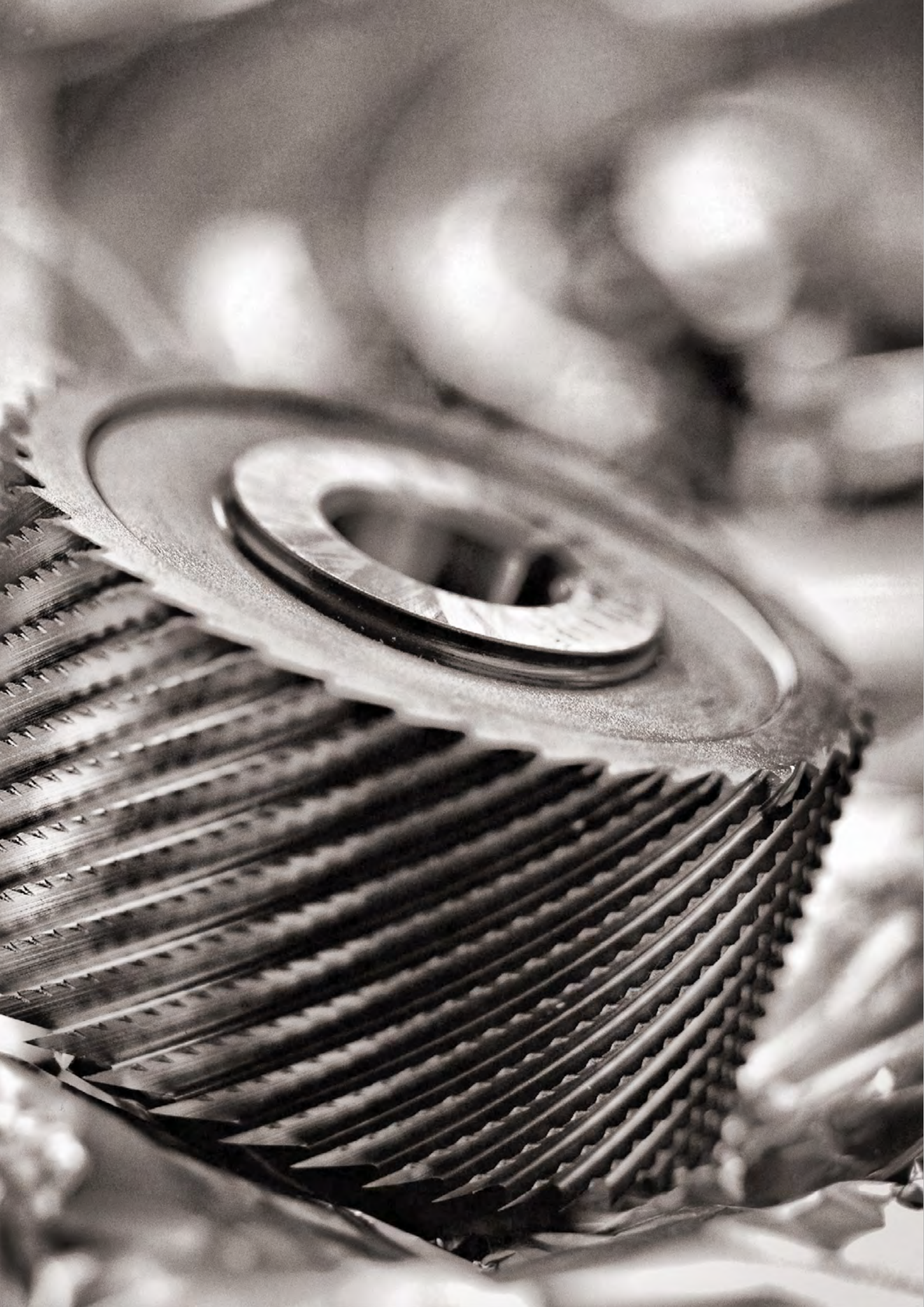


Reamers Ø 1.00 to Ø 4.90
Reamers Ø 5.00 to Ø 10.0



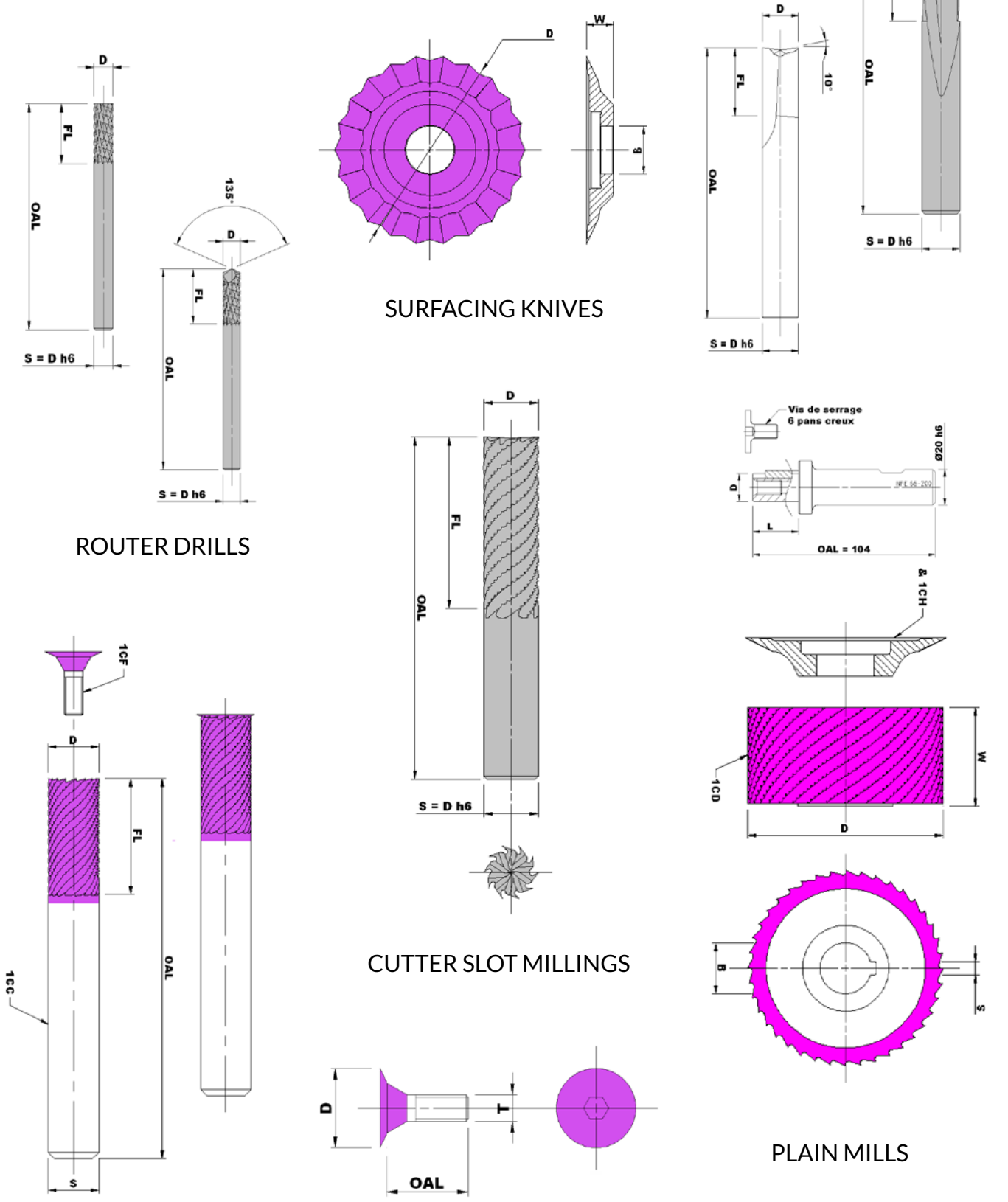
HSS trepans
Ø 10.0 to Ø 50.0





MACHINING CUTTING TOOLS

COMPLETE RANGE OF AERONAUTICAL MACHINING CUTTING TOOLS



COMPOSITE ROUTERS Very High Performances

- Roughing composite router
- Multiteeth composite router
- Herringbone F2 composite router
- Herringbone composite router



FRC-D - FRC-G



FCM-G - FCM-D

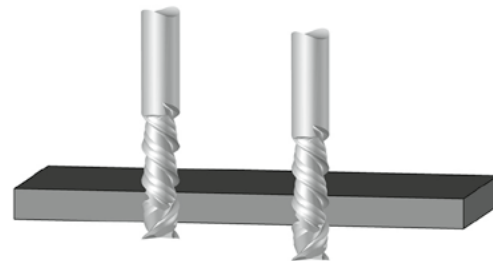
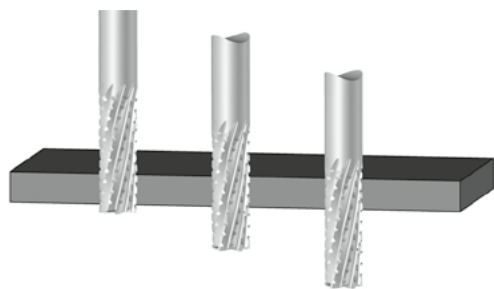


F2C



FCC

Flute Management



Upcut milling for best surface quality



Down Cut Side

Up Cut Side

Example: FCC Ø 8

- 7000 rpm
- 0,20 mm/rev

COMPOSITE ROUTERS Very High Performances

A standard range of different geometries with each one different strong point in order to reach exactly to your requirements: quality, tool life, cycle time and cutting forces.

FCM-D - FCM-G

VHP Multiteeth composite router

A multipurpose mill, the best compromise: quality, performance and long tool life.

FRC-D - FRC-G

VHP Roughing composite router

A mill generating very low cutting forces for machining parts with low rigidity setups, low clamping forces, or important overhang of the tool.

F2C - FCC

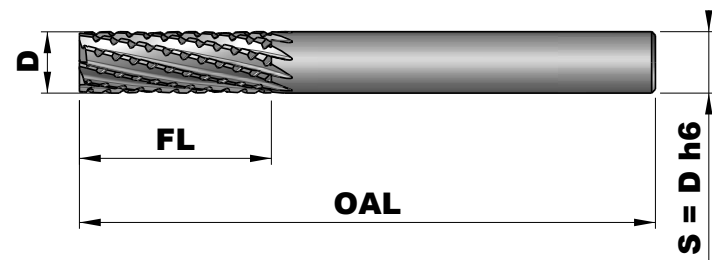
VHP Herringbone composite router

A mill that allows to obtain the best surface finish combined with very high cutting tool conditions.

	FCM-G - FCM-D	FRC-G - FRC-D	F2C - FCC
Application	Roughing and finishing	Roughing	Roughing and finishing
Surface quality	2nd	3rd	1st
Cutting resistance	2nd	1st	3rd
Tool life	1st	2nd	3rd
Flute Management	Yes	Yes	Small
Teeth number	Various (depends on Ø)	Various (depends on Ø)	Various (depends on Ø)
Milling direction	Conventional (upcut milling)		

MACHINING CUTTING TOOLS

VHP Multiteeth composite router



FCM-D: Right helix - Right hand cut

FCM-G: Left helix - Left hand cut

Application:

Very high performance router for composite stacks on CNC machine. Well adapted for big material removal rate.

Tool geometry:

Right and left
Chip breakers
Burr style end cut

Tool material:

Solid carbide with Diamond coating

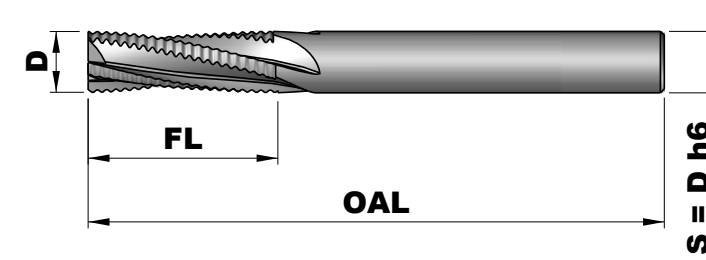
For:

Composite, CFRP

Item Right hand cut	Item Left hand cut	Ø		F	FL		OAL	
		Inch	mm		Inch	mm	Inch	mm
FCM-D001		.1181	3	6	.374	9.5	1.7717	45
	FCM-G001	.1181	3	6	.374	9.5	1.4961	38
FCM-D002		1/8 (.125)	3.175	6	.248	6.3	1.4961	38
	FCM-G002	1/8 (.125)	3.175	6	.374	9.5	1.4961	38
FCM-D003		1/8 (.125)	3.175	6	.374	9.5	1.4961	38
	FCM-G003	.1575	4	6	.5512	14	1.9685	50
FCM-D004		.1575	4	6	.5512	14	1.9685	50
	FCM-G004	.2362	6	8	.748	19	2.6772	68
FCM-D005		.1575	4	6	.4724	12	2.4803	63
	FCM-G005	.2362	6	10	.7087	18	3.4946	88
FCM-D006		3/16 (.1875)	4.763	6	.374	9.5	2.0079	51
	FCM-G006	1/4 (.25)	6.35	8	.748	19	2.4803	63
FCM-D007		.2362	6	8	.7087	18	2.6772	68
	FCM-G007	5/16 (.3125)	7.938	10	.9843	25	2.4803	63
FCM-D008		1/4 (.25)	6.35	8	.5118	13	2.4803	63
	FCM-G008	.315	8	10	.9449	24	2.9134	74
FCM-D009		1/4 (.25)	6.35	8	.748	19	2.4803	63
	FCM-G009	.315	8	14	.9449	24	3.7008	94
FCM-D010		1/4 (.25)	6.35	10	.748	19	2.4803	63
	FCM-G010	3/8 (.375)	9.525	12	1.1024	28	2.9921	76
FCM-D011		1/4 (.25)	6.35	12	0.748	19	2.4803	63
	FCM-G011	.3937	10	12	1.1811	30	3.1496	80
FCM-D012		1/4 (.25)	6.35	8	.9843	25	2.9921	76
	FCM-G012	.4724	12	14	1.4961	38	3.3858	86
FCM-D013		1/4 (.25)	6.35	10	.9843	25	2.9921	76
	FCM-G013	1/2 (.5)	12.7	14	1.4961	38	3.7402	95
FCM-D014		1/4 (.25)	6.35	12	.9843	25	2.9921	76
FCM-D015		1/4 (.25)	6.35	8	1.2598	32	4.0157	102
FCM-D016		5/16 (.3125)	7.938	10	.9843	25	2.4803	63
FCM-D017		.315	8	10	.9449	24	2.9134	74
FCM-D018		3/8 (.375)	9.525	12	.748	19	2.4803	63
FCM-D019		3/8 (.375)	9.525	12	1.1024	28	2.9921	76
FCM-D020		3/8 (.375)	9.525	12	1.4961	38	4.0157	102
FCM-D021		.3937	10	12	1.1811	30	3.1496	80
FCM-D022		.4724	12	14	1.4173	36	3.5838	86
FCM-D023		1/2 (.5)	12.7	14	.9843	25	2.9921	76
FCM-D024		1/2 (.5)	12.7	14	1.4961	38	3.9370	100
FCM-D025		1/2 (.5)	12.7	16	2.0079	51	4.0157	102

MACHINING CUTTING TOOLS

VHP Roughing composite router



FRC-D: Right helix - Right hand cut

FRC-G: Left helix - Left hand cut

Application:

Very high performance router for composite stacks on CNC machine. Well adapted for big material removal rate.

With very low cutting forces, but can required a finishing operation.

Tool geometry:

Right and left
Nicked profile

Tool material:

Solid carbide with Diamond coating

For:

Composite, CFRP

Item Right hand cut	Item Left hand cut	Ø		F	FL		OAL	
		Inch	mm		Inch	mm	Inch	mm
FRC-D001		.1181	3	3	.374	9.5	1.4961	38
	FRC-G001	.1181	3	3	.374	9.5	1.4961	38
FRC-D002		1/8 (.125)	3.175	3	.374	9.5	1.4961	38
	FRC-G002	.2362	6	4	.7087	18	3.1496	80
FRC-D003		.1575	4	3	.5512	14	1.9685	50
	FRC-G003	.315	8	4	.9449	24	3.5433	90
FRC-D004		.1575	4	3	.4724	12	2.4409	62
	FRC-G004	.3937	10	4	1.1811	30	3.9370	100
FRC-D005		.2362	6	4	.7087	18	2.6772	68
	FRC-G005	.4724	12	4	1.4173	36	4.3307	110
FRC-D006		1/4 (.25)	6.35	4	.4724	12	2.4803	63
FRC-D007		1/4 (.25)	6.35	4	.748	19	2.4803	63
FRC-D008		1/4 (.25)	6.35	4	.748	19	2.7165	69
FRC-D009		1/4 (.25)	6.35	4	.9843	25	2.9921	76
FRC-D010		.315	8	6	.9449	24	2.9134	74
FRC-D011		3/8 (.375)	9.525	6	.748	19	2.9921	76
FRC-D012		3/8 (.375)	9.525	4	1.1024	28	3.0709	78
FRC-D013		3/8 (.375)	9.525	6	1.1220	28.5	2.9921	76
FRC-D014		.3937	10	4	1.1811	30	3.1496	80
FRC-D015		.3937	10	6	1.1811	30	3.1496	80
FRC-D016		.4724	12	6	1.4173	36	3.3858	86
FRC-D017		1/2 (.5)	12.7	6	.9843	25	2.9921	76
FRC-D018		1/2 (.5)	12.7	6	1.4961	38	2.9921	76
FRC-D019		1/2 (.5)	12.7	6	1.4961	38	3.4646	88

Upon request, we can offer with a short delivery time, many variants of this range (material, flute length, overall length, type of shank, flute number, spiral angle, coating, etc).

Please, contact us for any request at contact@bija-industrie.com

MACHINING CUTTING TOOLS

RECOMMENDATIONS

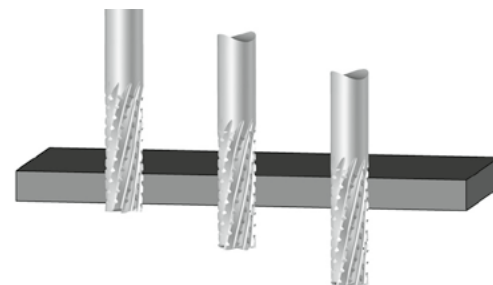
Our **FCM-G** and **FCM-D** are diamond coated router for roughing and semi-finishing composites. It uses extremely low cutting forces for low rigid fixtures and weak spindles.

APPLICATIONS

- Low rigid fixtures, setups and weak spindles
- High efficiency for roughing applications

FEATURES

- Roughing nicks for efficient milling providing extremely low cutting forces
- Diamond coating provides superior wear resistance and anti-welding properties
- Flute management can be applied by changing the milling position at the flute to increase tool life



CUTTING CONDITIONS

Work Material	CFRP		CFRTP		C/C composite	
Milling Speed	100 - 180		80 - 150		120 - 200	
Ø	f (mm/rev)					
	Ap < 0.25Ø	0.25Ø < Ap < 0.25Ø	0.5Ø < Ap < 1Ø	Ap=1Ø	1Ø < Ap < 2Ø	2Ø < Ap < 3Ø
3 à 3.5	0.03 - 0.04	0.06 - 0.075	0.05 - 0.06	0.04 - 0.05	0.03 - 0.04	0.02 - 0.025
4 à 5	0.04 - 0.05	0.075 - 0.09	0.06 - 0.07	0.05 - 0.06	0.04 - 0.05	0.025 - 0.03
.1575	0.08 - 0.10	0.15 - 0.18	0.12 - 0.15	0.10 - 0.12	0.08 - 0.10	0.05 - 0.06
8 à 9	0.12 - 0.20	0.24 - 0.37	0.19 - 0.30	0.16 - 0.25	0.12 - 0.20	0.08 - 0.12
9 à 10	0.19 - 0.24	0.36 - 0.45	0.29 - 0.36	0.24 - 0.30	0.19 - 0.24	0.12 - 0.15
12 à 13	0.34 - 0.56	0.63 - 1.05	0.50 - 0.84	0.42 - 0.70	0.34 - 0.56	0.21 - 0.35

SELECTION GUIDE

O: Best X: Good

Machining Style						Machine Type			Material Thickness	
Slotting	Side milling	Roughing	Finishing	Ramping	Plunging	Hand	CN	5 Axis	Thin	Thick
O	O	O	X	O	O	X	O	O	O	O

MACHINING CUTTING TOOLS

RECOMMENDATIONS

Our **FRC-G** and **FRC-D** are fine nicked router specially designed for carbon fiber composite trimming. The router features a cutting geometry coupled with diamond coating.

APPLICATIONS

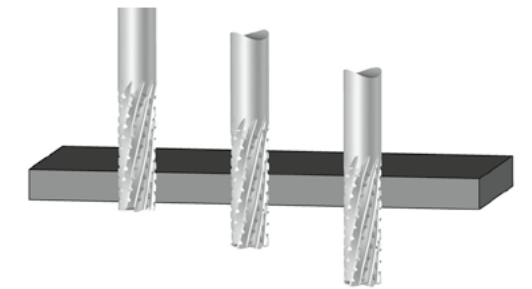
- Best in carbon fiber, also good for carbon/carbon
- High feed roughing and finishing
- Applied in both thick and thin laminates
- For ramping and helical interpolation

FEATURES

- Special nicks and flutes form to eliminate uncut fibers and delamination
- Extremely low cutting forces for long tool life
- Flute management can be applied by changing the milling position at the flute to increase tool life



Slotting Routing Pocketing



CUTTING CONDITIONS

Work Material	CFRP		CFRTP		C/C composite	
Milling Speed	100 - 180		80 - 150		120 - 200	
Ø	f (mm/rev)					
	Ap < 0.25Ø	0.25Ø < Ap < 0.25Ø	0.5Ø < Ap < 1Ø	Ap=1Ø	1Ø < Ap < 2Ø	2Ø < Ap < 3Ø
3 à 3.5	0.03 - 0.04	0.06 - 0.075	0.05 - 0.06	0.04 - 0.05	0.03 - 0.04	0.02 - 0.025
4 à 5	0.04 - 0.05	0.075 - 0.09	0.06 - 0.07	0.05 - 0.06	0.04 - 0.05	0.025 - 0.03
.1575	0.08 - 0.10	0.15 - 0.18	0.12 - 0.15	0.10 - 0.12	0.08 - 0.10	0.05 - 0.06
8 à 9	0.12 - 0.20	0.24 - 0.37	0.19 - 0.30	0.16 - 0.25	0.12 - 0.20	0.08 - 0.12
9 à 10	0.19 - 0.24	0.36 - 0.45	0.29 - 0.36	0.24 - 0.30	0.19 - 0.24	0.12 - 0.15
12 à 13	0.24 - 0.40	0.45 - 0.70	0.36 - 0.60	0.30 - 0.50	0.24 - 0.40	0.15 - 0.25

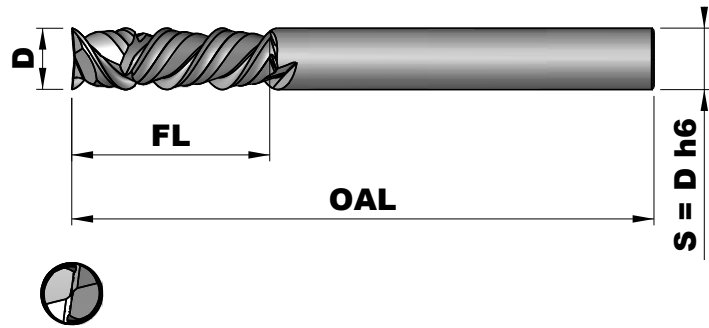
SELECTION GUIDE

O: Best X: Good

Machining Style						Machine Type			Material Thickness	
Slotting	Side milling	Roughing	Finishing	Ramping	Plunging	Hand	CN	5 Axis	Thin	Thick
O	O	X	X	O	O		O	O	O	O

MACHINING CUTTING TOOLS

VHP 2 flutes Herringbone composite router



F2C

Application:

Very high performance router for composite stacks on CNC machine. Well adapted for big material removal rate, and high feed rate. Avoid uncuted fibers and delamination. Excellent surface finish obtained.

Tool geometry:

2 flutes
High herringbone helix
Right hand cut

Tool material:

Solid carbide with Diamond coating

For:

Composite, CFRP

Item	Ø		F	FL		OAL	
	Inch	mm		Inch	mm	Inch	mm
F2C-001	.1181	3	2	.374	9.5	1.4961	38
F2C-002	1/8 (.125)	3.175	2	.374	9.5	1.4961	38
F2C-003	.1575	4	2	.5512	14	1.9685	50
F2C-004	.2362	6	2	.7087	18	2.6772	68
F2C-005	1/4 (.25)	6.35	2	.748	19	2.9921	76
F2C-006	3/8 (.375)	9.525	2	.9449	24	2.9134	74
F2C-007	3/8 (.375)	9.525	2	.748	19	2.9921	76
F2C-008	3/8 (.375)	9.525	2	2.0079	51	4.0157	102
F2C-009	.3937	10	2	1.1811	30	3.1496	80
F2C-010	1/2 (.5)	12.7	2	.9843	25	2.9921	76
F2C-011	1/2 (.5)	12.7	2	2.0079	51	4.0157	102

Our FC2 and FCC are diamond coating herringbone style routers for high feed rates and excellent surface finishes.

FEATURES

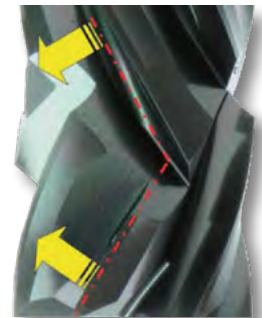
- Compression mechanism to neutralize cutting forces to prevent delamination on both top and bottom laminates
- Low cutting forces for long tool life

APPLICATIONS

- Excellent in carbon and glass composites and in thermoplastic matrix
- High feed roughing and finishing
- Best in thick laminates

Cutting conditions on demand

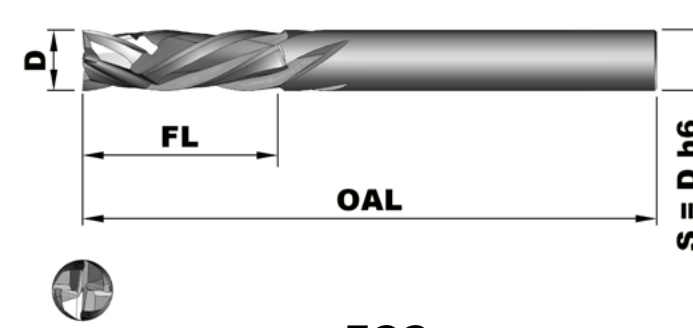
Left hand helix (shank side)
Direct cutting force downward



Right hand helix (end cut side)
Direct cutting force upward

MACHINING CUTTING TOOLS

VHP Herringbone composite router



FCC

Application:

Very high performance router for composite stacks on CNC machine. Well adapted for big material removal rate, and very high feed rate. Avoid uncuted fibers and delamination. Very good surface finish obtained.

Tool geometry:

Multiflute
Herringbone helix - Right hand cut

Tool material:

Solid carbide with Diamond coating

For:

Composite, CFRP

Item	Ø		F	FL		OAL	
	Inch	mm		Inch	mm	Inch	mm
3 FLUTES ROUTERS							
FCC-301	.1181	3	3	.374	9.5	1.4961	38
FCC-304	.1575	4	3	.5512	14	1.9685	50
4 FLUTES ROUTERS							
FCC-401	0.1181	3	4	.374	9.5	1.4961	38
FCC-402	1/8 (.125)	3.175	4	.5591	14.2	1.4961	38
FCC-403	1/8 (.125)	3.175	4	.374	9.5	1.4961	38
FCC-404	.1575	4	4	.5512	14	1.9685	50
FCC-405	.2362	6	4	.5906	15	2.5591	65
FCC-406	.2362	6	4	.7087	18	2.6772	68
FCC-407	1/4 (.25)	6.35	4	.748	19	2.4803	63
FCC-408	1/4 (.25)	6.35	4	.748	19	2.7165	69
FCC-409	.315	8	4	.7874	20	2.7559	70
FCC-410	.315	8	4	.9449	24	2.9134	74
FCC-411	3/8 (.375)	9.525	4	.8661	22	2.9921	76
FCC-412	3/8 (.375)	9.525	4	1.1024	28	3.0709	78
FCC-413	.3937	10	4	.9843	25	2.9528	75
FCC-414	.3937	10	4	1.1811	30	3.1496	80
FCC-415	.4724	12	4	1.1811	30	3.937	100
FCC-416	.4724	12	4	1.4173	36	3.3858	86
FCC-417	1/2 (.5)	12.7	4	1.4961	38	2.9921	76
6 FLUTES ROUTERS - FOR HIGH FEED TRIMMING & FINISHING							
FCC-606	.2362	6	6	.7087	18	2.6772	68
FCC-610	.315	8	6	.9449	24	2.9134	74
FCC-614	.3937	10	6	1.1811	30	3.1496	80
FCC-616	.4724	12	6	1.4173	36	3.3858	86
FCC-617	1/2 (.5)	12.7	6	1.4961	38	4.0157	102
8 FLUTES ROUTERS - FOR HIGH FEED TRIMMING & FINISHING							
FCC-814	.3937	10	8	1.1811	30	3.1496	80
FCC-816	.4724	12	8	1.4173	36	3.3858	86

Upon request, we can offer with a short delivery time, many variants of this range (material, flute length, overall length, type of shank, flute number, spiral angle, coating, etc).

Please, contact us for any request at contact@bija-industrie.com



CUTTING LUBRICANTS

BOELUBE®



A BOEING DEVELOPED LUBRICANT



The BOELUBE® range of lubricants is the result of a partnership between The **Orelube Corporation** and the **BOEING®** aerospace group. Marketed products are patented and developed using BOEING®'s manufacturing activities and its experience in lubricants. Thus, the perfect mastery of lubricant technology offers products that best meet the functional requirements of the industry.

ADAPTED, EFFICIENT AND RELIABLE RANGES

LIQUIDS

DRILLING

PASTES

REAMING

FORMING

SOLIDS

BENDING

POLISHING

DEBURRING

GRINDING

HEALTH PROTECTION AND RESPECT FOR THE ENVIRONMENT

Manufactured from personal care ingredients, the BOELUBE® range of biodegradable lubricants is non-toxic, non-irritating and environmentally safer. So our products will not promote dermatitis, provide a high degree of worker safety, and present a safe effective method to machine various types of materials without special handling, fluid recycling or typical disposal issues.

NON-CORROSIVE, NON-FLAMMABLE, CHEMICALLY STABLE

BOELUBE® LIQUIDS

BOELUBE 70090

This product is recommended for drilling, reaming, deburring, grinding, milling, slotting. It is compatible with **aluminium, titanium, graphite, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BOELUBE 70104 (100A)

This product is recommended for drilling, boring, reaming, deburring, grinding, milling, slotting. It is compatible with **aluminium, titanium, stainless steel, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BOELUBE 70106 (100F)

This product is recommended for drilling, boring, reaming, deburring, grinding, milling, slotting. It is compatible with **aluminium, titanium, stainless steel, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BOELUBE 70105

This product is synthetic clear microemulsion providing the superior lubricity of BOELUBE® products when diluted with water. This product is recommended in milling, boring, reaming and grinding operations. This fully biodegradable product contains no hazardous components.



BOELUBE® SOLIDS

BOELUBE 70200

This product is recommended for drilling, reaming, deburring, grinding, milling, sawing. It is compatible with **aluminium, titanium, graphite, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



A WIDE RANGE

FOR DAILY USE



		DRILLING	REAMING	DEBURRING	GRINDING	MILLING	FORMING	BORING	SAWING
PASTES	70302	•				•	•	•	
	70305	•				•	•	•	
	70307	•				•	•	•	
LIQUIDS	70090	•	•	•	•	•			
	70104	•	•	•	•	•		•	
	70105		•		•	•			
	70106	•	•	•	•	•		•	
SOL.	70200	•	•	•	•	•			•

BOELUBE® PASTES

BOELUBE 70302 - Multi Use *SOFT BLUE* Paste

This product is extremely cost effective in single point work such as drilling, milling or boring. It is compatible with **aluminium, titanium, stainless steel, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BOELUBE 70305 - Multi Use *HARD PINK* Paste

This product is extremely cost effective in single point work such as drilling, milling or boring. It is compatible with **aluminium, titanium, stainless steel, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BOELUBE 70307 - Multi Use *MEDIUM BLUE* Paste

This product is extremely cost effective in single point work such as drilling, milling or boring. It is compatible with **aluminium, titanium, stainless steel, composite materials, inconel, kevlar, wood, ferrous and non-ferrous materials**. This fully biodegradable lubricant contains no hazardous chemical components.



BONDING BRUSHES

BONDING BRUSHES ON DEMAND

WE PRODUCE
YOUR BONDING BRUSHES
ACCORDING TO YOUR NEEDS



BACK TYPE




FORTH TYPE

BRUSHING DIAMETER
from 6 mm to 60 mm

PILOT DIAMETER
from 2 mm to 25.4 mm

STAINLESS STEEL WIRE
OR
BRASS-PLATED STEEL WIRE



 Galvanic corrosion: Do not use brass-plated steel wire on aluminum structures

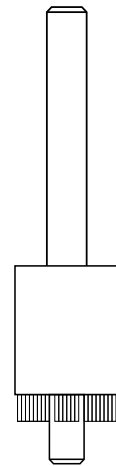
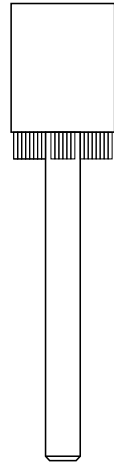
BONDING BRUSHES

BONDING BRUSHES

ACCORDING TO

AIRBUS HELICOPTERS ECA-3113 STANDARD

THE ECA-3113 STANDARD IS USED TO DETERMINE THE RELATION BETWEEN PILOT Ø / BRUSH Ø & WIRE TYPE AND Ø



SERIES	REFERENCE * FORTH TYPE	HOLE Ø (mm)	PILOT Ø (mm)	BRUSH Ø (mm)	STANDARD WASHER
STANDARD	BMP-SP06/21	2.2	2.1	6	EN2139 EN2138
	BMP-SP07/26	2.7	2.6	7	
	BMP-SP08/31	3.2	3.1	8	
	BMP-SP10/41	4.2	4.1	10	
	BMP-SP12/47	4.8	4.7	12	
	BMP-SP12/51	5.2	5.1	12	
	BMP-SP14/61	6.2	6.1	14	
	BMP-SP16/71	7.2	7.1	16	
	BMP-SP18/81	8.2	8.1	18	
WIDE	BMP-LSP14/41	4.2	4.1	14	EN2914
	BMP-LSP18/51	5.2	5.1	18	
	BMP-LSP20/61	6.2	6.1	20	
	BMP-LSP24/81	8.2	8.1	24	
	BMP-LSP24/95	9.6	9.5	24	
	BMP-LSP24/120	12.1	12	24	
	BMP-LSP32/101	10.2	10.1	32	
SPECIFIC GROUND MODULE	BMP-MSP14/51	5.2	5.1	14	
SPECIFIC ANTI-VIBRATION	BMP-AVSP26/81	8.2	8.1	26	

* Back type version references: BMT-xxxxx

BONDING BRUSHES

REACH SOLUTIONS

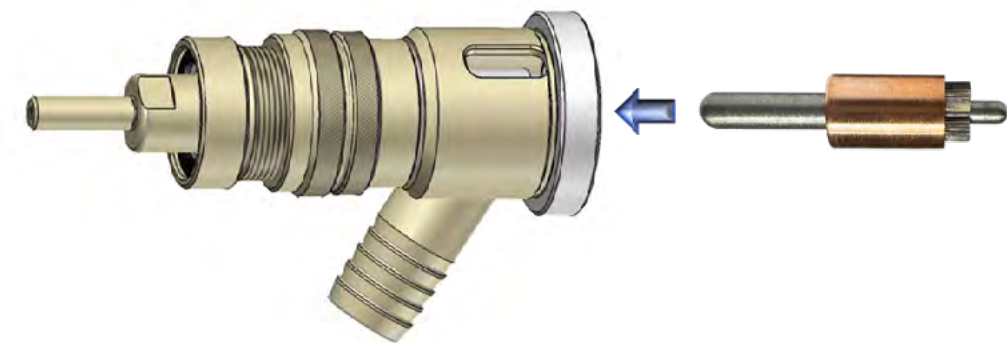
BONDING BRUSHES ON STOP WITH SUCTION



THE USE OF A BMM19 OR BMM23 MICROSTOP ALLOWS CONDUCTIVITY RESERVES TO BE MADE AVOIDING THE RISK OF NONCONFORMITY

BMM19
Bonding up to
19 mm

BMM23
Bonding up to
23 mm



BONDING BRUSHES CASES F.O.D

BACK

FORTH

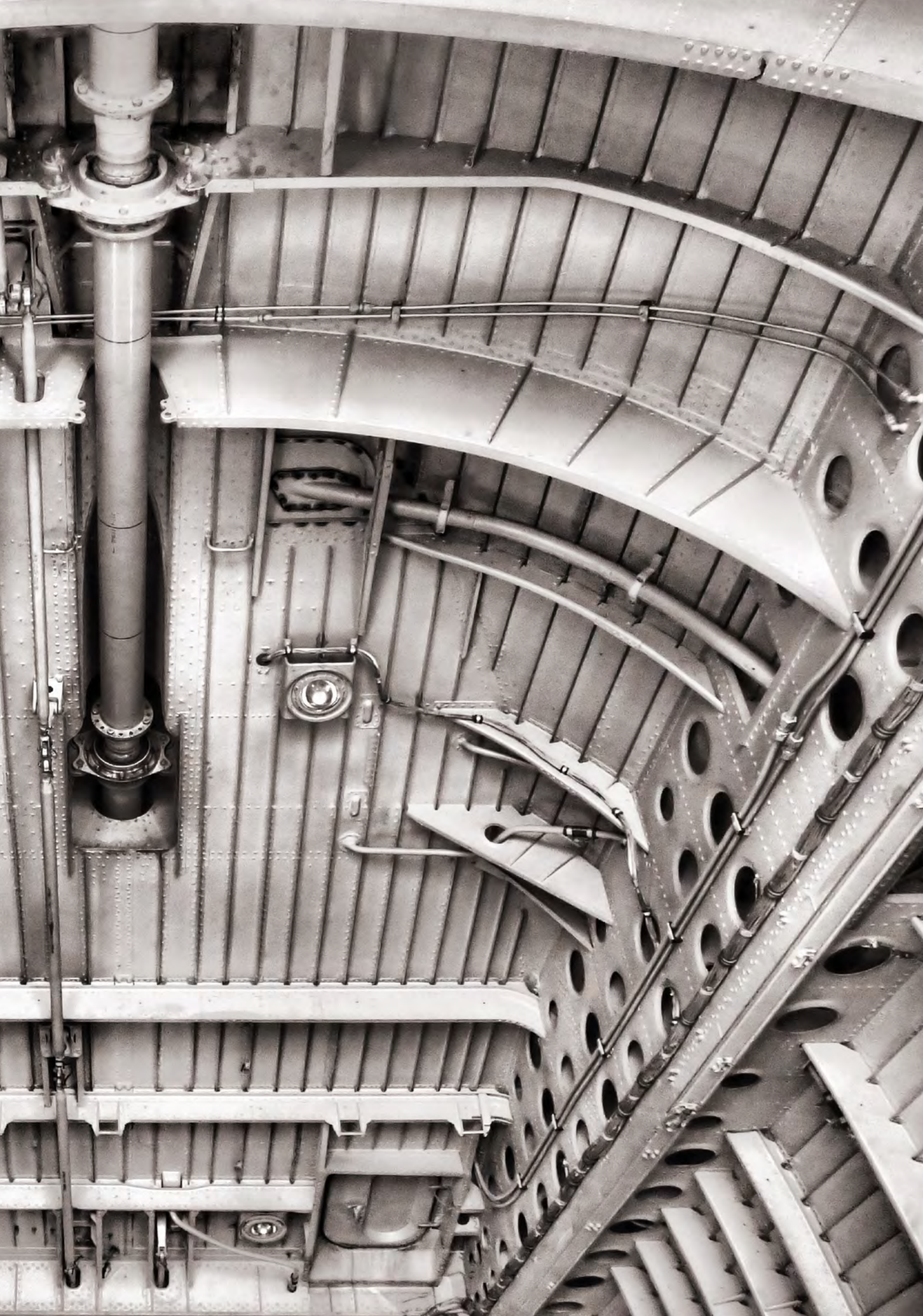


ECA3113-BMT

CONSISTENT WITH AIRBUS HELICOPTERS ECA-3113 STANDARDIZATION

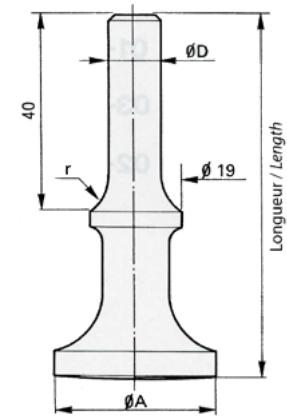


ECA3113-BMP



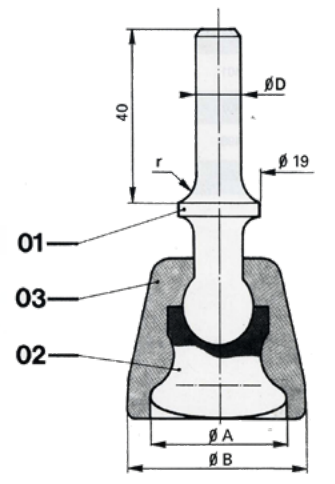
RIVETING TOOLS

RIVETING HAMMERS AND BUCKING BARS



RIVETING HAMMERS

RIVET SETS



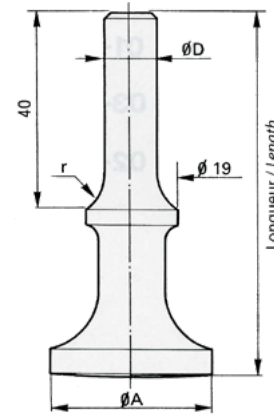
INERMET®
BUCKING BAR
CASES



RIVETING TOOLS



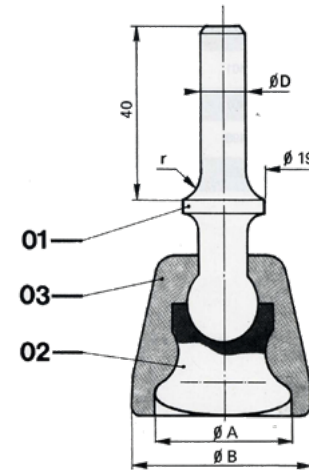
**FLUSH RIVET SET
MUSHROOM TYPE**



Code	ϕD	ϕA	L
03911800	9.5	22	102
03911374	10.2	21	48
03910900	10.2	22	65
03911809	10.2	22	66
03911810	10.2	22	109
60771150	10.2	31	90
60771155	10.2	31	150
60771160*	10.2	31	190



**FLUSH SET
SWIVEL TYPE**

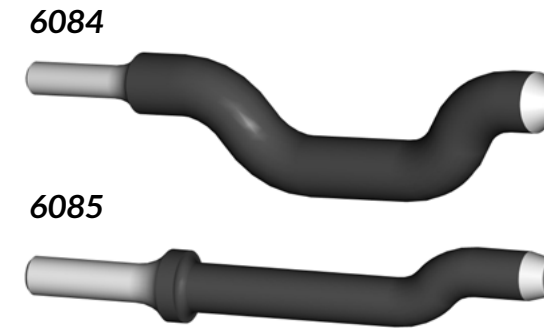


Code	ϕD	ϕA	ϕB
60751100	10.2	18	24
60751150	10.2	31	40

RIVETING TOOLS

MADE IN
FRANCE

RIVET SET UNIVERSAL HEAD/FLUSH HEAD



RIVET TYPE		FLUSH HEAD		UNIVERSAL HEAD			
ϕ SHANK		10.2	10.2	10.2	10.2	10.2	10.2
ϕ RIVET		2.4 - 5.6 3/32" - 7/32"	6.35 & 9.52 1/4" - 3.8"	2.4 3/32"	3.2 1/8"	4.0 5/32"	4.8 3/16"
TYPE	L mm**	REFERENCES					
6080	60	60802111*	60802116*	60802141	60802142	60802143	60802144
	90	60802211	60802216*	60802241	60802242	60802243	60802244
	150	60802311	60802316	60802341	60802342	60802343	60802344
	190	60802411	60802416	60802441	60802442	60802443	60802444
6081	60	-	-	-	-	-	-
	90	60812211*	60812216*	60812241	60812242	60812243	60812244
	150	60812311	60812316*	60812341	60812342	60812343	60812344
	190	60812411	60812416	60812441	60812442	60812443	60812444
6084	60	-	-	-	-	-	-
	90	-	-	-	-	-	-
	150	60842311*	60842316*	60842341*	60842342*	60842343*	60842344*
	190	60842411	60842416	60842441	60842442	60842443	60842444
6085	60	-	-	-	-	-	-
	90	-	-	-	-	-	-
	150	60852311*	60852316*	60852341	60852342	60852343	60852344
	190	60852411*	60852416*	60852441	60852442	60852443	60852444



