

# X30 WATERSWIFT 60CC - TAG

## FEATURES - CARACTERISTIQUES



Cylinder volume <i>Volume du cylindre</i>	59.17 cm <sup>3</sup> (60.00 cm <sup>3</sup> max)
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Bore <i>Alésage</i>	41.81 mm
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Max. bore <i>Alésage max.</i>	42.10 mm
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Stroke <i>Course</i>	43mm
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Cooling system <i>Système de refroidissement</i>	Water <i>Eau</i>
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Inlet system <i>Système d'admission</i>	Piston valve <i>Jupe de piston</i>
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Number of carbs <i>Nombre de carburateurs</i>	1
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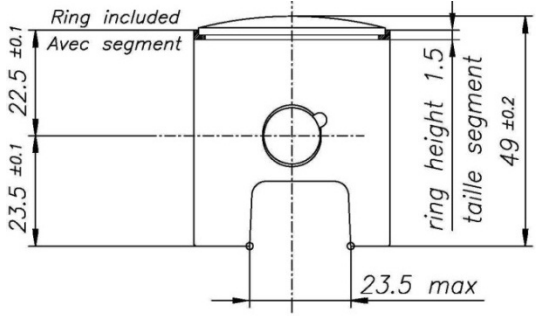
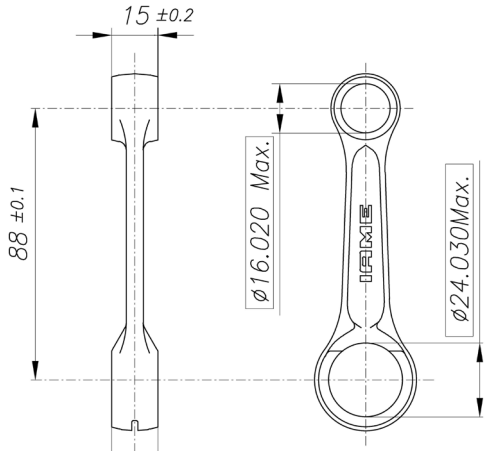
Tillotson Carburettor <i>Carburateur Tillotson</i>	HW-31A	Cylinder / crankcase transfers n° <i>N° de canaux cylindre / carter</i>	2
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Number of piston rings <i>Nombre de segments</i>	1	Inlet / exhaust ports number <i>N° lumières admiss / échapp.</i>	1 / 1
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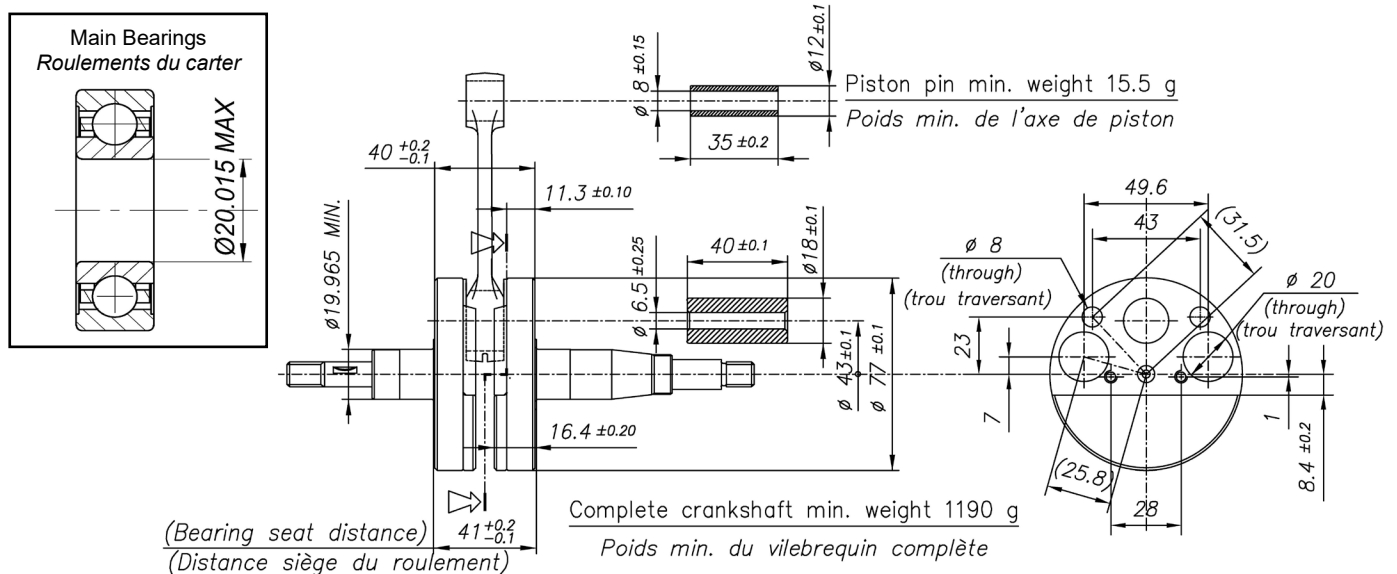
Big end conrod bearing diam. <i>Diamètre palier tête de bielle</i>	18x24x15	Combustion chamber shape <i>Forme chambre de combustion</i>	Spherical <i>Sphérique</i>
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Crankshaft ball-bearing diam. <i>Diamètre palier du vilebrequin</i>	20x47x14	Selettra ignition (adjustable) <i>Allumage Selettra (réglable)</i>	2 poles 2 pôles
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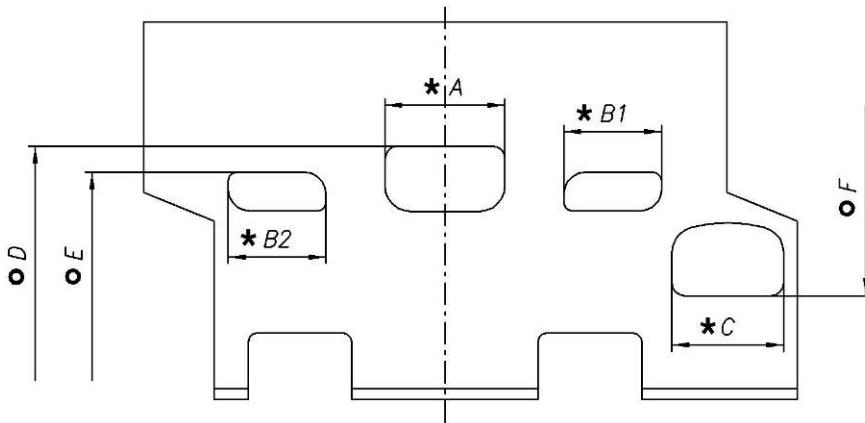
Small end conr. bearing diam. <i>Diamètre palier pied de bielle</i>	12x16x16	Distance between Conrod centres <i>Longueur (entre axe) de la bielle</i>	88 mm
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DESCRIPTION OF THE MATERIAL DESCRIPTION DES MATERIAUX		PISTON
Conrod material <i>Matériel de la bielle</i>	Steel <i>Acier</i>	 <p>Min. Weight Piston included ring = 60 g Poids Min. Piston avec segment = 60 g</p>
Crankshaft material <i>Matériel du vilebrequin</i>	Steel <i>Acier</i>	
Head Material <i>Matériel de la culasse</i>	Aluminium	
Cylinder Material <i>Matériel du cylindre</i>	Aluminium	
Liner material <i>Matériel de la chemise</i>	Cast Iron <i>Fonte</i>	DISTANCE BETWEEN CONROD CENTERS ENTRE AXE DE LA BIELLE
Crankcase material <i>Matériel du carter</i>	Aluminium	 <p>Min. Weight 80 g Poids min.</p>
Piston material <i>Matériel du piston</i>	Aluminium	
Piston rings material <i>Matériel des segments</i>	Cast Iron <i>Fonte</i>	
Exhaust muffler material <i>Matériel du pot d'échappement</i>	Sheet-steel <i>Tôle acier</i>	
Ball-bearings <i>Roulements</i>	6204 type	