**OUR RIVET SETS ARE AVAILABLE ON
REQUEST FOR LENGTHS UP TO 300MM

RIVETING TOOLS

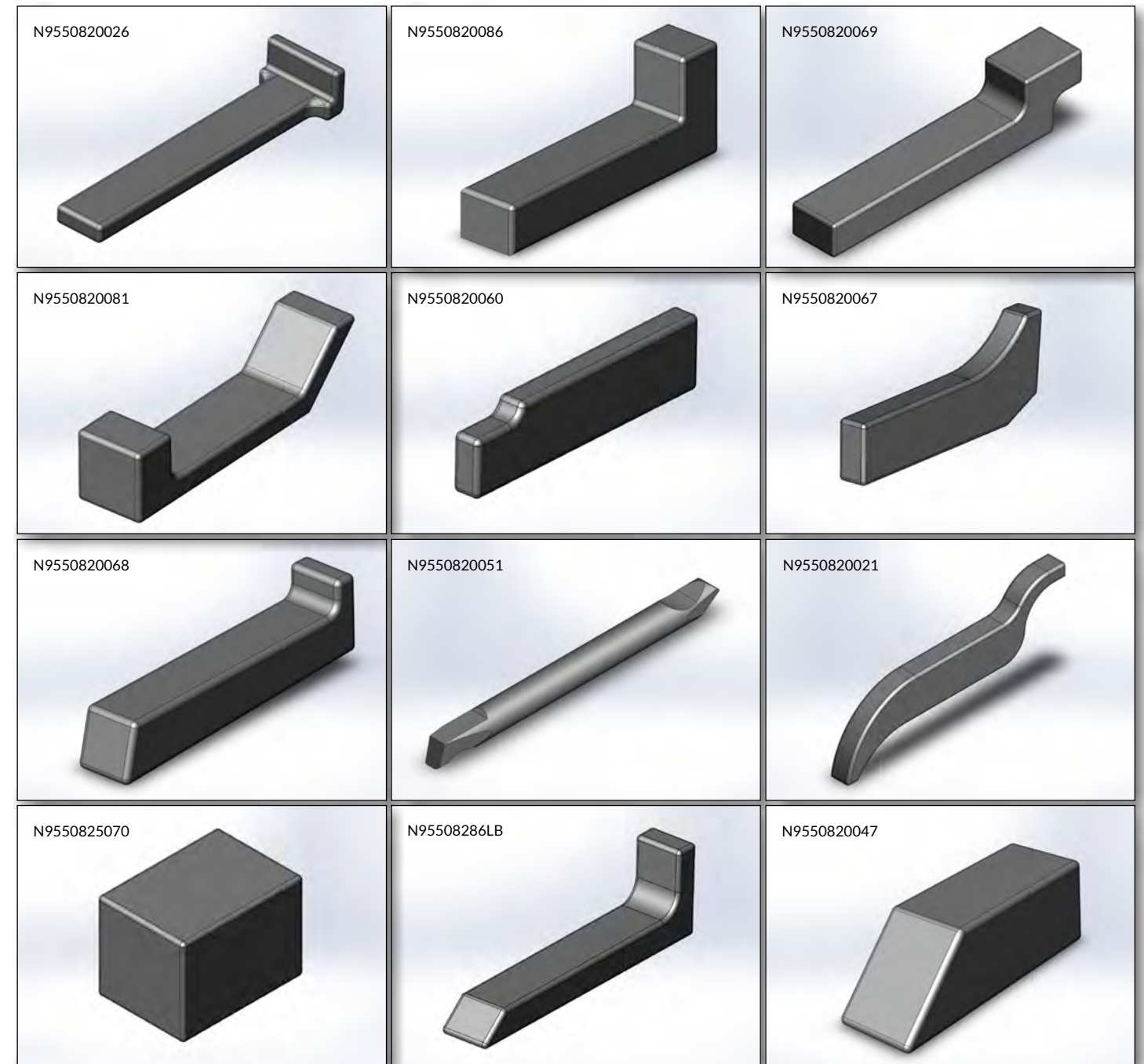


All our bucking bars are registered designs ®

RIVETING TOOLS

INERMET® BUCKING BARS

WE ALSO MAKE ALL YOUR SPECIAL BUCKING BARS ON REQUEST



All our bucking bars are registered designs ®

RIVETING TOOLS

RIVETING TOOLS

N95508COFF1



N95508COFF2



N95508COFF5



N95508COFF6



N95508COFF3



N95508COFF4



N95508COFF7

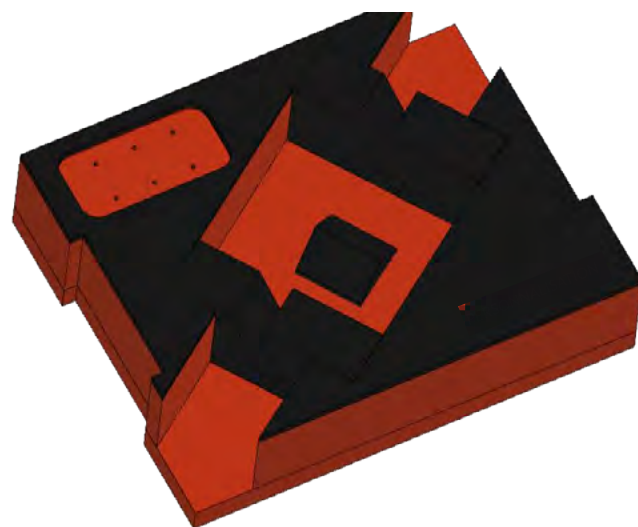


WE MAKE
YOUR CUSTOM
BUCKING BAR
CASES

CHOOSE
YOUR INERMET®
BUCKING BAR
CASE



PRV19GM



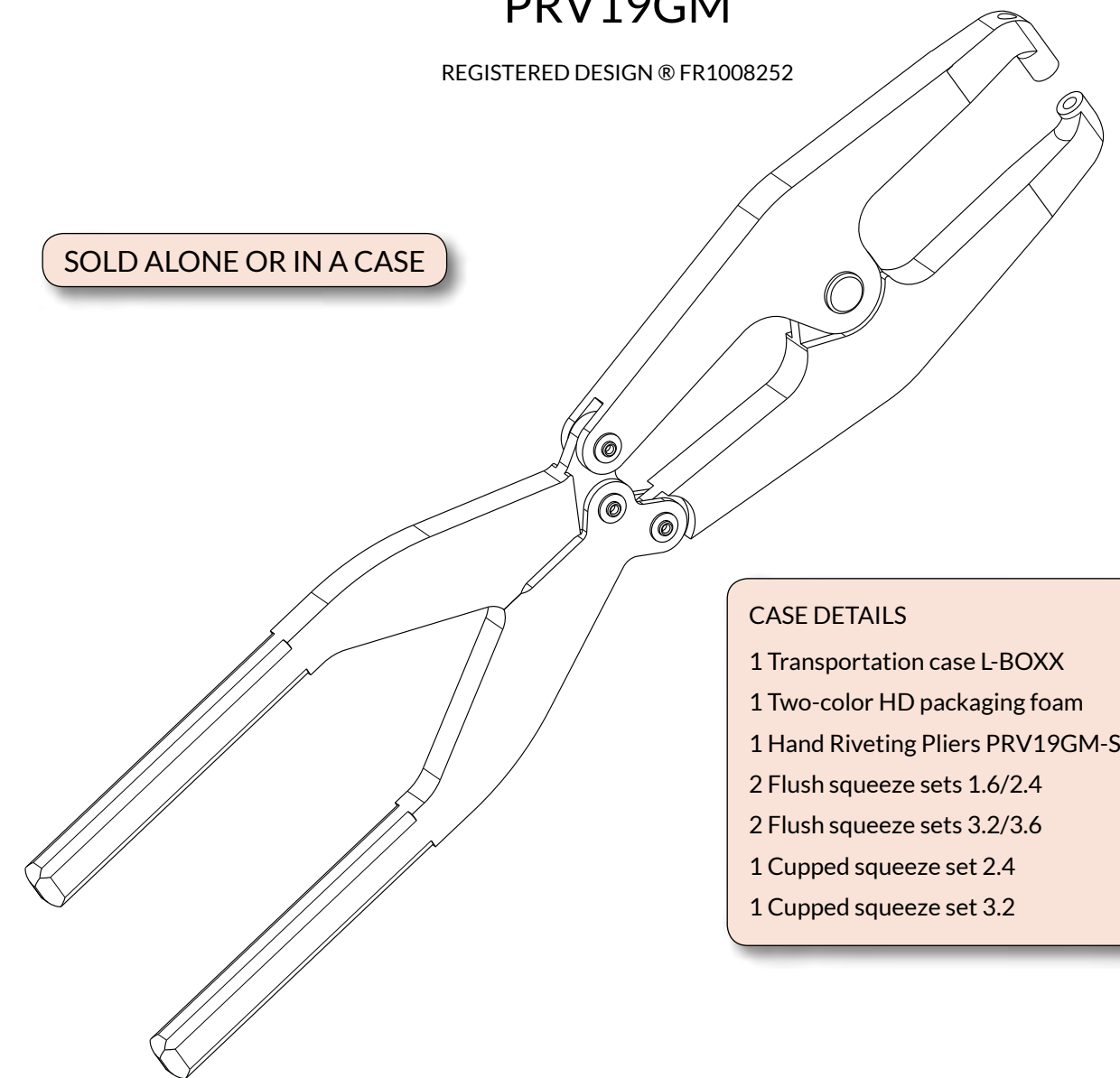
HAND RIVETING

PLIERS

PRV19GM

REGISTERED DESIGN ® FR1008252

SOLD ALONE OR IN A CASE



- CASE DETAILS**
- 1 Transportation case L-BOXX
 - 1 Two-color HD packaging foam
 - 1 Hand Riveting Pliers PRV19GM-S
 - 2 Flush squeeze sets 1.6/2.4
 - 2 Flush squeeze sets 3.2/3.6
 - 1 Cupped squeeze set 2.4
 - 1 Cupped squeeze set 3.2

FEATURES

Riveting aluminium rivets	Ø 3.2 mm Max
To use with rivet squeezer set	Ø 5.0 mm
Yoke opening	40 mm
Depth	85 mm
Overall length	442 mm





CRV19PM

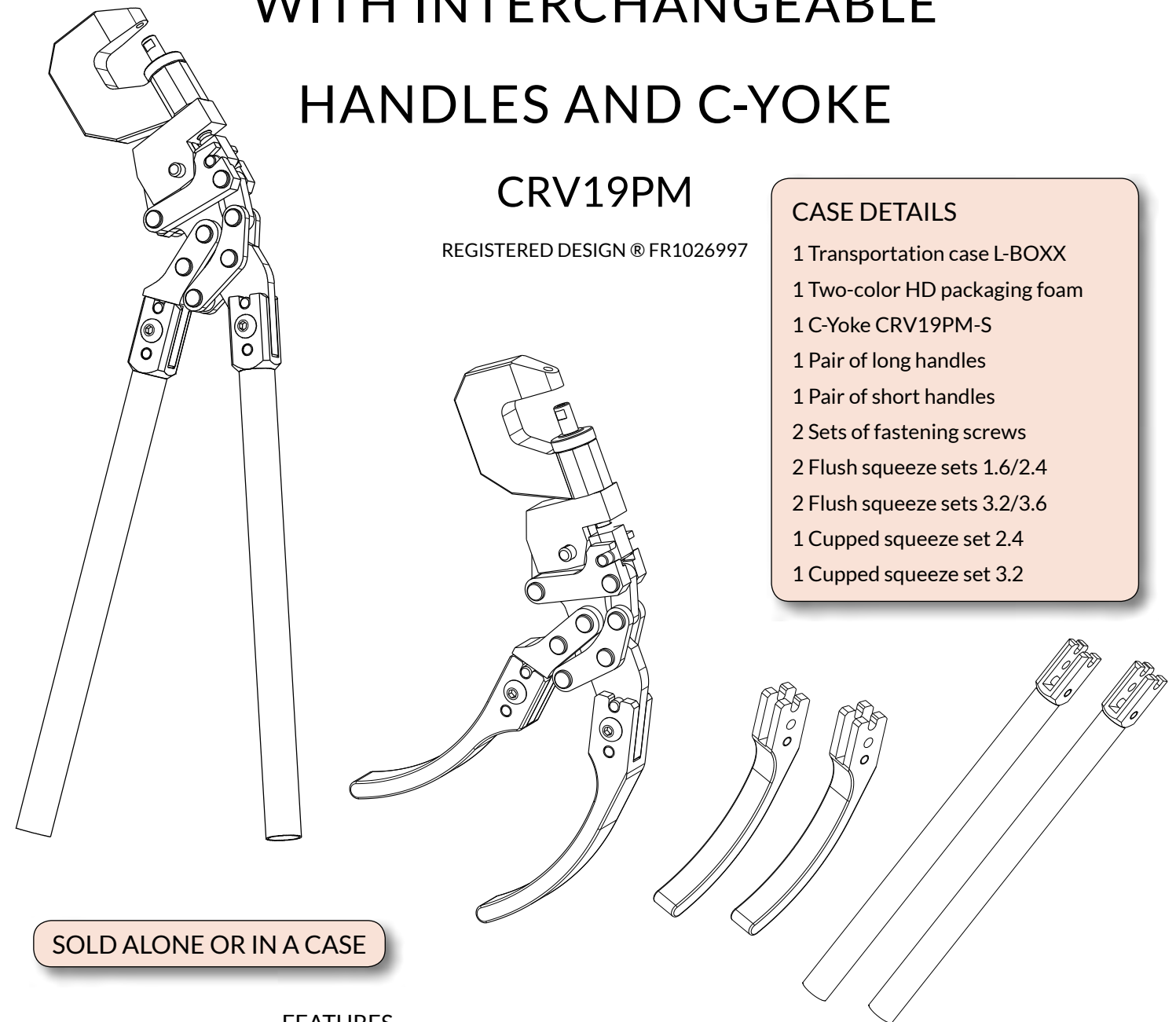


SPECIAL C-YOKES ON DEMAND

MANUAL C-YOKE
WITH INTERCHANGEABLE
HANDLES AND C-YOKE

CRV19PM

REGISTERED DESIGN ® FR1026997



CASE DETAILS

- 1 Transportation case L-BOXX
- 1 Two-color HD packaging foam
- 1 C-Yoke CRV19PM-S
- 1 Pair of long handles
- 1 Pair of short handles
- 2 Sets of fastening screws
- 2 Flush squeeze sets 1.6/2.4
- 2 Flush squeeze sets 3.2/3.6
- 1 Cupped squeeze set 2.4
- 1 Cupped squeeze set 3.2

SOLD ALONE OR IN A CASE

FEATURES

Riveting aluminium rivets	Ø 3.2 mm Max
To use with rivet squeezer set	Ø 4.0 mm
Yoke opening	16 mm
Depth	30 mm
Overall length with long handles	422 mm
Overall length with short handles	265 mm

MADE IN
FRANCE

RIVETING TOOLS

C-YOKES

W/O RIVET SET HOLDER
ADJUSTMENT

1.5T Force
C-yoke reaches
38.1 / 50.8 / 63.5 / 76.2 mm

10065107 10065108 10065109 10065110



3.0T Force
C-yoke reaches
38.1 / 50.8 / 63.5 / 76.2 mm

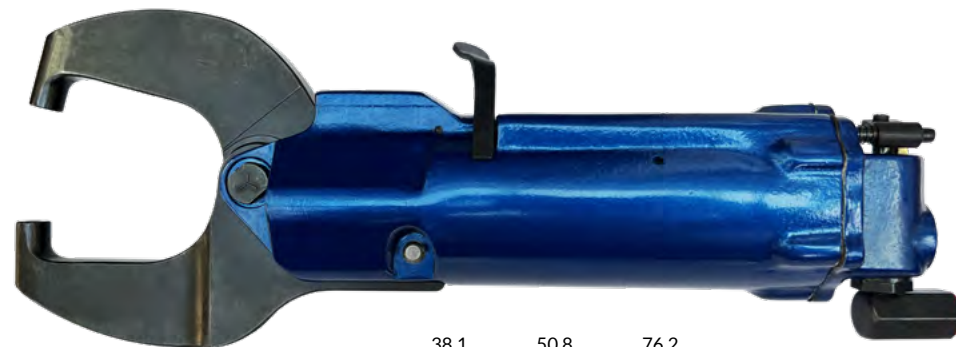
10065111 10065112 10065113 10065114

4.5T Force
C-yoke reaches
38.1 / 50.8 / 63.5 / 76.2 mm

10071564 10071565 10071566 10071567



38.1 50.8 76.2
10065111 10065112 10065113
5.5T 5.5T 5.5T



38.1 50.8 76.2
10071557 10071558 10071559
5.5T 3.1T 3.1T



ALLIGATOR

0.9T to 5.5T Force
38.1 to 177.8 mm C-yoke reach

RIVETING TOOLS

C-YOKES

WITH RIVET SET HOLDER
ADJUSTMENT

1.4T to 2.2T Force
50 mm C-yoke reach



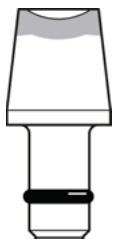
RB42
60103010
1.4T



RB41
60102010
2.2T



SQUEEZE SETS
RB400 - RB401
See page 52



RB40-60
60101010
2.6T

RB40-85
60101020
1.8T



RB43
60104010
1.4T

ALLIGATOR

1.4T to 3.5T Force
60 to 85 mm C-yoke reach



RB44-60
60110010
3.0T

RIVETING TOOLS

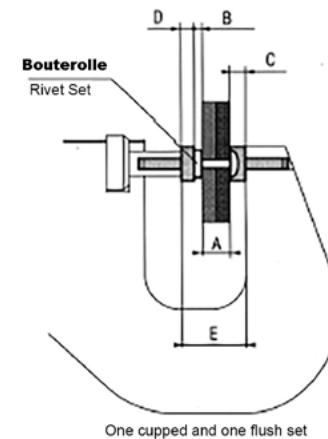
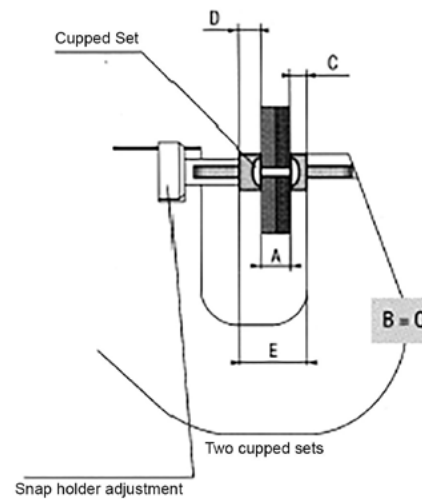
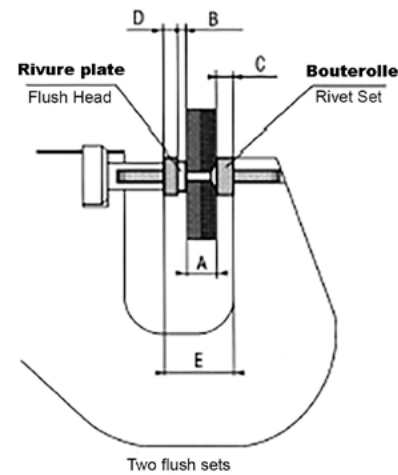
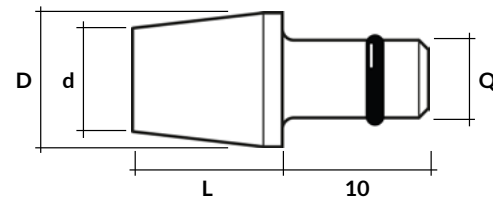
RB400 SQUEEZE SETS

FOR COUNTERSINK RIVETS

MADE IN
FRANCE

Ø RIVET		1.6 & 2.4	3.2 & 3.6	2	4.8	5.6 & 6.4
		1/6" & 3/32"	1/8" & 9/64"	5/32"	3/16"	7/32" & 1/4"
Ø	d	7	9	10	12	16
	D	9	9	14	14	16
	Q	5	5	5	5	5
L	4	60703005	60703205	60703405	60703505	60703605
	7	60703020	60703220	60703420	60703520	60703620
	10	60703040	60703240	60703440	60703540	60703640
	12.5	60703055	60703255	60703455	60703555	60703655
	16	60703075	60703275	60703475	60703575	60703675
	20	60703095	60703295	60703495	60703595	60703695

Ø	Q	4	4
L	4	60701005	60701205
	7	60701020	60701220



RIVETING TOOLS

SQUEEZE SET CASES

SQUEEZE SET CASE
FLUSH & CUPPED SQUEEZE SETS
VBR4001



DIMPLE DIE SET
B24EM

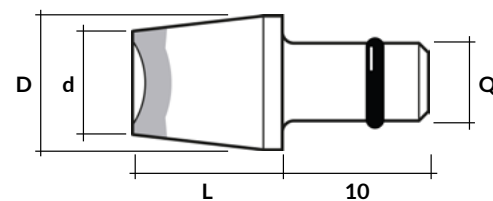


RB401 SQUEEZE SETS

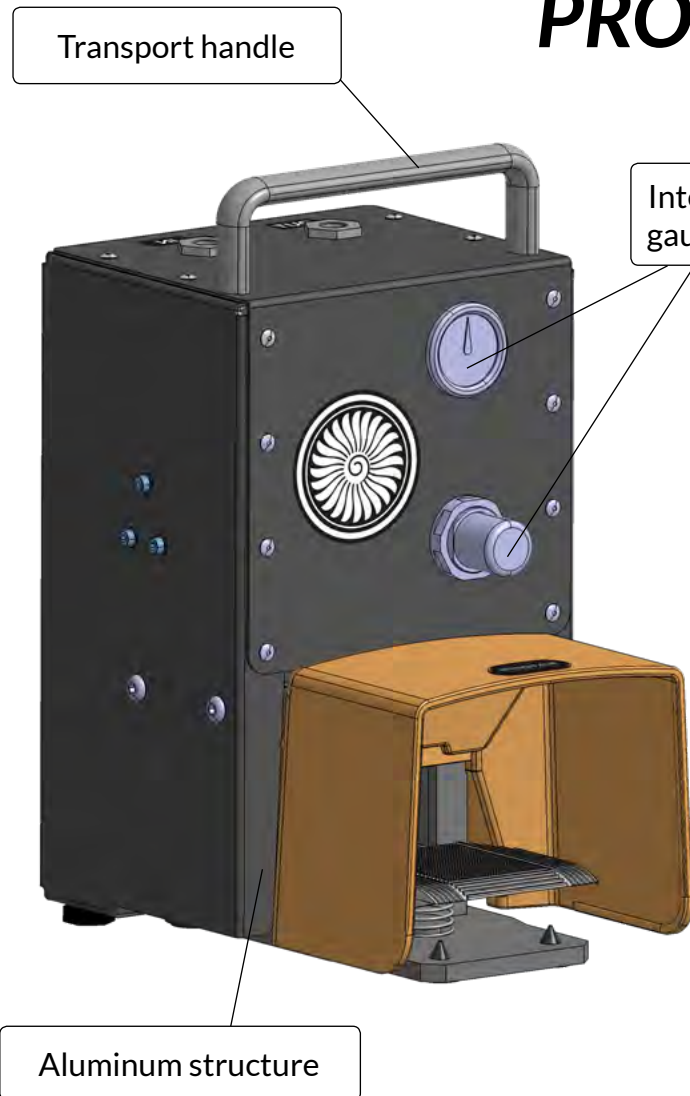
FOR UNIVERSAL HEAD TYPE RIVETS NFL 21215 - AN 470 - LN 9198

Ø RIVET		2.4	3.2	4.0	4.8	5.6
		3/32"	1/8"	5/32"	3/16"	7/32"
Ø	d	7	9	10	12	14
	D	9	9	14	14	16
	Q	5	5	5	5	5
L	4	60713105	60713205	60713405	60713505	60713605
	7	60713120	60713220	60713420	60713520	60713620
	10	60713140	60713240	60713440	60713540	60713640
	12.5	60713155	60713255	60713455	60713555	60713655
	16	60713175	60713275	60713475	60713575	60713675
	20	60713195	60713295	60713495	60713595	90713695

Ø	Q	4	4
L	4	60711105	60711205
	7	60711120	60711220



FINALLY, A REAL PROGRESSIVE RIVETING



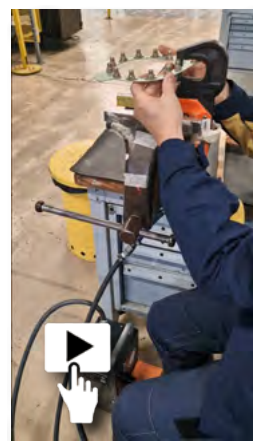
Finally, a truly progressive pedal for pneumatic riveting.

Our PRP23 pedal provides a risk-free approach thanks to a double stroke.

The first stroke provides a controlled approach to the rivet.

The second stroke allows the rivet to be flattened in complete safety.

**CUSTOMER
SATISFACTION
SAYS IT ALL**



THANKS TO MAXENCE

PROGRESSIVE PEDAL

NEW

RIVETING PEDAL
PRP23

FOR
PNEUMATIC
RIVETING

SAFETY

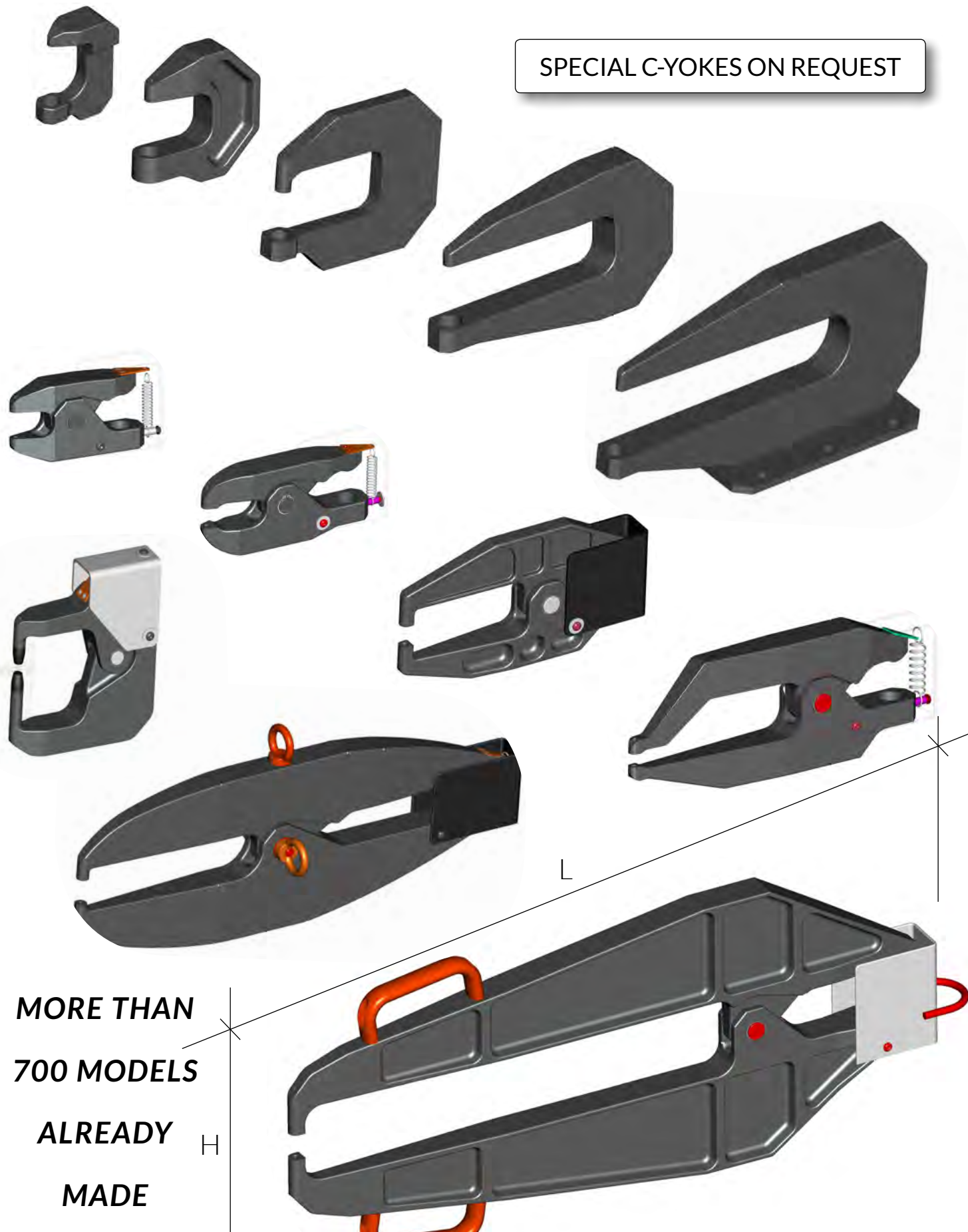
COMFORT

ERGONOMICS

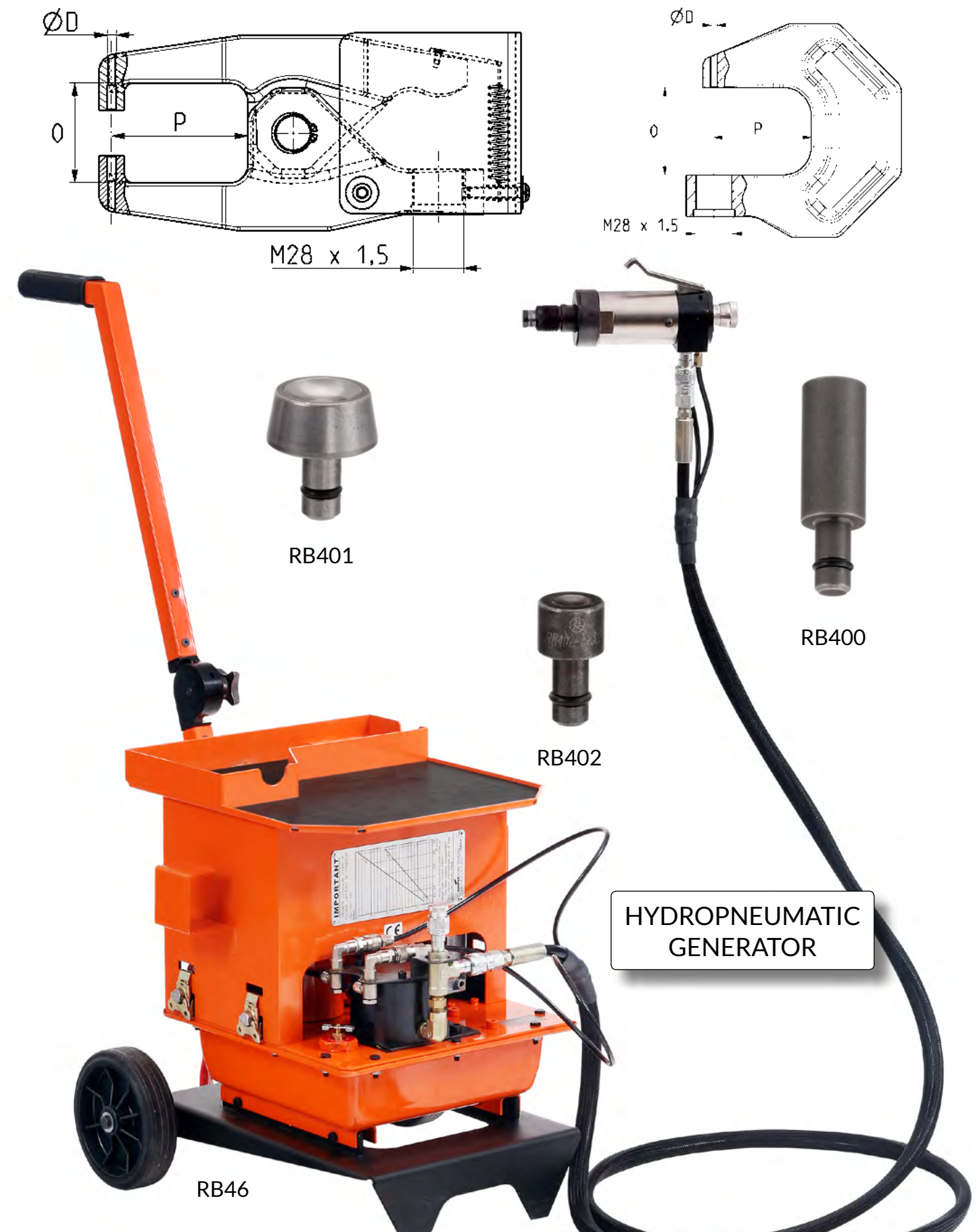
MADE IN
FRANCE



RIVETING TOOLS



RIVETING TOOLS



YOUR NEW BATTERY-POWERED MOBILE RIVETING MACHINE LIGHT, QUIET, POWERFUL

Ergonomics:

- Easy setup directly on the E-Gen's screen, you just need to enter the riveting force before starting a new application.
- The E-Gen is easily movable thanks to its weight under **13,5 kg** and its compact size.
- Compared to hydraulic generators, the E-Gen is incredibly quiet **72 dBA** (-15dBA).

Productivity:

- Your E-Gen comes with two fast-charging batteries (1h).
Up to **450** cycles per battery*.

Features:

- Allows the setting of the clamping force directly on the screen.
- Stores two different clamping parameters accessible at the touch of a finger.
- Counts the number of cycles performed.
- Checks the battery charge.
- Checks the pneumatic pressure.
- International patent.

Security:

- Automatic return of the piston.
- Permanent control of the system (electric and pneumatic).

Option:

- High capacity battery/Mains power supply
- Possibility to put a pistol grip for a better ergonomics on the cylinder
- Secure pedal start cycle control

Compatible with all our pliers/special C-yokes (see page 56)
Compatible with our 3.5 T/5.6 T and 10 T cylinders
depending on the type of application

ELECTRIC RIVETING MACHINE

E-Gen



E-GEN BOX

HYDRAULIC CYLINDER



Pressure range 200-560 bar
Alu - monel - titanium rivets



Riveting Force Table

ALLIGATOR	RB 40-60	2.2 T
ALLIGATOR	RB 40-85	1.8 T
ALLIGATOR	RB 43	1.4 T
ALLIGATOR	RB 44-60	3.0 T
ALLIGATOR	RB 44-100	2.8 T
ALLIGATOR	RB 44-130	2.2 T
C-YOKE	RB 41	2.2 T
C-YOKE	RB 42	1.4 T
C-YOKE	RB 49	3.5 T

RIVETING NEEDED FORCE OVERVIEW

ALUMINUM RIVET									
RIVET Ø	mm Ø	1.6 Ø	2.4 Ø	3.2 Ø	3.6 Ø	4.0 Ø	4.8 Ø	5.6 Ø	6.4 Ø
"C" Riveting height Squezzed Head Thickness	Nominal mm	0.86	1.20	1.60	1.75	1.95	2.40	2.80	3.15
Riveting Force	x1000 daN	0.4 T	0.8 T	1.4 T	1.8 T	2.2 T	3.1 T	4.2 T	5.5 T

Rivet Extra-Length= 1,5 x Rivet Ø

TITANIUM RIVET								
RIVET Ø	mm Ø		2.4 Ø	3.2 Ø	3.6 Ø	4.0 Ø	4.8 Ø	5.6 Ø
"C" Riveting height Squezzed Head Thickness	Nominal mm			>1.05	>1.20	>1.40	>1.65	>2.10
Riveting Force	x1000 daN		1.4 T	2.5 T	3.2 T	3.9 T	5.6 T	8.3 T

Rivet Extra-Length = 1,0 x Rivet Ø

STEEL RIVET								
RIVET Ø	mm Ø		2.4 Ø	3.2 Ø	3.6 Ø	4.0 Ø	4.8 Ø	5.6 Ø
"C" Riveting height Squezzed Head Thickness	Nominal mm		0.78	1.05	1.23	1.4	1.65	1.90
Riveting Force	x1000 daN		1.2 T	2.1 T	2.6 T	3.2 T	4.6 T	6.8 T

Rivet Extra-Length = 0.8 x Rivet Ø

Note: All rivet force at room temperature

NEW

GRANTED PATENT
N° FR2206873

MADE IN
FRANCE



USE WITH MOUNTING BASE



USE WITH TRIPOD

USE WITHOUT TRIPOD

RIVET EXTRACTION SYSTEM



MRO12T is the first tool composition specifically dedicated to the extraction of rivets **WITHOUT RISK OF DAMAGE**.

It covers the 4 most common rivet diameters. Available individually or in a case.

ORDER YOUR COMPONENTS INDIVIDUALLY OR IN A CASE.

According to MTC20-03-01-102 work card AIRBUS Helicopters



Case details see pages 130-131

	FOR RIVET Ø2.4	FOR RIVET Ø3.2	FOR RIVET Ø4.0	FOR RIVET Ø4.8
DRILL BUSHES	CPSP22M12T	CPSP30M12T	CPSP38M12T	CPSP46M12T
TWIST DRILLS	F22MRO12T	F30MRO12T	F38MRO12T	F46MRO12T
TRIPOD	3POD-12T			
BASE Ø24/24 mm	EMB1-12T			
BASE Ø26/32 mm	EMB2-12T			
BASE Ø30/36 mm	EMB3-12T			
TRIPOD COMPLETE CASE	MRO12T			

RIVETING TOOLS



G83A CASE



G747 CASE



G800



G800
INSTALLATION KIT



G704 CASE

RIVETING TOOLS



JBLT10F

10 FLUSH TYPES

JBLT10P

10 PROTRUDING TYPES

JBLT55FP

5 FLUSH TYPES / 5 PROTRUDING TYPES



JO-BOLT



HI-LOK

CHL-18P





LIGHTWEIGHT

ERGONOMIC

POWERFUL

VERSATILE

RELIABLE

FAST



LIGHTWEIGHT
LESS THEN 2,5KG WITH
STANDARD STRAIGHT NOSE

QUICKNESS
AS FAST AS A
PNEUMATICRIVETER

**HIGH
AUTONOMY**
APPROX. 1 WEEK
CHARGING TIME 20 MIN

**COMPATIBLE
WITH THE NOSES
BELOW***
**HUCK
CHERRY
OLYMPIC**



18 VDC LI-ION BATTERY
WIHT CHARGE INDICATOR

CUSTOM-MADE CASES



PT4500(H) CASE: ASNA1
For ASNA0077/78

PT4500(H) CASE: ASNA2
For ASNA0026/27

PT4500(H) CASE: ASNA3
For NAS1919/21

PT4500(H) CASE: ASNA4
For NAS1398/99

VIDEO



* SOME NOSES REQUIRE AN ADAPTER



ACCESSORIES & FASTENERS

THICKNESS GAUGE
JR3025



BLIND HOLE
SPOTTERS
(TRANSFER PINS)



PN250 - PN330 - PN399 - PN499

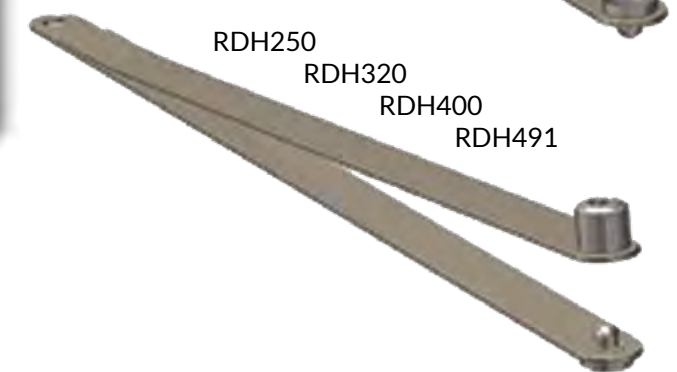
COMPLETE RANGE OF SPECIFIC
ACCESSORIES FOR AERONAUTICAL
ASSEMBLY

RDB250
RDB320
RDB400
RDB491



HOLE
FINDER TOOLS

RDH250
RDH320
RDH400
RDH491



BDP25 BDP32 BDP40 BDP41 BDP48



DRILL STOPS

ASTER™ TOOLS
SCO135-4040 & SCO135-4140



3POD



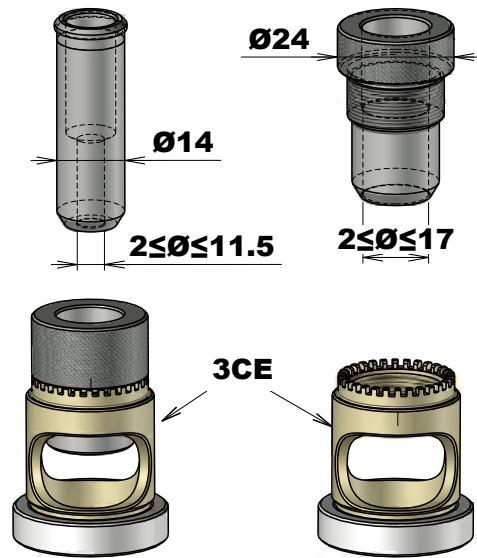
DRILL BUSHES & GUIDES



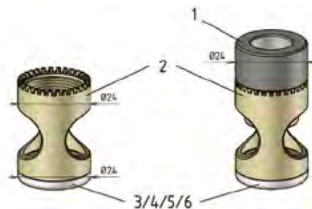
4POD

DRILL BUSHES HOLDER

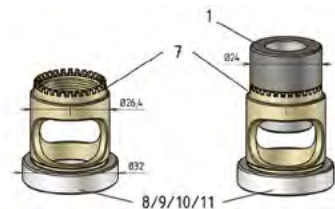
STANDARD BUSH THREADED BUSH



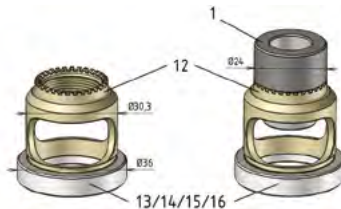
Base 1 :
M20 Tapped base
Internal diameter, Ø15
Nylon or steel nose piece



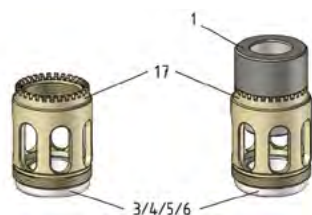
Base 2 :
M26 threaded base
Internal diameter, Ø22
Nylon or steel nose piece



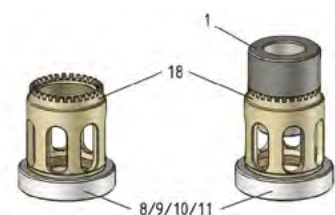
Base 3 : M30 threaded base
Internal diameter, Ø26
Nylon or steel nose piece



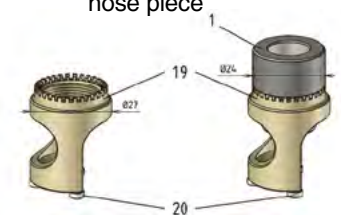
Base 4 : M20 tapped and M26 threaded base
Internal diameter, Ø15
Nylon or steel nose piece N°1



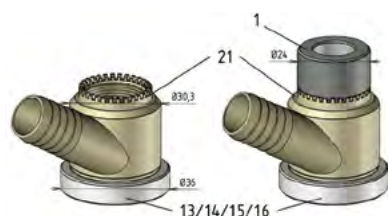
Base 5 : M20 tapped and M26 threaded base
Internal diameter, Ø20
Nylon or steel nose piece N°2



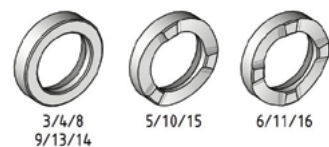
Offset base : Base with offset
Internal diameter, Ø18
Offset 4mm
3 nylons feet, or offset steel nose piece



Base 7 : M30 threaded base
With vacuum Ø16 x 13
Internal diameter, Ø26
Nylon or steel nose piece

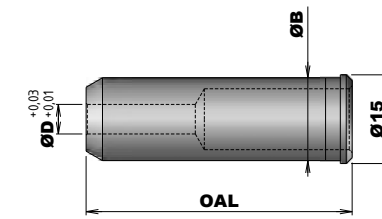


Tripod : Tripod base Ø50
Offset 16mm

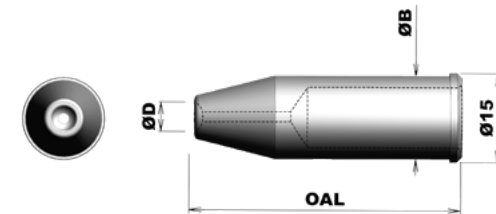


Possible noses: Flat, tripod or quadripod
In Nylon or steel

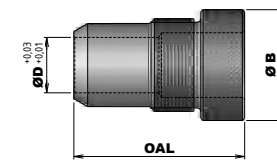
DRILL BUSHES & ACCESSORIES



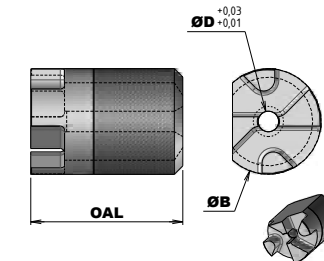
STANDARD BUSH
Available Ø 2.0 -> Ø 11.5 mm/0.01
To use with our bush holder 3POD, 4POD & 3CE
Ref : CPSTØ



DRILL BUSH FOR RIVET EXTRACTION
Available for rivet extraction
Ø 2.4/Ø 3.1/Ø 4.0/Ø 4.80 mm
Ref: CPSPØM12T - GRANTED PATENT FR2206873



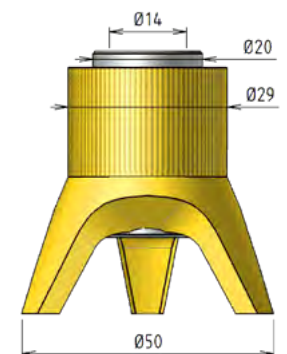
THREADED BUSH
Available Ø 2.0 -> Ø 17.0 mm/0.01
To use with our bush holder 3CE
Ref : CFEØ



CHIP BREAKER DRILL BUSH
Available Ø 2.0 -> Ø 17.0 mm/0.01
Ref: PPBØ

Spare part item	Index	Description
PART0216	1	Bush adaptor
PART0034	2	Base 1, Ø24
PART0036	3	Nylon nose N°1
PART0037	4	Steel nose N°1
PART0205	5	Tripode Nylon nose N°1
PART0200	6	Quadripod nylon nose N°1
PART0038	7	Base 2, Ø26
PART0040	8	Nylon nose N°2
PART0041	9	Steel nose N°2
PART0206	10	Tripod nylon nose N°2
PART0059	11	Quadripod nylon nose N°2
PART0042	12	Base 3, Ø30
PART0044	13	Nylon nose N°3
PART0045	14	Steel nose N°3
PART0058	15	Tripod nylon nose N°3
PART0207	16	Quadripod nylon nose N°3
PART0213	17	Base 4, Ø26
PART0214	19	Base with offset and nylon pins
PART0048	21	Base 7, Ø30 with vacuum

TRIPOD & QUADRIPOD



Ref: 3POD & 4POD

ACCESSORIES & FASTENERS

DRILL JIGS



ON REQUEST

REGISTERED DESIGN
© FR1008157

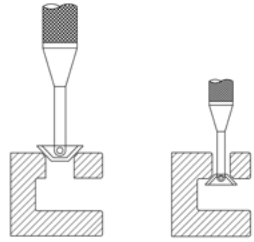
GAUGES



2-612



269C3



NRC1000
Ø3-5.5

NRC2000
Ø5-10

NRC2200
Ø10-22

MRO SET CLEAN

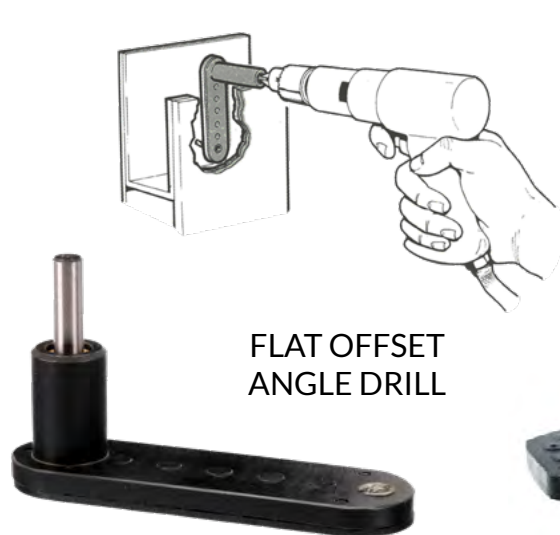


MSC1 MSC2 MSC3 MSC4



MSC1000

FLAT OFFSET ANGLE DRILL



RING CUTTERS

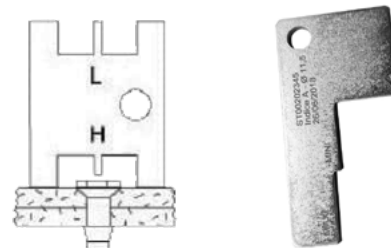


Ø 4.00
Ø 4.16
Ø 4.80
Ø 5.00
Ø 5.60
Ø 6.00
Ø 6.35
Ø 7.94

CONTROL RANGE



THICKNESS GAUGE



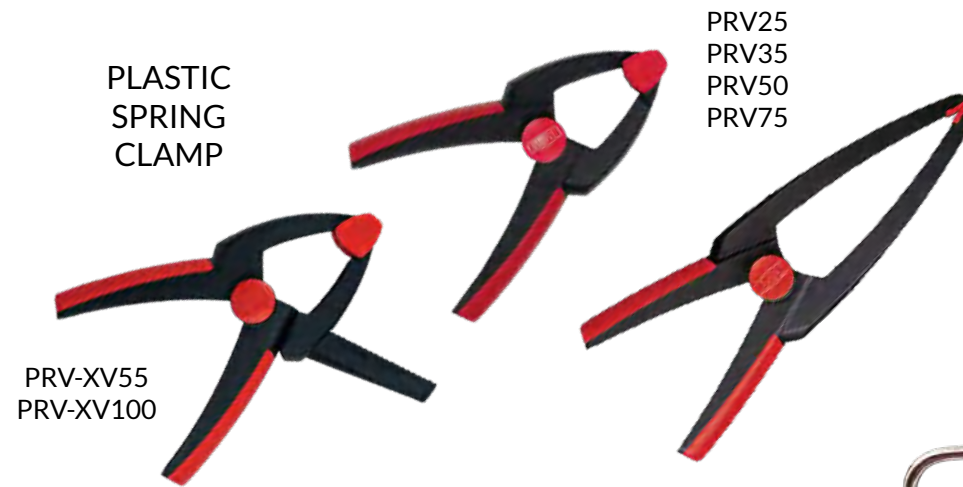
PRODUCTS ON REQUEST

ACCESSORIES & FASTENERS

RIVET FAN SPACING TOOL GPR10



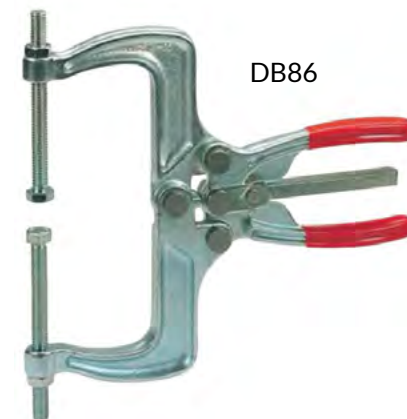
PLASTIC SPRING CLAMP



PRV-XV55
PRV-XV100

PRV25
PRV35
PRV50
PRV75

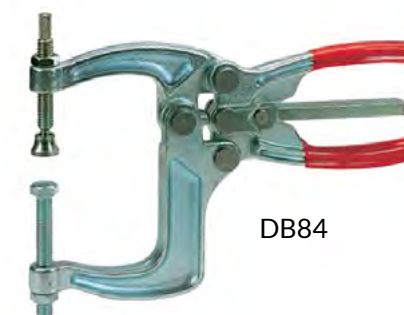
SPARKPROOF KNIFE BCA01



DB86



DB41



DB84



BSR1



BSR1/2

SIDE-GRIP CLECOS CLAMPS

HANDI CLAMP



PHK1



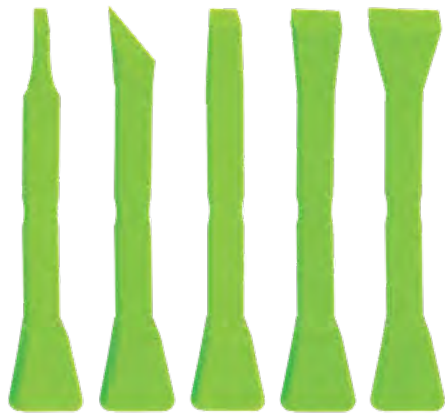
PCL40



TENSION
CLAMP

ACCESSORIES & FASTENERS

SPATULA KIT
GRT106-V

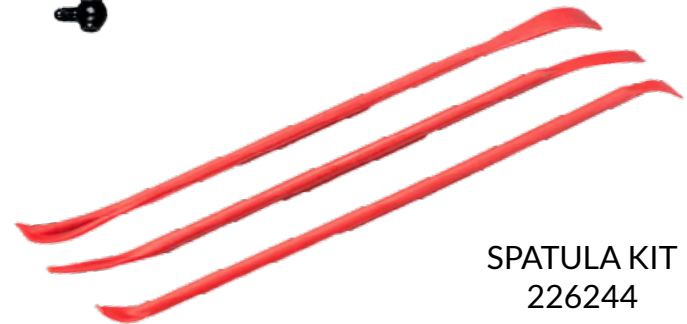


GRT106-V

PRY TOOL
4140



SEMCO® GUNS



SPATULA KIT
226244



SEALANT
REMOVAL CUTTERS
Ø10 & Ø25



FPR10



FPR25

ACCESSORIES & FASTENERS

41 SERIES



TEMPORARY FASTENERS

PZ50S



1000 SERIES  IN STOCK



CHD SERIES

C & CL SERIES

CC SERIES

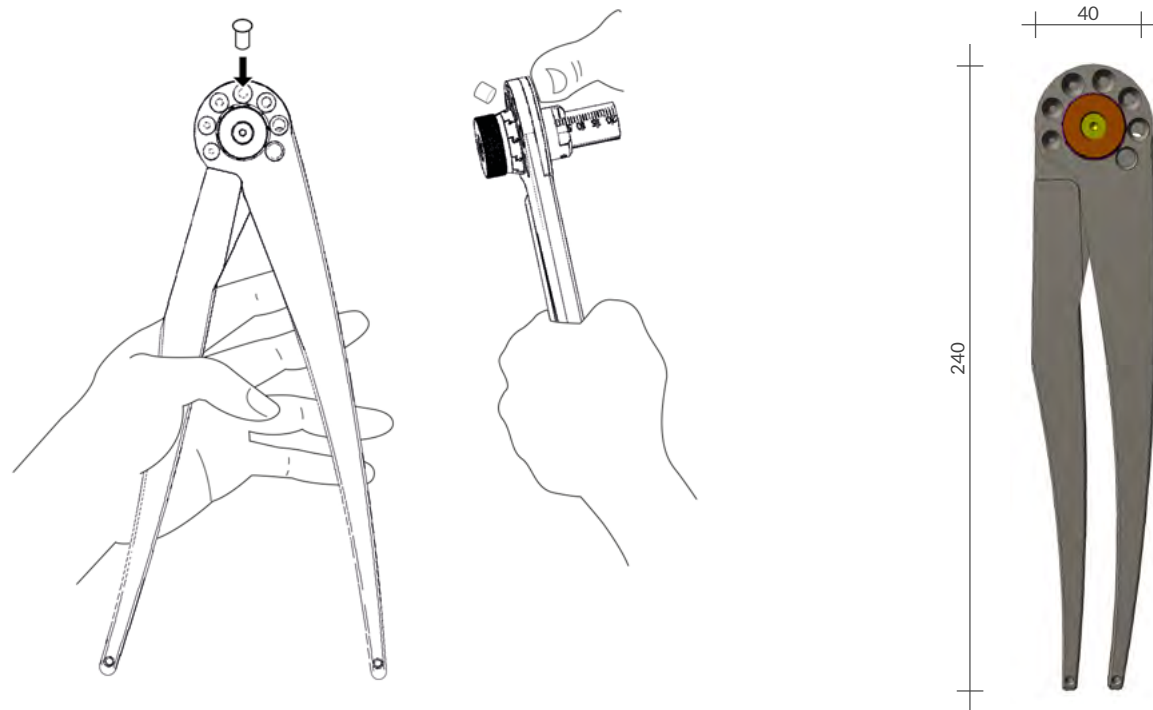


AERO
BIT BOX
BBA30



PNEUMATIC
INSTALLATION
TOOLINGS





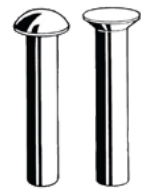
RIVET CUTTING PLIERS

PCRM21

Manual rivet cutter, equipped with a micrometric adjustment, allowing a clean and precise cut of aluminum rivets from Ø 1.6 to Ø 6.0.

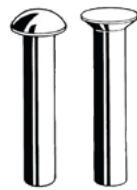
NEW

Cut your rivets up to a length of **3.5mm**



CUTTING LENGTH
Mini 3.5 mm
Max 20 mm

RIVET DIAMETER
Mini 1.6 mm
Max 6.0 mm



Inch version : PCRI21



MADE IN FRANCE



HI-LOK pins have become extremely popular in aerospace construction - they make it possible to achieve reliable structural joints even in safety-critical, restricted work environments. This is exactly where the compact and patented HI-LOK ratchet comes in.

Additional benefits for you: unlike HI-LOK ratchets from other manufacturers, ours offer the highest possible protection against Foreign Object Damage (FOD).

Conventional HI-LOK ratchets are merely conventional ratchets with a drilled tool mount for insertion of a hexagon key. The problem is that the tool is not held captive by a ball or pin. This means the ratchet is no longer FOD safe.

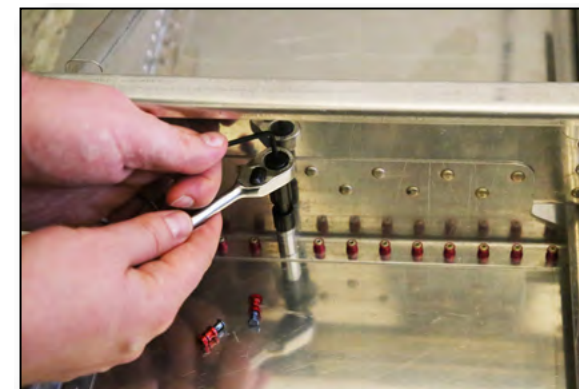
With our patented HI-LOK ratchet, this is different: the hexagon key simply pushes the ball retention system to one side. As soon as the hexagon key is removed, the ball moves back into its usual place.

P/N: CHL-18P

HI-LOK TOOLS



FOR YOUR SAFETY



JR3025 BOX



OPTION
IP65 & F.O.D
ultra resistant
waterproof case

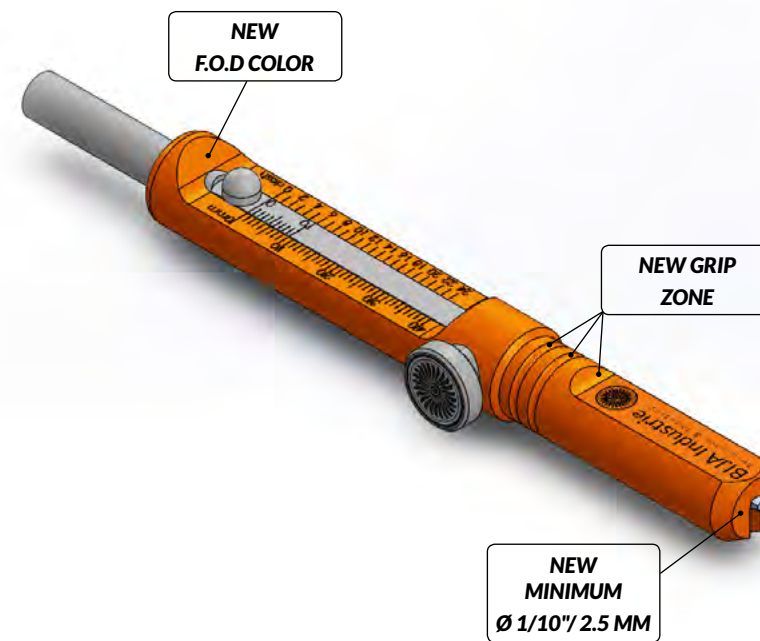
F.O.D
cushioning foam

THICKNESS GAUGE JR3025

NEW

F.O.D color: Orange
Minimum capacity: Ø 1/10" / 2.5mm

- Simple and ergonomic, equipped with an efficient safety locking device, this inspection tool is designed for checking all thicknesses from 0 to 1 1/4" (30 mm).
- Minimum capacity: Ø 1/10" / 2.5mm
- Dash and millimeter graduation.
- Better handling thanks to its grip zone.



Registered Design ® 1090128

DIGITAL



AFN-1



AFN-2



AFN-3



AFN-4

8 VERSIONS
TO COVER ALL
YOUR REQUIREMENTS



AFN-K

Rivet-height gauge case
Two-color F.O.D
foam



ANALOG



AFA-1



AFA-2



AFA-3



AFA-4

RIVET-HEIGHT GAUGE

NEW

DIGITAL VERSIONS

- Positive & negative flush measurement
- Adjustable tolerance mark
- Height adjustment & locking
- 0.01mm / IP51 digital comparator
 - Data output
 - LCD display
 - 360° rotatable
 - Interchangeable
 - 6 reading positions
 - Interchangeable probe



ANALOG VERSIONS

- 0.01mm analog comparator
 - 360° rotatable
 - Interchangeable
 - 6 reading positions
 - Interchangeable probe
 - Mechanism with anti-shock protection

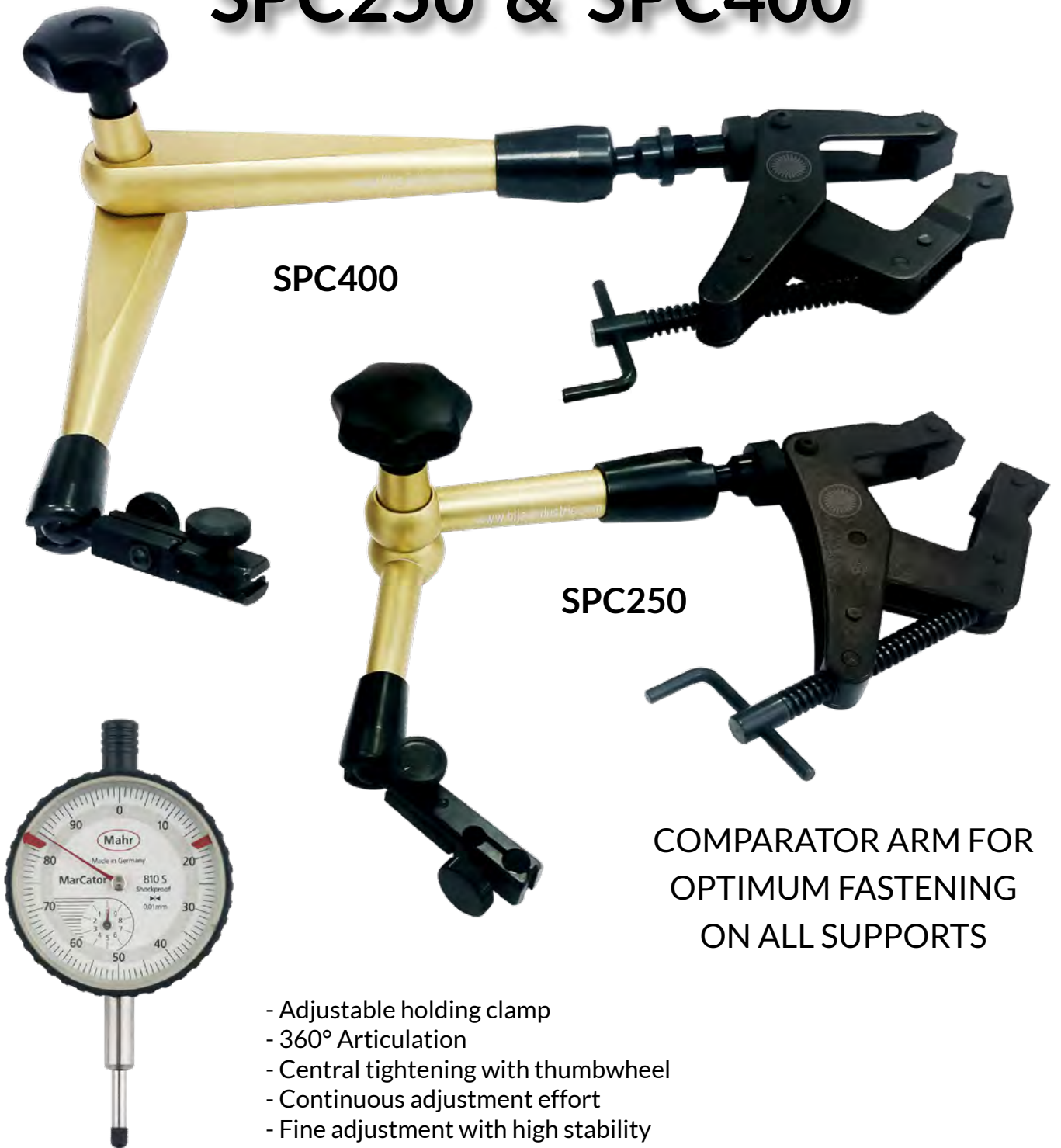




MANY THANKS TO MATTHIEU AND HELILAGON FOR THESE AMAZING PHOTOS



**CLAMP
COMPARATOR HOLDERS
SPC250 & SPC400**



COMPARATOR ARM FOR
OPTIMUM FASTENING
ON ALL SUPPORTS

- Adjustable holding clamp
- 360° Articulation
- Central tightening with thumbwheel
- Continuous adjustment effort
- Fine adjustment with high stability
- Dial gauge holder Ø8 H7
- Optional comparator

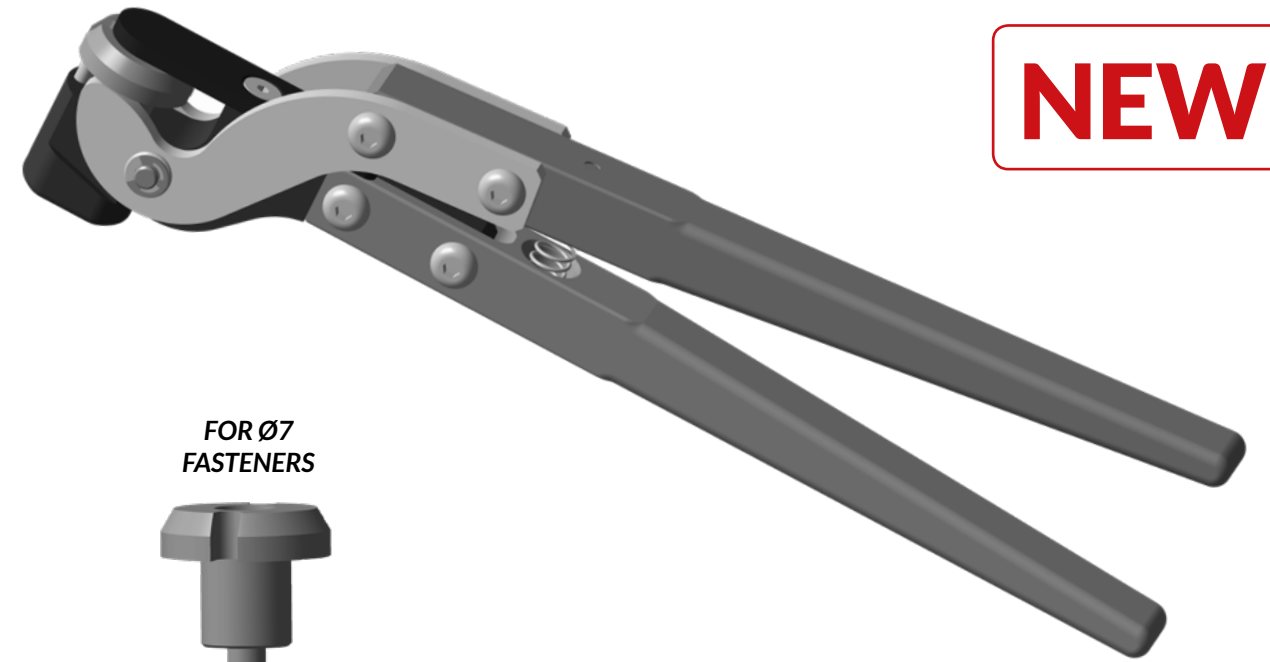


ACCESSORIES & FASTENERS

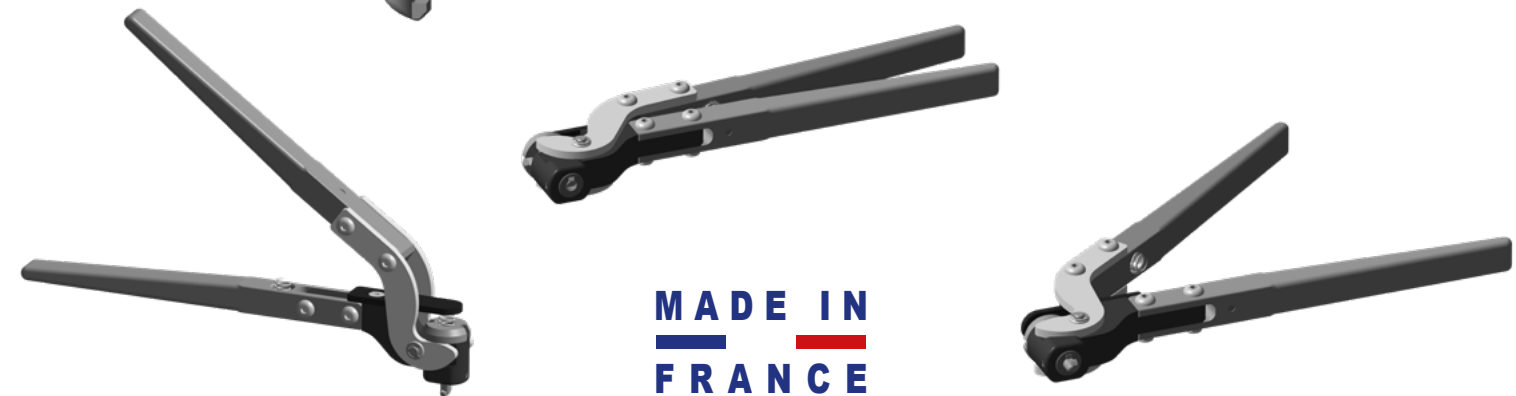
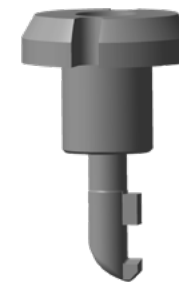
"CHAMPION" PLIERS

PCH12-7

NEW



FOR Ø7
FASTENERS



MADE IN
FRANCE



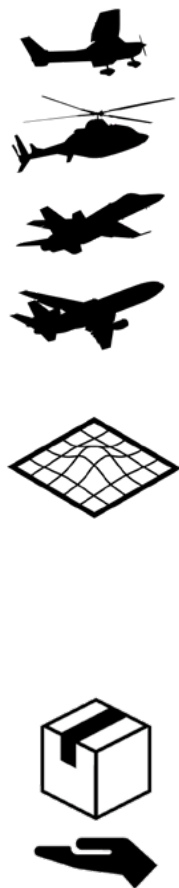
PAINT-RITER™+ DURA-INK®+ AEROSPACE



Paint-Riter™+ and Dura-Ink®+ Series Aerospace markers meet the most stringent aerospace industry standards. An element analysis report is published for each batch to guarantee low levels of chlorides, halogens, sulfur and low melting point metals specified by GE and Rolls-Royce Specs.

FEATURES

- Formulas certified to meet the strict requirements of aeronautical standards
- Fast drying, long lasting and wear/weather/UV resistant formulas
- Valve-actuated nibs for better controlled flow
- Durable metal barrels offer large ink or paint capacity
- Clip-grip caps allow for easy storage and handling, even with work gloves
- Industrial grade marker leaves long-lasting and wear/weather/UV resistant marks
- Marking range: -50°F to 150°F (-46°C to 66°C)



MRO
SUPPLY CHAIN

CIVIL
MILITARY

STAINLESS STEEL
SUPERALLOY METALS
ALLOY METALS

Paint-Riter™+ Aerospace
Industrial Paint Formula
Available in 4 colors:
Black, White, Yellow and Red

- 96892 ■ 96894
- 96893 ■ 96895

Dura-Ink®+ Aerospace
Industrial Ink Formula
Available in Black

- 96924



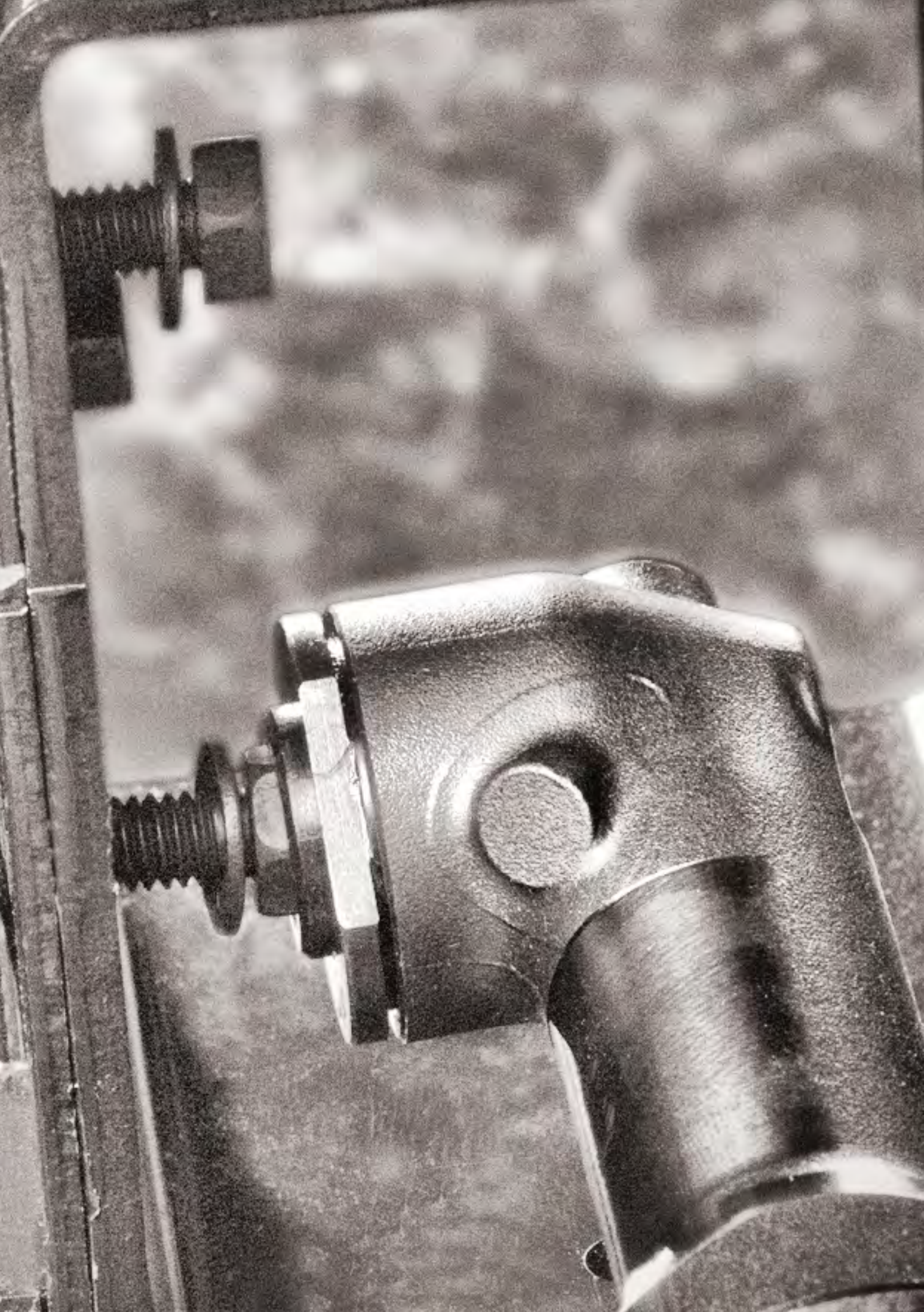
**IN COMPLIANCE WITH
AERONAUTICAL STANDARDS*
ROLLS-ROYCE EMS 56752 - GE D50TF8**

New industrial grade permanent paint and ink markers specially designed for performance in the aerospace industry.



VIDEO LINKS





PNEUMATIC TOOLS

DRILLS

STRAIGHT DRILLS



UT8741A



30F300DC



15LF083-38



53078

PISTOL GRIP DRILLS



14CNL92-51



30F420PC



UT8817



52835

RIGHT-ANGLE DRILLS



30F300A90C



15L1488-38



Twist drill case 1-10mm / 0.5mm
170 pcs
4000 600 867 (HSS)
4000 600 868 (HSS-Co)



Quick-clamp drill chuck
1 - 10 mm - Mount 3/8-24
4000 832 004
2 - 13 mm - Mount 1/2-20
4000 832 006



Twist drill case HSS-Co
1.0 - 5.9 / 0.1mm
4000 861 938
6.0 - 10 / 0.1mm
4000 861 939

**INTERCHANGEABLE HEAD
RIGHT ANGLE DRILLS**



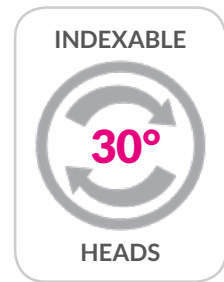
Available with:
9/32-40 UNS
or
1/4-28 UNF-2B

**MODULAR DRILLS
15LQ SERIES**



CHUCK
45° - 90° - 360°

Power 300 watts
Quick change indexable noses
Free speed 600 to 5 300 rpm



AHP12

**RIGHT ANGLE DRILLS
15LF SERIES**

15LF283-93 (360°)



15LF283-59 (90° CHUCK)



**F.O.D COLLETS HOLDER
PLP10**

Collet locations & diameters
on request



REGISTERED DESIGN ® FR1008705

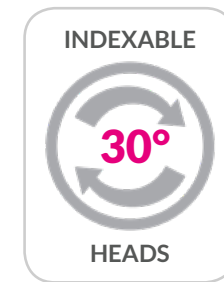
**INTERCHANGEABLE HEAD
RIGHT ANGLE DRILLS**

**STRAIGHT
CHUCK
30° - 45° - 90°
RIGHT ANGLE**



**MODULAR DRILLS
30FM SERIES**

Power 300 watts
Quick change indexable noses
Free speed 1 200 to 6 200 rpm



Exhaust can be redirected at will:

With the rotating device, the exhaust air can be vented away from the operator based on the position the drill is being used in.



Available with:
9/32-40 UNS
or
1/4-28 UNF-2B

PNEUMATIC TOOLS

UT8764



UT5764



SANDERS

15003



MNF1



58506



X31V - Ø75



UT8760BK - Ø50 & 75



58505



MINI SANDER CASES



59024 - Ø125
59029 - Ø150



UT8705DSC - Ø75



UT8781K
Ø50 & 75



UT8702SR - Ø150

PNEUMATIC TOOLS

PRECISION GRINDERS

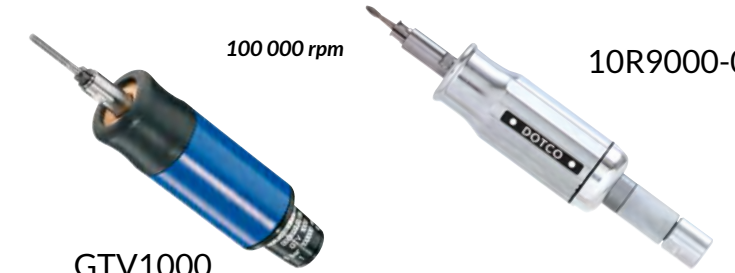
12-04 60 000 rpm



100 000 rpm

10R9000-03

GTV1000



VARIABLE SPEED DRILLS

135DPV



MG-7206B



48325



10L1003-36



GRINDERS

Alu:
JFL5-6A

Steel:
JFL10-6



RIVETING HAMMERS

MG-7236B



48317



10LF281-36



PNEUMATIC TOOLS

VACUUMS

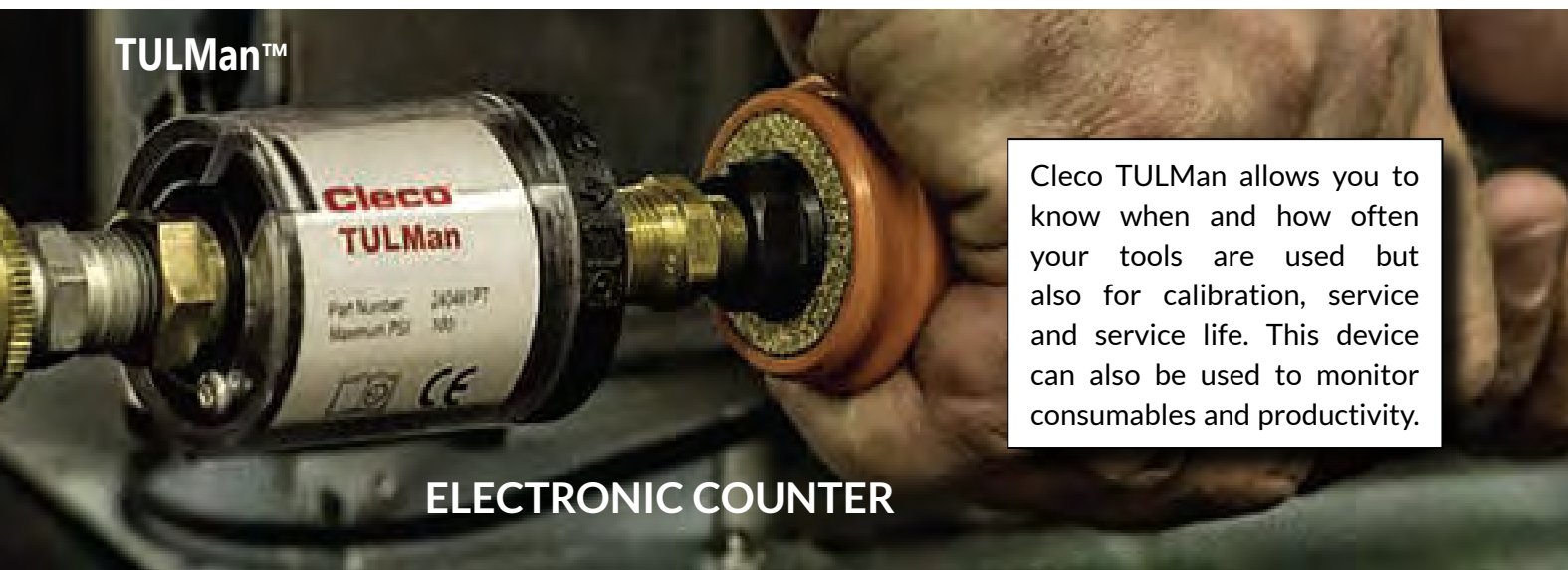


UT395



VENTURIX

TULMan™



Cleco TULMan allows you to know when and how often your tools are used but also for calibration, service and service life. This device can also be used to monitor consumables and productivity.

ELECTRONIC COUNTER

PUSH TYPE GREASE GUN
45-1982



SWIVEL CONNECTIONS
SW-102 - 1/4



LUBRICATING CYLINDER
45-0201 - 1/4



PNEUMATIC TOOLS



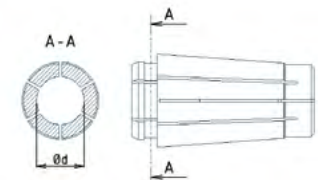
RIVET SHAVERS



SHEARS



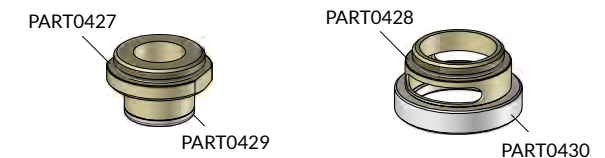
BACK-SPOTFACING



ROUTERS



NIBBLERS



POSSIBLE NYLON NOSES:
Flat, tripod or quadripod



RAPTOR VAC®

MOBILE ELECTRIC
VACUUM SYSTEM
CATEGORY 3 ATEX

ATEX ZONE 22
230V (50 HZ)
DRY COLLECTION

Safety and fine dust capture are the specialty of Category 3 Raptor Vac® Clean Air Solutions. From motor head to recovery tank each component plays a role in fire prevention and fine dust capture.



61431

Category 3 Raptor Vacs® are used to capture non-metallic dusts, such as wood, composites, carbon, aluminum, titanium, steels, copper, brass and stainless steel, created through sanding operations.

Powerful suction supports two operators simultaneously in dry industrial applications. Two additional HEPA filters included within powerhead, making it eligible for IP6X, adding further dust protection to electric components. IP6X - defined as tested to fully dust tight.



Vacuum Cleaning Kit
Category 3 ATEX
96607



WALL MOUNT TYPE
61471



Hose assy-1" vac, 5/16" air, 20' long
31990



BACKPACK TYPE
61473



1-1/4" x 8' coaxial, conductive vacuum hose assembly
31955

RAPTOR VAC®

PORTABLE PNEUMATIC
VACUUM SYSTEM
CATEGORY 2 ATEX

ATEX ZONE 1 & 21
DRY COLLECTION



PNEUMATIC SCREWDRIVING

AUTOMATIC SHUT-OFF AIR SCREWDRIVERS & NUTRUNNERS

TORQUE RANGE
0.4 Nm to 5 Nm



REVERSIBILITY NEXT TO
STARTING BUTTON
15C5APA-150-R
150, 250 or 650 rpm



REVERSIBILITY ON TOP
15C5APA-150
150, 250 or 650 rpm

AUTOMATIC SHUT-OFF

ADJUSTABLE TORQUES

ERGONOMICS



90° ANGLE
15C5A90-150
150, 250 or 650 rpm



STRAIGHT
15C5AL-150
150, 250 or 650 rpm

TOM

TIGHTENING OPERATIONS MONITOR



TIGHTENING OPERATIONS SUPERVISION
TORQUE CONTROL
SCREW COUNTING
CYCLE TIME MONITORING
8 PROGRAMS



CONTROL & CALIBRATION



TT3 0.15 Nm TO 3Nm
TT10 0.5 Nm TO 10Nm
TT30 1.5Nm TO 30 Nm

ACCESSORIES & OPTIONS



AUTOMATIC SHUT-OFF

AIR SCREWDRIVERS & NUTRUNNERS

TORQUE RANGE
3.5 Nm to 12 Nm



STRAIGHT
26C12AL-150
150, 250 or 400 rpm



REVERSIBILITY NEXT TO STARTING BUTTON
26C12APA-150-R
150, 250 or 650 rpm



REVERSIBILITY ON TOP
15C5APA-250
150, 250 or 650 rpm



REVERSIBILITY NEXT TO STARTING BUTTON WITH TRIPLE AIR INLET
26C12APA-150-3i
150, 250 or 650 rpm

PNEUMATIC SCREWDRIVING
POSSIBLE UP TO 60 Nm



ELECTRIC SCREWDRIVING



CellClutch

CORDLESS ASSEMBLY TOOLS

INTELLIGENCE
HAS NEVER BEEN
SO SIMPLE

PROGRAMMABLE TIGHTENING
STRATEGIES



ERGONOMICS



CONNECTED



ACCURATE



FAST



ELECTRIC SCREWDRIVING

ELECTRIC SCREWDRIVING

RIGHT ANGLE - CellClutch

Ref	Speed rpm		Nm		Ft-lb		Weight* kg (lb)	Length mm (in)	Side to Center mm (in)	Height mm (in)	Output
	Min	Max	Min Torque	Max Torque	Min Torque	Max Torque					
CLBAW083	92	915	2.2	8.0	1.6	5.9	1.46 (3.2)	252 (9.92)	12.5 (0.49)	76.0 (2.99)	3/8"
CLBA123	65	650	3.3	12.0	2.4	8.8	1.46 (3.2)	252 (9.92)	12.5 (0.49)	76.0 (2.99)	3/8"
CLBA203	36	360	8.3	21.0	6.1	15.5	1.73 (3.8)	492 (19.37)	15.0 (0.59)	76.0 (2.99)	3/8"
CLBA303	26	255	8.3	30.0	6.1	22.1	1.73 (3.8)	492 (19.37)	15.0 (0.59)	76.0 (2.99)	3/8"
CLBA403	285	190	15.1	41.0	11.1	30.2	1.83 (4.0)	513 (20.00)	18.5 (0.73)	76.0 (2.99)	3/8"
CLBA653	12	115	16.0	65.0	11.8	47.9	1.93 (4.3)	533.4 (21.0)	19.0 (0.75)	76.0 (2.99)	3/8"

*Values do not include battery. 2ah Battery weighs 0.43kg. 5ah Battery weighs 0.72kg

PISTOL - CellClutch

Ref	Speed rpm		Nm		Ft-lb		Weight* kg (lb)	Length mm (in)	Side to Center mm (in)	Height mm (in)	Output
	Min	Max	Min Torque	Max Torque	Min Torque	Max Torque					
CLBP04Q	177	1770	1.1	4.0	0.8	2.9	1.04 (2.3)	213.5 (8.41)	28.5 (1.12)	209 (8.23)	1/4"
CLBP08Q	95	985	2.1	8.0	1.5	5.9	1.04 (2.3)	213.5 (8.41)	28.5 (1.12)	209 (8.23)	1/4"
CLBP12Q	70	700	3.2	12.0	2.4	8.8	1.04 (2.3)	213.5 (8.41)	28.5 (1.12)	209 (8.23)	1/4"

*Values do not include battery. 2ah Battery weighs 0.43kg. 5ah Battery weighs 0.72kg

BATTERIES AND CHARGERS

Ref	Description
4932430062	18V, 2.0Ah Battery (.43kg/.94lb)
4932430483	18V, 5.0Ah Battery (.72kg/1.60lb)
4932472073	Double Rapid Charger M18™
4932430086	6 Batteries Charger M18™



TORQUE ANALYSER

Ref	Description
CTA0114	0.4 - 4 Nm Torque analyser
CTA3038	3.0 - 30 Nm Torque analyser
CST6838	68 Nm Stationary transducer
CJK38	Female stationary joint kit 3/8"



- FAST**
BUILT-IN TORQUE TRANSDUCER FOR FAST AND ACCURATE TORQUE READOUT ON THE EASY-TO-READ WHITE OLED SCREEN
- FLEXIBLE**
POWERED BY EITHER POWER CORD OR BATTERY FOR FLEXIBILITY
- VERSATILE**
RUNDOWN ADAPTOR PROVIDED TO SIMULATE REAL-WORLD TIGHTENING

Proven Cleco Clutch
Safety, accuracy and repeatability with a CMK >1.67 (at a tolerance of +/-10 % in accordance with ISO 5393)

INTELLIGENCE
SIMPLICITY

Programmable Tightening Strategies
Make your tasks easier with up to 7 programmable stages via USB interface
Standard features include batch count, angle or duration parameters and speed adjustment



Multi-Color LED
Work light for secondary "OK/NOK" operator feedback while also illuminating your workpiece

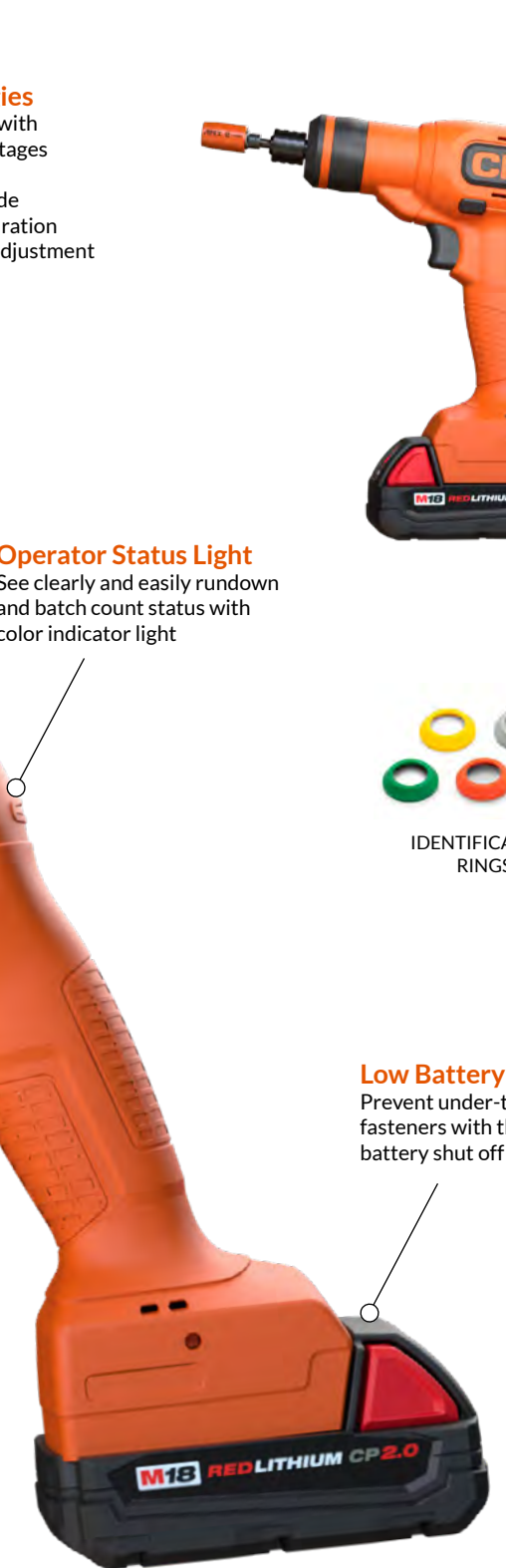
Operator Status Light
See clearly and easily rundown and batch count status with color indicator light