### CRANKSHAFT - VILEBREQUIN



CYLINDER DEVELOPMENT – DEVELOPPEMENT DU CYLINDRE



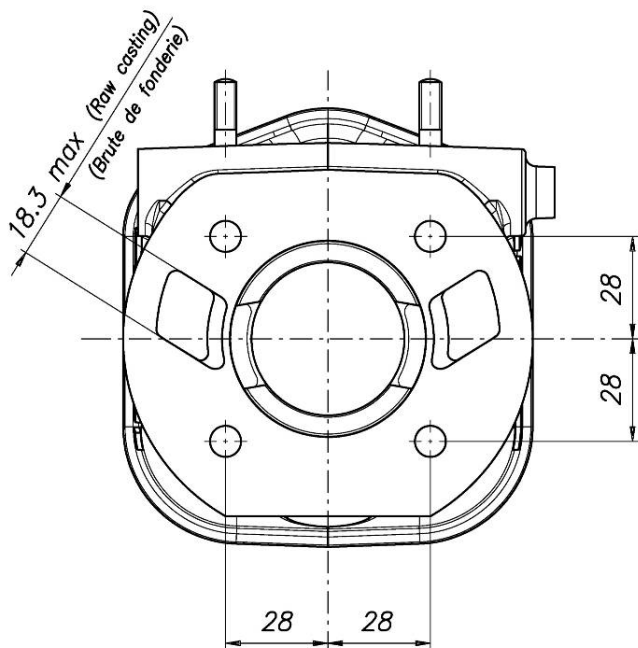
A	28±0.2 mm
B1 = B2	21.8±0.2 mm
C	26±0.2 mm
D	157° max
E	116° ±2°
F	145° max

CHORDAL READING – LECTURE CORDALE

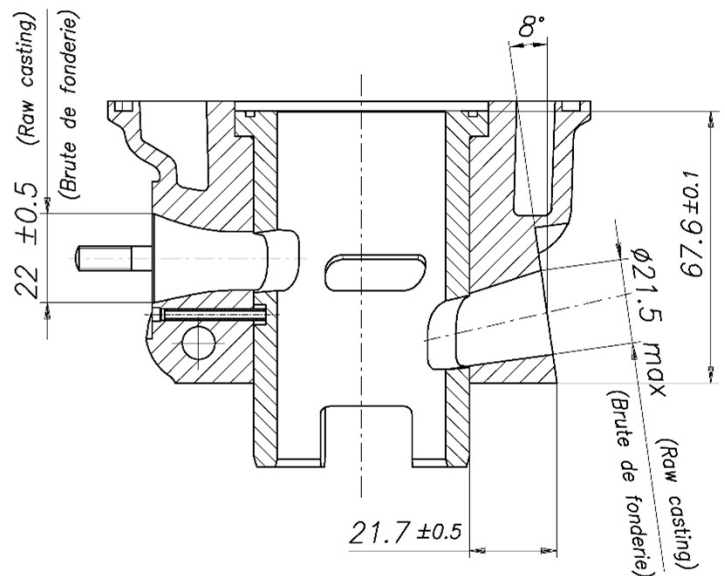
ANGULAR READING BY INSERT A 0.2 mm x 5 mm GAUGE –  
LECTURE ANGULAIRE PAR INSERTION D'UNE CALE DE 0.2 mm x 5 mm