IDENTIFICATION RINGS

Low Battery Warning
Prevent under-torqued fasteners with the low battery shut off

SIMPLE, SMART CORDLESS ASSEMBLY TOOLS BRINGING PROGRAMMABILITY TO YOUR LINE



ELECTRIC SCREWDRIVING

ELECTRIC SCREWDRIVING

THE FUTURE OF CONNECTIVITY

Safety/Accuracy
Repeatability of 2.0 cm/cmK with +/- 7% accuracy for safety critical joints

Flexible
Easily connects over Wifi (2.4 & 5.0 GHz) or Bluetooth 4.0

Cost Savings
Connect up to 16 tools to 1 controller

Easy to Use
Program applications directly from the tool interface

Multi-Color LED
Work light for secondary "OK/NOK" operator feedback while also illuminating your workpiece

Reduce Downtime
Exchange tools in seconds by swapping all wireless parameters and run down results on the line using the SmartSwap card

Compatibility
Forward and backward compatibility with Cleco's entire Global cordless Controller platforms

Enhanced WiFi Range
Up to 100 meters for a broad connection within your production facility

Stay Alive Function
Prevents reboot during battery change, gaining time and efficiency

On-Tool Storage
Back-up on-tool data collection in the event of disrupted connection



CellTek CORDLESS ASSEMBLY TOOLS



CONNECTIVITY - The most reliable real-time synchronization with manufacturing and engineering systems



ERGONOMICS - Sleek and lightweight for the ultimate in comfort and balance



SPEED - Improve your production time with the fastest cordless assembly tools in its class



ACCURATE - Ensures safety-critical assembly with best-in-class accuracy and repeatability

PISTOLS from 1.1 to 14.4 Nm
RIGHT ANGLES from 3.6 to 65 Nm



ELECTRIC SCREWDRIVING

ELECTRIC SCREWDRIVING

RIGHT ANGLE



Ref	Speed rpm	Nm		Ft-lb		Weight* kg (lb)	Length mm (in)	Side to Center mm (in)	Height mm (in)	Output
		Min Torque	Max Torque	Min Torque	Max Torque					
CTBAW153	1025	3.6	15.0	2.7	11.1	1.4 (3.1)	515 (20.28)	14.3 (0.56)	38.7 (1.52)	3/8"
CTBAW213	735	5.2	21.0	3.8	15.5	1.4 (3.1)	515 (20.28)	14.3 (0.56)	38.7 (1.52)	3/8"
CTBAW273	560	6.8	27.0	5.0	19.9	1.4 (3.1)	515 (20.28)	14.3 (0.56)	38.7 (1.52)	3/8"
CTBAW383	395	10.0	38.0	7.4	28.0	1.55 (3.4)	525 (20.60)	16.5 (0.65)	44.5 (1.75)	3/8"
CTBAW503	285	13.0	50.0	9.6	36.9	1.6 (3.5)	534 (21.02)	17.0 (0.67)	43.8 (1.72)	3/8"
CTBAW653	220	17.0	65.0	12.5	47.9	1.7 (3.7)	543 (21.38)	19.0 (0.75)	46.8 (1.84)	3/8"

*Values do not include battery. 2ah Battery weighs 0.43kg. 5ah Battery weighs 0.72kg

PISTOL



Ref	Speed rpm	Nm		Ft-lb		Weight* kg (lb)	Length mm (in)	Side to Center mm (in)	Height mm (in)	Output
		Min Torque	Max Torque	Min Torque	Max Torque					
CTBPW05Q	3525	1.1	4.9	0.8	3.6	0.90 (2.0)	191 (7.52)	19.3 (.76)	210 (8.27)	1/4"
CTBPW10Q	1600	2.4	10.0	1.8	7.4	0.95 (2.1)	207 (8.15)	19.3 (.76)	210 (8.27)	1/4"
CTBPW15Q	1125	3.4	14.4	2.5	10.6	0.95 (2.1)	207 (8.15)	19.3 (.76)	210 (8.27)	1/4"

*Values do not include battery. 2ah Battery weighs 0.43kg. 5ah Battery weighs 0.72kg

CONTROLLERS*



Ref	Description	Tool Compatibility	Weight kg (lb)	Width mm (in)	Height mm (in)	Depth mm (in)
mPro200GC-G	Controller (Global)	CellTek, LiveWire, I-Wrench	3.23 (7.1)	113 (4.4)	340 (13.4)	320 (12.6)
mPro200GC-AP-G	Controller with Access Point (Global)	CellTek, LiveWire, I-Wrench	3.43 (7.5)	113 (4.4)	340 (13.4)	320 (12.6)

*Also compatible with the mPro400 Global Controller Platform

BATTERIES AND CHARGERS

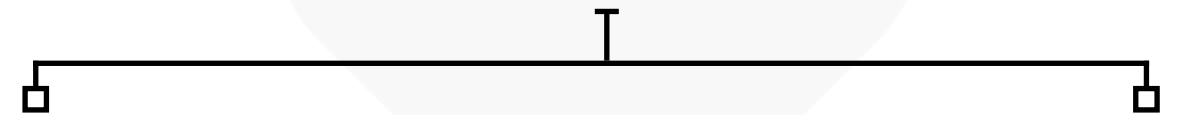


Ref	Description
4932430062	18V, 2.0Ah Battery (.43kg/.94lb)
4932430483	18V, 5.0Ah Battery (.72kg/1.60lb)
4932472073	Double Rapid Charger M18™
4932430086	6 Batteries Charger M18™

Ref	Description
ACA00-R0-G1-L00	Right Angle Gyroscope
ACP00-R0-G1-L00	Pistol Gyroscope
ACA00-R0-G0-LD4	Right Angle Ubisense Location Tag
ACP00-R0-G0-LD4	Pistol Ubisense Location Tag
ACA00-R0-G0-LSI	Right Angle Siemens Location Tag (RTL5)
ACP00-R0-G0-LSI	Pistol Siemens Location Tag (RTL5)



COMPATIBILITY



CellClutch



CellTek



Milwaukee®

CORDLESS POWER TOOLS

DRILLING & SCREWING

12V & 18V



M12 FUEL™
INSTALLATION DRILL/DRIVER
WITH INTERCHANGEABLE HEADS
4933471332



M18 FUEL™
ONE-KEY™ DRILL DRIVER
WITH AUTOSTOP™
4933464524



M18 FUEL™
DRILL DRIVER
WITH AUTOSTOP™
4933479862

FUEL™ TECHNOLOGY

- POWERSTATE™ BRUSHLESS MOTOR
- REDLITHIUM™ BATTERY
- REDLINK™+ SMART ELECTRONICS



M12™ REDLINK™
SUB COMPACT DRILL
DRIVER
4933441930



M12™ FUEL™
SUB COMPACT DRILL
DRIVER
4933479872



M12™
SUB COMPACT RIGHT
ANGLE DRILL
49334416900



M18™
COMPACT RIGHT
ANGLE DRILL
4933427189

ONE-KEY™ THE SMARTEST APPROACH TO EQUIPMENT MANAGEMENT



ONE-KEY™ technology allows you to control your tools and provides you with information about your machinery fleet.

- Digital inventory
- Equipment tracking
- Employee management
- Location management
- Connected tools



M12™
SUB COMPACT DRILL DRIVER
WITH REMOVABLE CHUCK
4933447836



M12™ REDLINK™
SUB COMPACT DRIVER
¼ HEX
4933441910



M4™ - 4V
SCREWDRIVER
4933440475

Nothing but **HEAVY DUTY.**™

M18™ FUEL™
75 MM BELT SANDER
4933479614



SANDING

M12 M18



M18™
QUARTER SHEET SANDER
4933479966



M12™ FUEL™
SUB COMPACT SPOT SANDER
4933479680



M12™ FUEL™ BAND FILE
10 mm & 13 mm
4933480958 - 4933480960



360°



M18™ 125 mm RANDOM
ORBITAL SANDER
4933464228

GRINDING & POLISHING

M12 M18



M12™ FUEL™
ANGLED DIE GRINDER
4933471438



M12™ FUEL™
STRAIGHT DIE GRINDER
4933471435



M18™ FUEL™ TRIM ROUTER
WITH 8 mm/6 mm COLLETS AND BASES
4933479073



M18™ FUEL™ MULTI-TOOL
4933478491



M12™ FUEL™ MULTI-TOOL
4933472238

COMPRESSOR

M18



M18™ FUEL™ AIR COMPRESSOR
Maximum air pressure 9,31 bar and 48 l/m at 2,8 bar
14 kg and only 68 dB (A)
4933472166



M18™ FUEL™ POLISHER
Maximum polishing accessory
Ø 180 mm
4933451549



M12™ SUB COMPACT
POLISHER/SANDER
Capacity of 76 mm polishing
sponge and 50 mm sanding pad
4933447791

SAWING & CUTTING

M12 M18



M18™ FUEL™ BODY GRIP OR
TOP HANDLE JIGSAW
4933464799 - 4933464726



M18 FUEL™
RECIPROCATING SAW
1 HAND HACKZALL™
4933459887



M18™ METAL SHEAR
Maximum cutting depth of
1,2 mm or 2,0 mm
4933447925 - 4933447935



M12™ FUEL™ NIBBLER
Cutting capacity 1,6 mm
4933479617

VACUUMS

M18



M18™ FUEL™ PACKOUT™
WET/ DRY VACUUM
4933478187



M18™ WET/ DRY VACUUM
4933464029

BATTERIES & CHARGERS



M12™ CHARGER
4932352000



M12™ NRG-201 PACK
M12™ RED LITHIUM 2.0 A.H BATTERIES
M12™ CHARGER
4933451900



M12™ NRG-402 PACK
M12™ RED LITHIUM 4.0 A.H BATTERIES
M12™ CHARGER
4933459211



M12™ NRG-603 PACK
M12™ RED LITHIUM 6.0 A.H BATTERIES
M12™ CHARGER
4933459208



M12™ NRG-303 PACK
M12™ RED LITHIUM 3.0 A.H BATTERIES
M12™ CHARGER
4933459207



M12™ COMPACT
CHARGER AND
POWER SOURCE
4932459450



M12™ RED LITHIUM BATTERIES
2 A.H : 4932430064
3 A.H : 4932451388



M12™ USB PLUG
4932459888



M12™ BATTERIES
RED LITHIUM
- 6 A.H : 4932451395
- 4 A.H : 4932430065



M12™ HIGH OUTPUT™
2.5 AH BATTERY
4932480164



M12™ HIGH OUTPUT™
5.0 AH BATTERY
4932480165

BATTERIES & CHARGERS



M18™ NRGCR-502 PACK
M18™ RESISTANT 5.0 AH BATTERY
M12™ & M18™ FAST CHARGER
4932479831

M18™ RED LITHIUM BATTERIES



4932430483



4932430063



4932430062

M18™ RED LITHIUM BATTERIES
HIGH OUTPUT™



4932464260



4932471070



4932464712



4932471069



M18™ DUAL BAY RAPID CHARGER
3x FASTER*
4932472073



M14™ - M18™ MULTIBAY CHARGER
CHARGES UP TO 6 BATTERIES SEQUENTIALLY
4932430086

DUAL CHARGERS



M12™ & M18™
FAST CHARGER
3x FASTER*
4932451079



M12™ & M18™
SUPER CHARGER
4x FASTER**
4932471736

MRO[®]

INTEGRAL
SOLUTIONS



The **MRO Integral Solutions[®]** brand is the result of cooperative work between BIJA Industrie and its 20 years of experience, and the most emblematic training center in the aeronautics sector.

MRO Integral Solutions[®] is a unique range of tooling compositions dedicated to aeronautical maintenance and production.

This range is designed to be adaptable and upgradeable, and thus meet the most stringent needs and requirements of the sector.

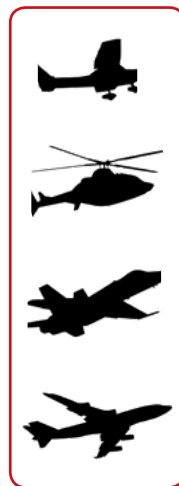
***THE BRAND DEDICATED TO
THE MRO'S WORLD***





MRO-X

STRUCTURAL RIVETING



MRO Integral Solutions®

MRO-X is a unique tooling kit dedicated to the installation of solid rivets on aeronautical structures.

The kit is declined in 3 compositions, *MRO2X*, *MRO3X* as well as *MRO4X*.

The tools are held by two-color FOD foam which allows quick and secure storage and easy transport.

MRO-X



STRUCTURAL RIVETING

Versions

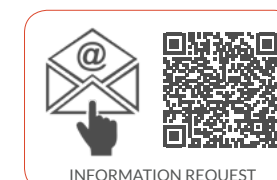
MRO2X: Composition with 2X hammer

MRO3X: Composition with 3X hammer

MRO4X: Composition with 4X hammer

Technical information

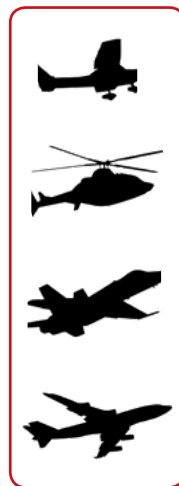
- Number of tools: 8 pcs
- Weight: 5.0 kg
- L-BOXX clip-on & stackable case
- Size (case): 445 x 358 x 152
- Foam colors





MRO-X+

STRUCTURAL RIVETING



MRO Integral Solutions®

MRO-X+ is a unique tooling kit dedicated to the installation of solid rivets on aeronautical structures.

The kit is declined in 3 compositions, *MRO2X+*, *MRO3X+* as well as *MRO4X+*.

The tools are held by two-color FOD foam which allows quick and secure storage and easy transport.



MRO-X+



STRUCTURAL RIVETING

Versions

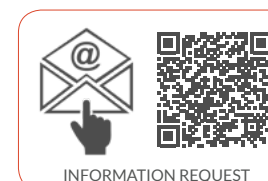
MRO2X+ :
Composition MRO2X with 2 additional bucking bars and 1 rivet cutter

MRO3X+ :
Composition MRO3X with 2 additional bucking bars and 1 rivet cutter

MRO4X+ :
Composition MRO4X with 2 additional bucking bars and 1 rivet cutter

Technical information

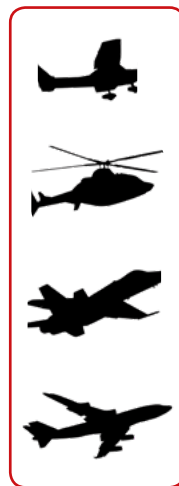
- Number of tools: **11pcs**
- Weight: **8.0 kg**
- L-BOXX clip-on & stackable case
- Size (case): **445 x 358 x 152**
- Foam colors





MRO5R

ROSAN RING EXTRACTION



MRO Integral Solutions®

MRO5R is the must-have tool kit dedicated to the extraction of Rosan rings.

The size of the mills is perfectly studied according to each of your needs.

The tools are held by two-color FOD foam, which allows a quick and secure storage. Its small size makes it easy to use and transport.



MRO5R



ROSAN RING EXTRACTION

Technical information

- Number of tools: 5 pcs
- 3 female mills
- 2 male mills
- Weight: 1.3 kg
- Size (case): 340 x 275 x 83
- Foam colors
- Reference: MRO5R

ROSAN - MALE



ROSAN - FEMALE



NEW



MRO Integral Solutions®

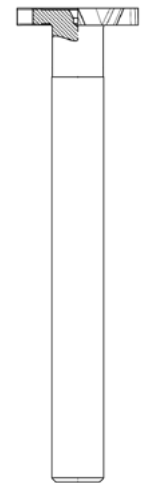
MRO8P is the must-have tool kit dedicated to the installation and removal of inserts.

The tools are held by two-color FOD foam, which allows a quick and secure storage. Its small size makes it easy to use and transport.

MRO8P

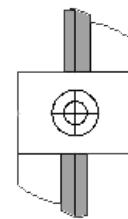
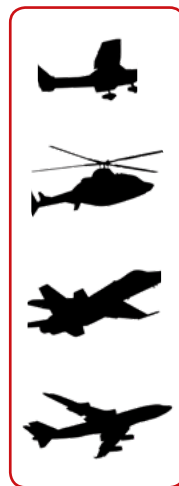
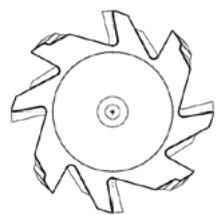
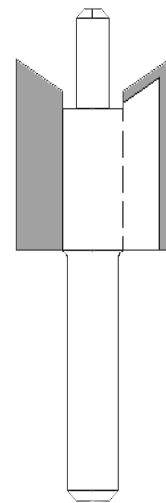


INSTALLATION AND REMOVAL OF INSERTS



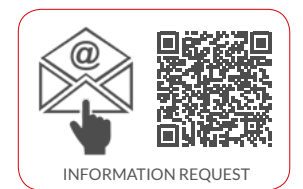
MRO8P

INSTALLATION & REMOVAL OF INSERTS



Technical information

- Number of tools: 8 pcs
- Ø11.5 / Ø14.2 / Ø16.4 / Ø17.4
- Weight: 0.3 kg
- Size (case): 235 x 185 x 48
- Foam colors
- Reference: MRO8P





MRO10

STRUCTURAL REPAIR



MRO Integral Solutions®

MRO10 is the must-have tool kit dedicated to the repair of aeronautical metallic and composite surfaces.

The tools are held by two-color FOD foam, which allows a quick and secure storage. Its small size makes it easy to use and transport.




MRO10



STRUCTURAL REPAIR

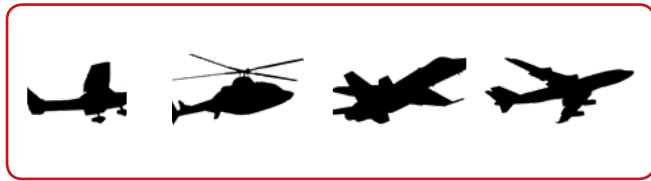
Technical information

- Number of tools: 15 pcs
- Weight: 1.5 kg
- Size (case): 340 x 275 x 83
- Foam colors 
- Reference: MRO10



NEW

PATENT PENDING
FR2206873



MRO12T

RIVET EXTRACTION



USE WITH TRIPOD



USE WITHOUT TRIPOD

MRO Integral Solutions®

MRO12T is the first tool composition specifically dedicated to the extraction of rivets **WITHOUT RISK OF DAMAGE.**

According to MTC20-03-01-102 work card AIRBUS Helicopters

The tools are held by two-color FOD foam, which allows a quick and secure storage. Its small size makes it easy to use and transport.



MRO12T



NEW DRILL BUSHES
NEW DRILLS
NEW TRIPOD

Technical information

- Number of tools: 31 pcs
- Weight: 1.4 kg
- Size (case): 340 x 275 x 83
- Foam colors
- Reference: MRO12T





MRO30P

WINDSHIELD POLISHING



MRO Integral Solutions®

MRO30P is the must-have tool kit dedicated to the lusterizing and polishing of aircraft windshields.

The tools are held by two-color FOD foams which allows quick and secure storage and easy transport.



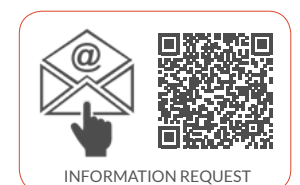
MRO30P



WINDSHIELD POLISHING

Technical information

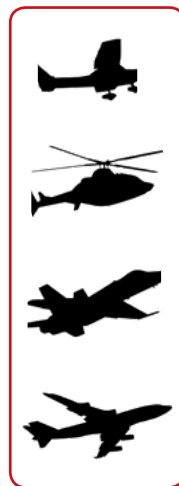
- Number of tools: + than 170 pcs
- Weight: 10.7 kg
- Size (case): 675 x 590 x 290
- Foam colors
- Reference: MRO30P





MRO40E

ELECTRICAL SYSTEM
MAINTENANCE



MRO Integral Solutions®

MRO40E is an EVOLUTIVE & MODULABLE kit dedicated to the maintenance of aeronautical electrical systems.

The tools are held by two-color FOD foam, which allows quick and secure storage.


MRO40E



ELECTRICAL SYSTEM MAINTENANCE



Technical information

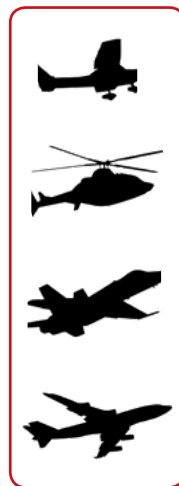
- Number of tools: 43 pcs
- Weight: 12.5 kg
- Size (case): 969 x 406 x 155
- Foam colors 
- Reference: MRO40E





MRO50

STANDARD MAINTENANCE



MRO Integral Solutions®

MRO50M & MRO50A are unique tooling kits dedicated to aeronautical standard maintenance.

The kits are organized in 5 drawers and 1 upper compartment. The tools are held by two-color FOD foams which allows quick and secure storage and easy transport.




MRO50



STANDARD MAINTENANCE

Technical information

- Number of tools: 163 pcs
- Weight: 27.5 kg / 28.0 kg
- Telescopic case handle
- Size (case): 598 x 410 x 472
- Foam color 
- Option: IP67 case
- Reference: MRO50M (Metric)
- Reference: MRO50A (Imperial)

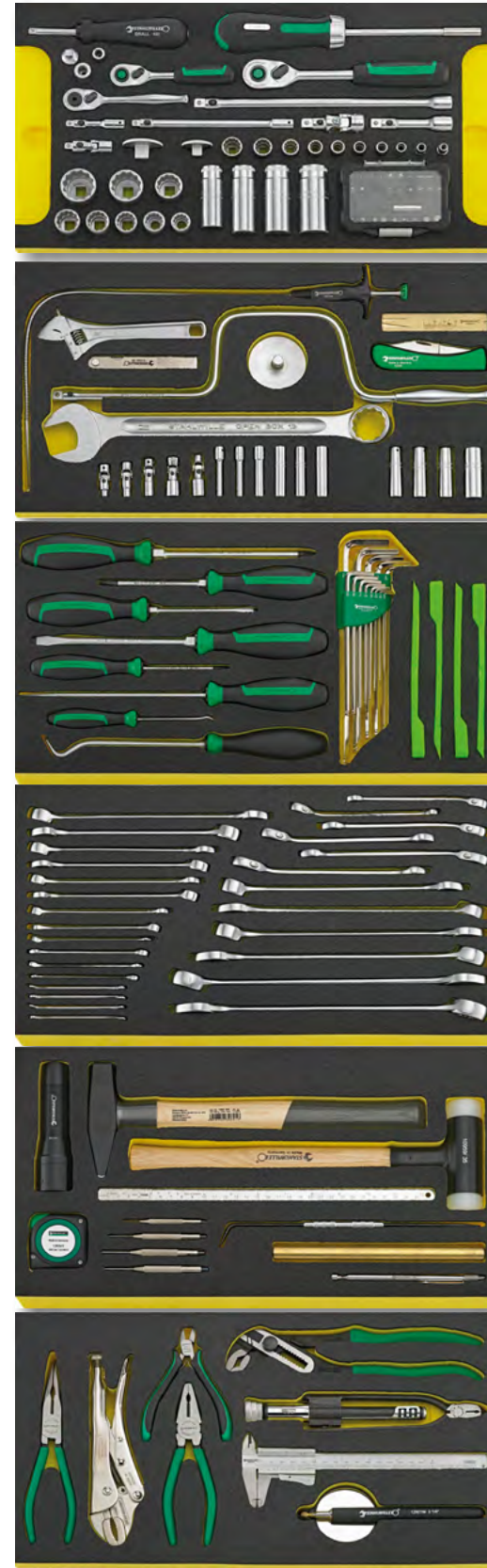
MRO50M
METRIC



MRO50A
IMPERIAL

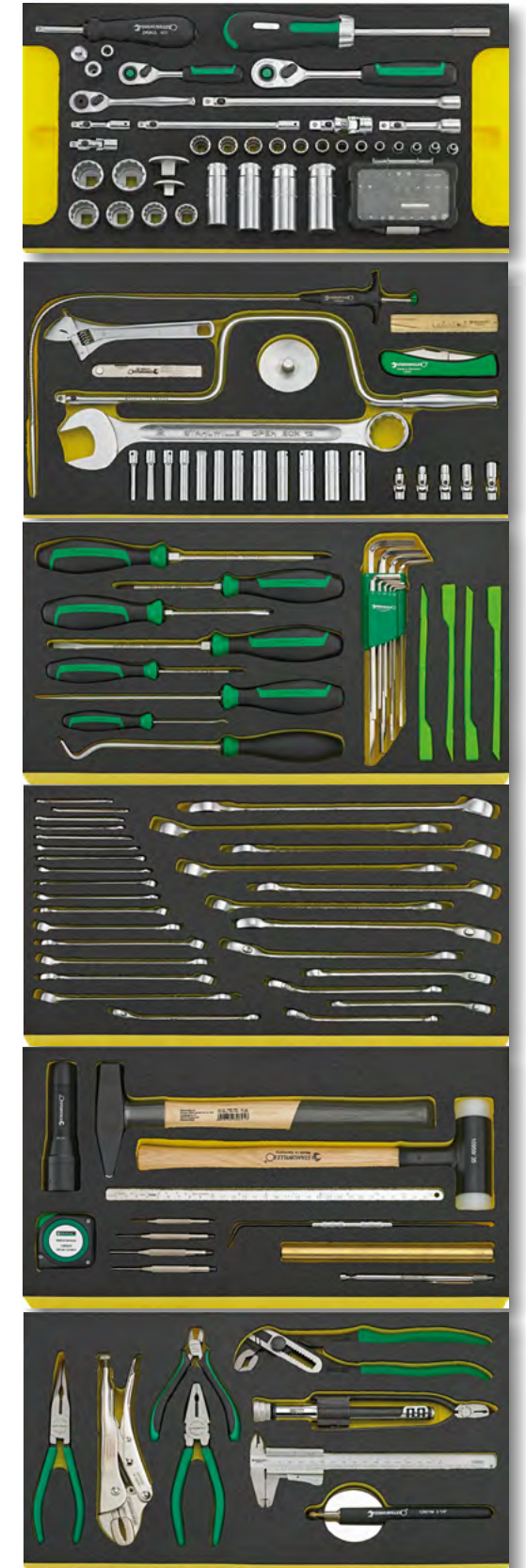


MRO50A



IMPERIAL

MRO50M

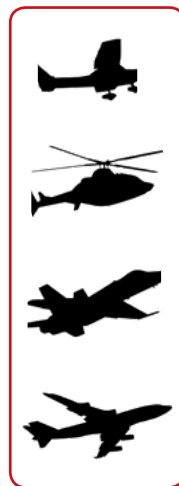


METRIC



MRO50F

AIRCRAFT ON GROUND



MRO Integral Solutions®

MRO50F is an "Aircraft On Ground" kit (AOG).

The kit is organized in 7 drawers and 1 upper compartment. The tools are held by two-color FOD foams which allows quick and secure storage and easy transport.




MRO50F



AIRCRAFT ON GROUND

Technical information

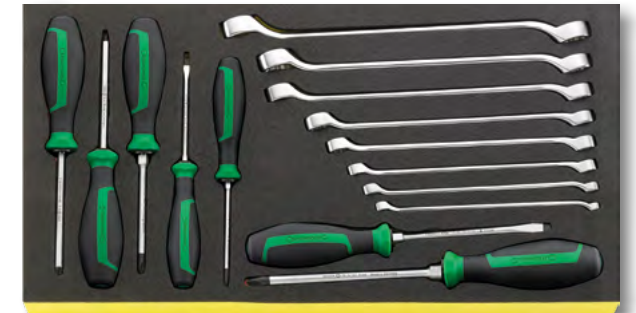
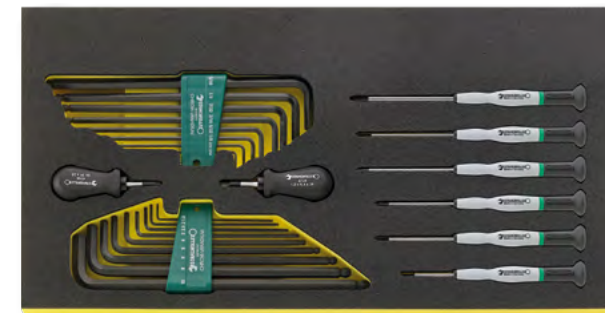
- Number of tools: 163 pcs
- Weight: 29.0 kg
- Telescopic case handle
- Size (case): 598 x 410 x 472
- Foam color 
- Option: IP67 case
- Reference: MRO50F



METRIC
+
IMPERIAL



MRO50F



INFORMATION REQUEST



MRO60B

MGB & TRGB CONTROL



MRO Integral Solutions®

MRO60B is a set of 30 x 2 pin gages specifically developed for the control of MGB and TRGB (for example Bell 206, MD500 and H125).

MRO60B is modifiable and adaptable according to your needs and control specificities.

The 60 pin gages are stored in groups of 2 in individual tubes and held by a two-color FOD foam, which allows a quick and secure storage. Its small size makes it easy to use and transport.

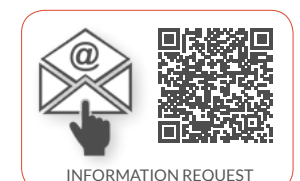
MRO60B



MGB & TRGB CONTROL

Technical information

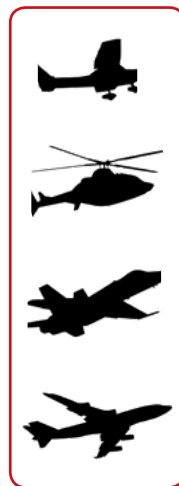
- Number of pin gages: 30 x 2 pcs
- Weight: 1.0 kg
- Size (case): 340 x 275 x 83
- Foam colors
- Reference: **MRO60B**





MRO85V

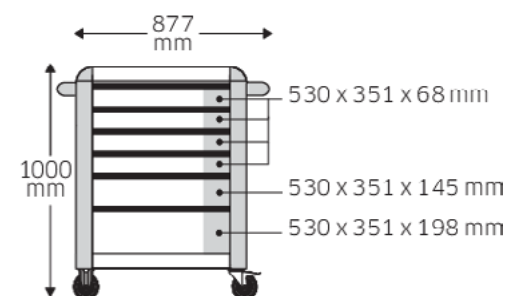
STANDARD MAINTENANCE



MRO Integral Solutions®

MRO85V is a unique tooling composition dedicated to the aeronautical standard maintenance.

The trolley is organized in 6 drawers, 4 equipped drawers and 2 empty drawers. The tools are held by two-color FOD foams, which allows quick and secure storage.

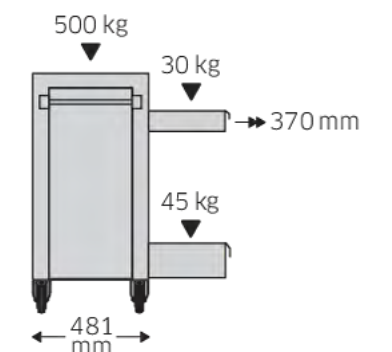


MRO85V

STANDARD MAINTENANCE

Technical information

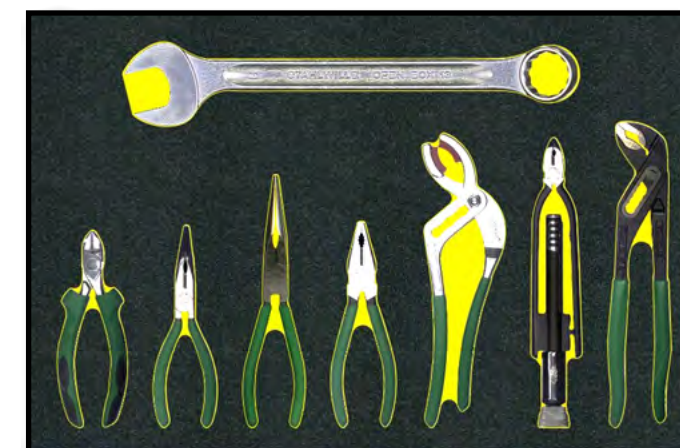
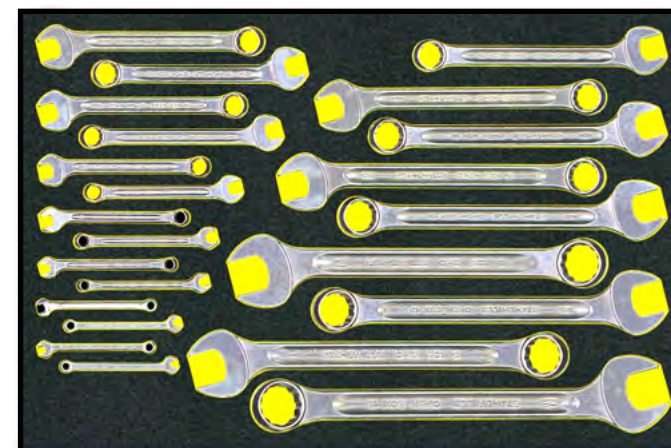
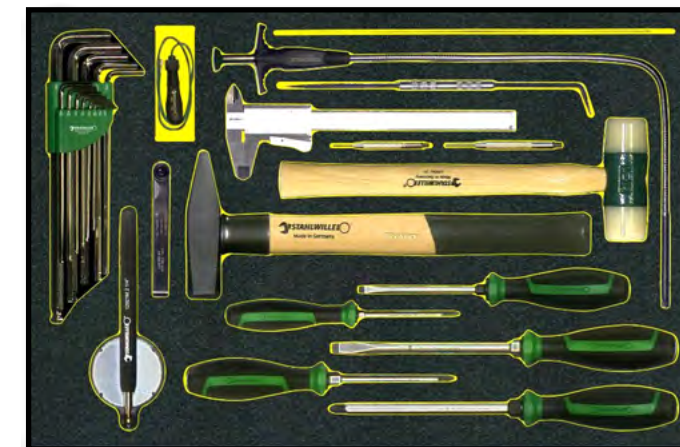
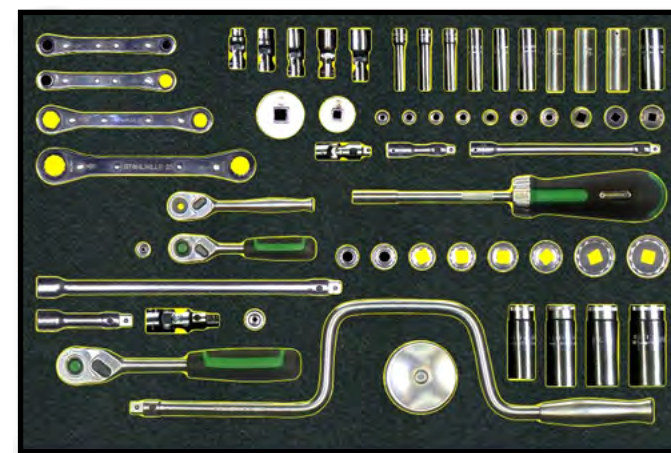
- Number of tools: **117 pcs**
- 6 drawers **100%** extractable
- Automatic closing of the drawer
- Lift per drawer: **30/45 kg**
- Static load capacity: **500 kg**
- Foam color
- Reference: **MRO85V**





Two-stage safety concept:

1. Central locking with a cylinder lock and fold-down key
2. Topple-proof
It is not possible to pull out several drawers at the same time

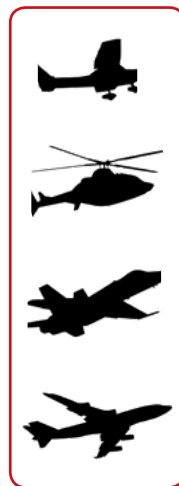


MRO85V



MRO95A

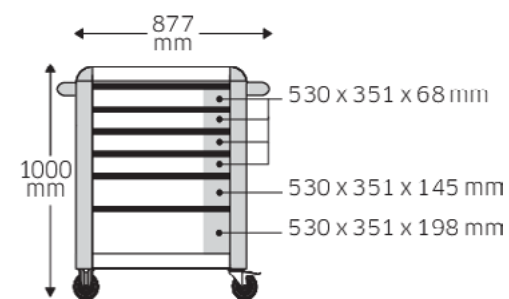
AVIONICS MAINTENANCE



MRO Integral Solutions®

MRO95A is a unique tooling kit dedicated to avionics maintenance.

The trolley is organized in 6 drawers, 5 equipped drawers and 1 empty drawer. The tools are held by two-color FOD foams, which allows quick and secure storage.

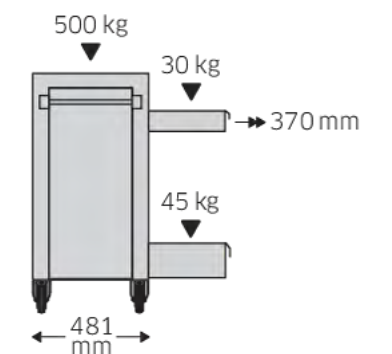


MRO95A

AVIONICS MAINTENANCE

Technical information

- Number of tools: **167 pcs**
- 6 drawers **100%** extractable
- Automatic closing of the drawer
- Lift per drawer: **30/45 kg**
- Static load capacity: **500 kg**
- Foam color
- Reference: **MRO95A**



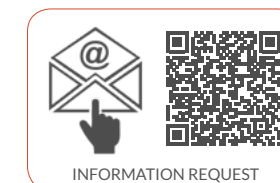
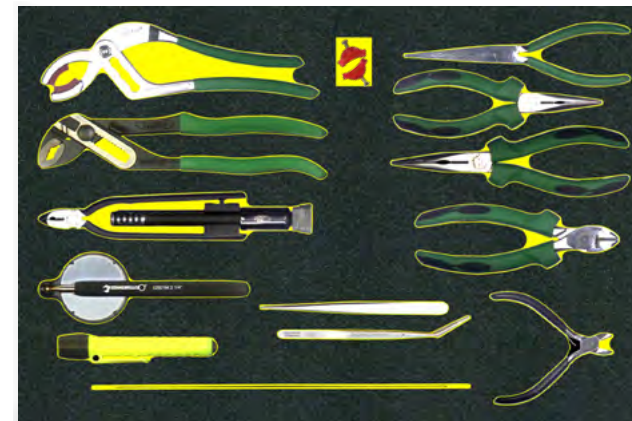
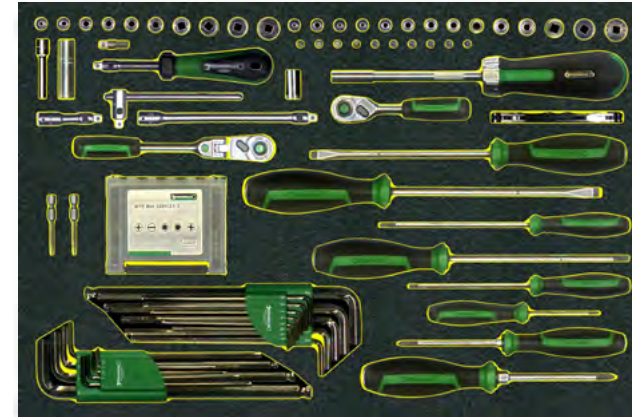


Two-stage safety concept:

1. Central locking with a cylinder lock and fold-down key
2. Topple-proof
It is not possible to pull out several drawers at the same time



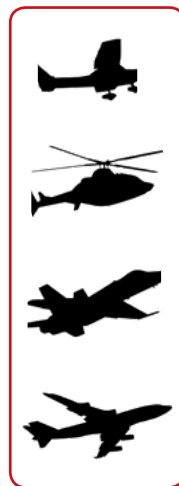
MRO95A





MRO100V

STRUCTURAL REPAIR



MRO Integral Solutions®

MRO100V is a unique tooling kit dedicated to the repair of aeronautical metallic and composite surfaces.

The case is organized in 6 drawers and 1 upper compartment. The tools are held by two-color FOD foams which allows quick and secure storage and easy transport.




MRO100V

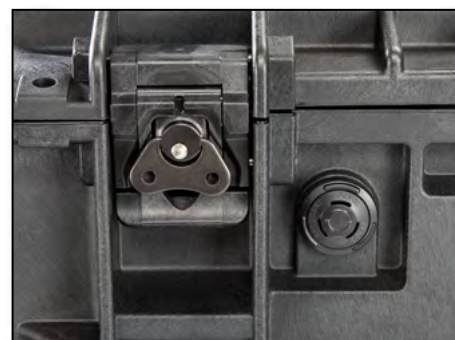


STRUCTURAL REPAIR

Technical information

- Number of tools: 258 pcs
- Weight: 36.8 kg
- Telescopic case handle
- Off-road wheels
- Size (case): 608 x 375 x 456
- Foam colors 
- Reference: MRO100V

MRO100V



DRAWER - 2



A COMPLETE COMPOSITION
SPECIALLY STUDIED AND DESIGNED
FOR THE AERONAUTICAL INDUSTRY

DRAWER - 3



NEW

MARKERS
IN COMPLIANCE WITH
AERONAUTICAL STANDARDS*
ROLLS-ROYCE EMS 56752
GE D50TF8

UPPER COMPARTMENT



NEW

CHOICE OF
HAMMER
2X, 3X OR 4X

DRAWER - 4



NEW

NEW GENERATION
RIVET CUTTING
PLIERS

DRAWER - 1



NEW

5 BONDING BRUSHES
CONSISTENT WITH
AIRBUS HELICOPTERS
ECA3113
STANDARDIZATION

DRAWER - 5



COMPOSITE

METALLIC

REPAIRS



INFORMATION REQUEST

DRAWER - 6

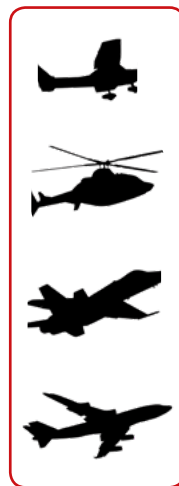


NEW



MRO180V

STRUCTURAL REPAIR



MRO Integral Solutions®

MRO180V is a unique tooling kit dedicated to the repair of aeronautical metallic and composite surfaces.


Each case is organized into 5 trays, including 1 in the lid. The tools are held by two-color FOD foams which allows quick and secure storage and easy transport.

MRO180V



STRUCTURAL REPAIR

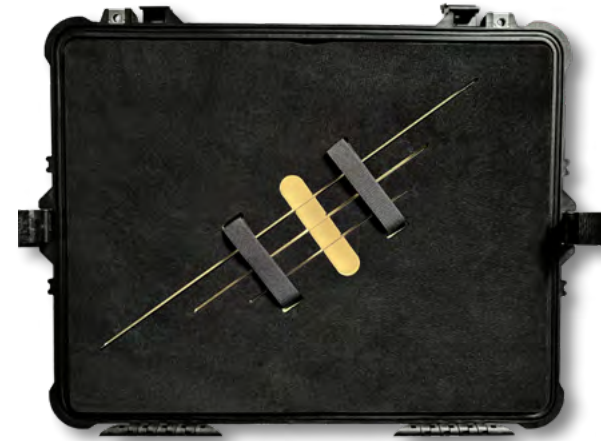
Technical information

- Number of tools: 177 pcs
- Weight: 33.0 kg / 21.0 kg
- Telescopic case handle
- Certification: IP67
- Size (case): 630 x 492 x 352
- Foam colors 
- Reference: MRO180V

CASE A



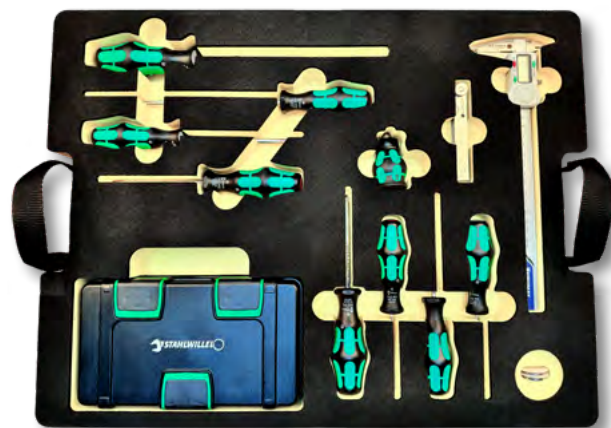
LID



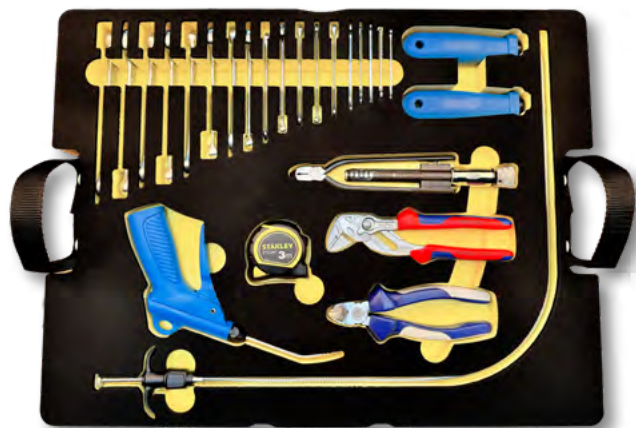
BOTTOM



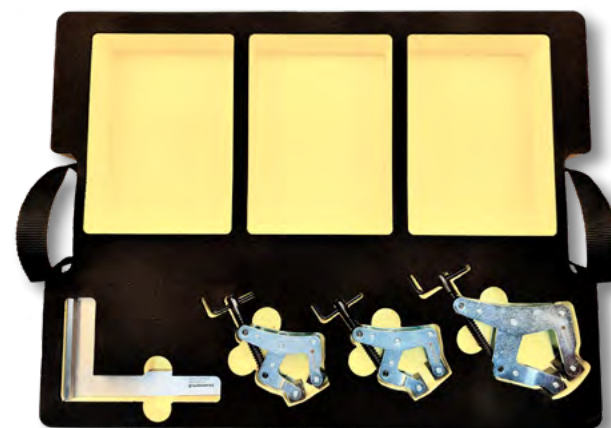
TRAY 1



TRAY 2



TRAY 3



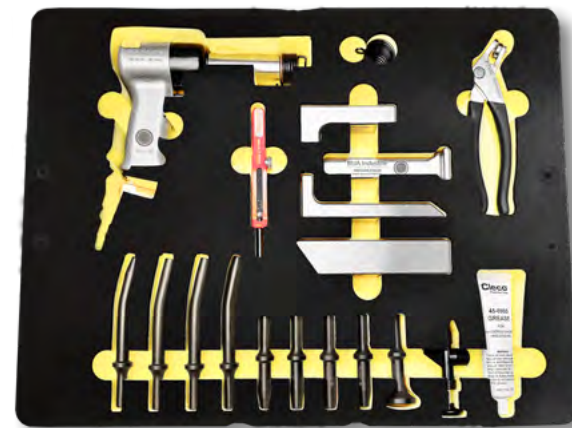
CASE B



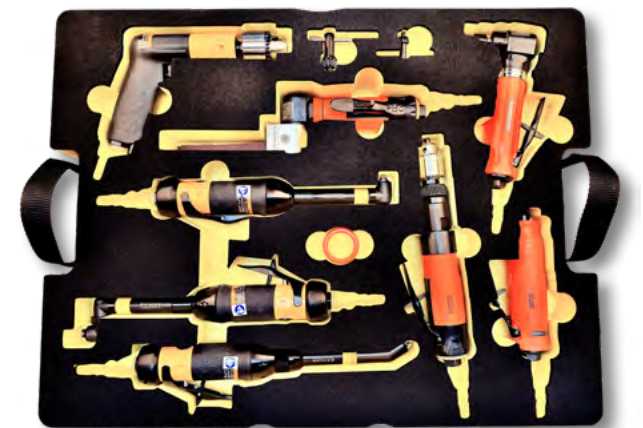
LID



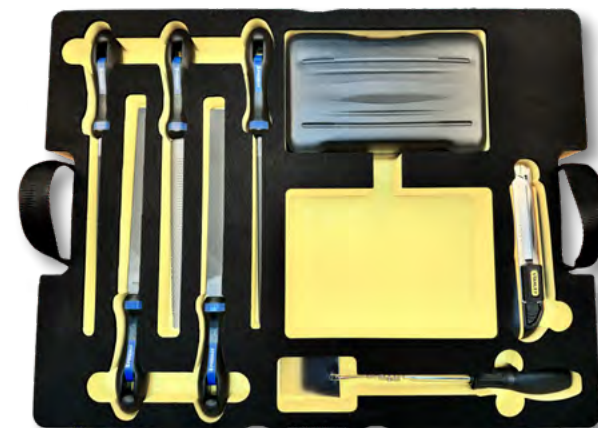
BOTTOM



TRAY 1



TRAY 2



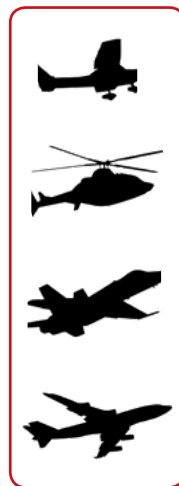
TRAY 3





MRO190

STRUCTURAL
MANUFACTURING & REPAIR



MRO Integral Solutions®

MRO190 is a unique tooling composition dedicated to the fabrication and repair of aeronautical metallic and composite surfaces.