USING IAME TOOL Cod. 10194 – *UTILISER OUTIL*

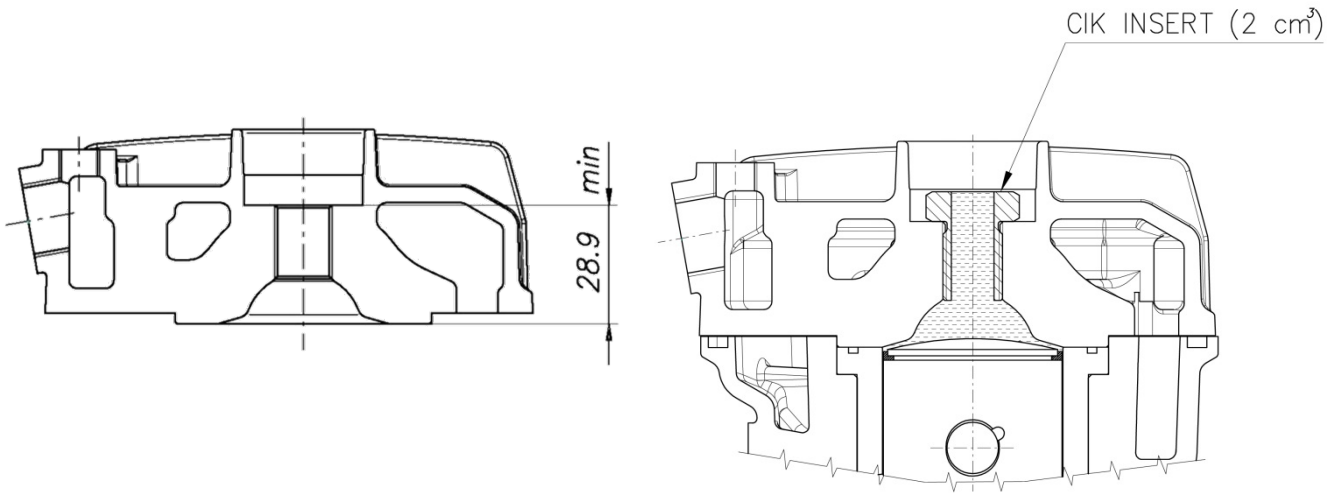
CYLINDER BASE VIEW  
VUE DE LA BASE DU CYLINDRE



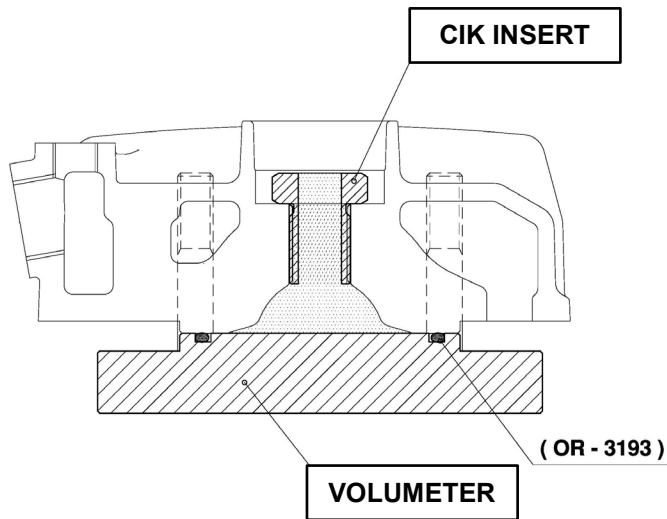
CYLINDER SECTION VIEW  
VUE EN SECTION DU CYLINDRE



COMBUSTION CHAMBER VIEW  
VUE DE LA CHAMBRE DE COMBUSTION



COMBUSTION CHAMBER VOLUME = 6.5 cm<sup>3</sup> min.  
VOLUME CHAMBRE COMBUSTION

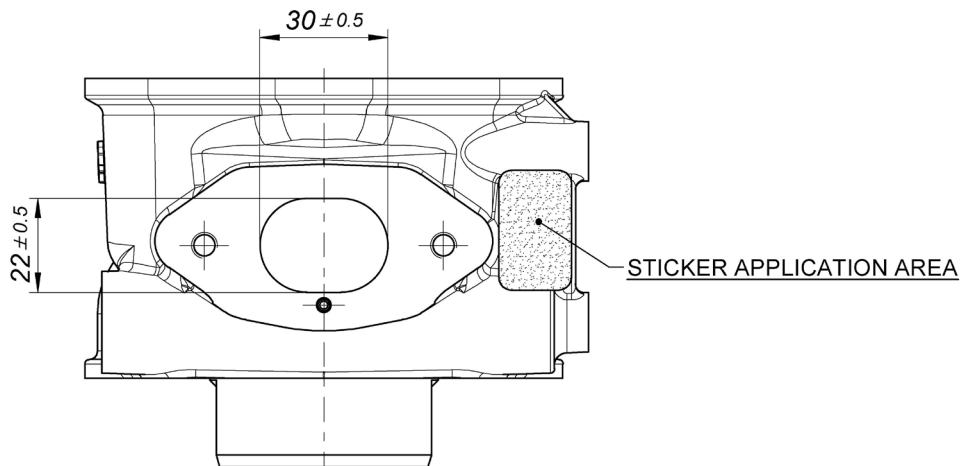


**SQUISH MIN. = 0.75 mm**

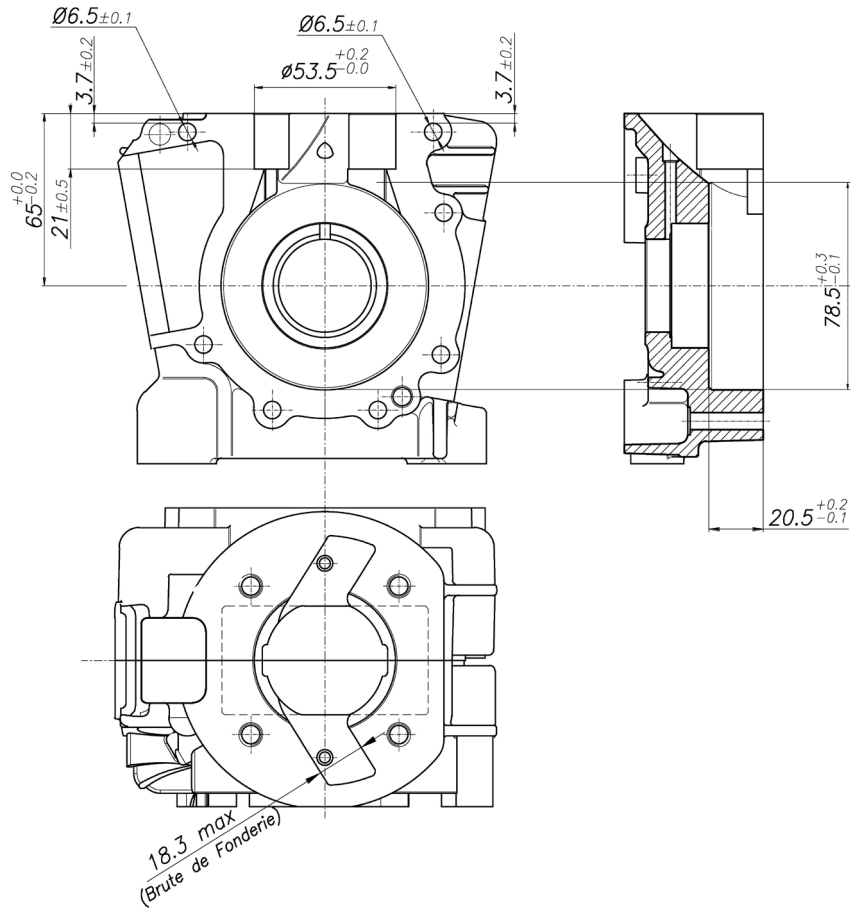
measured with Ø1.5mm TIN  
mesurée avec de l'étain Ø1.5mm