The trolley is organized in 6 drawers. The tools are held by two-color FOD foams, which allows quick and secure storage.



MRO190

STRUCTURAL
MANUFACTURING
REPAIR

Technical information

- Number of tools: 254 pcs
- 6 drawers 100% extractable
- Automatic closing of the drawer
- Lift per drawer: 30 kg
- Static load capacity: 500 kg
- Foam colors
- Reference: MRO190



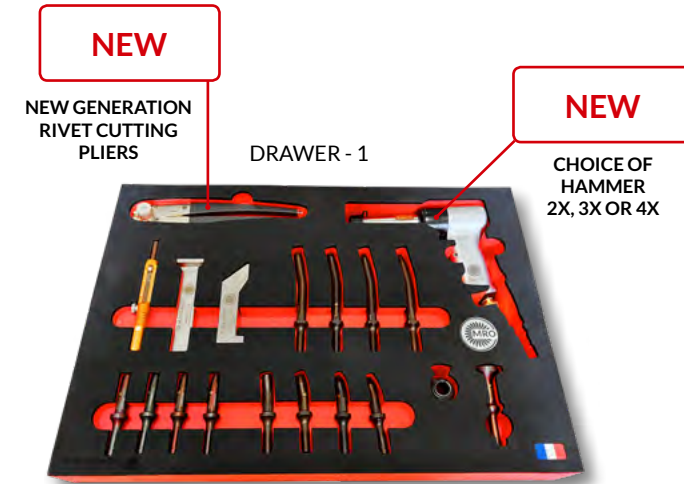


MANUFACTURING

REPAIR

METAL

COMPOSITE



NEW
NEW GENERATION
RIVET CUTTING
PLIERS

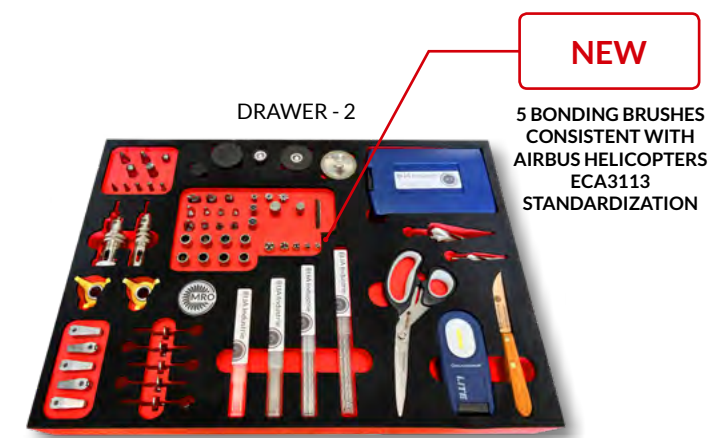
DRAWER - 1

NEW
CHOICE OF
HAMMER
2X, 3X OR 4X

A COMPLETE COMPOSITION

SPECIALLY STUDIED AND DESIGNED

FOR THE AERONAUTICAL INDUSTRY



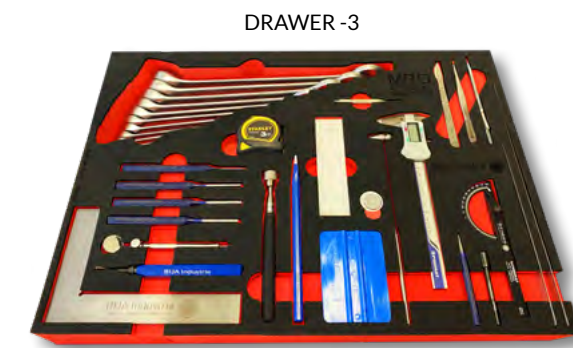
DRAWER - 2

NEW
5 BONDING BRUSHES
CONSISTENT WITH
AIRBUS HELICOPTERS
ECA3113
STANDARDIZATION



DRAWER - 5

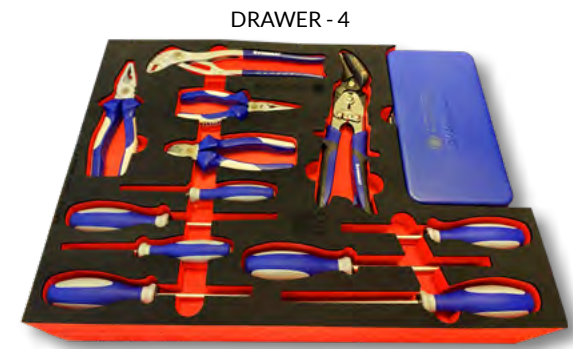
NEW
MARKERS
IN COMPLIANCE WITH
AERONAUTICAL STANDARDS*
ROLLS-ROYCE EMS 56752
GE D50TF8



DRAWER - 3



DRAWER - 6



DRAWER - 4

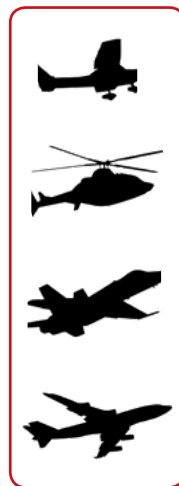


DRAWER - 6+



MRO200

STRUCTURAL
MANUFACTURING & REPAIR



MRO Integral Solutions®

MRO200 is a unique tooling composition dedicated to the fabrication and repair of aeronautical metallic and composite surfaces.

The trolley is organized in 6 drawers. The tools are held by two-color FOD foams, which allows quick and secure storage.

A side cupboard with 2 shelves provides additional storage space for accessories and consumables.



MRO200



STRUCTURAL MANUFACTURING REPAIR

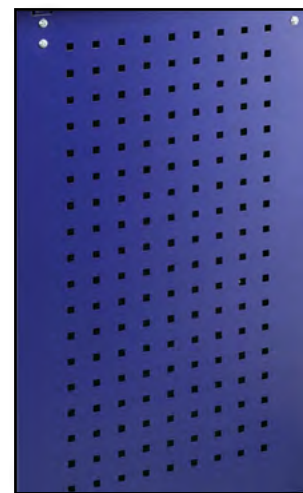
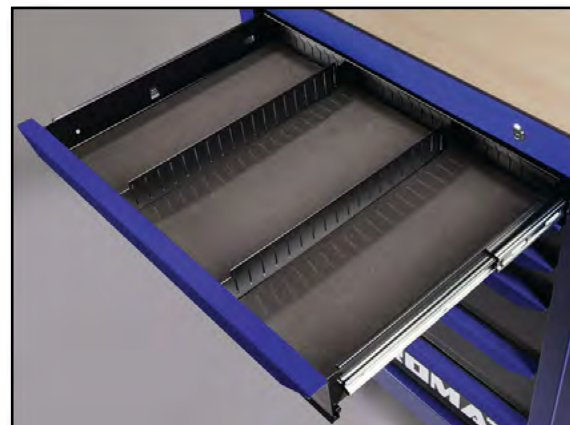
Technical information

- Number of tools: 432 pcs
- 6 drawers 100% extractable
- Automatic closing of the drawer
- Lift per drawer: 25 kg
- Static load capacity: 400 kg
- Lockable side cupboard with 2 storage shelves
- Foam colors
- Reference: MRO200



REPAIR
MANUFACTURING

METAL
COMPOSITE



NEW 2023

NEW GENERATION
RIVET CUTTING
PLIERS

DRAWER - 1



NEW 2023

CHOICE OF
HAMMER
2X, 3X OR 4X

A COMPLETE COMPOSITION

SPECIALLY STUDIED AND DESIGNED

FOR THE AERONAUTICAL INDUSTRY

DRAWER - 2



NEW 2023

5 BONDING BRUSHES
CONSISTENT WITH
AIRBUS HELICOPTERS
ECA3113
STANDARDIZATION

DRAWER - 5



NEW 2023

MARKERS
IN COMPLIANCE WITH
AERONAUTICAL STANDARDS*
ROLLS-ROYCE EMS 56752
GE D50TF8

DRAWER - 3



DRAWER - 6



DRAWER - 4



DRAWER - 6+



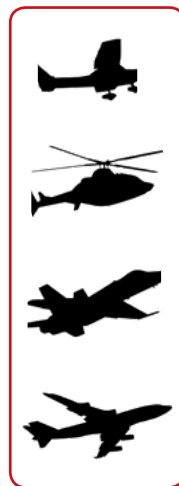
BULK & CONSUMABLES





MRO250M

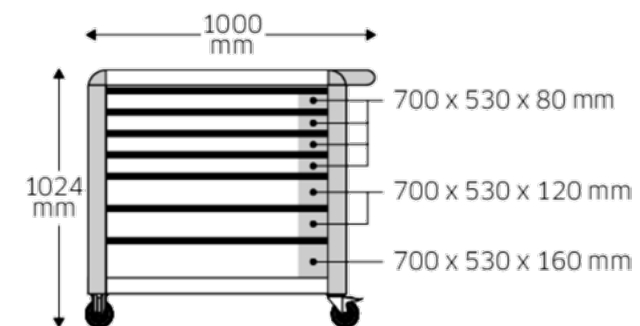
STANDARD MAINTENANCE



MRO Integral Solutions®

MRO250M is a unique tooling composition dedicated to the aeronautical standard maintenance.

The trolley is organized in 7 drawers, 6 equipped drawers and 1 empty drawer. The tools are held by two-color FOD foams, which allows quick and secure storage.

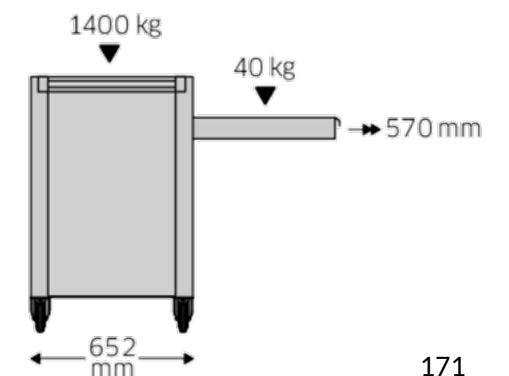


MRO250M

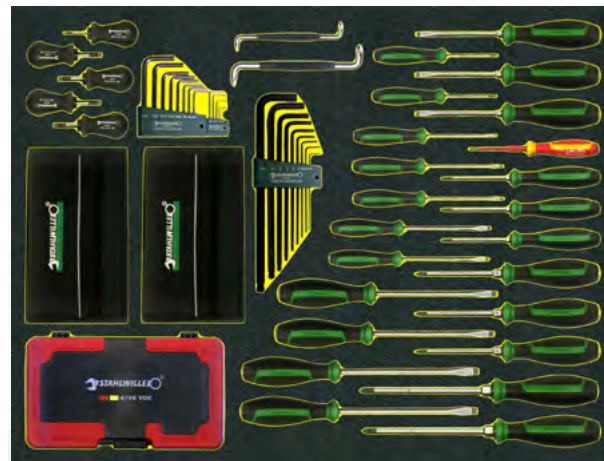
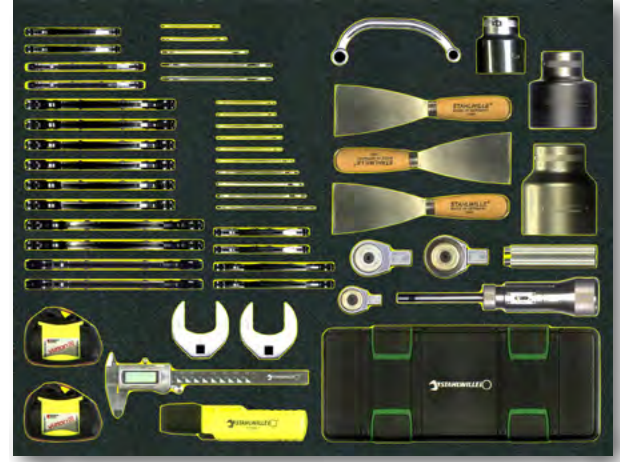
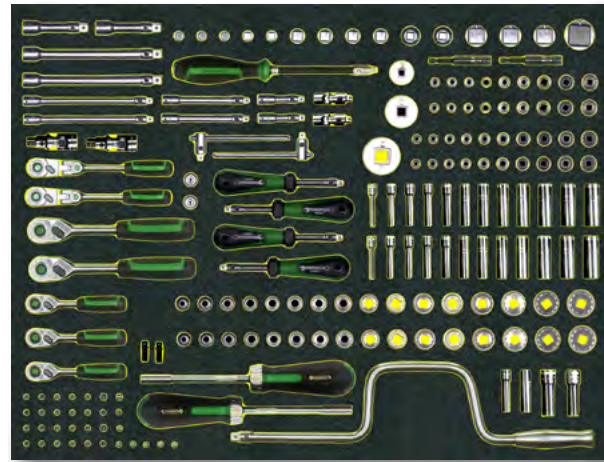
STANDARD MAINTENANCE

Technical information

- Number of tools: 243 pcs
- 7 drawers 100% extractable
- Automatic closing of the drawer
- Lift per drawer: 40 kg
- Static load capacity: 1400 kg
- Foam color
- Reference: MRO250M



MRO250M



Three-stage safety concept:

1. Central locking with a cylinder lock and fold-down key
2. Individual lock prevents inadvertent opening in transit
3. Topple-proof
It is not possible to pull out more than one drawer at a time



PREPARED FOR ANYTHING



SAFE DOWN TO THE LAST DETAIL



FULL CONFIGURATION AS STANDARD

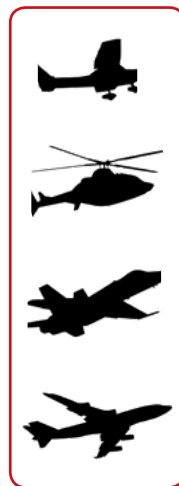


INFORMATION REQUEST



MRO250T

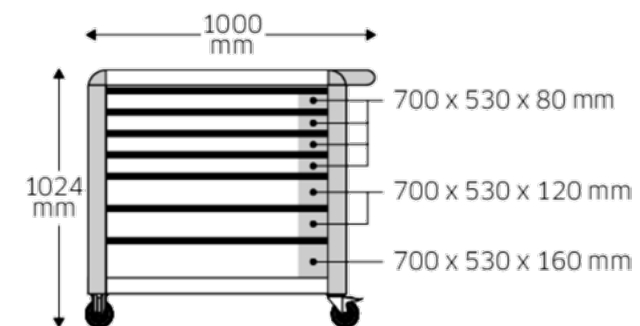
STANDARD
MAINTENANCE & DYNAMOMETRY



MRO Integral Solutions®

MRO250T is a unique tooling composition dedicated to standard aeronautical maintenance with a 7th drawer dedicated to dynamometry.

The trolley is organized in 7 drawers. The tools are held by two-color FOD foams, which allows quick and secure storage.

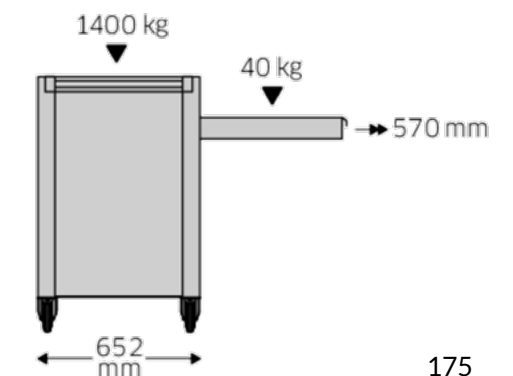


MRO250T

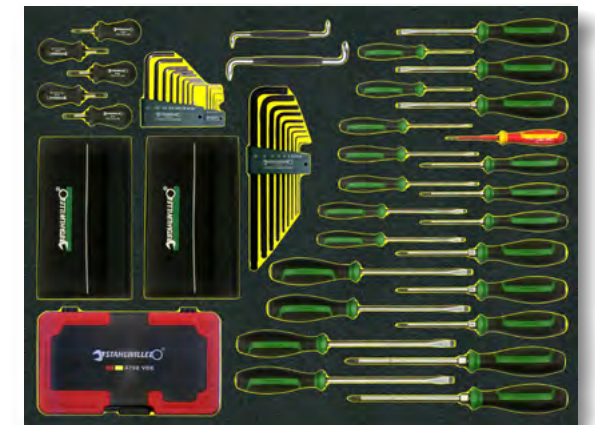
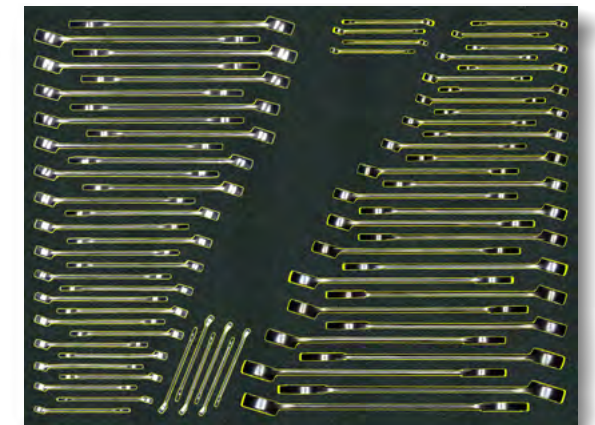
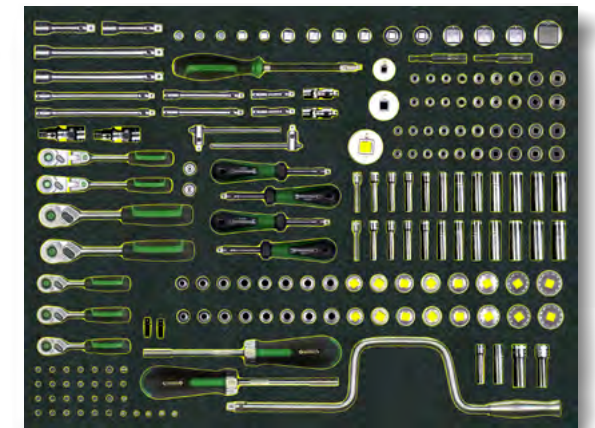
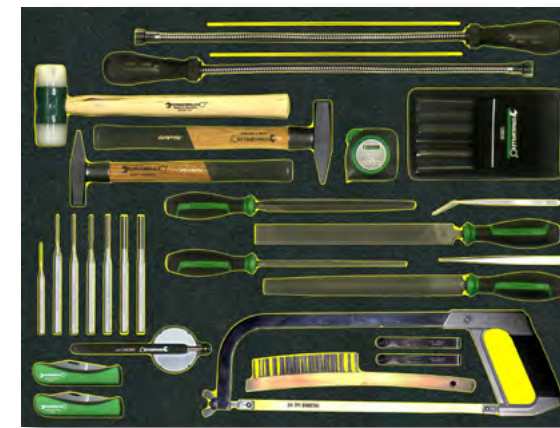
STANDARD MAINTENANCE & DYNAMOMETRY

Technical information

- Number of tools: 284 pcs
- 7 drawers 100% extractable
- Automatic closing of the drawer
- Lift per drawer: 40 kg
- Static load capacity: 1400 kg
- Foam color
- Reference: MRO250T

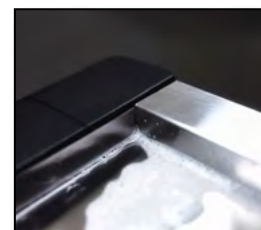


MRO250T



Three-stage safety concept:

1. Central locking with a cylinder lock and fold-down key
2. Individual lock prevents inadvertent opening in transit
3. Topple-proof
It is not possible to pull out more than one drawer at a time



PREPARED FOR ANYTHING



SAFE DOWN TO THE LAST DETAIL



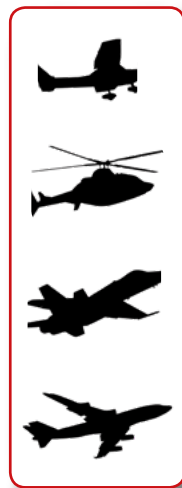
FULL CONFIGURATION AS STANDARD





MRO4.0

STRUCTURAL
MANUFACTURING & REPAIR



MRO 4.0

The alliance of *E-tag* and *BIJA Industrie* know-how allows us to offer you the full range of **RFID** technologies to meet your needs.

IN COOPERATION WITH
OUR PARTNER



**PATENTED
TECHNOLOGY**





The patented polycarbonate sheets are custom-made to store and track sockets, bits, hacksaws, Allen keys and other small, fine tools used in sets.

Our trolleys and cases dedicated to avionics, structure or aerospace mechanics, can now be offered with first-rate RFID technology.



NO RFID TAG ON YOUR TOOLS

NO FOD RISK DUE TO RFID TAGS

TECHNOLOGY ADAPTED TO METALLIC AND NON-METALLIC TOOLS

NO SIZE LIMIT FOR YOUR TOOLS

SIMPLE, INTUITIVE SOFTWARE



NO RFID TAG ON YOUR TOOLS

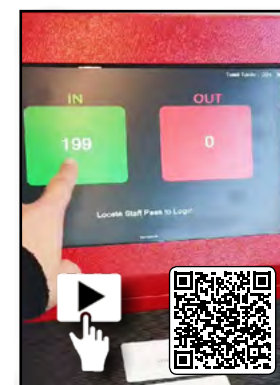


EQUIPMENT AND TOOLS STORED IN THE TROLLEY ARE SCANNED AND RECORDED WITH A PRESET PERIODIC UPDATE.



THE TROLLEY IS SECURED AND THE ACCESS CARDS PROVIDED PROHIBIT UNAUTHORIZED USE.

HOW IT WORKS VIDEO



THE INTERIOR CONFIGURATION OF OUR TROLLEYS IS CUSTOM-MADE TO YOUR REQUIREMENTS
4 AVAILABLE FOAM COLORS



COMPOSITE REPAIR



The **ANITA** hot bonder consoles are known worldwide by MROs and airplane manufacturers as the most appropriate equipment to perform bonding repair on composite structures. Their design and processing benefit from more than twenty years of commitment in the manufacture and repair of composite materials.

They're designed as portable, lightweight and practical systems for on-site application, and their operations are optimized to be extremely simple for workshop technicians to use.

TECHNICAL SPECIFICATIONS

- Dimensions:WxDxH:350x220x260 mm- 14x9x9 in-Weight:9,6kg-22lb
- Volts: 220 or 120 VAC, automatic switching
- Power capability: 30 Amps x 220 Volts = 6000 Watts or 30 x 120 Volts = 3600 Watts available on 2 independent power output
- High Quality Touch Screen Panel for Operator Dialogue and Data visualisation
- Dimensions: 160x125 mm - 6,5 x 5 in
- Sensing precision:
temperature better than 0,4°C/0,8°F
vacuum better than 0,050 bar/1,5 inHg

INNOVATIVE FEATURES

- An extra third output power channel (230 Volts or 120 Volts - 3 Amp) for cold area heating
- Test of presence of blanket; measurement of power of blanket in the range 200 to 6000 watts
- Watch dog and safety associated circuits for safe operations

OTHER FEATURES

- Available languages: English, French, Spanish, German, Italian, Russian, Chinese, Japanese
- Units in °C and bars or °F and Hg
- Thermocouple scanning capacity: type J or K (to be specified when order), 12 plugs, with optional external extension up to 24 plugs
- 2 Vacuum electronic gauges on return hose from bag to qualify the actual vacuum in bag itself. This value is monitored permanently, displayed, printed, recorded
- Printer with large standard paper
- Audible alarm, and mimics for alarms and heat actions
- Easy accessible external fuses
- All blanket cables come with special circular military connectors mounted for a high quality coupling. Our blankets come also with same quality mating connectors
- Software and electronic safety features
- 2 USB ports, for export of data to a USB key or support

ANITA EZ0901

HOT BONDER
2 ZONES



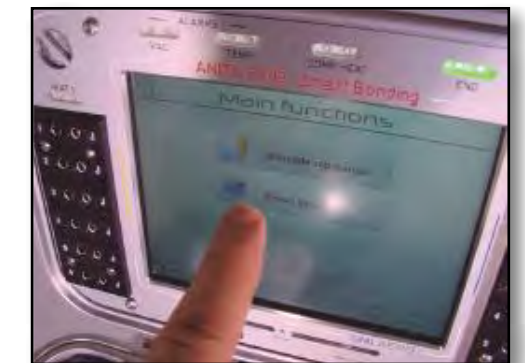
FEATURES

- 2 heating zones controlled simultaneously or independently for 1 or 2 repairs
- 12 thermocouples (J or K)
- Integrated printer for quality control
- Automatic switching to 120V/230V environment
- 2 vacuum lines for the vacuum bag
- Touch screen for easy and intuitive programming
- Reporting of cycles downloadable through 2 USB ports
- Blanket power check and detection of shorts
- Crossed zone test
- Integrated safety electronic circuits
- Large memory capacity for cycle data

TOUCH SCREEN

The Anita is equipped with a large touch screen. Specially developed software makes it easy to operate:

- Programming simple and elaborate cycles
- Immediate start of cycles
- Process supervision with graphical and tabular presentations
- Interactive selection of temperature control modes
- Selection of innovative functions



ADVANCED PERFORMANCES

In a small compact box, the Anita gathers all the necessary functions to control the bonding heating process under vacuum for a repair on composite or metal structures.

It is specially designed to reach maximum performances on small and large surfaces, on thin and thick structures and on structures with differentiated thermal reaction.



DELIVERY

The Anita comes with all its accessories necessary to implement a bonding operation under vacuum: a complete set of cables, hoses, in a storage and transportation console.

Case Dimension:

460 x 350 x 166 mm (18 x 14 x 7 in)

Weight: 12 kg (27 lb)

Content list:

- A power cable: 1 unit, length 5 m (6-ft.)
- Blanket cable: 2 units, length 3 m (10 ft)
- Vacuum Silicone Hoses: 2 units for return sensing, length 3 m (10 ft.)
- 2 vacuum valves
- A heat compensation blanket (230 or 120 Volts) and its cable
- Thermocouple cables:12 of 3 m long (10 ft.)
- A first set of printer consumable
- A user and service manual



REFERENCES TO ORDER

P/N: EZ0901-T*

*T = To be specified when order for Thermocouples Type J or K, T=J or T=K

CONSUMABLES

A box of 20 printer paper rolls
P/N : OTI010-01
A box of 10 printer ink cartridges
P/N : OTI010-02

ENGINE COVER REPAIR AS350B3



VIDEO LINK

ANITA
CUSTOMER
SATISFACTION
SAYS IT ALL

THANKS TO JULIEN & LUDOVIC

MAIN FUNCTIONS

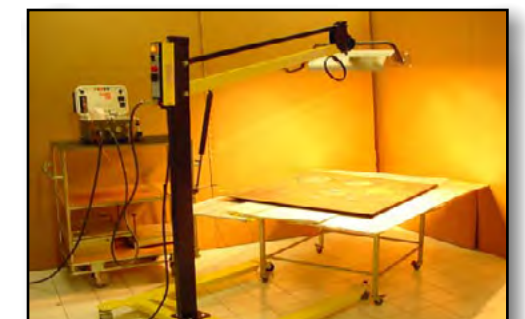
- Heat control on 2 independent channels for 1 repair with 1 or 2 heating zones or 2 separate repairs
- Innovative 3rd channel for heat losses compensation on the bag or around the patch
- Large heating capacity with 6000 watts/220 Volts
- Bag vacuum sensing for repair qualification; 2 sensors installed
- Panel printer
- Touch screen panel for:
 - easy programming
 - start cycle
 - graphic supervision
 - active control mode selection
 - calibration
 - quality control report
 - heat blanket testing
- Blanket power check and detection of shorts
- Built in electronic safety circuits
- Large memory storage capacity for cycle data
- USB connections: 2 ports
- Transfer of data to a USB key
- Automatic reporting under PDF
- Calibration made easy by dialogue and software tuning operations



HEATING SYSTEMS

The Anita can drive, without any other circuit tuning, various heating systems like:

- Heat blankets (see our general catalogue for selection)
- Radiant panels
- Hot air blowers



ACCESSORIES



VACUUM PLUGS
 PVAP50 Ø 50 mm (Max temp. 250°C)
 PVAP75 Ø 75 mm (Max temp. 250°C)

**CARRYING CASE FOR THE ANITA
 CONSOLE AND ITS ACCESSORIES**
 EZC011

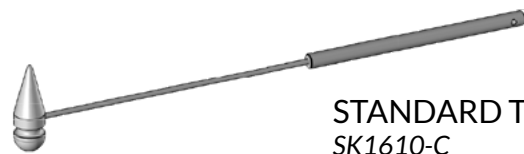


**VENTURI
 VP-ACV15HS-C**



THERMOCOUPLES
 EZT010-J-3
 EZT010-K-3

**ELECTRICAL VACUUM PUMP
 (BI-VOLTAGE)**
 WVP021



STANDARD TAP TEST
 SK1610-C

TAP TEST MINI VERSION
 SK1410



TITANIUM COATED SCISSORS
 4000818430

PRECISION BALANCE 3 kg/0.1 gr
 EHA 3000-1



PRECISION BALANCE 500 gr/0.1 gr
 TGC 500-1

PRECISION BALANCE 150 gr/0.01 gr
 TGC 500-2

List of additional
 accessories on
 request

PERIPHERALS IN OPTION

SCANNER 12 TC



Extension of thermocouple channels proposed to extend the capacity of temperature measurement by connexion of a scanner of capacity 12 T/C. Wireless linked to the Anita, the scanner can easily be positioned close to the repair and this is useful in case of difficult access, the Anita being positioned at distance.

- Capacity 12 = 2 x 6 thermocouples J or K, engineered at the order
- Detected automatically by the Anita
- With this scanner, total capacity of thermocouples handled by Anita is 24 for 1 large repair or 12 thermocouples per zone for a repair with 2 zones
- P/N: EZS012-J ou K according to your choice

REMOTE CONTROL WITH A SCREEN TABLET

We offer now the possibility to dialogue at distance with the Anita EZ through a latest technology wifi linking the Anita to a remote tablet.

This unique feature is designed to ease the operator's work during on-site operations.

Alarms are also transferred at distance visually on the remote screen and loudly through a speaker.

P/N: EZR010



ANITA hot bonders are also available in 2-zone ATEX versions to cover the widest range of applications.

**ANITA ATEX
EZH1401**



2 ZONES

To meet the safety procedures required for using electrical bonding equipment in a classified hazardous area, this hot bonder offers a fully explosion proof version. According to the fundamentals of explosive area classifications, the area surrounding the aircraft without fuel is considered potentially explosive due to the presence of potentially flammable gases (aircraft fuel).

ANITA EZ4Z01

HOT BONDER

USEFUL FOR:

- Intensive repair on parts with multiple impacts
- Radome repair
- When blankets have 3 to 4 zones
- Helicopter blade repair



4 ZONES

MAIN FEATURES:

- Temperature measurements: by thermocouples, type J or K according to your choice on order
- 4 Vacuum sensing return line
- Total power capacity: 30 Amp x 230 V
- Each zone is equipped with a power capacity of 20 amps
- USB port



ANITA CC010

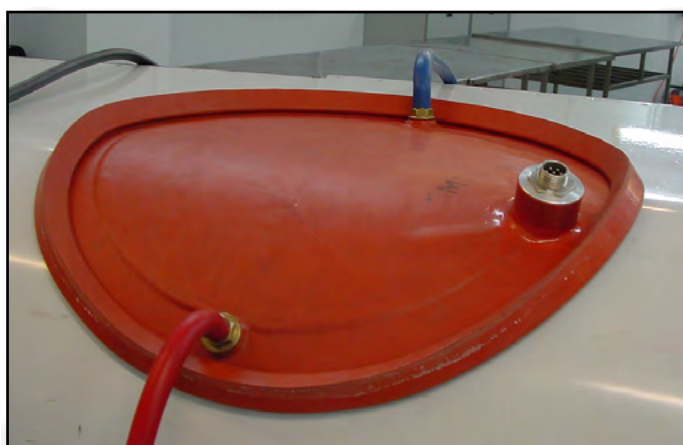
BATTLEFIELD HOT BONDER



THE CONCEPT OF THE BATTLEFIELD HOT BONDER

The construction criteria sought for this device were lightweight, robustness, simplification, adaptability to change of combat context or workshop. Built in a reduced volume, the hot bonder allows a complete vacuum bonding cycle with all the necessary security.

ADAPTED HEATING SYSTEM



DIGITAL HOT BONDER

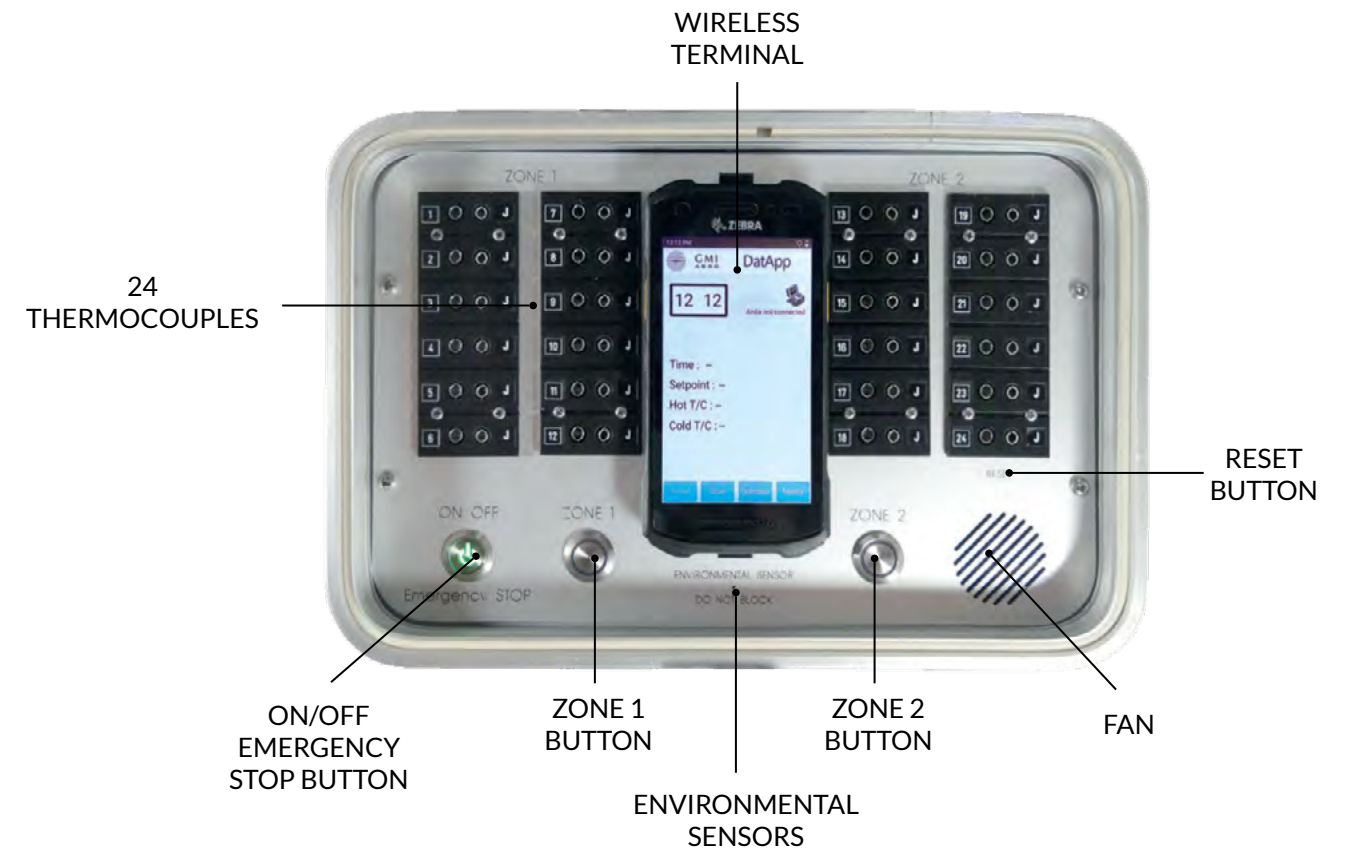
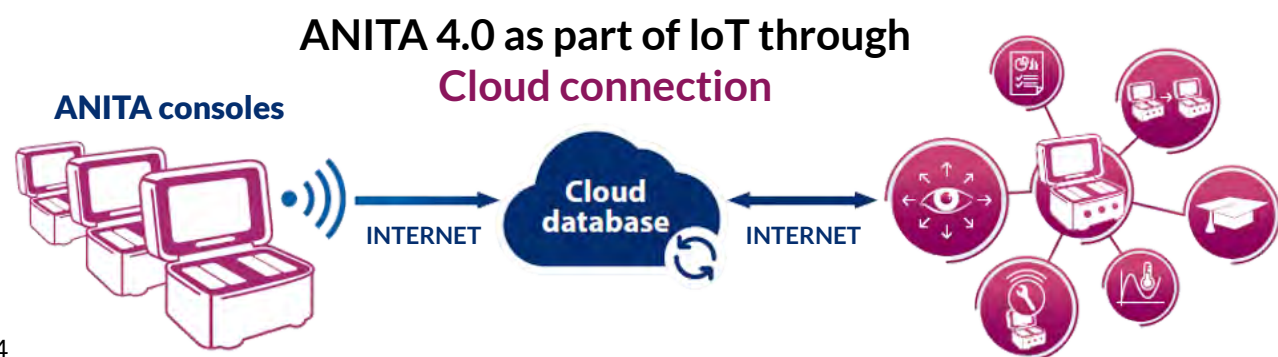
ANITA 4.0 is accompanied by a variety of Network Applications (NetApps) to introduce bonded composite repairs in the digital aircraft maintenance era.

In addition to new repair functions, NetApps have been engineered to ease curing monitoring, cycle data transfer and reporting, workshop equipment supervision and remote maintenance, as well as enhanced training and development of Digital-Physical Twin repairs.



DIGITALIZATION OF AIRCRAFT MAINTENANCE 6 NETAPPS FAMILIES

- Polyvalent Reporting Tool
- Thermal Mapping Apps
- Multi-Console Supervision
- Remote Maintenance Apps
- Enhanced Training Apps
- Digital-Physical Twin

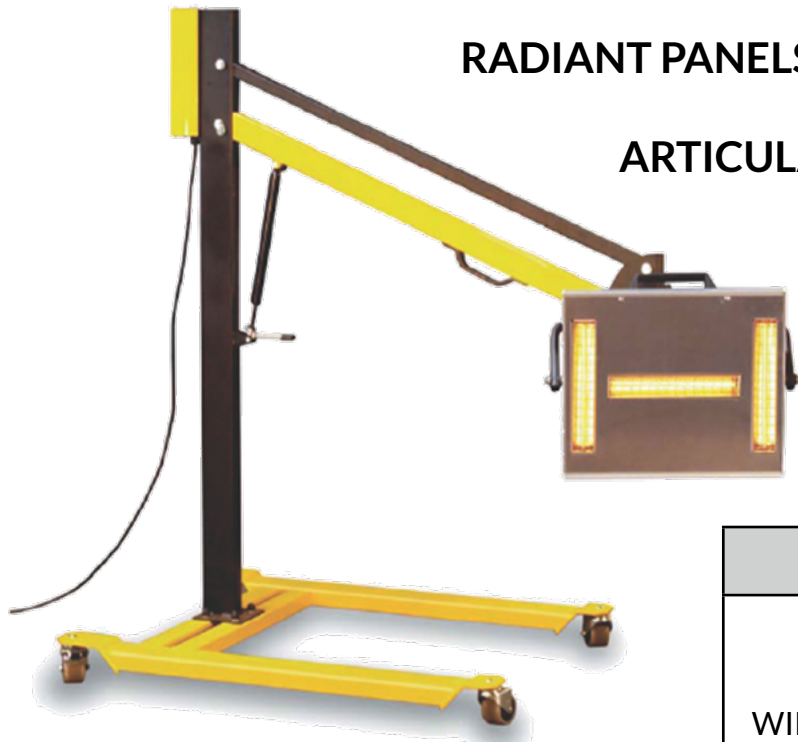


COMPOSITE REPAIR

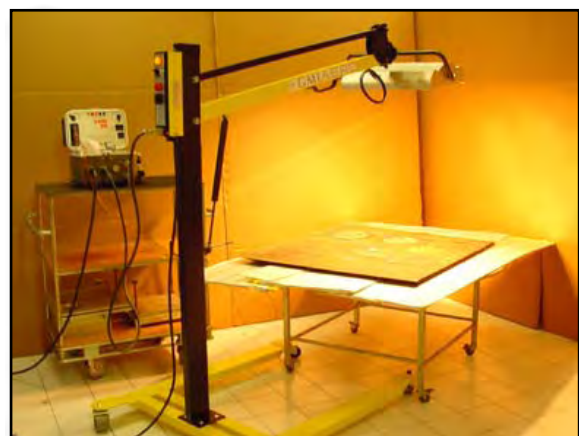
These infrared lamp panels are mounted on articulated arms to ease positioning above large and complex parts. They are mainly used for painting, primers and small area hardening of epoxides at low temperatures (typically 120 °C). They are provided mounted on an articulated arm, itself on a rolling assembly.

- A cassette with 3 infrared transmitters
- Long lifetime of transmitters thanks to permanent ventilation
- 10,000 hours lifetime of transmitters
- Ventilation provides high safety for the user
- The panel can be controlled by an Anita hot bonder by direct connection to a heating blanket

RADIANT PANELS WITH ARTICULATED ARMS



WIDE HEATING AREA



P/N	Designation
WIR-MA-2	The system in its basic version (230 Volts - 3 KW) Large drying zone : 1 x 0,9 m Control with interface for automatic control Usually for heat up to 120°C
WIR-MR-2	With Option to be attached to above system to control it independently of the Anita hot bonder by a controller only, mounted on the vertical post <i>Picture of controller box may be different</i>
WIR-MRS-2	The same as the previous one, but with a 4 thermocouples scanner Type J or K to be specified <i>Picture of control box may be different</i>
WIRL-2	Spare Infrared Lamp 230 volts
IWIR-M	Spare Filter

COMPOSITE REPAIR

INFRARED LAMPS SMALL OR MEDIUM AREAS



P/N	Designation	Note
WIR-SB1-A-2	Spot Bond 1 infrared lamp 1 Lamp	1000 Watts
WIR-SB2-A-2	Spot Bond 1 infrared lamp 2 Lamps	2000 Watts
WIR-SB1-RS-T*	Spot Bond 1 infrared lamp With 4 TC scanner controller	1000 Watts
WIR-SB2-RS-T*	Spot Bond 2 infrared lamps With 4 TC scanner controller	2000 Watts
WIR-SBL-1	Spare lamp	120 V
WIR-SBL-2	Spare lamp	230 V
WIR-SBC01	Transport container	/

* Thermocouples J or K type

HOT AIR GUN PROFESSIONAL LINE



4000892747

Hot air gun HG 1920 E
2000 W 80-600°C
150/150-300/300-500 l/min



4000892746

Hot air gun HG 2320 E
2300 W 80-650°C
150-500 l/min



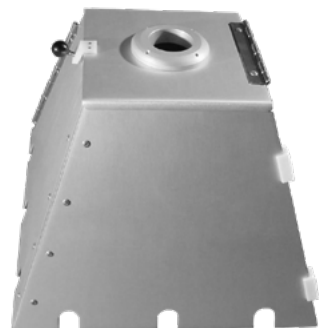
4000892759

Hot air accessories set
12-part in case



4000892753

Hot air gun HG 2220 E
2200 W 80-630°C
150/500 l/min



ET010

The foldable oven (40 x 40 cm) is used to dry and cure a repair. It is very useful to cure a resin up to 120°C/250°F.

It can be used with our hot bonders.

HEATING BLANKETS



Heating blankets are made with silicone reinforced with glass fiber. They are available in 1 or 2 heating zones.

All our blankets are mounted with a circular connector compatible with our Anita hot bonder cables. Here below is a list of classical ordered dimensions.

P/N	Dim cm	Zone Nbr
HB020-1Z-V*	Ø 20	1 zone
HB025-1Z-V*	Ø 25	1 zone
HB030-1Z-V*	Ø 30	1 zone
HB035-1Z-V*	Ø 35	1 zone
HB040-1Z-V*	Ø 40	1 zone
HB045-1Z-V*	Ø 45	1 zone
HB050-1Z-V*	Ø 50	1 zone
HB055-1Z-V	Ø 55	1 zone
HB060-1Z-V	Ø 60	1 zone
HB070-1Z-V*	Ø 70	1 zone
HB080-1Z-V*	Ø 80	1 zone
HB090-1Z-V*	Ø 90	1 zone

P/N	Dim cm	Zone Nbr
HB015015-1Z-V*	15 x 15	1 zone
HB020020-1Z-V*	20 x 20	1 zone
HB020030-1Z-V*	20 x 30	1 zone
HB020040-1Z-V*	20 x 40	1 zone
HB025025-1Z-V*	25 x 25	1 zone
HB025040-1Z-V*	25 x 40	1 zone
HB025050-1Z-V*	25 x 50	1 zone
HB030030-1Z-V*	30 x 30	1 zone
HB030050-1Z-V*	30 x 50	1 zone
HB030060-1Z-V*	30 x 60	1 zone
HB030070-1Z-V*	30 x 70	1 zone
HB040040-1Z-V*	40 x 40	1 zone
HB040060-1Z-V*	40 x 60	1 zone
HB040080-2Z-V*	40 x 80	2 zones
HB050050-1Z-V*	50 x 50	1 zone
HB050075-1Z-V*	50 x 75	1 zone
HB050090-2Z-V*	50 x 90	2 zones
HB060060-1Z-V*	60 x 60	1 zone
HB060080-2Z-V*	60 x 80	2 zones
HB070070-1Z-V*	70 x 70	1 zone
HB070090-2Z-V*	70 x 90	2 zones

V* = 1 for 120 Volts; V* = 2 for 230 Volts

STRETCHABLE BLANKETS

Our stretchable (or adaptable) heating blankets are stretchier than the standard heating blankets.

They give a better diffusion of heat and can better adapt to curved surfaces such as double curvature.



Technical features:

- Shapes: rectangle, square, round, oval
- Available in 120V or 230V
- Available in 1 or more heating zones
- Maximum size: 60 x 60 cm or Ø 60 cm

P/N	Dimensions cm	Number of zone
HBC010010-1Z-2	10 x 10	1 zone
HBC020020-1Z-2	20 x 20	1 zone
HBC030040-1Z-2	30 x 40	1 zone
HBC045045-1Z-2	45 x 45	1 zone
HBC010-1Z-2	Ø 10	1 zone
HBC050-2Z-2	Ø 50	2 zones

RADOME SHAPED BLANKETS



We offer ready to use moulded blankets to the shape of aircraft radomes. These blankets have been designed to cover the tip of radomes of Boeing 777, 767, 747, 737, Airbus, Bombardier CRJ, ATR. These blankets are shaped to fit either the external skin or the internal skin of the radome.

- Dimensions according to models
- Cables: lead length 70 cm
- Voltage: 220/230 V AC
- Heating circuits:
in sectors or concentric zones
according to models





ELECTRICAL SYSTEMS

COMPLETE RANGE OF STRIPPING & CRIMPING

CRIMPING HAND TOOLS



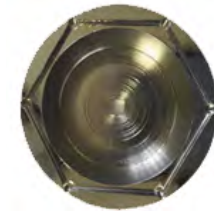
TOOLS FOR HOSE CLAMP



POSITIONERS



CLAMPING SOCKETS FOR CONNECTORS



STRAIGHT
BCT-42382-0

INSERTION EXTRACTION TOOLS



HOLDING CLAMPS



CURVED
BCT-42385-0

STRIPMASTER TOOLS

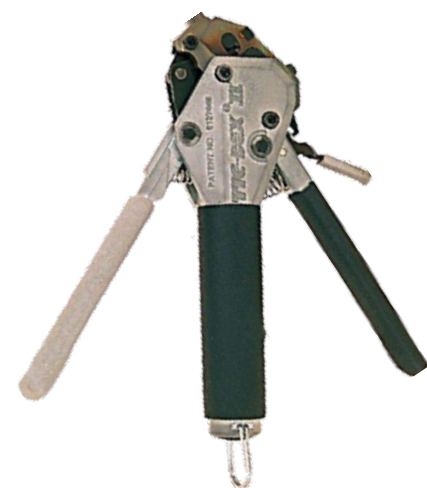


BRUSH FOR ALUMINUM CONDUCTOR WIRE



BB26CA

CLAMPING TOOLS



ELECTRICAL SYSTEMS



WRENCH SET WITH
INDICATOR LIGHTS
VCV21CR



MAINTENANCE CASE
DMC1149



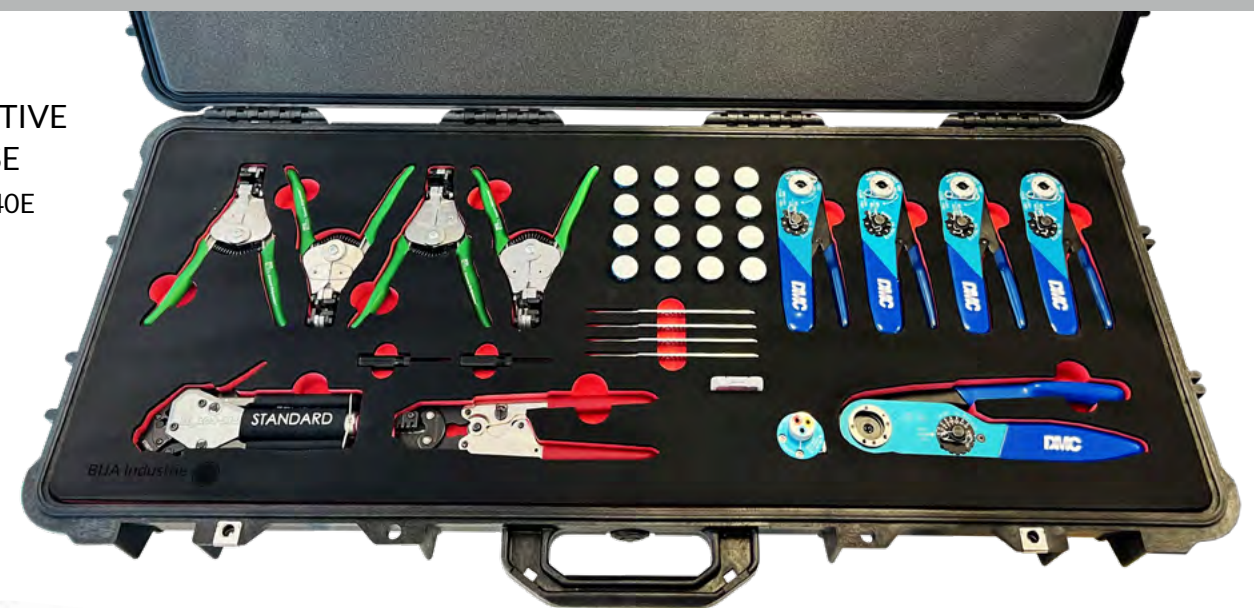
CLAMPING SOCKETS CASE
OCE83-30



CLAMPING BRACKETS FOR
CONNECTORS
SDM2683

ELECTRICAL SYSTEMS

EVOLUTIVE
CASE
MRO40E



CRIMPING
TOOLS



HOT AIR TOOLS
See page 198

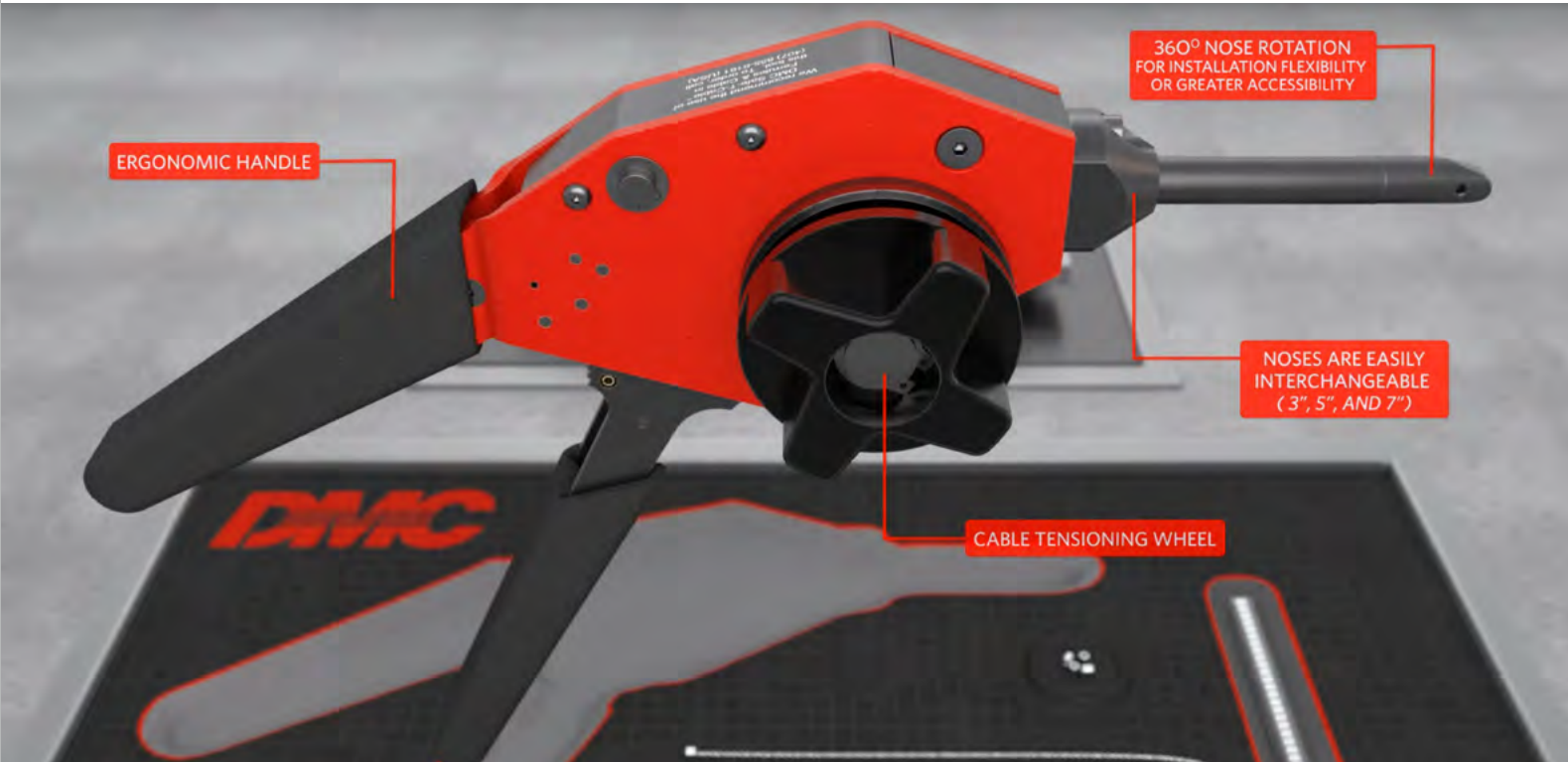


CLAMPING
TOOLS



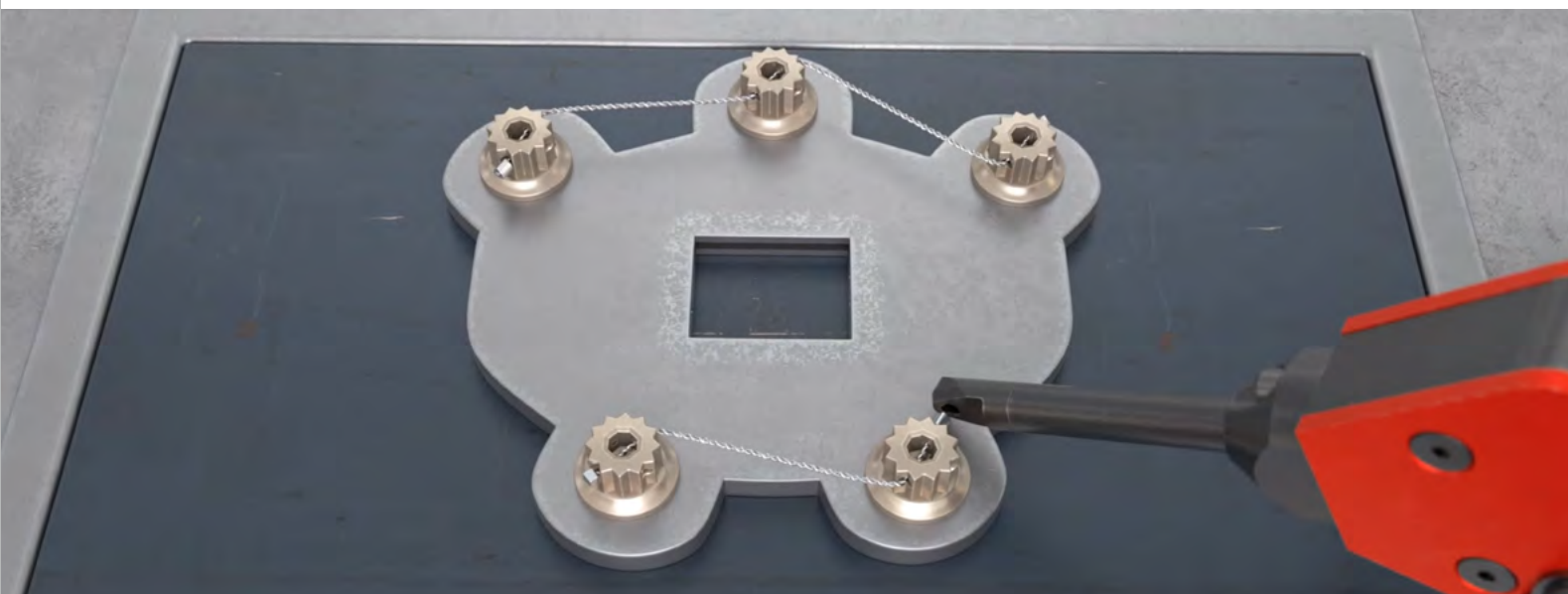
BRAKING

SAFE-T-CABLE® LOCKWIRE SYSTEM



TIME-SAVING TECHNOLOGY

Safe-T-Cable® can replace, in many applications, the security thread twisted by hand. Safe-T-Cable® will improve the efficiency and quality of your assembly operations.




BRAKING



CASES
 2 PLIERS 200 SERIES
 -
 2 PLIERS 300 SERIES
 -
 2 PLIERS 400 SERIES

CHECKBOX









AVAILABLE MATERIALS

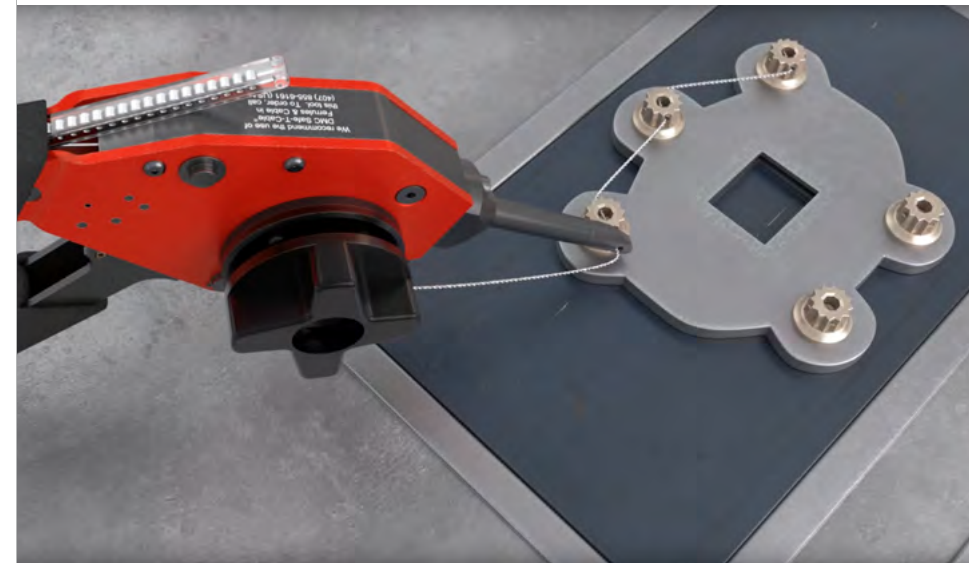
- 321 STAINLESS
- INCONEL 600
- INCONEL 625

AVAILABLE SIZES -

<p>- CROSS SECTION -</p>  <p>7x9</p>	<p>Pour SAFE-T-CABLE série 400</p>	<p>.062/.072 INCH DIAMETER CABLE</p>
 <p>7x7</p>	<p>Pour SAFE-T-CABLE série 300</p>	<p>.040/.048 INCH DIAMETER CABLE</p>
 <p>3x7</p>	<p>Pour SAFE-T-CABLE série 200</p>	<p>.032/.038 INCH DIAMETER CABLE</p>
 <p>1x7</p>	<p>Pour SAFE-T-CABLE série 200</p>	<p>.022/.026 INCH DIAMETER CABLE</p>

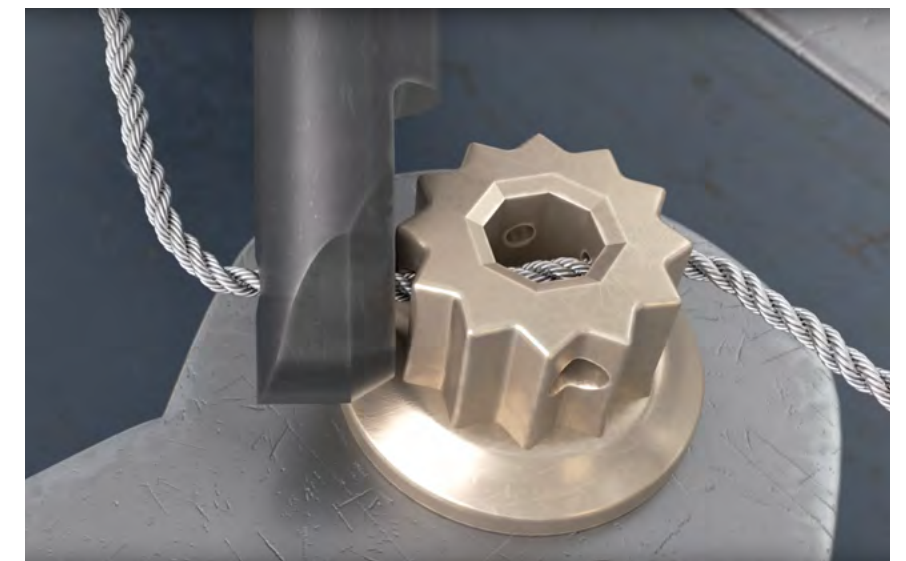
Safe-T-Cable®

BRAKING



The **Safe-T-Cable®** is made up of a high-strength, pre-twisted stainless steel cable with, at one end, one fixed stop, and at the other end, one end cap mobile (ferrule), which can be crimped at any time over the length of the cable.

The precision of the tool and its accessories facilitates the verification of its implementation. **Safe-T-Cable®** can be equipped with noses of different lengths, which allows improved access to restricted areas.



Typical installation of a security wire with 2 fasteners

Typical installation of 2 **Safe-T-Cable®** fasteners

* The time really saved will depend on the application.

BRAKING

MANUAL BRAKING PLIERS CLOCKWISE & ANTICLOCKWISE



- SERRATED JAWS
- WITH SIDE CUTTER
- JAWS ANGLED BY 40°
- LOCKING WIRES UP TO 1.6 MM Ø
- CLOCKWISE & ANTICLOCKWISE USE

CONVERSION TABLE

mm/inch

mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.
0,300	-	-	,018	1,067	-	58	,0420	2,578	-	38	,1015	4,623	-	14	,1820	7,200	-	-	,2835	10,400	-	-	,4094
0,320	-	-	,026	1,092	-	57	,0430	2,600	-	-	,1024	4,700	-	13	,1850	7,300	-	-	,2874	10,490	-	Z	,4130
0,343	-	80	,035	1,100	-	-	,0433	2,642	-	37	,1040	4,762	3/16	-	,1875	7,366	-	L	,2900	10,500	-	-	,4134
0,350	-	-	,038	1,150	-	-	,0453	2,650	-	-	,1043	4,800	-	12	,1890	7,400	-	-	,2913	10,600	-	-	,4173
0,368	-	79	,045	1,181	-	56	,0465	2,700	-	-	,1063	4,851	-	11	,1910	7,493	-	M	,2950	10,700	-	-	,4213
0,380	-	-	,050	1,191	3/64	-	,0469	2,705	-	36	,1065	4,900	-	-	,1929	7,500	-	-	,2953	10,716	27/64	-	,4219
0,397	2/64	-	,056	1,200	-	-	,0472	2,750	-	-	,1083	4,915	-	10	,1935	7,541	19/64	-	,2969	10,800	-	-	,4252
0,400	-	-	,057	1,250	-	-	,0492	2,778	7/64	-	,1094	4,978	-	9	,1960	7,600	-	-	,2992	10,900	-	-	,4291
0,406	-	78	,060	1,300	-	-	,0512	2,794	-	35	,1100	5,000	-	-	,1969	7,671	-	N	,3020	11,000	-	-	,4331
0,420	-	-	,065	1,321	-	55	,0520	2,800	-	-	,1102	5,055	-	8	,1990	7,700	-	-	,3031	11,100	-	-	,4374
0,450	-	-	,077	1,350	-	-	,0531	2,819	-	34	,1110	5,100	-	-	,2008	7,800	-	-	,3071	11,12	7/16	-	,4375
0,457	-	77	,080	1,397	-	54	,0550	2,850	-	-	,1122	5,105	-	7	,2010	7,900	-	-	,3110	11,200	-	-	,4409
0,480	-	-	,089	1,400	-	-	,0551	2,870	-	33	,1130	5,159	13/64	-	,2031	7,938	5/16	-	,3125	11,300	-	-	,4449
0,500	-	-	,097	1,450	-	-	,0571	2,900	-	-	,1142	5,182	-	6	,2040	8,000	-	-	,3150	11,400	-	-	,4488
0,508	-	76	,0200	1,500	-	-	,0591	2,946	-	32	,1160	5,200	-	-	,2047	8,026	-	O	,3160	11,500	-	-	,4528
0,520	-	-	,0205	1,511	-	53	,0595	2,950	-	-	,1161	5,220	-	5	,2055	8,100	-	-	,3189	11,509	29/64	-	,4531
0,533	-	75	,0210	1,550	-	-	,0610	3,000	-	-	,1181	5,300	-	-	,2087	8,200	-	-	,3228	11,600	-	-	,4567
0,550	-	-	,0217	1,588	1/16	-	,0625	3,048	-	31	,1200	5,309	-	4	,2090	8,204	-	P	,3230	11,700	-	-	,4606
0,572	-	74	,0225	1,600	-	-	,0630	3,100	-	-	,1220	5,400	-	-	,2126	8,300	-	-	,3268	11,800	-	-	,4646
0,580	-	-	,0228	1,613	-	52	,0635	3,175	1/8	-	,1250	5,410	-	3	,2130	8,334	21/64	-	,3281	11,900	-	-	,4685
0,600	-	-	,0236	1,650	-	-	,0650	3,200	-	-	,1260	5,500	-	-	,2165	8,400	-	-	,3307	11,906	15/32	-	,4687
0,610	-	73	,0240	1,700	-	-	,0669	3,264	-	30	,1285	5,556	7/32	-	,2187	8,433	-	Q	,3320	12,000	-	-	,4724
0,620	-	-	,0244	1,702	-	51	,0670	3,300	-	-	,1299	5,600	-	-	,2205	8,500	-	-	,3346	12,100	-	-	,4764
0,635	-	72	,0250	1,750	-	-	,0689	3,400	-	-	,1339	5,613	-	2	,2210	8,600	-	-	,3386	12,200	-	-	,4803
0,650	-	-	,0256	1,778	-	50	,0700	3,454	-	29	,1360	5,700	-	-	,2244	8,611	-	R	,3390	12,300	-	-	,4843
0,660	-	71	,0260	1,800	-	-	,0709	3,500	-	-	,1378	5,791	-	1	,2280	8,700	-	-	,3425	12,303	31/64	-	,4844
0,680	-	-	,0268	1,850	-	-	,0728	3,569	-	28	,1405	5,800	-	-	,2283	8,731	11/32	-	,3437	12,400	-	-	,4882
0,700	-	-	,0276	1,854	-	49	,0730	3,572	9/64	-	,1406	5,900	-	-	,2323	8,800	-	-	,3465	12,500	-	-	,4921
0,711	-	70	,0280	1,900	-	-	,0748	3,600	-	-	,1417	5,944	-	A	,2340	8,839	-	S	,3480	12,600	-	-	,4961
0,720	-	-	,0283	1,930	-	48	,0760	3,658	-	27	,1440	5,953	15/64	-	,2344	8,900	-	-	,3504	12,700	1/2	-	,5000
0,742	-	69	,0292	1,950	-	-	,0768	3,700	-	-	,1457	6,000	-	-	,2362	9,000	-	-	,3543	12,800	-	-	,5039
0,750	-	-	,0295	1,984	5/64	-	,0781	3,734	-	26	,1470	6,045	-	B	,2380	9,093	-	T	,3580	12,900	-	-	,5079
0,780	-	-	,0307	1,994	-	47	,0785	3,797	-	25	,1495	6,100	-	-	,2402	9,100	-	-	,3583	13,000	-	-	,5118
0,787	-	68	,0310	2,000	-	-	,0787	3,800	-	-	,1496	6,147	-	C	,2420	9,128	23/64	-	,3594	13,097	33/64	-	,5156
0,794	1/32	-	,0313	2,050	-	-	,0807	3,861	-	24	,1520	6,200	-	-	,2441	9,200	-	-	,3622	13,100	-	-	,5157
0,800	-	-	,0315	2,057	-	46	,0810	3,900	-	-	,1535	6,248	-	D	,2460	9,300	-	-	,3661	13,200	-	-	,5197
0,813	-	67	,0320	2,083	-	45	,0820	3,912	-	23	,1540	6,300	-	-	,2480	9,347	-	U	,3680	13,300	-	-	,5236
0,820	-	-	,0323	2,100	-	-	,0827	3,969	5/32	-	,1563	6,350	1/4	E	,2500	9,400	-	-	,3701	13,400	-	-	,5276
0,838	-	66	,0330	2,150	-	-	,0846	3,988	-	22	,1570	6,400	-	-	,2520	9,500	-	-	,3740	13,494	17/32	-	,5313
0,850	-	-	,0335	2,184	-	44	,0860	4,000	-	-	,1575	6,500	-	-	,2559	9,525	3/8	-	,3750	13,500	-	-	,5315
0,880	-	-	,0346	2,200	-	-	,0866	4,039	-	21	,1590	6,528	-	F	,2570	9,576	-	V	,3770	13,600	-	-	,5354
0,889	-	65	,0350	2,250	-	-	,0886	4,089	-	20	,1610	6,600	-	-	,2598	9,600	-	-	,3780	13,700	-	-	,5394
0,900	-	-	,0354	2,261	-	43	,0890	4,100	-	-	,1614	6,629	-	G	,2610	9,700	-	-	,3819	13,800	-	-	,5433
0,914	-	64	,0360	2,300	-	-	,0906	4,200	-	-	,1654	6,700	-	-	,2638	9,800	-	-	,3858	13,891	35/64	-	,5469
0,920	-	-	,0362	2,350	-	-	,0925	4,216	-	19	,1660	6,747	17/64	-	,2656	9,804	-	W	,3860	13,900	-	-	,5472
0,940	-	63	,0370	2,375	-	42	,0935	4,300	-	-	,1693	6,756	-	H	,2660	9,900	-	-	,3898	14,000	-	-	,5512
0,950	-	-	,0374	2,381	3/32	-	,0937	4,305	-	18	,1695	6,800	-	-	,2677	9,922	25/64	-	,3906	14,100	-	-	,5551
0,965	-	62	,0380	2,400	-	-	,0945	4,366	11/64	-	,1719	6,900	-	-	,2717	10,000	-	-	,3937	14,200	-	-	,5591
0,980	-	-	,0386	2,433	-	41	,0958	4,394	-	17	,1730	6,909	-	1	,2720	10,084	-	X	,3970	14,288	9/16	-	,5625
0,991	-	61	,0390	2,450	-	-	,0965	4,400	-	-	,1732	7,000	-	-	,2756	10,100	-	-	,3976	14,300	-	-	,5630
1,000	-	-	,0394	2,489	-	40	,0980	4,496	-	16	,1770	7,036	-	J	,2770	10,200	-	-	,4016	14,400	-	-	,5669
1,016	-	60	,0400	2,500	-	-	,0984	4,500	-	-	,1772	7,100	-	-	,2795	10,262	-	Y	,4040	14,500	-	-	,5709
1,041	-	59	,0410	2,527	-	39	,0995	4,572	-	15	,1800	7,137	-	K	,2810	10,300	-	-	,4055	14,600	-	-	,5748
1,050	-	-	,0413	2,550	-	-	,1004	4,600	-	-	,1811	7,144	9/32	-	,2813	10,319	13/32	-	,4063	14,684	37/64	-	,5781

CONVERSION TABLE

mm/inch

mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.
14,700	-	-	,5787	19,050	3/4	-	,7500	23,416	59/64	-	,9219
14,800	-	-	,5827	19,100	-	-	,7520	23,500	-	-	,9252
14,900	-	-	,5866	19,200	-	-	,7559	23,600	-	-	,9291
15,000	-	-	,5906	19,300	-	-	,7598	23,700	-	-	,9331
15,081	19/32	-	,5937	19,400	-	-	,7638	23,800	-	-	,9370
15,100	-	-	,5945	19,500	-	-	,7677	23,812	15/16	-	,9375
15,200	-	-	,5984	19,600	-	-	,7717	23,900	-	-	,9409
15,300	-	-	,6024	19,700	-	-	,7756	24,000	-	-	,9449
15,400	-	-	,6063	19,800	-	-	,7795	24,100	-	-	,9488
15,478	39/64	-	,6094	19,844	25/32	-	,7813	24,200	-	-	,9528
15,500	-	-	,6102	19,900	-	-	,7835	24,209	61/64	-	,9531
15,600	-	-	,6142	20,000	-	-	,7874	24,300	-	-	,9567
15,700	-	-	,6181	20,100	-	-	,7913	24,400	-	-	,9606
15,800	-	-	,6220	20,200	-	-	,7953	24,500	-	-	,9646
15,875	5/8	-	,6250	20,241	51/64	-	,7969	24,600	-	-	,9685
15,900	-	-	,6260	20,300	-	-	,7992	24,606	31/32	-	,9687
16,000	-	-	,6299	20,400	-	-	,8031	24,700	-	-	,9724
16,100	-	-	,6339	20,500	-	-	,8071	24,800	-	-	,9764
16,200	-	-	,6378	20,600	-	-	,8110	24,900	-	-	,9803
16,272	41/64	-	,6406	20,638	13/16	-	,8125	25,000	-	-	,9843
16,300	-	-	,6417	20,700	-	-	,8150	25,003	63/64	-	,9844
16,400	-	-	,6457	20,800	-	-	,8189	25,250	-	-	,9941
16,500	-	-	,6496	20,900	-	-	,8228	25,400	1	-	10000
16,600	-	-	,6535	21,000	-	-	,8268	25,500	-	-	10039
16,669	21/32	-	,6563	21,034	53/64	-	,8281	25,750	-	-	10138
16,700	-	-	,6575	21,100	-	-	,8307	25,797	1- 1/64	-	10156
16,800	-	-	,6614	21,200	-	-	,8346	26,000	-	-	10236
16,900	-	-	,6654	21,300	-	-	,8386	26,194	1- 1/32	-	10313
17,000	-	-	,6693	21,400	-	-	,8425	26,250	-	-	10335
17,066	43/64	-	,6719	21,431	27/32	-	,8437	26,500	-	-	10433
17,100	-	-	,6732	21,500	-	-	,8465	26,591	1- 3/64	-	10469
17,200	-	-	,6772	21,600	-	-	,8504	26,750	-	-	10531
17,300	-	-	,6811	21,700	-	-	,8543	26,998	1- 1/16	-	10629
17,400	-	-	,6850	21,800	-	-	,8583	27,000	-	-	10630
17,462	11/16	-	,6875	21,828	55/64	-	,8594	27,250	-	-	10728
17,500	-	-	,6890	21,900	-	-	,8622	27,384	1- 5/64	-	10781
17,600	-	-	,6929	22,000	-	-	,8661	27,500	-	-	10827
17,700	-	-	,6969	22,100	-	-	,8701	27,750	-	-	10925
17,800	-	-	,7008	22,200	-	-	,8740	27,781	1- 1/32	-	10937
17,859	45/64	-	,7031	22,225	7/8	-	,8750	28,000	-	-	11024
17,900	-	-	,7047	22,300	-	-	,8780	28,178	1- 7/64	-	11094
18,000	-	-	,7087	22,400	-	-	,8819	28,250	-	-	11122
18,100	-	-	,7126	22,500	-	-	,8858	28,500	-	-	11220
18,200	-	-	,7165	22,600	-	-	,8898	28,575	1- 1/8	-	11250
18,256	23/32	-	,7187	22,622	57/64	-	,8906	28,750	-	-	11319
18,300	-	-	,7205	22,700	-	-	,8937	28,972	1- 9/64	-	11406
18,400	-	-	,7244	22,800	-	-	,8976	29,000	-	-	11417
18,500	-	-	,7283	22,900	-	-	,9016	29,250	-	-	11516
18,600	-	-	,7323	23,000	-	-	,9055	29,369	1- 5/32	-	11563
18,653	47/64	-	,7344	23,019	29/32	-	,9063	29,500	-	-	11614
18,700	-	-	,7362	23,100	-	-	,9094	29,750	-	-	11713

mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.	mm	fract.	Gauge	dec.
30,250	-	-	1,909	41,672	1- 41/64	-	1,6406	56,356	2 - 7/32	-	2,2187				
30,500	-	-	1,2008	42,000	-	-	1,6535	57,000	-	-	2,2441				
30,559	1- 13/64	-	1,2031	42,069	1- 21/32	-	1,6563	57,150	2 - 1/4	-	2,2500				
30,750	-	-	1,2106	42,466	1- 43/64	-	1,6719	57,944	2 - 9/32	-	2,2813				
30,956	1- 7/32	-	1,2187	42,500	-	-	1,6732	58,000	-	-	2,2835				
31,000	-	-	1,2205	42,862	1- 11/16	-	1,6875	58,738	2 - 5/16	-	2,3125				
31,250	-	-	1,2303	43,000	-	-	1,6929	59,000	-	-	2,3228				
31,353	1- 15/64	-	1,2344	43,259	1- 45/64	-	1,7031	59,531	2 - 11/32	-	2,3437				
31,500	-	-	1,2402	43,500	-	-	1,7126	60,000	-	-	2,3622				
31,750	1- 1/4	-	1,2500	43,656	1- 23/32	-	1,7187	60,325	2 - 3/8	-	2,3750				
32,000	-	-	1,2598	44,000	-	-	1,7323	61,000	-	-	2,4016				
32,147	1- 17/64	-	1,2656	44,053	1- 47/64	-	1,7344	61,119	2 - 13/32	-	2,4063				
32,500	-	-	1,2795	44,450	1- 3/4	-	1,7500	61,912	2 - 7/16	-	2,4375				
32,544	1- 9/32	-	1,2813	44,500	-	-	1,7520	62,000	-	-	2,4409				
32,941	1- 19/64	-	1,2969	44,847	1- 49/64	-	1,7656	62,706	2 - 15/32	-	2,4687				
33,000	-	-	1,2992	45,000	-	-	1,7717	63,000	-	-	2,4803				
33,338	1- 5/16	-	1,3125	45,244	1- 25/32	-	1,7813	63,500	2 - 1/2	-	2,5000				
33,500	-	-	1,3189	45,500	-	-	1,7913	64,000	-	-	2,5197				
33,734	1- 21/64	-	1,3281	45,641	1- 51/64	-	1,7969	64,294	2 - 17/32	-	2,5313				
34,000	-	-	1,3386	46,000	-	-	1,8110	65,000	-	-	2,5591				
34,131	1- 11/32	-	1,3437	46,038	1- 13/16	-	1,8125	65,088	2 - 9/16	-	2,5625				
34,500	-	-	1,3583	46,434	1- 53/64	-	1,8281	65,881	2 - 19/32	-	2,5937				
34,528	1- 23/64	-	1,3594	46,500	-	-	1,8307	66,000	-	-	2,5984				
34,925	1- 3/8	-	1,3750	46,831	1- 27/32	-	1,8437	66,675	2 - 5/8	-	2,6250				
35,000	-	-	1,3780	47,000	-	-	1,8504	67,000	-	-	2,6378				
35,322	1- 25/64	-	1,3906	47,228	1- 55/64	-	1,8594	67,469	2 - 21/32	-	2,6563				
35,500	-	-	1,3976	47,500	-	-	1,8701	68,000	-	-	2,6772				
35,719	1- 13/32	-	1,4063	47,625	1- 7/8	-	1,8750	68,262	2 - 11/16	-	2,6875				
36,000	-	-	1,4173	48,000	-	-	1,8898	69,000	-	-	2,7165				
36,116	1- 27/64	-	1,4219	48,022	1- 57/64	-	1,8906	69,056	2 - 23/32	-	2,7187				
36,500	-	-	1,4370	48,419	1- 29/32	-	1,9063	69,850	2 - 3/4	-	2,7500				
36,512	1- 7/16	-	1,4375	48,500	-	-	1,9094	70,000	-	-	2,7559				
36,909	1- 29/64	-	1,4531	48,816	1- 59/64	-	1,9219	70,644	2 - 25/32	-	2,7813				
37,000	-	-	1,4567	49,000	-	-	1,9291	71,000	-	-	2,7953				
37,306	1- 15/32	-	1,4687	49,212	1- 15/16	-	1,9375	71,438	2 - 13/16	-	2,8125				
37,500	-	-	1,4764	49,500	-	-	1,9488	72,000	-	-	2,8346				
37,703	1- 31/64	-	1,4844	49,609	1- 61/64	-	1,9531	72,231	2 - 27/32	-	2,8437				
38,000	-	-	1,4961	50,000	-	-	1,9685	73,000	-	-	2,8740				
38,100	1- 1/2	-	1,5000	50,006	1- 31/32	-	1,9687	73,025	2 - 7/8	-	2,8750				
38,497	1- 33/64	-	1,5156	50,403	1- 63/64	-	1,9844	73,819	2 - 29/32	-	2,9063				
38,500	-	-	1,5157	50,500	-	-	1,9882	74,000	-	-	2,9134				
38,894	1- 17/32	-	1,5313	50,800	2	-	2,0000	74,612	2 - 15/16	-	2,9375				
39,000	-	-	1,5354	51,000	-	-	2,0079	75,000	-	-	2,9528				
39,291	1- 35/64	-	1,5469	51,594	2 - 1/32	-	2,0313	75,406	2 - 31/32	-	2,9687				
39,500	-	-	1,5551	52,000	-	-	2,0472	76,000	-	-	2,9921				
39,688	1- 9/16	-	1,5625	52,388	2 - 1/16	-	2,0625	76,200	3	-	3,0000				
40,000	-	-	1,5748	53,000	-	-	2,0866	76,994	3 - 1/32	-	3,0313				
40,084	1- 37/64	-	1,5781	53,181	2 - 3/32	-	2,0937	77,000	-	-	3,0315				
40,481	1- 19/32	-	1,5937	53,975	2 - 1/8	-	2,1250	77,788	3 - 1/16	-	3,0625				
40,500	-	-	1,5945	54,000	-	-	2,1260	78,000	-	-	3,0709				
40,878	1- 39/64	-	1,6094	54,769	2 - 5/32	-	2,1563	78,581	3 - 3/32	-	3,0937				
41,000	-	-	1,6142	55,000	-	-	2,1654	79,000	-	-	3,1102				
41,275	1- 5/8	-	1,6250	55,562	2 - 3/16	-	2,1875	79,375	3 - 1/8	-	3,1250				
41,500	-	-	1,6339	56,000	-	-	2,2047	80,000	-	-	3,1496				

PREVENT FOD RISK



PRINCIPLE OF FOREIGN MATERIAL EXCLUSION

The use of barriers, signs and shutters makes it possible to inform of an FOD risk area, and to temporarily block certain access points or pipings and pipelines during maintenance or work.

In this way the space is secure, and the inclusion of foreign material in pipes, ducts, etc, is impossible.



The provision of FOD cabinets is also a simple and effective solution to fight against the Foreign Material Exclusion. This type of cabinet is composed of all FOD products (barriers, rubalises, caps, plugs, covers, etc) to meet this principle.



PRINCIPLE OF FALLING OBJECT DAMAGE

This principle prevents falling objects during maintenance/work activities.

This prevents injuries that could be caused by the fall of a tool or object. And also reduces operating costs caused by the fall, forcing the user to stop what he's doing to get back the object and then continue his work for example.

The prevention of falling objects is done from the tool to the worker, and is divided into 3 steps:

- Fastening point (fastener)
- Tether
- Anchoring point

- The fastening point:

- 3 categories of tool fasteners:
- Permanent (fixed)
 - Semi permanent (heat fused)
 - Temporary (taped)



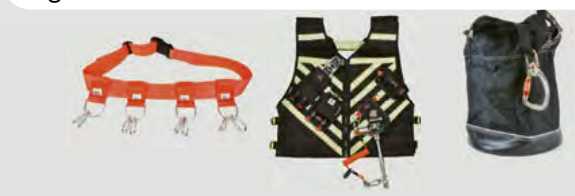
- The tether:

Connects the tool to the anchor point. It is defined according to the nature of the task (length of the tether), its duration (ease of installation, change of hand or storage on the anchor point) and weight of the tool carried (ergonomics).



- The anchor point:

It is defined according to the type of intervention, the duration of the intervention and the ergonomics.



SEALING OF MACHINES & PIPES

INFO GUIDE

The use of cover devices allows the protection and temporary blocking of certain pipes, pipelines and/or machines during maintenance or work. In this way the space is secure and the inclusion of foreign material in the pipes, ducts, etc. impossible. Protecting the openings in these spaces is essential because inadequate protection can lead to future mechanical problems that may pose a security threat. There are different ways of sealing the openings in a FOD area: FOD sealing covers, FOD plugs, FOD sponges, etc.



Nylon FOD Covers

Allows you to lock and seal pipes/pipelines during storage and maintenance activities.

- Keeps foreign material out of open equipment and pipes that are not under supervision or under maintenance
- FOD nylon protective barrier with Urethane bracket
- Round bottom for custom fit
- High visibility color.
- Adjustable pull string with non-metallic locking system
- Fire retardant & water resistant
- Printed message: FOD
- NFPA-701 compliant



Reference	In Package	Sizes Ø x h (cm)	Sizes Ø in inches	Colors
CBFR1-OR	50	2,54 Ø x 10,16	1"x4"	
CBFR2-OR	50	5,08 Ø x 10,16	2"x4"	
CBFR4-OR	30	10,16 Ø x 15,24	4"x6"	
CBFR6-OR	30	15,24 Ø x 15,24	6"x6"	
CBFR9-OR	30	22,86 Ø x 15,24	9"x6"	
CBFR12-OR	20	30,48 Ø x 15,24	12"x6"	orange
CBFR15-OR	20	38,10 Ø x 15,24	15"x6"	
CBFR18-OR	20	45,72 Ø x 15,24	18"x6"	
CBFR24-OR	20	60,96 Ø x 25,40	24"x10"	
CBFR30-OR	20	76,20 Ø x 25,40	30"x10"	
CBFR38-OR	10	96,52 Ø x 25,40	38"x10"	

We also offer custom nylon covers to fit all openings. **Consult us!**

Vented Nylon FME Covers

Allows you to lock out ventilation pipes/ducts without blocking their operation during your central maintenance activities.

- Keeps foreign material out of open equipment and pipes that are not under supervision or under maintenance
- FOD nylon protective barrier with Urethane bracket
- Round bottom with Mesh ventilation window and Velcro® fastening: prevents pressure changes from sucking or ejecting the cover
- Often used for piping and electrical equipment in operation
- High visibility color
- Adjustable pull string with non-metallic locking system
- Fire retardant & water resistant.
- Printed message: FOD
- NFPA-701 compliant



Reference	In Package	Sizes Ø x h (cm)	Sizes Ø in inches	Colors
CBVFR1-OR	50	2,54 Ø x 10,16	1"x4"	
CBVFR4-OR	30	10,16 Ø x 15,24	4"x6"	
CBVFR6-OR	30	15,24 Ø x 15,24	6"x6"	
CBVFR9-OR	30	22,86 Ø x 15,24	9"x6"	
CBVFR12-OR	20	30,48 Ø x 15,24	12"x6"	
CBVFR15-OR	20	38,10 Ø x 15,24	15"x6"	orange
CBVFR18-OR	20	45,72 Ø x 15,24	18"x6"	
CBVFR24-OR	20	60,96 Ø x 25,40	24"x10"	
CBVFR30-OR	20	76,20 Ø x 25,40	30"x10"	
CBVFR38-OR	10	96,52 Ø x 25,40	38"x10"	

US Patent
No. 7,900,654

SEALING OF MACHINES & PIPES

Self-degrading FME covers

- The fabric of the cover dissolves in 95°C water
- Reduces radioactive waste
- Round bottom
- FME marking with cover diameter
- Elastic closure

No metal
components



Reference	In Package	Sizes Ø x h (cm)	Sizes Ø in inches	Colors
CB-DSLV1*	100	1"x4"	2,54 x 10,16	
CB-DSLV2	100	2"x4"	5,08 x 10,16	
CB-DSLV4	100	4"x6"	10,16 x 15,24	
CB-DSLV6	100	6"x6"	15,24 x 15,24	
CB-DSLV10	50	10"x6"	22,86 x 15,24	
CB-DSLV12	50	12"x6"	30,48 x 15,24	Grey
CB-DSLV15	50	15"x6"	38,10 x 15,24	
CB-DSLV18	50	18"x6"	45,72 x 15,24	
CB-DSLV24	50	24"x10"	60,96 x 25,40	
CB-DSLV30	50	30"x10"	76,20 x 25,40	
CB-DSLV38	50	38"x10"	96,20 x 25,40	

FME SAFE-T-SPONGE®

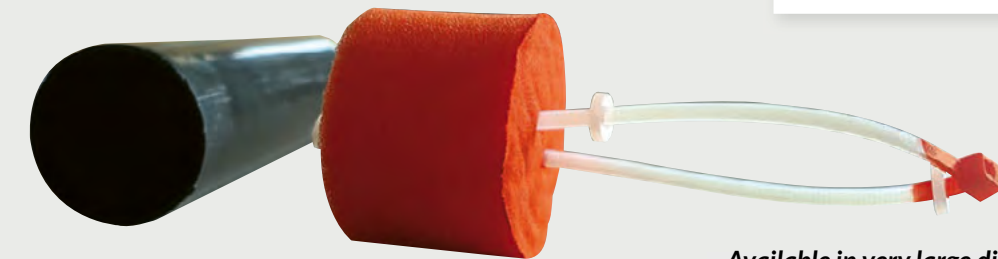
Effectively protects pipes/ducts from introduction of debris.