MIN. TOT. VOLUME OF CHAMBER IN THE CYLINDER HEAD = 7.4 cm<sup>3</sup>  
VOLUME MIN. CHAMBRE DE COMBUSTION DANS LA CULASSE

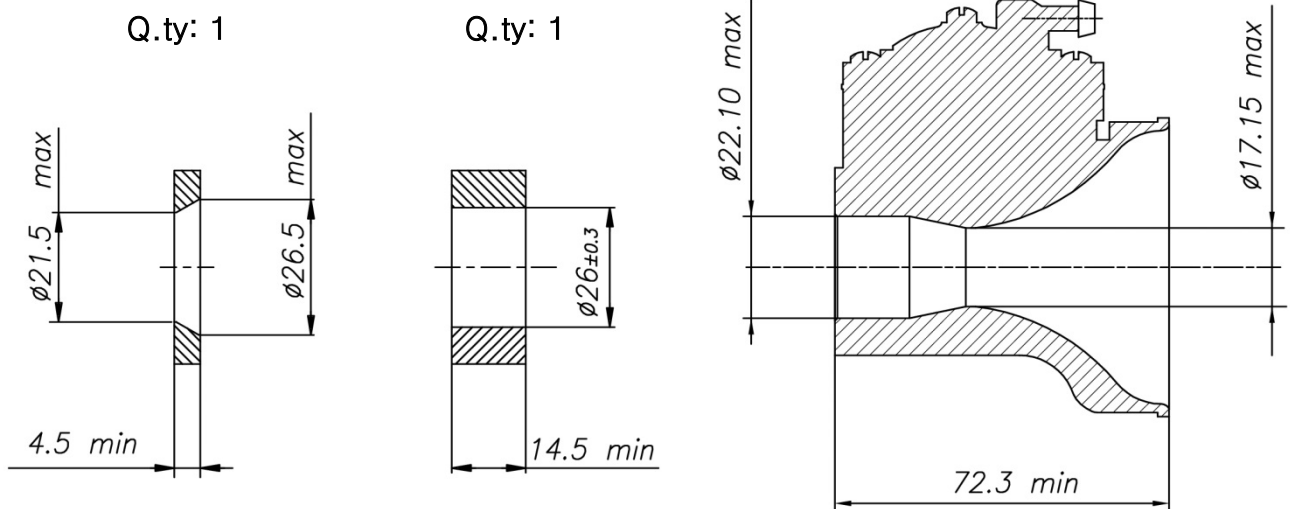
REAR VIEW AND DIMENSION  
ARRIERE VUE ET DIMENSION



CRANKCASE INSIDE VIEW  
VUE A L'INTERIEUR DU CARTER

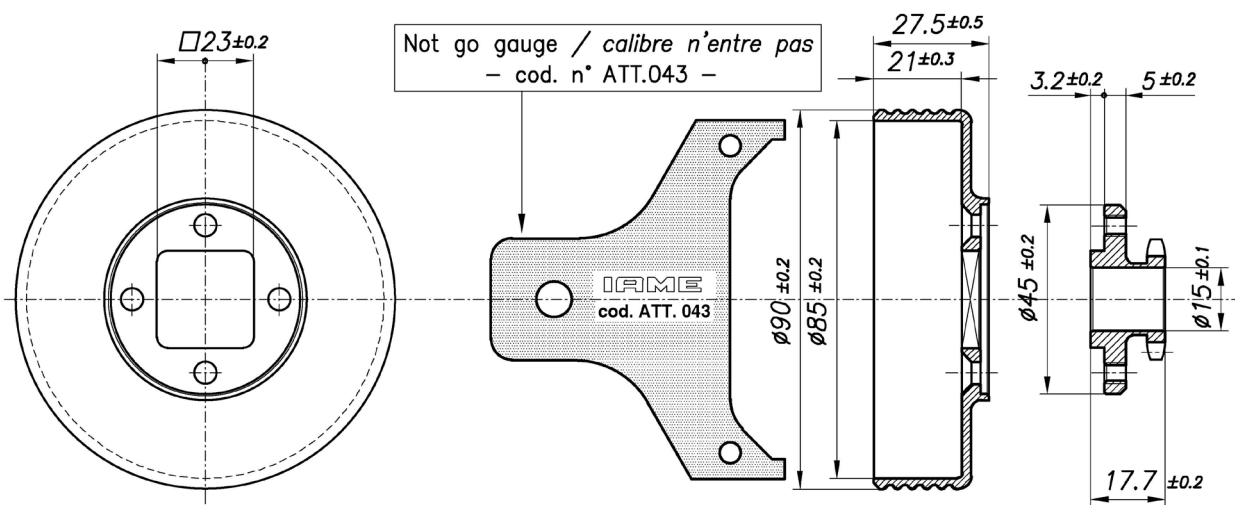
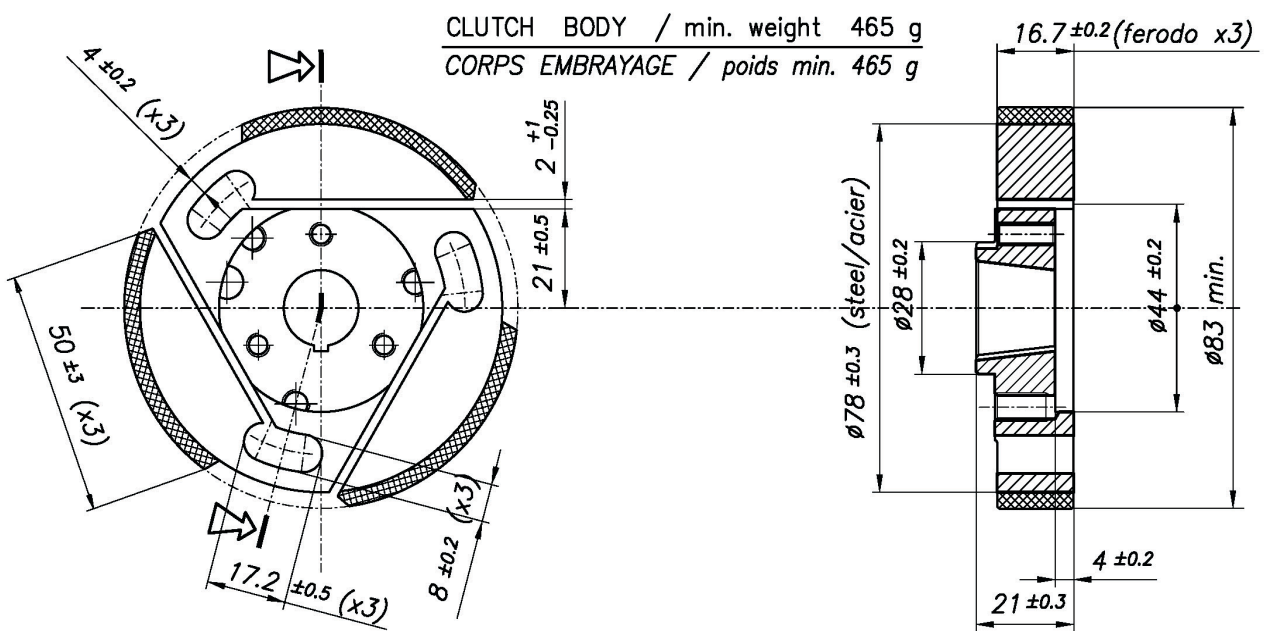
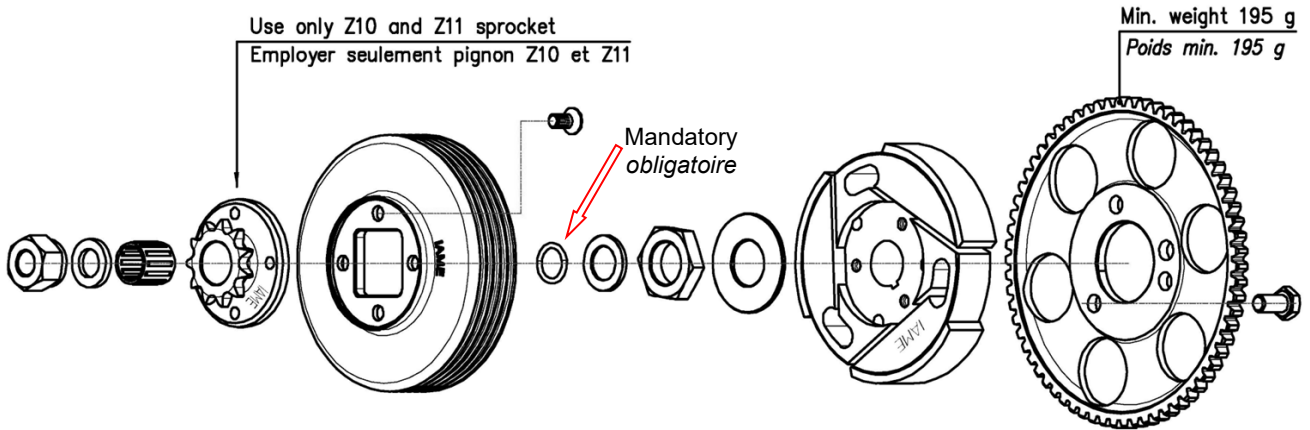


VENTURI CARB. DIMENSIONS and THERMAL SPACERS  
CARBURATEUR ET SONS ENTRETOISES



TILLOTSON MOD. HW-31A

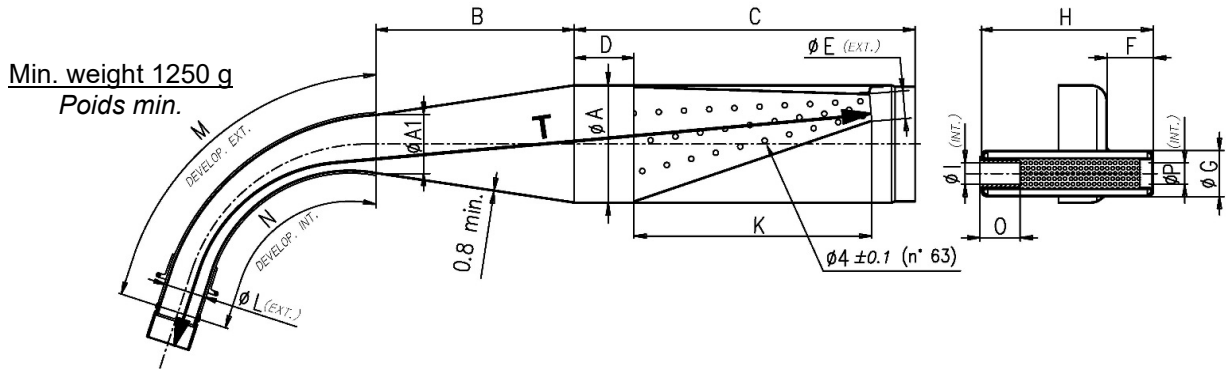
# DESCRIPTION OF THE CLUTCH – DESCRIPTION DE L'EMBRAYAGE



CLUTCH DRUM / min. weight 175 g  
CLOCHE D'EMBRAYAGE / poids min. 175 g

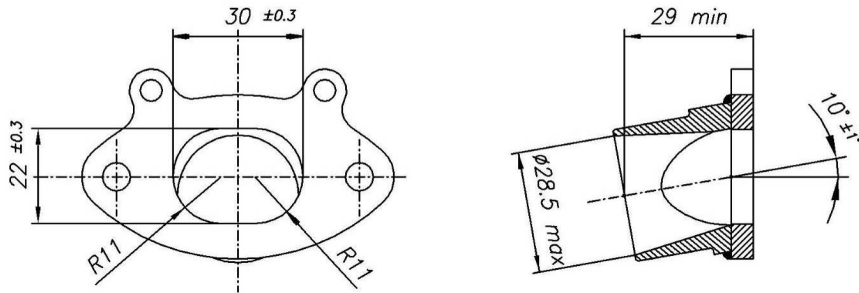
DRIVE SPROCKET / min. weight 68 g  
PIGNON / poids min. 68 g