- Effective alternative to rags, tape, wood, or air bladders...
- Reusable and compressible sponge shutter, quick installation & removal.
- Floating.
- Equipped with an attachment point to connect to a lanyard.
- Long life: reusable.
- No metal components.
- Low Halogen: less than 350 ppm.
- Select a sponge 1 size larger than the pipe for a better fit (ex: for 20" Ø pipe, use a 22" Ø sponge).
- Available in very large diameters - up to 50" (consult us).

US Patent No. 6 506 014 & 6 824 356



Advice for choosing the size
Select a sponge one size larger than the pipe for a better fit (ex: for 20" Ø pipe, use a 22" Ø sponge).



Available in very large diameters, consult us !

Reference	Model	Sizes Ø "	Sizes Ø cm	In Package
N-PL1	standard	1	2,5	25 par paquet
N-PL2	standard	2,25	5,7	25 par paquet
N-PL3	standard	3,25	8,2	25 par paquet
N-PL4	standard	4,25	10,7	25 par paquet
L-PL-14	nucléaire	14	35,5	1 par paquet

IMPORTANT:
Remember to secure your shutter by hanging a lanyard or rope at the fastening point. **Consult us.**

F.O.D POUCH

- FOD pouch with silkscreen marking
- 0% metal to limit scratches
- 2 interior compartments
- Velcro fasteners 25 mm
- 2 belt loops
- Sizes H x l = 31 x 20,5 cm
- P/N : FBB01



LANYARDS

Elastic tethers lanyards with carabiner



Tethers lanyards with carabiner for heavy tools



Scoubidou type tethers lanyards



Lanyards with two carabiners



Quick-Switch® Packs

US Patent N° 9,351,558 (Quick-Switch®)



Retractable tethers lanyards



ATTACHMENT POINTS / TETHERING

Double dee rings with anti-rotation captive pin

US Patent No. 9,038,360



Cold shrink attachments

Brevet US N° 9,402,457, 9,339,100 + D676,311



Heat-shrinkable attachments

US Patent No. 9,402,457 & 9,339,100 + D676 311



Nylon webbing with D-ring end and reinforced tether attachment tape



Tool Collar® Kits

US Patent N° 8,567,290 + 8,567,291



Grip-Fit™ attachments

US Patent N° D718,590



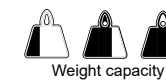
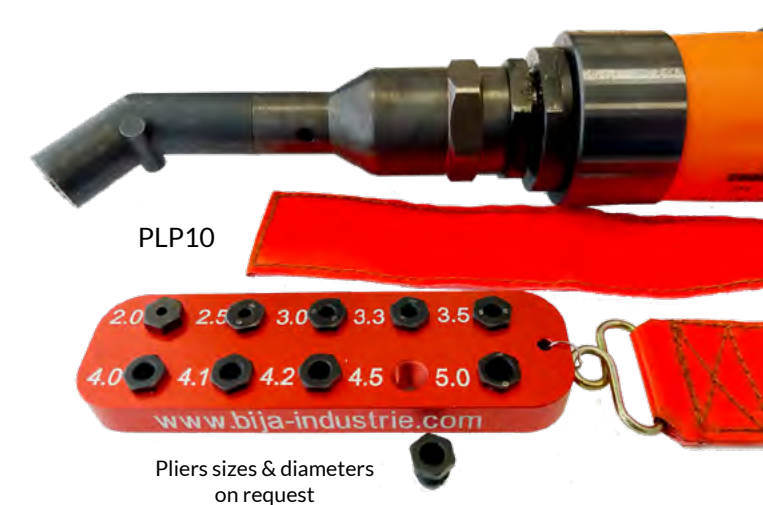
Straps with swivel and non-swivel tether cinch loops

US Patent N° D676,734 (TETHCNCHLPSW)
Patent filed for swivel and non-swivel tether cinch loops



F.O.D collets holder

Registered design © FR1008705



A COMPLETE RANGE



Laser marking stations can be used to mark all your components regardless of the material: plastic, metal, organic minerals and more. The workspace is optimized to identify, in a series or by unit, without cluttering your environment. Our stations are compatible with all our laser technologies.



All coding formats:
Datamatrix, barcodes,
QR codes, UID, GS1, etc

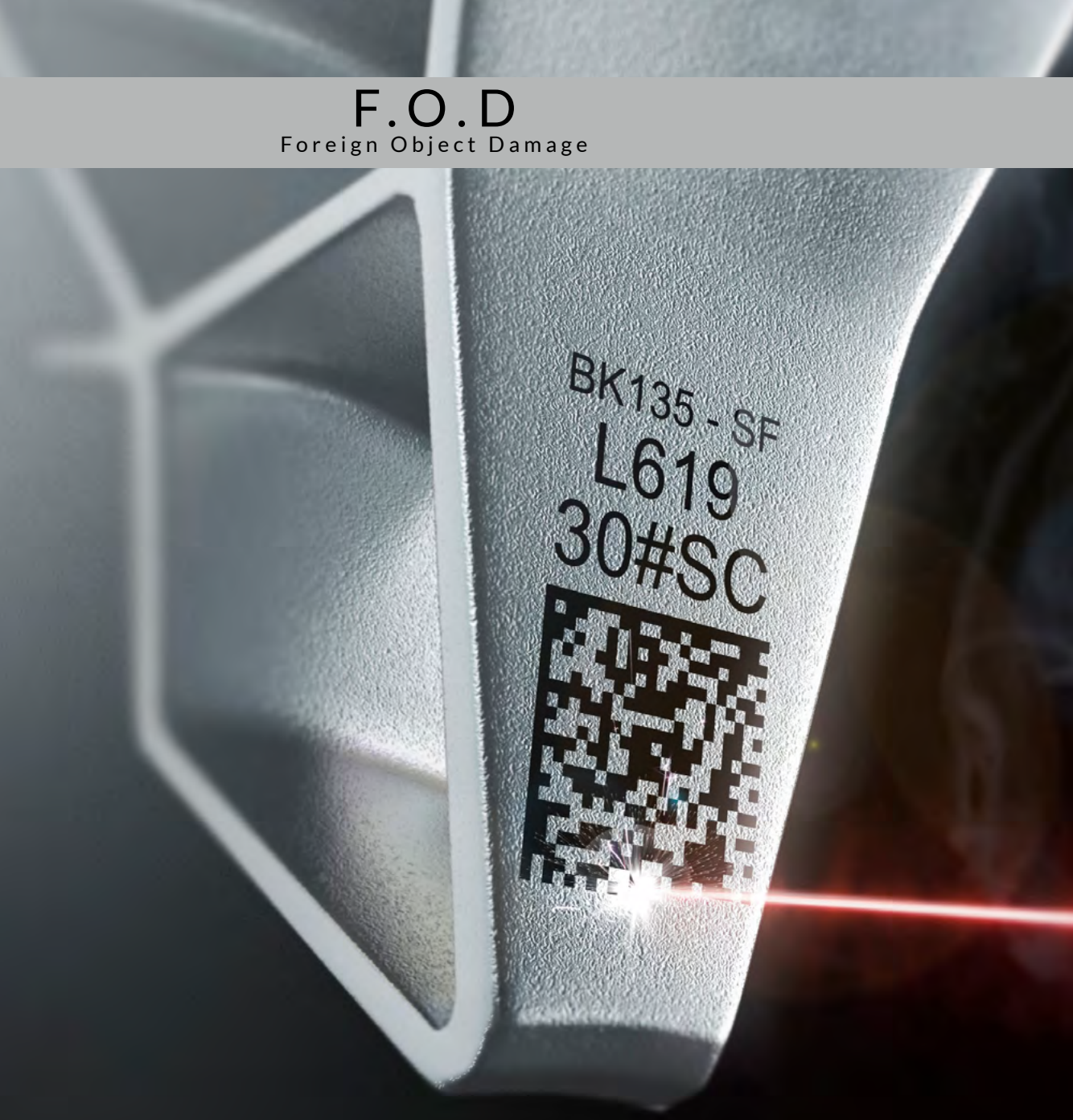
Serialization Tools:
counter, variables, shift codes,
automatic timestamping, etc



Direct access to
marking parameters

COMPLETE SAFETY
EXPERTS AT YOUR SERVICE
EXPERTISE IN LASER TECHNOLOGY
SOMETHING TO SUIT EVERY BUDGET

LASER MARKING
AND TRACEABILITY
SOLUTIONS



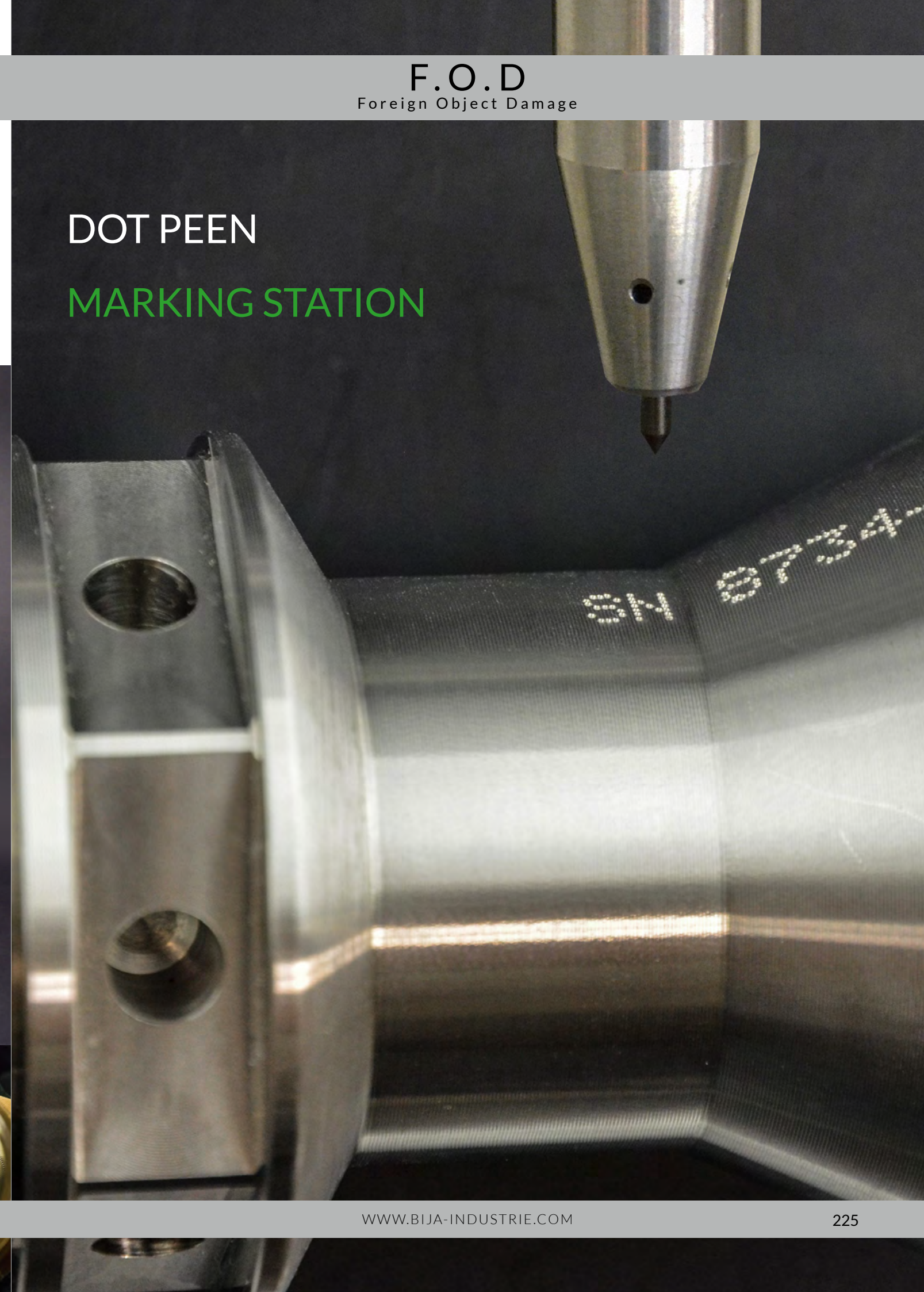
FOR ALL YOUR MARKING

The IMPACT marking station meets all your identification needs, present and future:

- Direct and permanent marking: references, logos, serial numbers, dates, graphics and symbols, counters, graduations, DataMatrix codes, etc
- Marking of plates in series: automatic plate feeders (as an option)
- Unique identifier and traceability of every component and batch of workpieces
- Markings compliant with ISO, automotive, aeronautical, military & defence standards, etc



DOT PEEN MARKING STATION





ERGONOMIC AND BALANCED INDUSTRIAL ARMS

3ARM®

ERGONOMICS DIMM

CLUSTER PORT FR.P

SD-5

SD-7

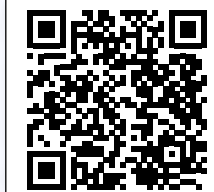
LOG BCK/P

SYSTEM DATA TH03E

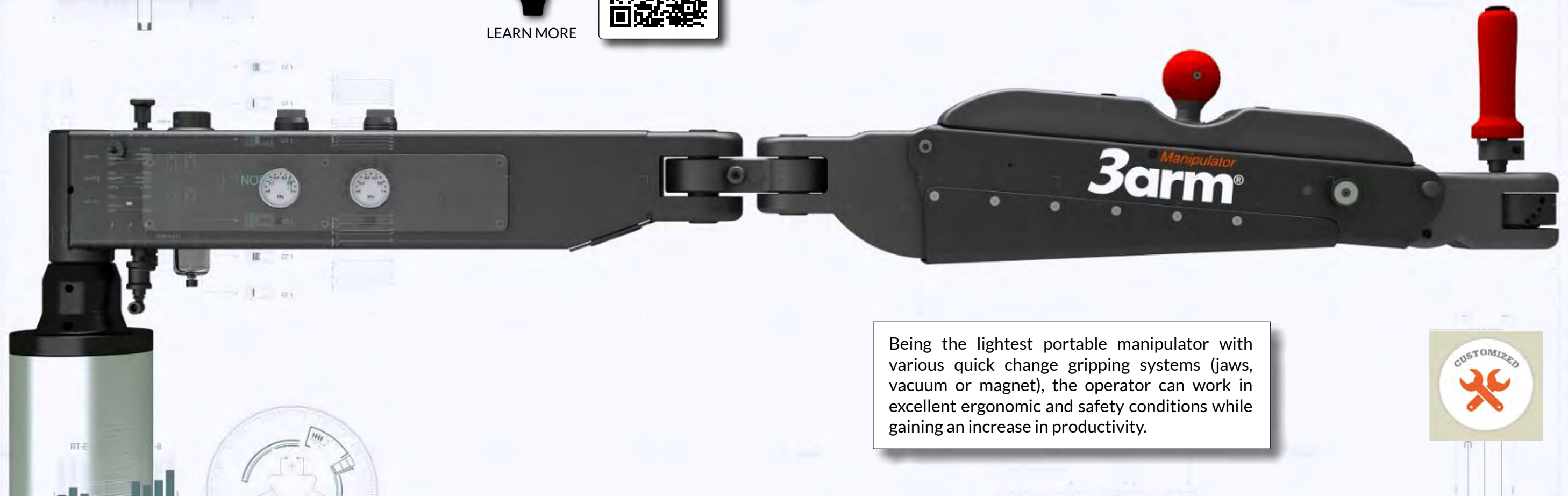
TW



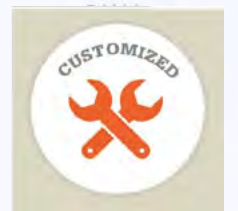
LEARN MORE



3ARM®, the right and efficient industrial ergonomic articulating arm solution to hold any kind of hand held power tool and different application devices. 3ARM® range offers zero gravity balancing through its accurate pneumatic balancer system, high weight load capacity, pneumatic and manual work positioners, torque reaction arm, many heads and attachments, and a wide range of supports to make easy the handling of the equipment and achieve any working area.



Being the lightest portable manipulator with various quick change gripping systems (jaws, vacuum or magnet), the operator can work in excellent ergonomic and safety conditions while gaining an increase in productivity.





LIGHTINGS



DUAL 2 in 1 SYSTEM

INSPECTION HAND LAMP
RECHARGEABLE & CABLE
POWERFUL LED
900 LUMENS
03.5243



MULTIFUNCTION LAMP
300 LUMENS
03.5400RED



FLASHLIGHT
RECHARGEABLE
1000 LUMENS
03.5138



RECHARGEABLE FLOODLIGHT
1000 LUMENS
03.5620



3-IN1 HAND LAMP
ULTRA-THIN & FLEXIBLE
200 LUMENS
03.5610



DUAL 2 in 1 SYSTEM

POWERFUL FLOODLIGHTS
RECHARGEABLE & CABLE
4000 & 6000 LUMENS
03.5441 / 03.5443



MULTIFUNCTION LAMP
250 LUMENS
03.5667



I-VIEW HEADLAMP
400 LUMENS
03.5626

STANDARD HEADLAMP I-VIEW HEADLAMP



LIGHTINGS



FALSHLIGHT
USB RECHARGEABLE
2000 LUMENS
4933479637



NECK LIGHT
USB RECHARGEABLE
400 LUMENS
4933479898



HEADLAMP
600 LUMENS
4933479963



M12



SWIVEL CARABINER FLOODLIGHT
USB RECHARGEABLE
550 LUMENS
4933479766



STICK LIGHT
220 LUMENS
4932430178



LANTERN LIGHT
4932430562



TORCH
120 LUMENS
4932430360



INSPECTION LAMP
300 LUMENS
4932430564



TORCH
120 LUMENS
4932430361

M18



AREA LIGHT
4000 LUMENS
4933478118

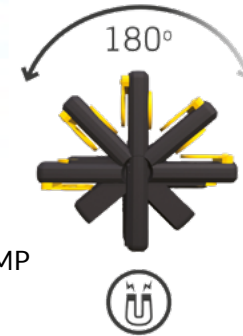


LIGHTINGS

EX PROOF LIGHTINGS



EX PROOF HAND LAMP
RECHARGEABLE
350 LUMENS
03.5617



03.5619



03.5618
RECHARGEABLE



03.5607



EX PROOF HEADLAMP
RECHARGEABLE
200 LUMENS
03.5606



EX PROOF HAND LAMP
RECHARGEABLE
200 LUMENS
03.5611





DYNAMOMETRY

THE ONLY TORQUE WRENCH WITH ELECTRONICALLY CONTROLLED BREAKAGE THAT GUARANTEES THE CONFORMITY OF YOUR TIGHTENING*



Model 0.4-4 Nm



Model 1-10 Nm

DYNASAM 4.0®



Model 10-100 Nm

15° damped breakage
Available on wrench 10-100 Nm



COMFORT
PRECISION
RELIABILITY
VERSATILITY
TRACEABILITY



MADE IN FRANCE



Model 10-100 Nm



Model 0.4-4 Nm

*With a good quality screw nut and suitable lubrication.

SENSOTORK®



701

COMPACT AND WITH
FIXED FINE TOOTH RATCHET

Reference	Nm	Square	L mm single key	Weight kg
701	1-20	1/4	210	0.716
701-SP*	1-20	1/4	210	0.700



- 1** **Safe.** Thanks to the permanently integrated fine-tooth ratchet with 80 teeth and QuickRelease technology.
- 2** **Compact.** The ergonomically constructed design is extremely slim and enables working even in the most awkward places.
- 3** **Versatile.** Three measuring methods: track, peak hold, joint evaluation.
- 4** **Accurate.** SENSOTORK® 701 measures to within ± 4%. Always.
- 5** **Intuitive.** The required mode of operation can be quickly and easily set using the single-button setting system.
- 6** **Ergonomically designed.** Strain-free working thanks to the specially designed handle.

MANOSKOP®



714

DIRECT TORQUE
READING AND TRIGGER

Reference	Nm	Attachment	L mm single key	Weight kg
714-1	1-10	9 x 12 mm	226	0.370
714-2	2-20	9 x 12 mm	226	0.380
714-4	4-40	9 x 12 mm	252	0.420
714-6	6-60	9 x 12 mm	393	0.810
714-10	10-100	9 x 12 mm	466	1.085
714-20	20-200	14 x 18 mm	547	1.361
714-40	40-400	14 x 18 mm	687	1.765
714-65	65-650	22 x 28 mm	890	3.222
714-80	80-800	22 x 28 mm	1158	4.572
714-100	100-1000	22 x 28 mm	1343	4.990

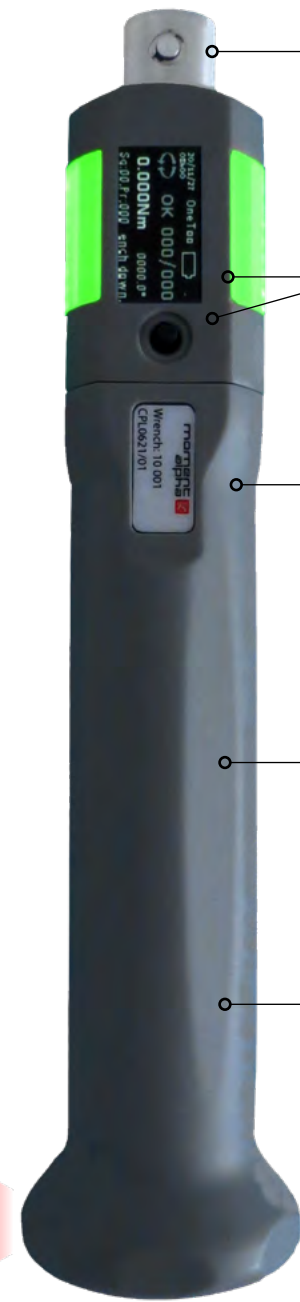
- 1** **High-definition graphical color display** with additional side-mounted indicator lamps.
- 2** **Automatic key-lock** prevents inadvertent changes.
- 3** **Fast, accurate setting** via keypad. Display deviation value ± 2%.
- 4** **Up to 200 screwdriving cases** programmable in up to 25 operational schedules.

moment alpha

BARGRAPH
8 LEDs
3 COLORS



BARCODE
READER



INTERCHANGEABLE ACCESSORIES
WITH AUTOMATIC DETECTION
(EXTENSIONS, RATCHETS)

1.4" OLED SCREEN ASSOCIATED
WITH A MULTI-DIRECTIONAL
BUTTON

VIBRATION 
SOUND ALERT 

ERGONOMIC HANDLE
Length: 250 mm
Diam: 40 mm
Weight: 650 gr

INTERCHANGEABLE
LI-ION BATTERY
Autonomy: Up to 6 h
Charging time: 2 h

ACCURACY TORQUE AND ANGLE
1% OF FULL SCALE



TORQUE WRENCH
TORQUE & ANGLE

MADE IN
FRANCE



- Tightening direction management
- Can be used in torsion and flexion mode
- Automatic detection of accessories
- Open Protocol/One-Too Protocol/Toolsnet
- Measuring range from 0 to 1000 Nm depending on the extensions

TIGHTENING STRATEGIES:

- Torque only
- Torque control with angle monitoring
- Angle control with torque monitoring
- Drag torque

OPTIONAL STRATEGIES:

- Residual torque strategy
- Landmark mode strategy
- Target angle mode strategy
- Elastic limit detection strategy



RATCHETS:

- 200 - 600 Nm
- 1000 Nm

1-Wire card



WRENCH ALONE 4 TO 40 Nm
WRENCH WITH EXTENSIONS -> 1000 Nm
SCREWDRIVER MODE 0.5 TO 5 Nm

EXTENSIONS:

- 100 Nm
- 200 Nm
- 300 Nm
- 400 Nm
- 600 Nm
- 1000 Nm



DYNALEC



DIRECT TORQUE READING
TIGHTENING & LOOSENING

Reference	Nm	Square	L mm single key	Weight kg
V-04-R	0.3-4	1/4"	255	0.800
V-1R	0.5-13	1/4"	255	0.800
V-2J	1-27	3/8"	255	0.900
V-4J	3-40	3/8"	255	0.900
V-8S	6-80	1/2"	460	2.100
V-16S	10-160	1/2"	530	2.100
V-20S	20-215	1/2"	530	2.100
V-40CL	30-400	3/4"	720	4.000
V-80CL	40-800	3/4"	1010	6.000
V-200ML	250-2000	1"	2060	18.000



With tracking needle



DYNATECH

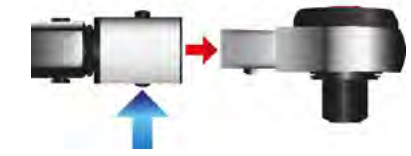


FULLY-TESTED REPEATABILITY
PRECISION & SAFETY

Reference	Nm	Attachment	L mm single key	Weight kg
DYTC-5-0 DYTC-5-1	1-5	9 x 12 mm	190	0.401
DYTC-25-0 DYTC-25-1	5-25	9 x 12 mm	216	0.421
DYTC-50-0 DYTC-50-1	10-50	9 x 12 mm	341	1.100
DYTC-100-0 DYTC-100-1	20-100	9 x 12 mm	430	1.277
DYTC-200-0 DYTC-200-1	40-200	14 x 18 mm	479	1.564
DYTC-350-0 DYTC-350-1	70-350	14 x 18 mm	543	1.764
DYTC-600-0 DYTC-600-1	120-600	14 x 18 mm	946	6.315



Special tips on request



DYTC-xxx-0 = W/O RATCHET
DYTC-xxx-1 = WITH RATCHET

MANOSKOP®



730 Quick

SAFETY LOCK
QuickRelease

Reference	Nm	Attachment	L mm single key	Weight kg
730Q-5	6-50	9 x 12 mm	315	0.780
730Q-10	20-100	9 x 12 mm	370	0.940
730Q-12	25-130	14 x 18 mm	410	1.080
730Q-20	40-200	14 x 18 mm	455	1.210
730Q-40	80-400	14 x 18 mm	590	1.620
730Q-65	130-650	14 x 18 mm	875	3.190



Easy-to-read twin scale for Nm/ft-lb and Nm/in-lb



No need for manual reset to zero thanks to wear-free trigger system



Rapid setting thanks to easy-action locking lever in the handle



MANOSKOP®



730 N

QUICK & EASY CONTROL
QuickSelect

Reference	Nm	Attachment	L mm single key	Weight kg
730N-2	4-20	9 x 12 mm	275	0.737
730N-5	10-50	9 x 12 mm	330	0.831
730N-10	20-100	9 x 12 mm	386	1.128
730N-12	25-130	14 x 18 mm	421	1.264
730N-20	40-200	14 x 18 mm	467	1.655
730N-40	80-400	14 x 18 mm	607	3.231
730N-65	130-650	14 x 18 mm	890	3.504
730N-80	160-800	22 x 28 mm	1178	4.825
730N-100	200-1000	22 x 28 mm	1363	5.000



Safety interlock QuickRelease



No need for manual reset to zero thanks to the wear-free trigger system



Accurate one-handed setting - quick & easy control. Unlock, set, lock

TORSIOMAX



775

ACCURATE & ERGONOMIC
CLOCKWISE & ANTICLOCKWISE

Reference	cNm / Nm	Inside	L mm Single	Weight kg
775-3	2-30 / 0.02-0.3	F 6.3	105	0.240
775-12	20-120 / 0.2-1.2	F 6.3	157	0.375
775-30	40-300 / 0.4-3	F 6.3	160	0.395
775-50	100-500 / 1-5	F 6.3	205	0.445
775-100	400-1000 / 4-10	F 6.3	235	0.755

DISENGAGEABLE

± 6%

PROGRESSIVE



Easy-to-read twin scale
Nm/ft-lb



Insert tools:
for all 1/4" hex E 6.3

2-1000 cNm



Available in three models
for different torque ranges

TORSIOTRONIC®



± 4%

ELECTRONICS & MECHANICS
READING & TRIGGER

Reference	cNm / Nm	Inside	L mm Single	Weight kg
TORS-12	12-120 / 0.12-1.2	F 6.3	317	1.494
TORS-30	30-300 / 0.3-3	F 6.3	317	1.502
TORS-60	60-600 / 0.6-6	F 6.3	317	1.508
TORS-100	100-1000 / 1-10	F 6.3	317	1.616
54100062	CHARGER			

80

Ratcheting bit-holder
with 80 teeth



OLED display
clear & bright



The TORSIOTRONIC® screwdriver
is the first electromechanical torque
screwdriver in the world.

12-1000 cNm

4,5°

Small ratchet
angle of only 4.5°



Integrated
bit-holder ratchet

DYNATEST

LABORATORY



Reference	Nm	Drive	Weight kg
CMU-1000	50-1000	6 sockets of 36 mm	7.600

ACCURACY

Accuracy + or - 1% of the measured value
guaranteed between 5% and 100% of the nominal value

UNIVERSAL AND COMFORTABLE

Several measurement units:
Nm, Ft, Kg.cm, In.lb

Visual and audio alarm:
LED color:
Yellow 90% / Green 100% / Red 110%
Large screen with digital display



TRACEABILITY

Connectivity:
USB cable (included)

Memory:
999 peak mode values
SAM CMU software included

DYNATEST

WORKSHOP



Reference	Nm	Drive	Weight kg
CM-70	13.5-70	6 sockets of 10 mm	5.300
CM-400	20-400	6 sockets of 22 mm	5.800
CM-1000	50-1000	6 sockets of 36 mm	7.600

OPERATING TEMPERATURE
+5°C / +42°C

PROTECTION AGAINST FLUID SPLASHES

SENSOTORK®

WORKSHOP

TESTER FOR TORQUE WRENCHES
& TORQUE SCREWDRIVERS



Reference	Nm	Square
7707-1	0.2-10	1/4
7707-1W	0.4-20	1/4
7707-2W	2-100	3/8
7707-2-1W	4-200	1/2
7707-2-2W	8-400	3/4
7707-3W	25-1000	3/4

PerfectControl®

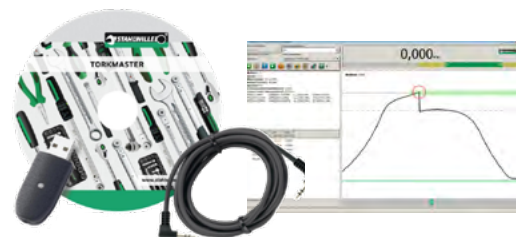
LABORATORY

COMPLETE CALIBRATION
SYSTEMS



Manual or Motor driven
1-1000* Nm

Calibration Software
TORKMASTER



SmartCheck

WORKSHOP

TESTER FOR TORQUE WRENCHES
& TORQUE SCREWDRIVERS



Reference	Nm	Square
Sm10 USB	1-10	1/4
Sm100 USB	10-100	3/8
Sm400 USB	40-100	3/4
Sm800 USB	80-800	3/4
Sm1500 USB	150-1500	1

- ACCURATE
- ROBUST
- FLEXIBLE
- ROTATING
- STANDALONE
- IMPACT-RESISTANT
- USB INTERFACE

± 1%



DYNAMOMETRY



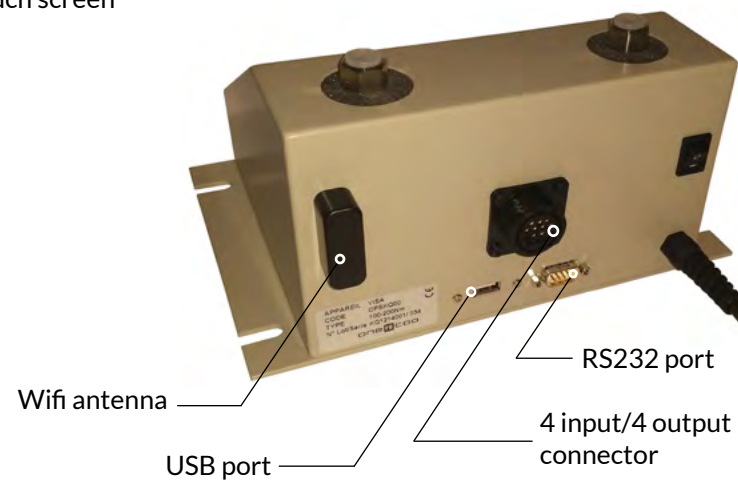
VÉRIFICATEUR D'INSTRUMENT DE SERRAGE ANGULAIRE



2 transducers
1 to 1 000 Nm range

SELECT YOUR SENSORS

Torque range	Drive*
1 to 10 Nm sensor	6 sockets of 10 mm
5 to 50 Nm sensor	6 sockets of 13 mm
10 to 100 Nm sensor	6 sockets of 17 mm
20 to 200 Nm sensor	6 sockets of 17 mm
50 to 500 Nm sensor	12 sockets of 27 mm
100 to 1 000 Nm sensor	12 sockets of 27 mm



Wifi antenna

USB port

RS232 port

4 input/4 output connector

ASSEMBLY MECHANICAL SIMULATOR



- 10 Nm Assembly Mechanical Simulator
- 50 Nm Assembly Mechanical Simulator
- 100 Nm Assembly Mechanical Simulator
- 200 Nm Assembly Mechanical Simulator
- 500 Nm Assembly Mechanical Simulator
- 1 000 Nm Assembly Mechanical Simulator

MADE IN FRANCE

(*) sockets supplied

DYNAMOMETRY

FLIGHT CONTROL TORQUE HANDLES



REGISTERED DESIGN ® FR1012419



- DBI25
- DBI35
- DBI50
- DBI100
- DBI200
- DBI300

- Torque +/- 2.5 daN
- Torque +/- 3.5 daN
- Torque +/- 5.0 daN
- Torque +/- 10 daN
- Torque +/- 20 daN
- Torque +/- 30 daN

MRO TORQUE AND ANGLE WRENCH



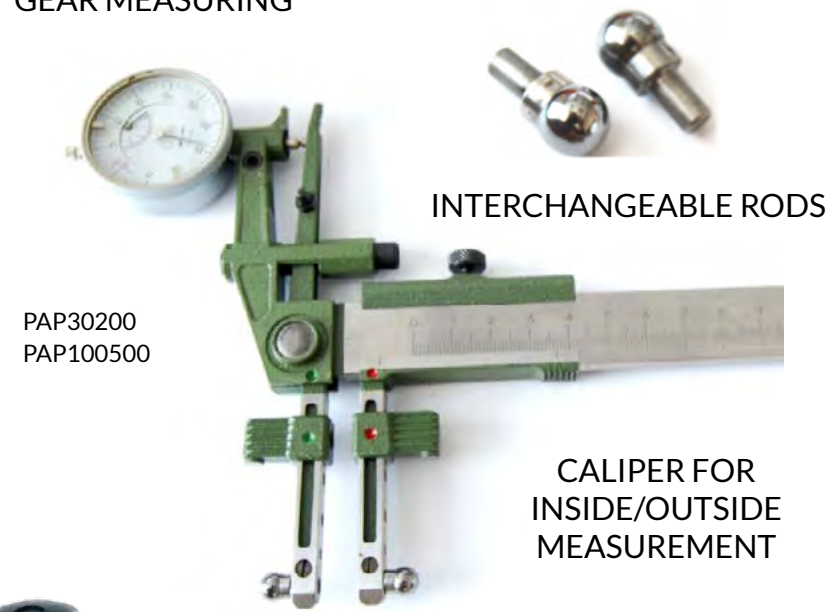
- Flexibility: Only One Wrench to manage tightening from 0,5 to 1 000 Nm, screwdriver and flexion mode
- Traceability: Register the last 100 000 results and 1 000 last curves (CSV format)
- Easy to use: Fast and simple programming mode, with Quality and Control Mode
- Functions: Tightening and batch counting
- Connectivity: Bluetooth Communication

FAST AND SIMPLE PROGRAMMING MODE



METROLOGY

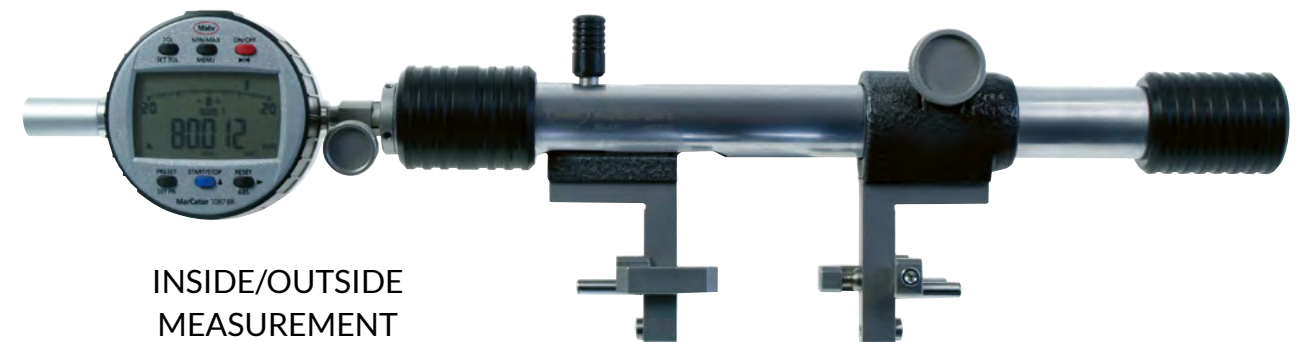
GEAR MEASURING



ADJUSTABLE SNAP GAGE



UNIVERSAL MEASURING INSTRUMENTS



METROLOGY



PIN GAGES



SMOOTH
THREAD
FLUTED



FLIGHT
CONTROL
TORQUE
HANDLES



REGISTERED DESIGN ® FR1012419

RIVET-HEIGHT
GAUGE



AFA-1

See pages
82-83



AFD-1



HIGH CAPACITY
ULTRA LIGHT
CALIPERS



MOBILE ROUGHNESS
MEASURING
INSTRUMENTS



SPIRIT
INCLINOMETERS

METROLOGY

MULTIMETERS



MOBILE MICRO-OHMMETERS



OM17



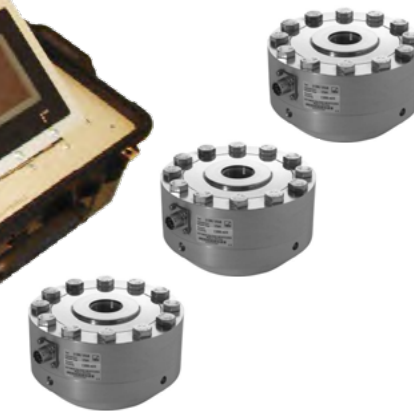
B-PTK-M5



For inductive and
non-inductive resistances



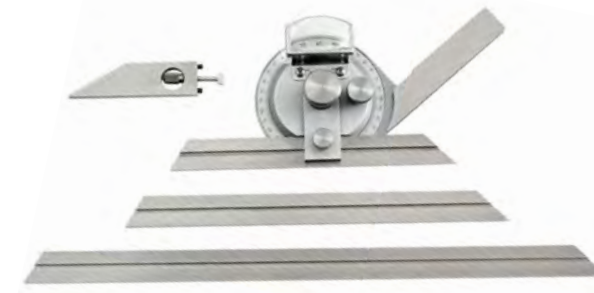
WEIGHING UNITS
FOR
HELICOPTERS



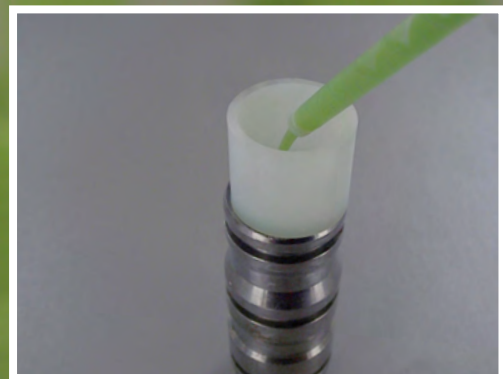
THERMOMETERS
THERMO-HYGROMETERS



PROTRACTORS



DIGITAL
INCLINOMETERS



PLASTIFORM® Technological Innovation:
Dimensional Print Moulding

Working principle of PLASTIFORM® technology:

PLASTIFORM® products are made up of two components that solidify upon contact (1:1 ratio). While curing, they imitate all details of the surface on which they are applied with a very high precision: dimensions, forms, texture, surface finish, etc

The 7 unique technical features of PLASTIFORM® compounds:

- 📍 Virtually no shrinkage**
 This polymerization, which lasts for approximately 6 minutes, does not lead to any loss of volume
- 📍 Micron (µm) accuracy**
 PLASTIFORM® products imitate all details of a surface (dimensions, form, surface finish...) to a precision better than 1 µm
- 📍 Shape-retention memory**
 When solid, the PLASTIFORM® shape will return to its form, even if temporarily distorted
- 📍 No adhesion, no residue**
 The PLASTIFORM® can be applied on every kind of surface⁽¹⁾ (metals, alloys, PVC, wood, plaster, etc), even under water
- 📍 Environmentally friendly**
 Non toxic, non polluting. PLASTIFORM® products can be handled with no specific precautions (except for resin products). Not subject to the REACH Regulation
- 📍 Dimensional stability**
 The cast will not degrade over time, and can be used for future reference
- 📍 Resistance**
 PLASTIFORM® products are resistant to most chemical, mechanical and heat treatments (up to 200°C)⁽²⁾



⁽¹⁾⁽²⁾ a preliminary test is recommended.

Double Blade Cutter



The Double Blade Cutter allows to create a slice of about 1mm in a fingerprint of a compatible product to facilitate its measurement.



Standard Double Blade Cutter
Blade spacing: ~1 mm and length: 60 mm
P/N: AC-012

Standard Cutter Guide
For standard cutter
P/N: AC-013



Kits and Cases

The big cases



- ML-040
- ML-041
- ML-042
- ML-100
- ML-101

The «Large Volume Products» kits



- KD-118
- KD-119
- KD-120
- KD-123

Accessories



DS-53



DP-50



DS-400

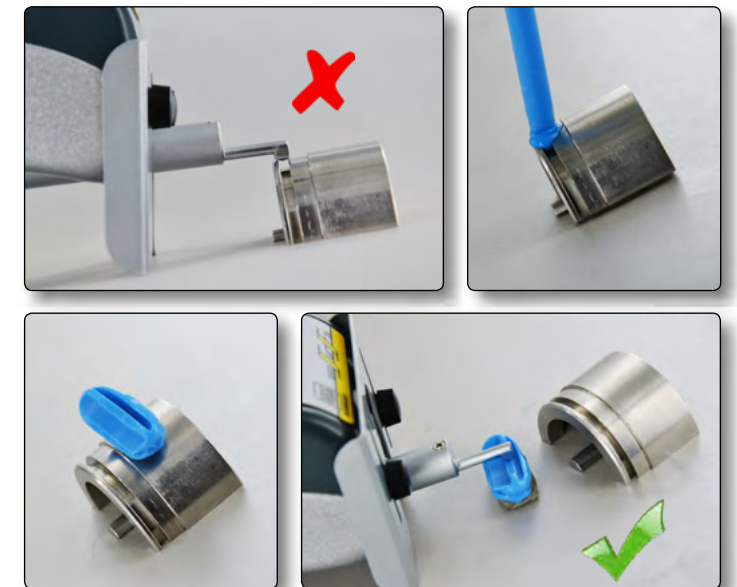


DP-400 / DB-400

Indirect Roughness Control

Some Plastiforms offer the possibility to check the surface condition of the part as well as its dimensions. Among these Plastiforms, some are rigid, others are flexible, thus, the range is able to reach the most difficult control areas.

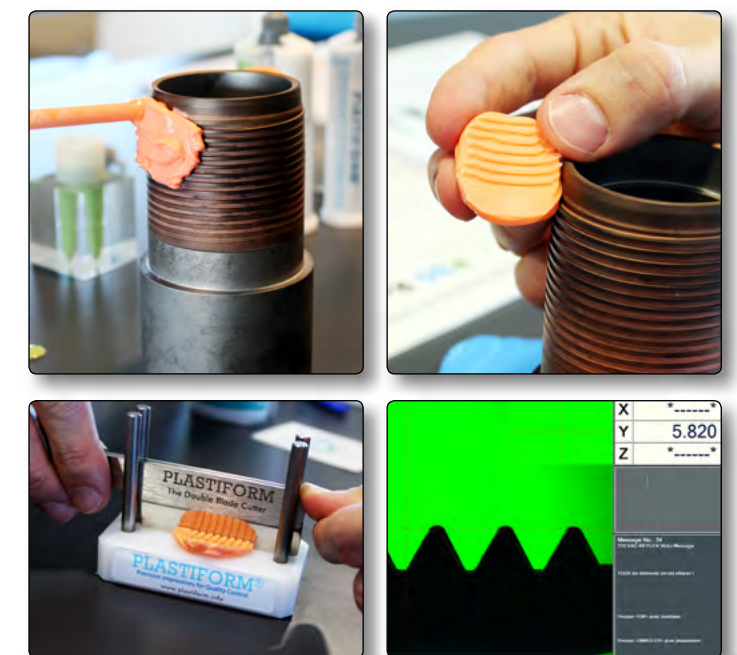
Rigid products should be used with contact measuring systems, whereas flexible products should be used with optical measuring systems.