**EXHAUST MUFFLER VIEW AND DIMENSIONS  
VUE ET DIMENSIONS DU SILENCIEUX D'ÉCHAPPEMENT**

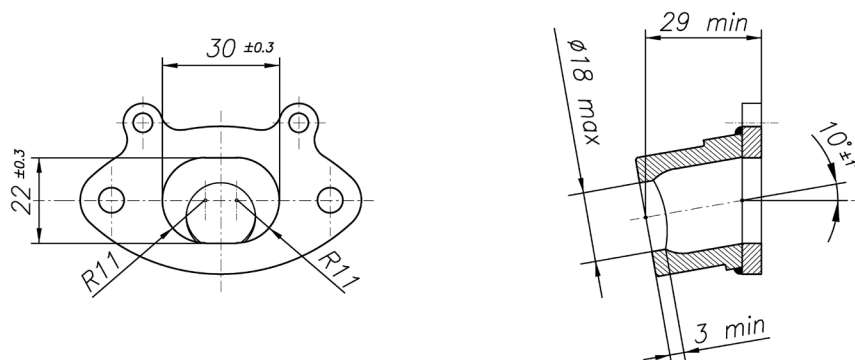
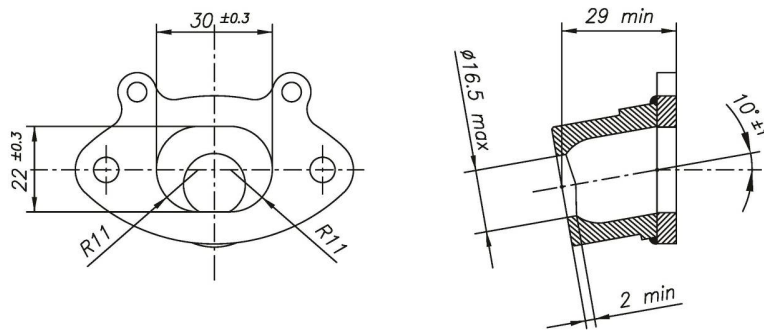


<b>A:</b> $90 \pm 1.5$	<b>C:</b> $260 \pm 3$	<b>F:</b> $35 \pm 3$	<b>I:</b> $17 \text{ Max.}$	<b>M:</b> $240 \pm 3$	<b>P:</b> $21 \pm 1$
<b>A1:</b> $45 \pm 1$	<b>D:</b> $47 \pm 5$	<b>G:</b> $35 \pm 1$	<b>K:</b> $181 \pm 3$	<b>N:</b> $190 \pm 3$	<b>T:</b> $600 \pm 5$
<b>B:</b> $150 \pm 3$	<b>E:</b> $20 \pm 1$	<b>H:</b> $132 \pm 2$	<b>L:</b> $31 \pm 1.5$	<b>O:</b> $30 \text{ Min.}$	

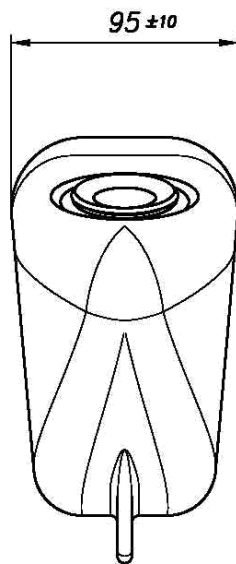
**EXHAUST MANIFOLD  
RACCORD D'ÉCHAPPEMENT**



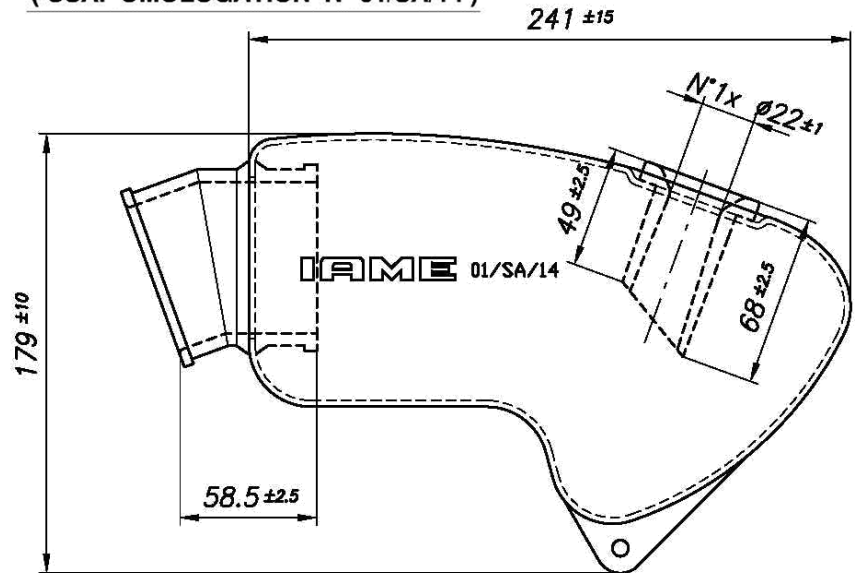
**EXHAUST MANIFOLDS WITH RESTRICTED  
RACCORDS AVEC RECSTRICTEUR D'ÉCHAPPEMENT**



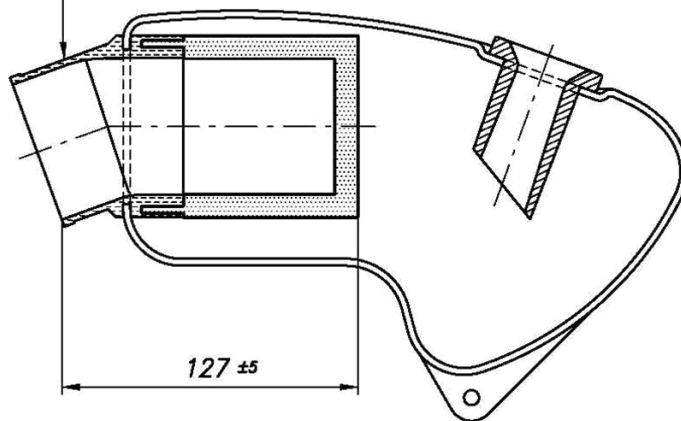
# INLET SILENCER – SILENCIEUX D'ASPIRATION



( CSAI OMOLOGATION N° 01/SA/14 )



**ALTERNATIVE**  
MANIFOLD WITH SPONGE FILTER  
COLLECTEUR AVEC UNE EPONGE  
FILTRE





WIRING DIAGRAM  
SCHÉMA CIRCUIT ÉLECTRIQUE

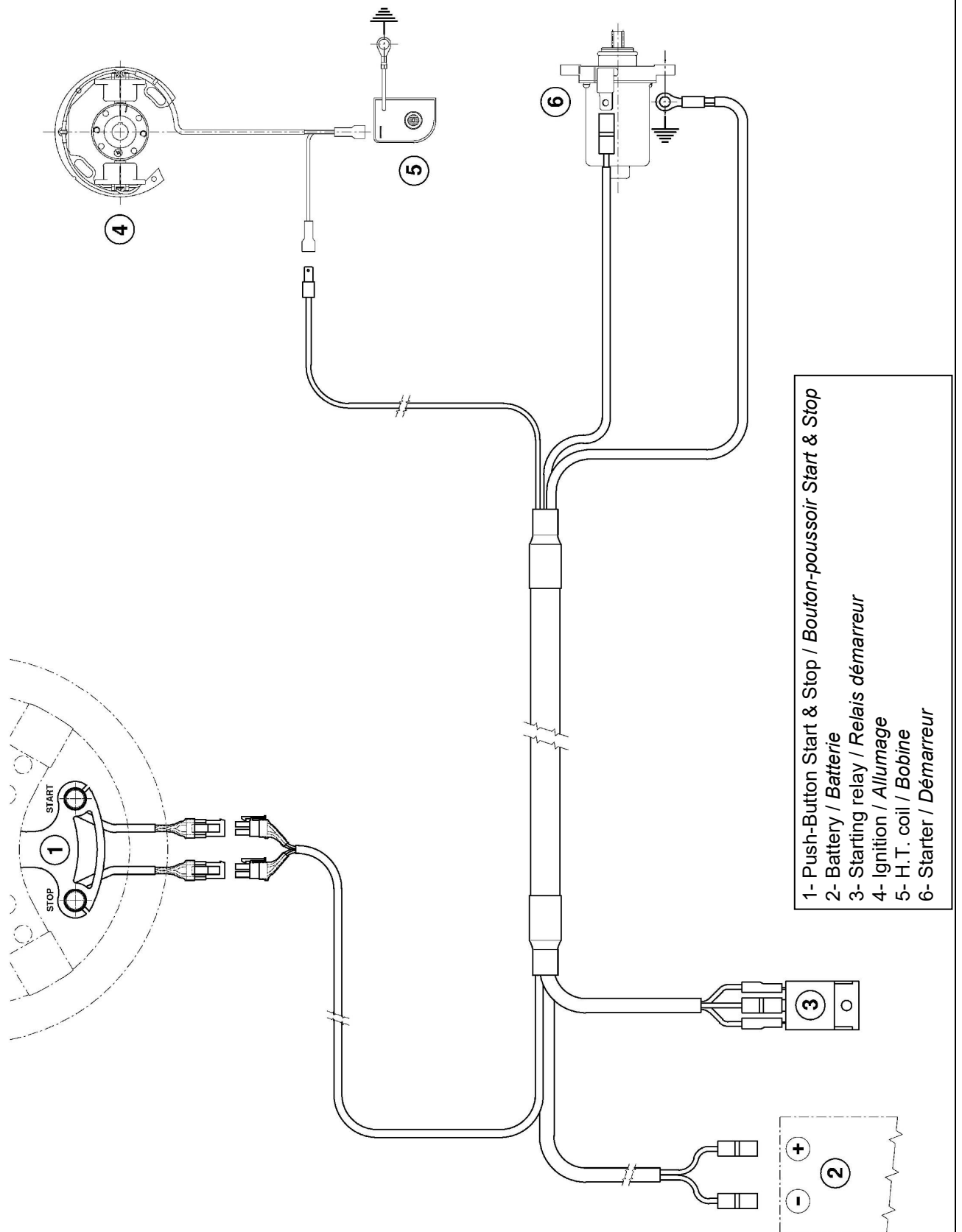


PHOTO COMPLETE WIRING  