Non-Destructive Control

The Plastiforms were created in order to carry out non-destructive controls of internal and external dimensions. Do not destroy your parts to validate their conformity! Capture dimensions in a footprint and measure directly the impression. The Plastiform range allows you to replace all your destructive controls with an impression control. Control your parts faster, easier and economically.

The resolution of the impressions is 1 µm!





The Safran Helicopter Engines Vibration Test Kit Type 3656-A is designed for field inspection of all Safran Helicopter Engines families. Vibration test measurements are performed according to the respective maintenance manual.

Type 3656-A is delivered with the sensor and conditioning unit (Fig. 2) consisting of a high-temperature industrial Charge Accelerometer Type 8324 and a cable/conditioning unit Type 2647-D-004. Type 2647-D-004 is a seven meter, low-noise, high-temperature cable with an integrated charge to DeltaTron converter, specifically customized for demanding engine measurements

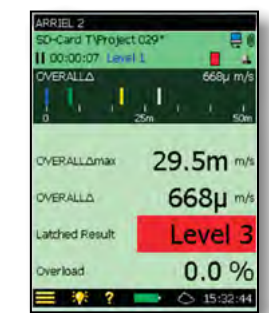
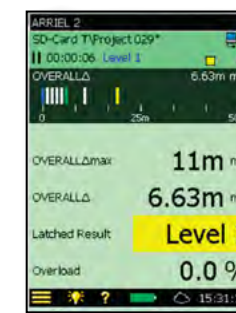
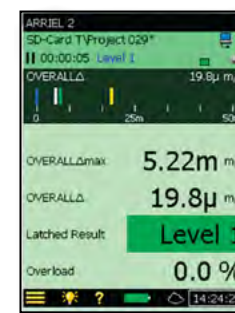
OUR SERVICES

- NEW PRODUCTS
- SUPPORT
- AFTER-SALES SERVICE
- FACTORY CALIBRATION

**SAFRAN HELICOPTER ENGINES
VIBRATION TEST KIT
TYPE 3656-A**

The vibration measurements are performed during an aircraft ground run, where the engine is run up under specific controlled conditions. Accelerometer Type 8324 is installed on the engine in a pre-defined position and connected to hand-held vibration analyzer Type 2250-H-100. The vibration analyzer features measurement templates and vibration limits from all Safran Helicopter Engines families, and will process the vibration measurements according to the maintenance manual instructions of the specific engine type.

The vibration measured is automatically compared to the individual limits of the specific engine, and the 2250-H-100 will give visual feedback of the status passed or limit exceeded. The vibration signals and test results are recorded during the test to provide optional post-processing by Safran Helicopter Engines. Detailed test annotation is easily appended by the operator using Safran Helicopter Engines predefined Meta Data.



VIBRATION TEST KIT 3656-A

2250-H-100



120505/1



Fig. 2

8324



METROLOGY

VIBRATION ANALYSIS



P/N 7310



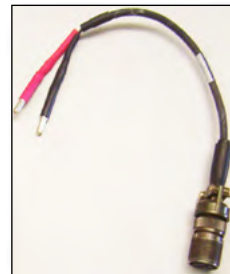
P/N 12900



P/N 9850



P/N 3575



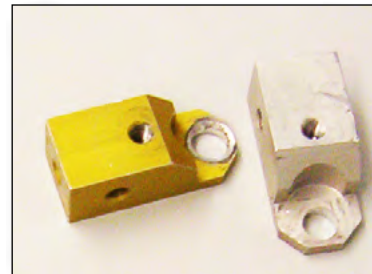
P/N 3140-555



P/N 11210-20



P/N 13797



P/N 10329-1 & 10329-2



P/N 3382 & 3383



P/N 10808-25



P/N 5876



P/N 11247-50



P/N 10423-1



P/N B-92933A01-T880



METROLOGY



COMPLETE RANGES TO COVER ALL VIBRATION ANALYSIS NEEDS ON CIVIL AND MILITARY AIRCRAFTS



MOBILE MEASUREMENT IMPACT

**THE FIRST PORTABLE DEVICE
FOR THE MEASUREMENT AND
CONTROL OF AIRCRAFT
IMPACTS**

**A DIRECT & FAST
OPTICAL MEASUREMENT
ON ALL SUPPORTS**



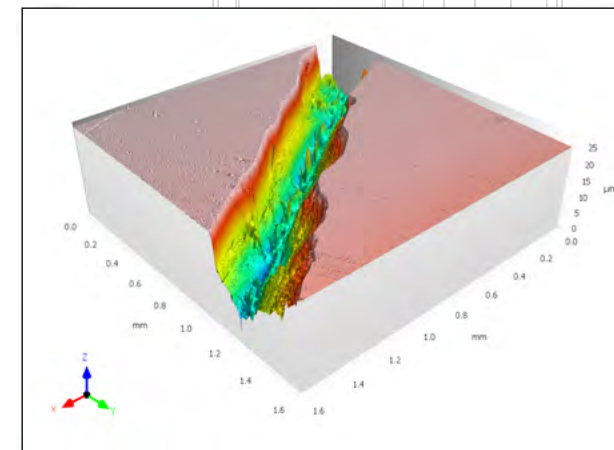
WINDSHIELD/STRUCTURE/BLADE
ROTOR/LANDING GEAR/WEAR PARTS
ETC

**THE GUARANTEE
OF YOUR
AIRWORTHINESS**



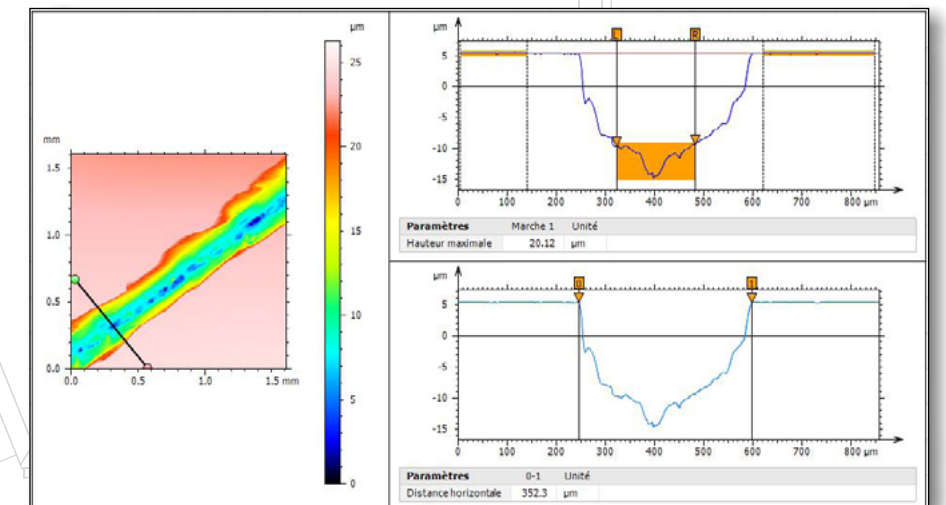
**MOBILE CONFOCAL
MICROSCOPE**
x5 x10 x20 x50 x100
INTERCHANGEABLE OBJECTIVES

3D MEASUREMENTS & ANALYSIS



**MEASUREMENT
ACCURACY**
+/- 0.0001 mm

**AN IMPACT
MEASUREMENT
IN LESS THAN
5 MINUTES**



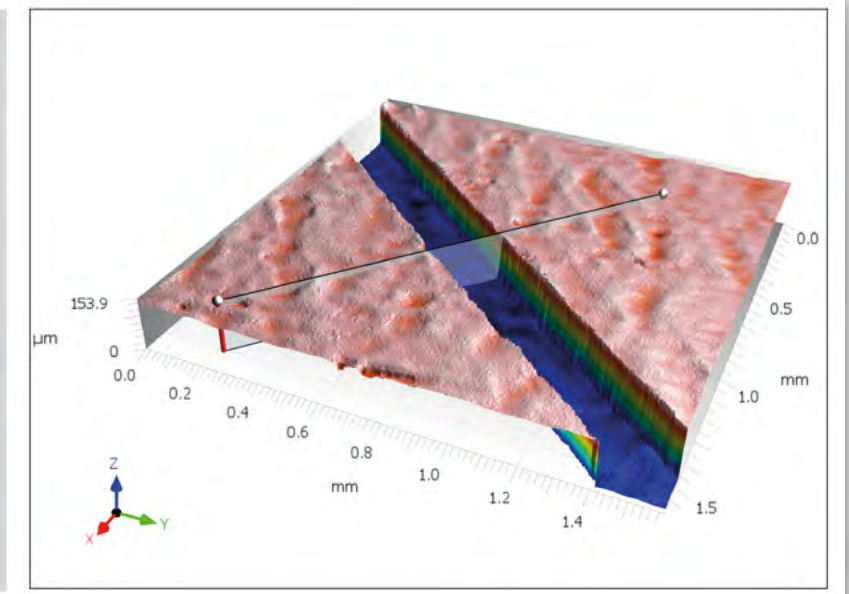


INTERIOR SCRATCH MEASUREMENT ON H175 WINDSHIELD



Número d'échantillon:	1
Utilisateur:	user
Date:	29/10/2021
<hr/>	
Système de mesure:	MMI
Objectif / capteur:	1600S
Stitching:	1x1
<hr/>	
Axe:	X
Longueur:	1.597 mm
Pas:	1.333 μm
<hr/>	
Axe:	Y
Longueur:	1.597 mm
Pas:	1.333 μm
<hr/>	
Notes:	/

3D SURFACE VIEW, HEIGHT AMPLIFICATION



INTERIOR scratch measurement of an H175 windshield from the **OUTSIDE!**

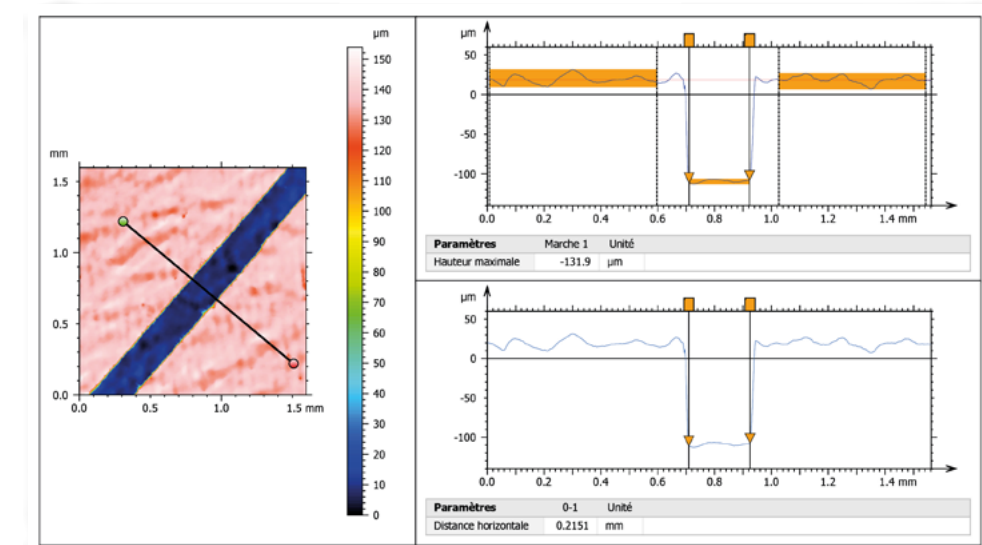
(Interior measurement not authorized by Airbus)

The maximum allowable depth for this type of damage is 200 μm .
The measured value is 131.9 μm .

- No windshield change
- No downtime
- Preserved airworthiness



2D SLICE ANALYSIS, HEIGHT AND WIDTH



RENT ME

ALSO AVAILABLE FOR RENT
WITH ITS TECHNICIAN



RENT ME

ALSO AVAILABLE FOR RENT
WITH ITS TECHNICIAN

MMI
MOBILE MEASUREMENT IMPACT
THE MOVIE

VISION OF
THE **FUTURE**



**MOBILE
MEASUREMENT
IMPACT**

THE MOVIE





NDT SOLUTIONS

NDT SOFTWARE AND SOLUTIONS PORFOLIO

VXintegrity™ a powerful NDT software platform that integrates all analytical tools and functions in an intuitive, ergonomic working environment. This new software platform contains four different modules (*Pipecheck, SmartDENT 3D, Surface Damage, Damage Monitoring*) able to handle all types of surface analysis, as well as simple metrology applications.

Our 3D scanners combined with **VXintegrity™** provide metrology-grade accuracy and traceable data with no time limit.



UNBEATABLE ACCURACY

- Highest data quality on digital reconstructions
- Reliable diagnostic and inspection results



INFINITELY TRACEABLE DATA

- Monitoring and comparing damage trends over time
- Establishment of trends



MANY USERS, SAME RESULT

- Low operator training and certification requirements
- Data acquisition and analysis with minimal human intervention

3D SCANNING SOLUTIONS FOR SURFACE DAMAGE ASSESSMENT

CHOOSE YOUR 3D SCANNER



Go!SCAN 3D™



HandySCAN 3D™ SILVER Series



HandySCAN 3D™ BLACK Series



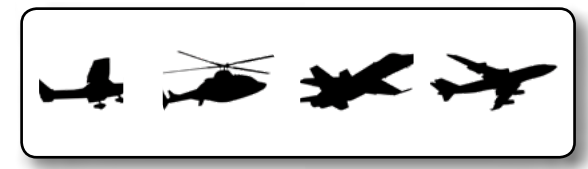
HandySCAN 3D™ MAX Series

	Fast and easy 3D scanning	Best price-performance ratio	Metrology-grade	Metrology-grade for large parts
Distinction	Texture and color measure	Simplicity Versatility	High-resolution 3D scans	4x larger scanning area
Accuracy	Up to 0,050 mm	Up to 0,030 mm	0,025 mm	0,075 mm
Acquisition conditions	Better results inside or in the shade	Inside or outside	Under direct sunlight and in harsh environments	Inside or outside
Color acquisition	Yes	No	No	No
Target quantity	+	++	++	+
Pricing	++	++	+++	+++
Acquisition speed	++	+	+++	+++
Working distance	0.40 m	0.30 m	0.30 m	1.00 m

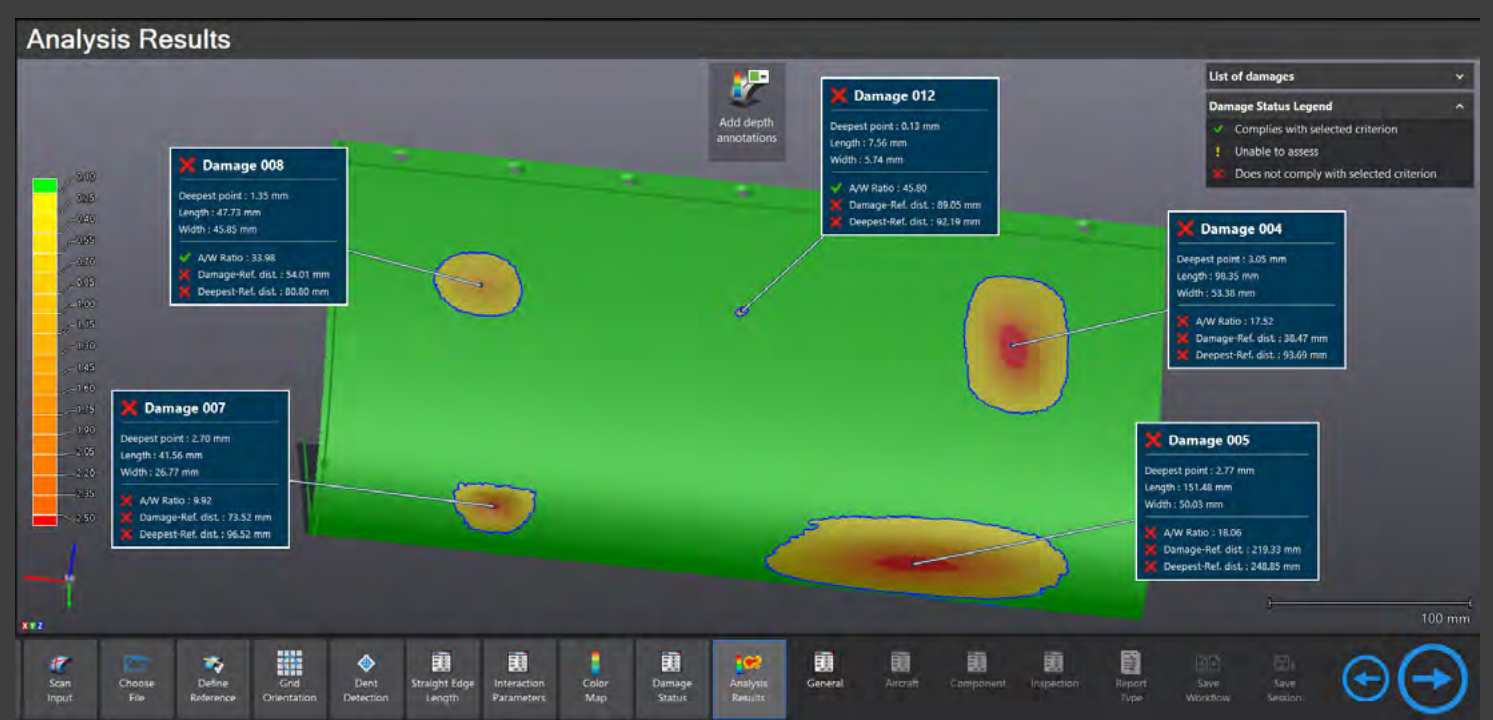
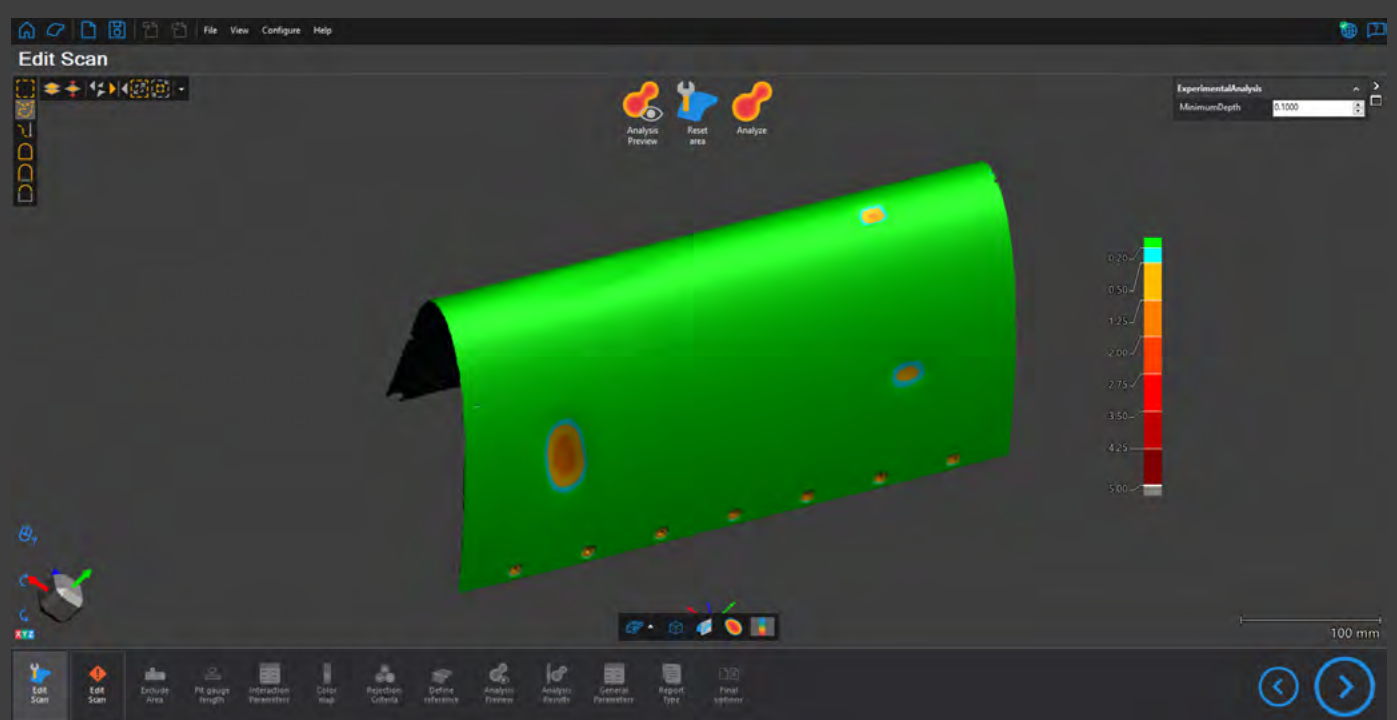


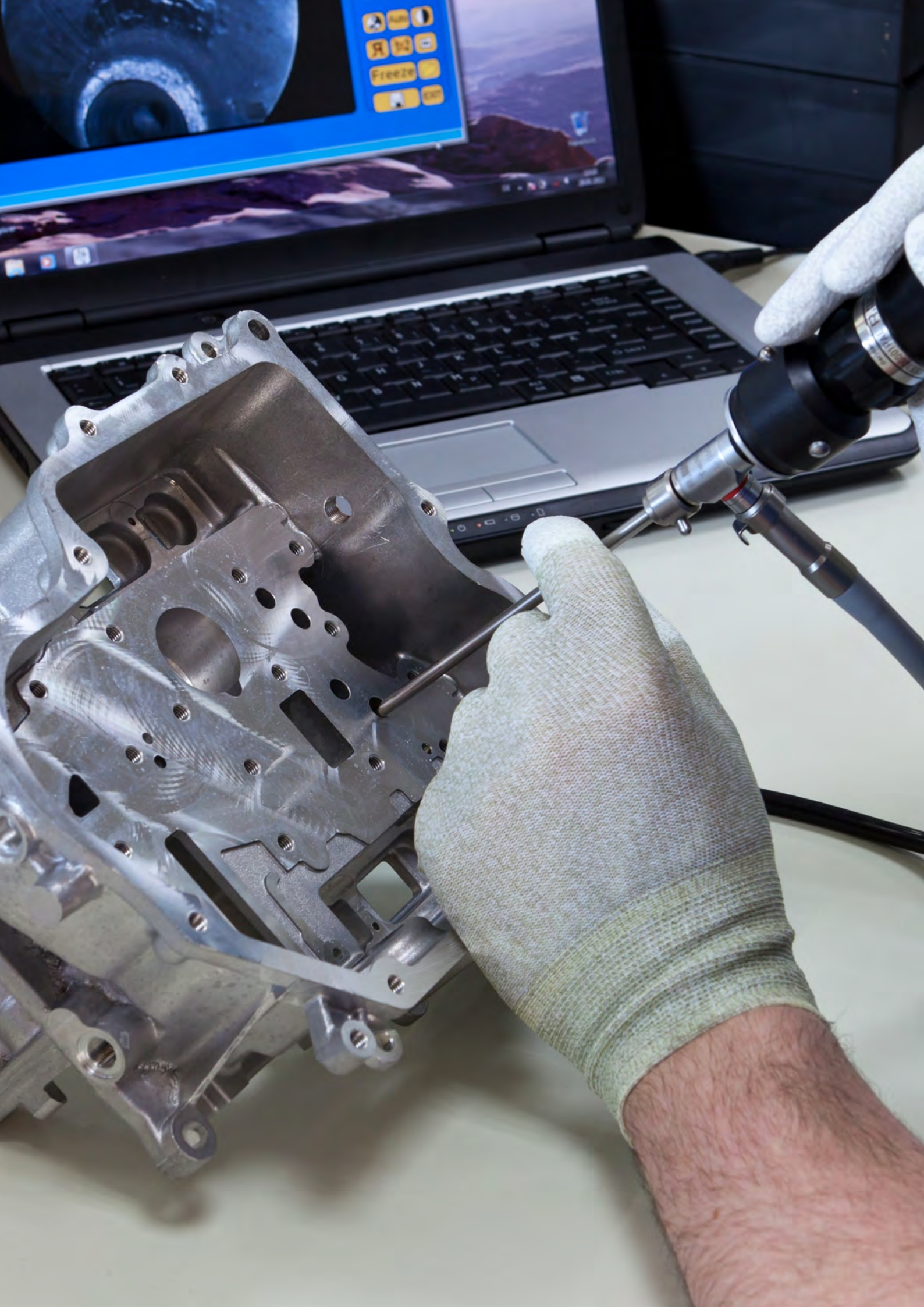
VXintegrity/SmartDENT 3D

NDT AEROSPACE INSPECTION



The MRO sector, aircraft, helicopter and RPAS manufacturers, and airlines all use NDT inspections. Accurate inspection is crucial to aircraft airworthiness, while limiting downtime and reducing costs. **SmartDENT 3D™** is the first 3D visualization software dedicated to the aerospace sector. Its algorithm is sensitive to the finest details, and enables the assessment and evaluation of impacts and deformations on different components, sizes and surface finishes of aircraft structures. This operator-independent software streamlines measurements and speeds up data extraction, enabling related departments to analyze final reports in optimized timeframes.





ENDOSCOPY



4.0	6.0	8.0
Ø 4.0 mm	Ø 6.0 mm	Ø 8.0 mm
1.5 - 4.0 m	1.5 - 7.5 m	1.5 - 7.5 m
4-way-360°	4-way-360°	4-way-360°
120° FOV	90°FOV	90°FOV

ATEX
CATEGORY 3



iRis XT Videoscope System

7.0" Touch display



4-Way

2-Way

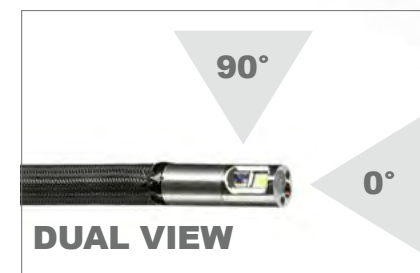


Integrated light source

2.4	3.0	4.0	6.0
Ø 2.4 mm	Ø 3.0 mm	Ø 4.0 mm	Ø 6.0 mm
1.0 - 3.0 m	1.0 - 1.5 m	1.0 - 3.0 m	1.0 - 7.5 m
2-way	2-way	4-way	4-way

High Resolution Camera CMOS Image Sensor

DUAL VIEW



XLED PRO Videoscope System

XLED PRO Videoscope System

ENDOSCOPY

The FLEX39HD and FLEX60HD are Ø3.9 or Ø6.0 articulated videoscopes with HD 720P image resolution (1 million pixels) and a choice of lighting types (LED or Cold Light, more powerful).

Its 4-way manual joystick enables you to steer the camera head 360°. To adapt to a wide range of uses, interchangeable probes of different lengths are available with 3.9 mm or 6.0 mm camera diameters and different viewing directions (axial, lateral, dual), details of which are given below.



Manual articulation
360° by joystick

Ø 3.9 mm or Ø 6.0 mm
camera head

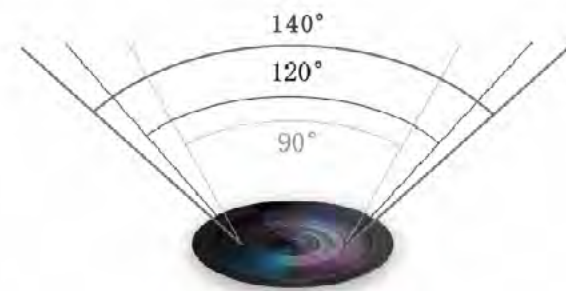
High resolution
1 Mpixels

Waterproof
IP65

120° viewing angle
(140° optional*)

5" HD color LCD screen
(1280 x 720 pixels)

2 types of lighting (choice)
Adjustable intensity
6 leds or cold light
by fiber optics



120° viewing angle
(140° optional*)



Interchangeable
flexible probe
from 1 m to 8 m



Carrying case

ENDOSCOPY

ENDOSCOPES HIGH DEFINITION

NEW!



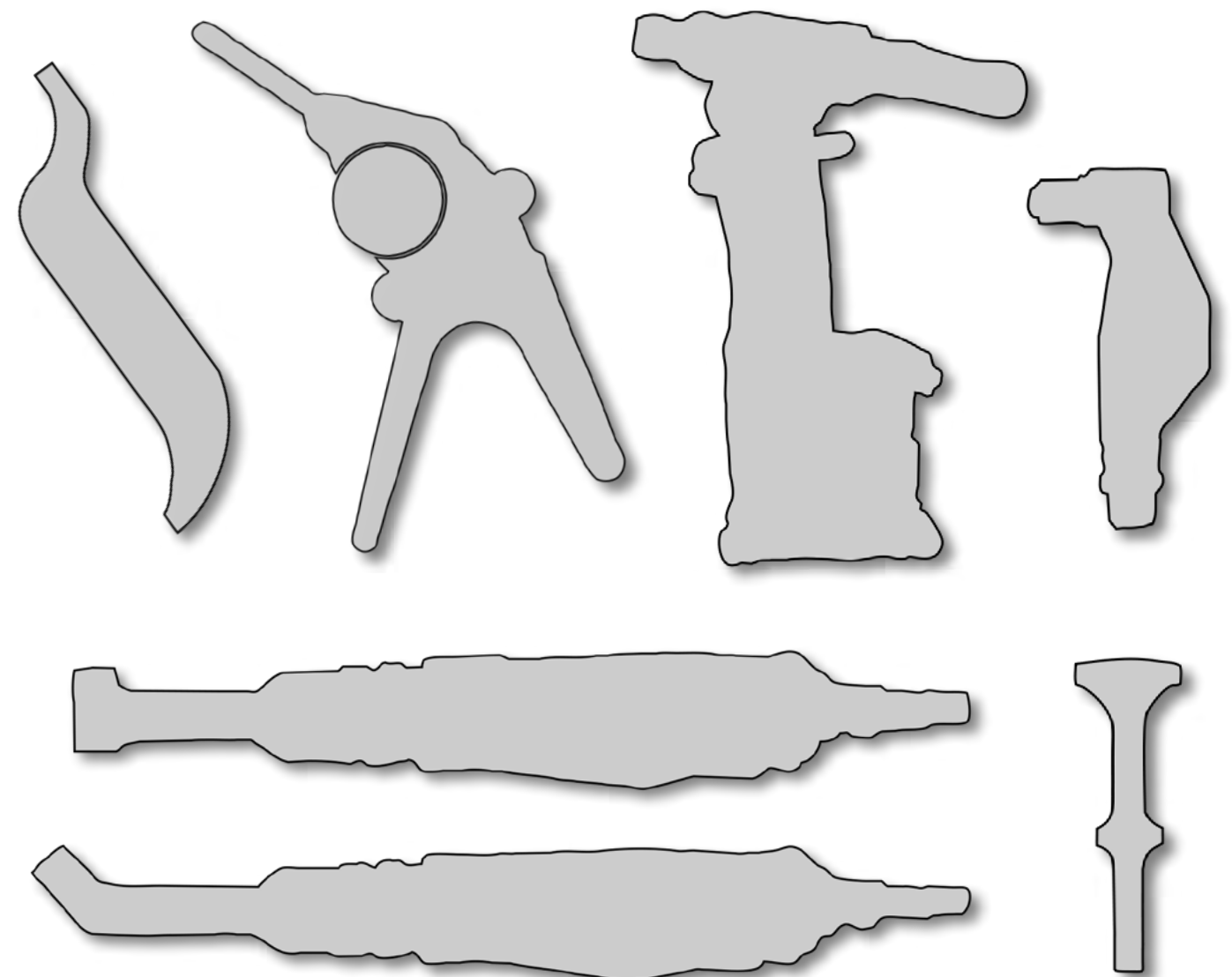
Ø 3.9mm

Ø 6.0mm



CUSTOM-MADE COMPOSITIONS

**OUR LARGE PRINTS DATABASE ALLOWS
US TO QUICKLY AND ACCURATELY
PRODUCE CUSHIONING FOAMS
FOR A WIDE NUMBER OF TOOLS**





THANKS TO OUR 3D SCANNER

CREAFORM / AMETEK

3D SCANNING OF ANY TOOL

LOW TOOL DOWNTIME

ON-SITE SERVICE AVAILABLE

OPTIMIZED FOAM PRODUCTION TIME

PERFECT TOOL HOLDING AND POSITIONING

PRECISE MOLD CAVITIES

ACCURACY

UP TO 0,050 MM
(0,0020 IN)

**VOLUMETRIC
ACCURACY**

0,050 MM + 0,150 MM/M
(0,0020 IN + 0,0018 IN/FT)

**PART SIZE RANGE
(recommended)**

0,1 - 4 M
(0,3 - 13 FT)

MEASUREMENT RATE

1 500 000
MEASUREMENTS/S



HIGH LEVEL
OF DETAILS



ACCURACY UP TO
0.050 MM (0.0020 IN)



COLOR
ACQUISITION



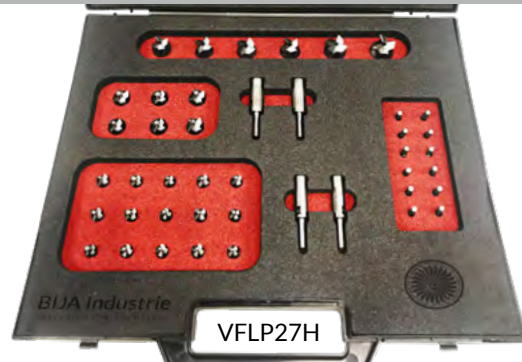
PATENTED
TECHNOLOGY



CUSTOM-MADE COMPOSITIONS



VCV21CR
WRENCHES WITH INDICATOR LIGHTS



VFLP27H
COUNTERBORES



COUNTERSINKS AND MICROSTOPS

SOME EXAMPLES OF OUR CUSTOM-MADE CASES



HAND REAMERS
ALES-V40 / ALES-V51



VFET9H
BACK COUNTERSINKS



COUNTERSINKS AND COLOR MICROSTOPS



MRO8P
INSTALLATION & REMOVAL OF INSERTS



BBA30
AVIATION BIT SET

CUSTOM-MADE COMPOSITIONS



JBLT10F
10 FLUSH

JBLT55FP
5 FLUSH / 5 PROTRUDING

JBLT10P
10 PROTRUDING



JO-BOLT



HI-LOK
CHL-18P



CUSTOM-MADE COMPOSITIONS



CHERRYMAX®
G747



CHERRYMAX®
G704



CHERRYMAX®
G704



CHERRYMAX®
G83

RIVETING TOOLS

CUSTOM-MADE COMPOSITIONS



PNEUMATIC CASE
AHP12



SAFE-T-CABLE
200,300 or 400 SERIES



THICKNESS GAUGE
JR3025



DESIGN & CARRY OUT YOUR PROJECTS

CUSTOM-MADE COMPOSITIONS



MANUAL C YOKE
CRV19PM



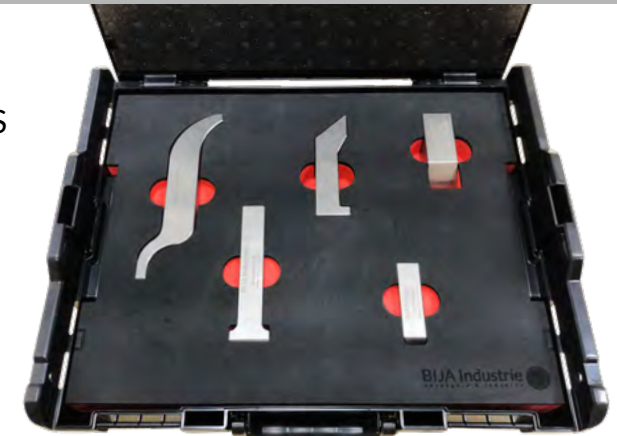
HAND RIVETING PLIERS
PRV19GM

CUSTOM-MADE COMPOSITIONS



N95505COFF2

BUCKING BARS



N95505COFF1



SQUEEZE SET CASE
VBR4001



RIVET EXTRACTION
MRO12T



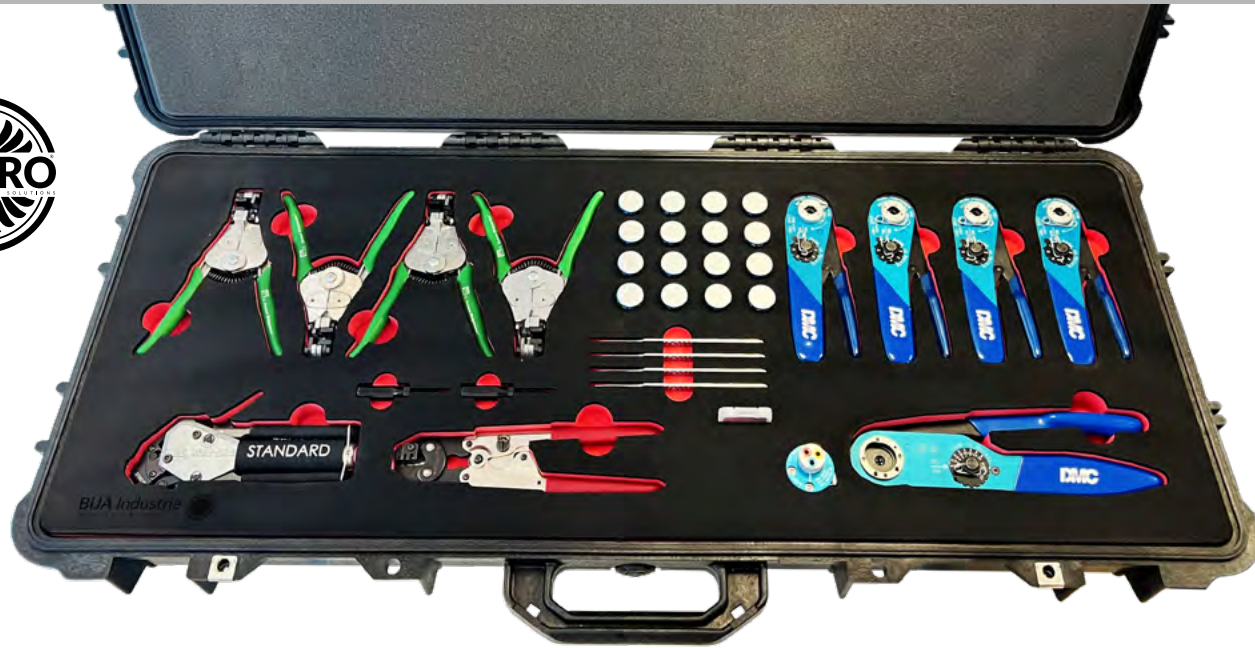
WINDSHIELD
POLISHING
CASE
MRO30P



BELL TREPANS
TRH50S



CROWFOOT
CFT-16V



MRO40E



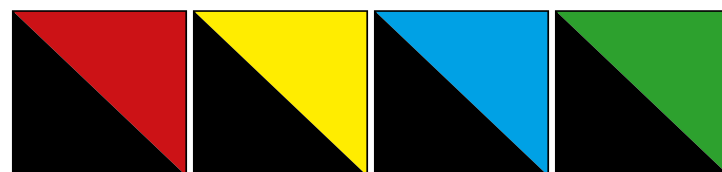
ECA3113-BMP



ECA3113-BMT

**FOR MOST OF
OUR FOAMS
YOU CAN CHOOSE
YOUR OWN
COLOR**

**4 AVAILABLE
FOAM COLORS**



CUSTOM-MADE COMPOSITIONS



MRO Integral Solutions

MRO50

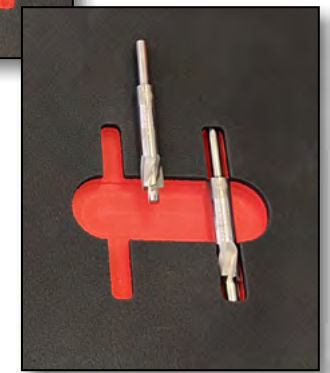
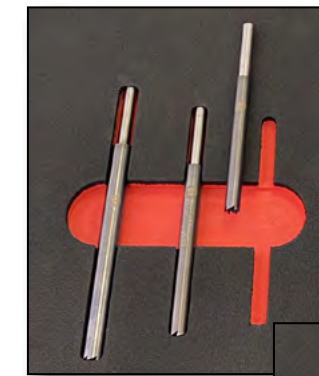
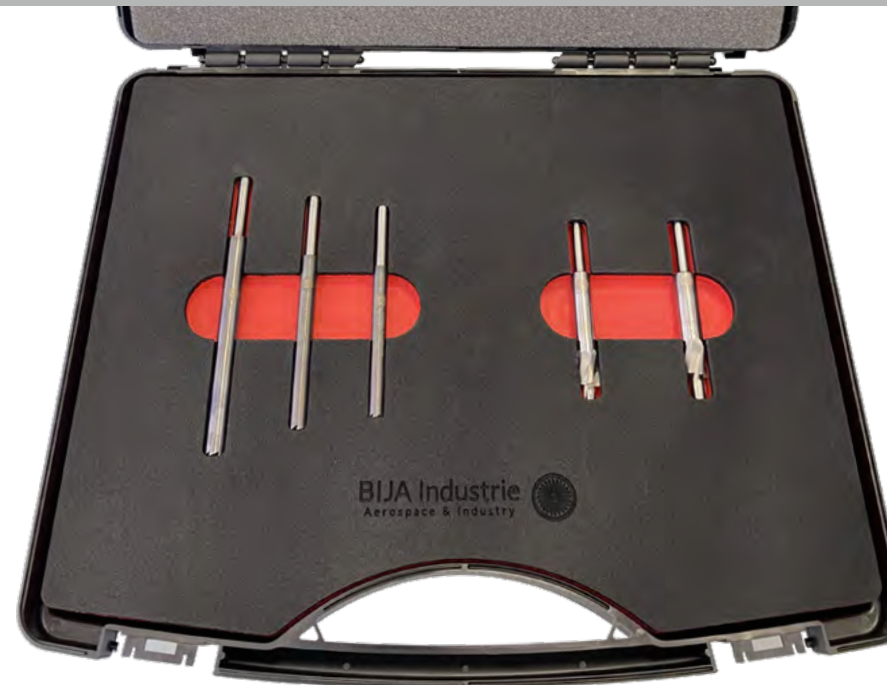


MRO50M
METRIC

MRO50A
IMPERIAL



CUSTOM-MADE COMPOSITIONS



MRO Integral Solutions

MRO5R



ROSAN RING EXTRACTION KIT

ROSAN - FEMALE



ROSAN - MALE



CUSTOM-MADE COMPOSITIONS



MRO Integral Solutions
MRO200



MRO Integral Solutions
MRO-X



2X, 3X or 4X

CUSTOM-MADE COMPOSITIONS



MRO Integral Solutions
MRO100V



MRO Integral Solutions
MRO50F



CUSTOM-MADE COMPOSITIONS



MRO Integral Solutions
MRO250M



**STANDARD
MAINTENANCE
EQUIPPED TROLLEY**

CUSTOM-MADE COMPOSITIONS



2X, 3X or 4X

MRO Integral Solutions
MRO-X+



**STRUCTURAL
RIVETING**



MRO Integral Solutions
MRO250T



**STANDARD
MAINTENANCE
& DYNAMOMETRY
EQUIPPED TROLLEY**



MRO Integral Solutions
MRO95A



**AVIONICS
MAINTENANCE
EQUIPPED TROLLEY**



CUSTOM-MADE COMPOSITIONS

- RIVET PULLER
- BUCKING BARS
- TORQUE HANDLES
- SAFE-T-CABLE PLIERS
- TORQUE WRENCHES
- MANUAL RIVETING TOOL SM
- MANUAL RIVETING TOOL LM
- PNEUMATIC RIVETING TOOL
ETC.

CUSTOM-MADE COMPOSITIONS

NEW CASES

FOR OUR PRODUCTION

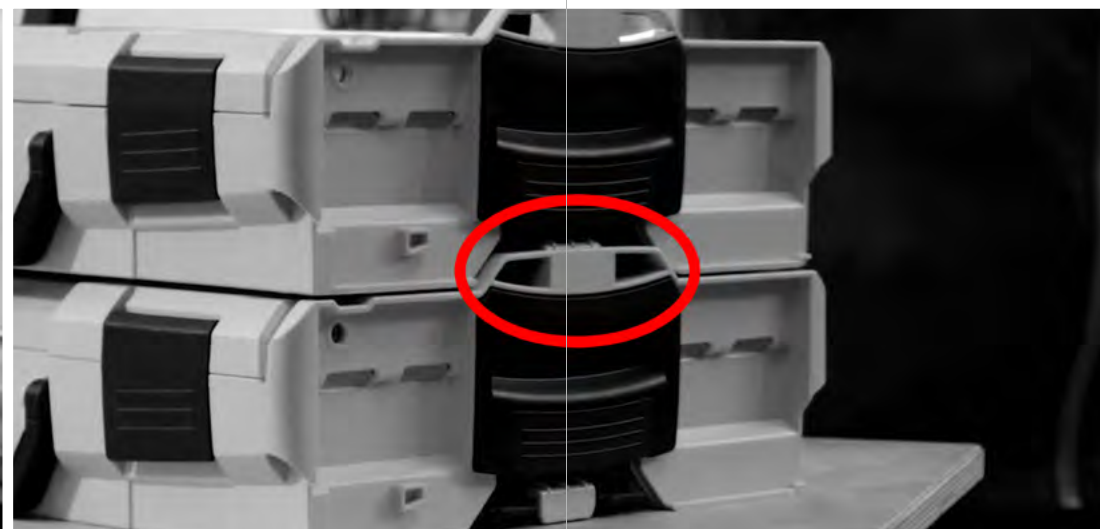
AND MAINTENANCE

CASES



REGISTERED CLICK CONNECTION

WATERPROOF & RESISTANT UP TO 100KG





SERVICES

- 3D SCANNING
- CUSTOM DRILLING UNITS
- CUSTOM RIVETING UNITS
- CUTTING TOOLS ON PLAN
- TEST GAUGES ON DRAWING
- COMPLEX METROLOGY SYSTEMS
- EXPERTISE & TECHNICAL SUPPORT
- CUSTOM-MADE PRODUCTION CASES
- CUSTOM-MADE MAINTENANCE CASES
- AFTER-SALES SERVICE, REPAIR & MAINTENANCE
- LASER ENGRAVINGS & IDENTIFICATIONS ON REQUEST



AERONAUTICAL SOLUTIONS
PDF VERSION

MANY THANKS TO

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