PHOTO DU CÂBLAGE ÉLECTRIQUE COMPLÈTE

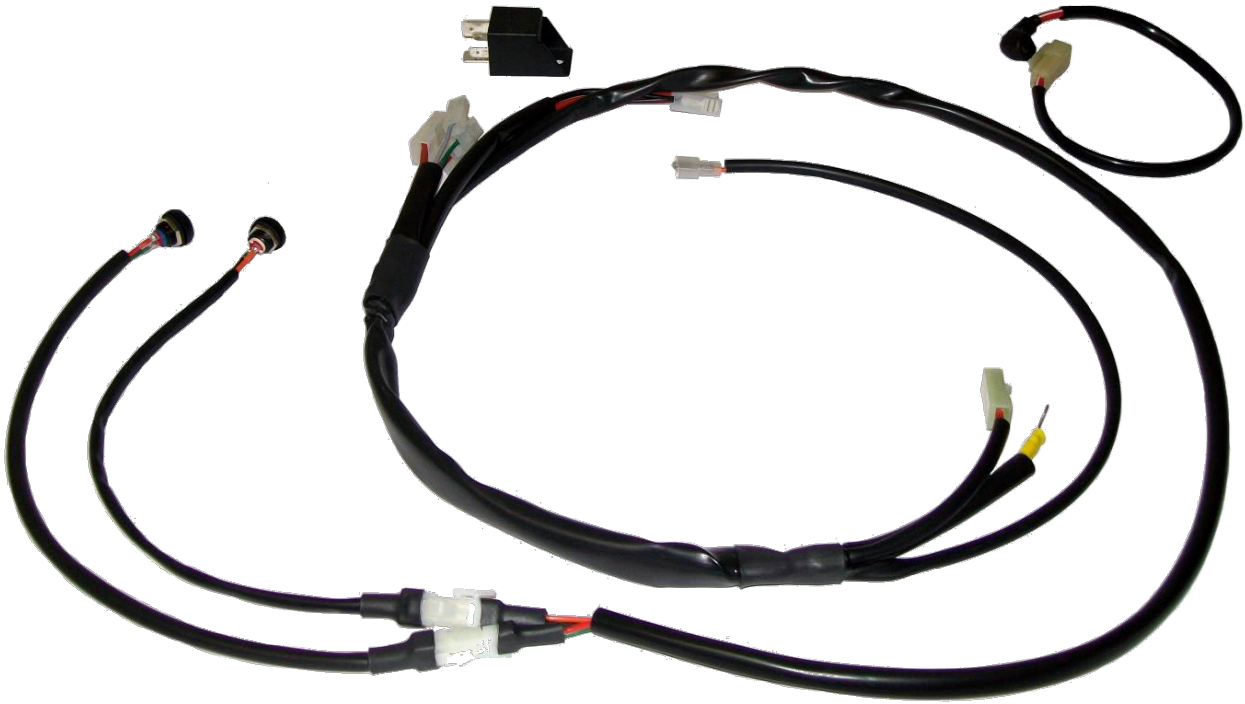
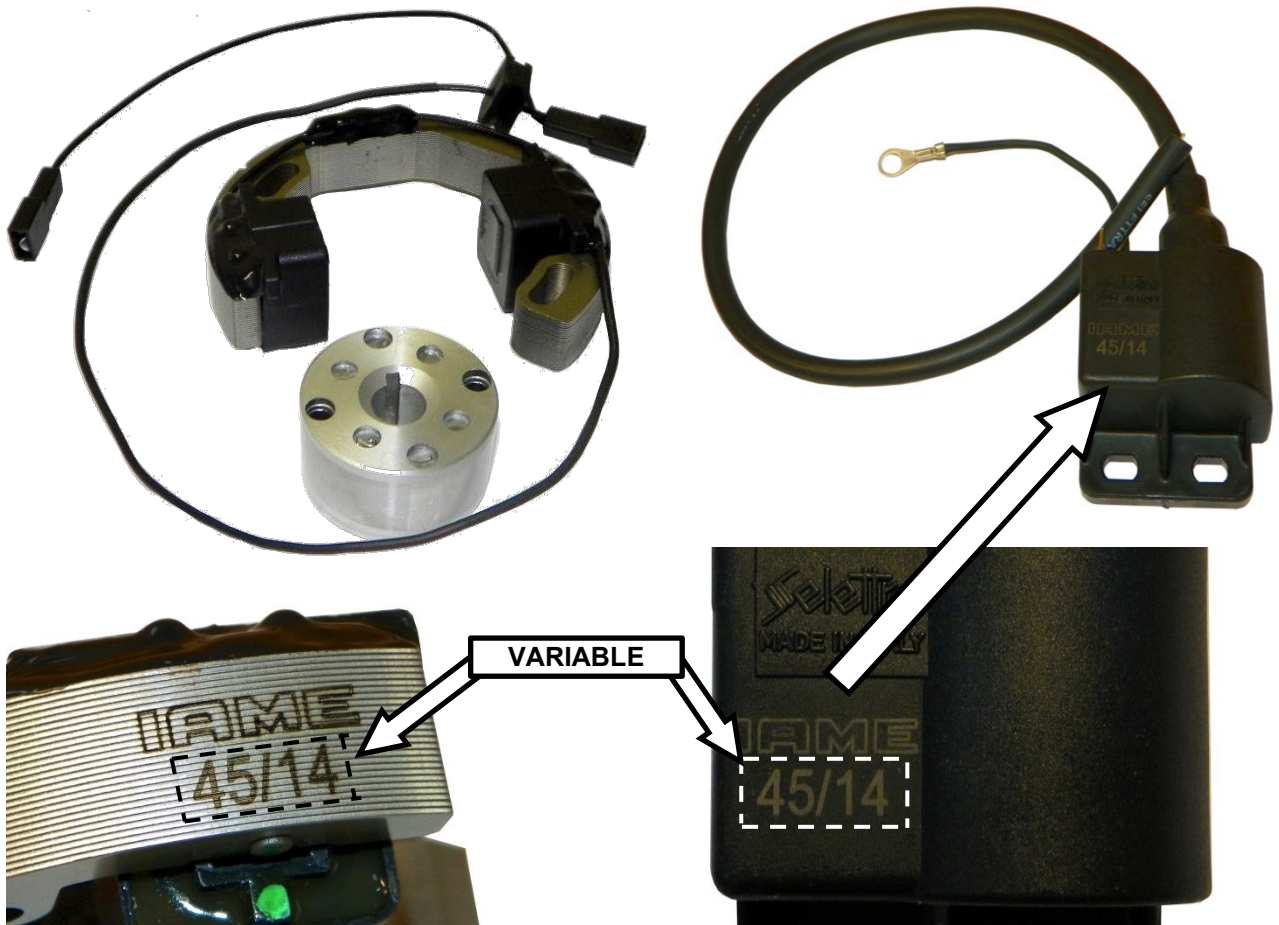


PHOTO IGNITION / PHOTO H.T. COIL (SELETTRA ANALOGUE 2 POLES)  
PHOTO ALLUMAGE / PHOTO BOBINE (SELETTRA ANALOGIQUE 2 POLES)



ALTERNATIVE WIRING LOOM DIAGRAM  
 SCHÉMA CIRCUIT ÉLECTRIQUE ALTERNATIF

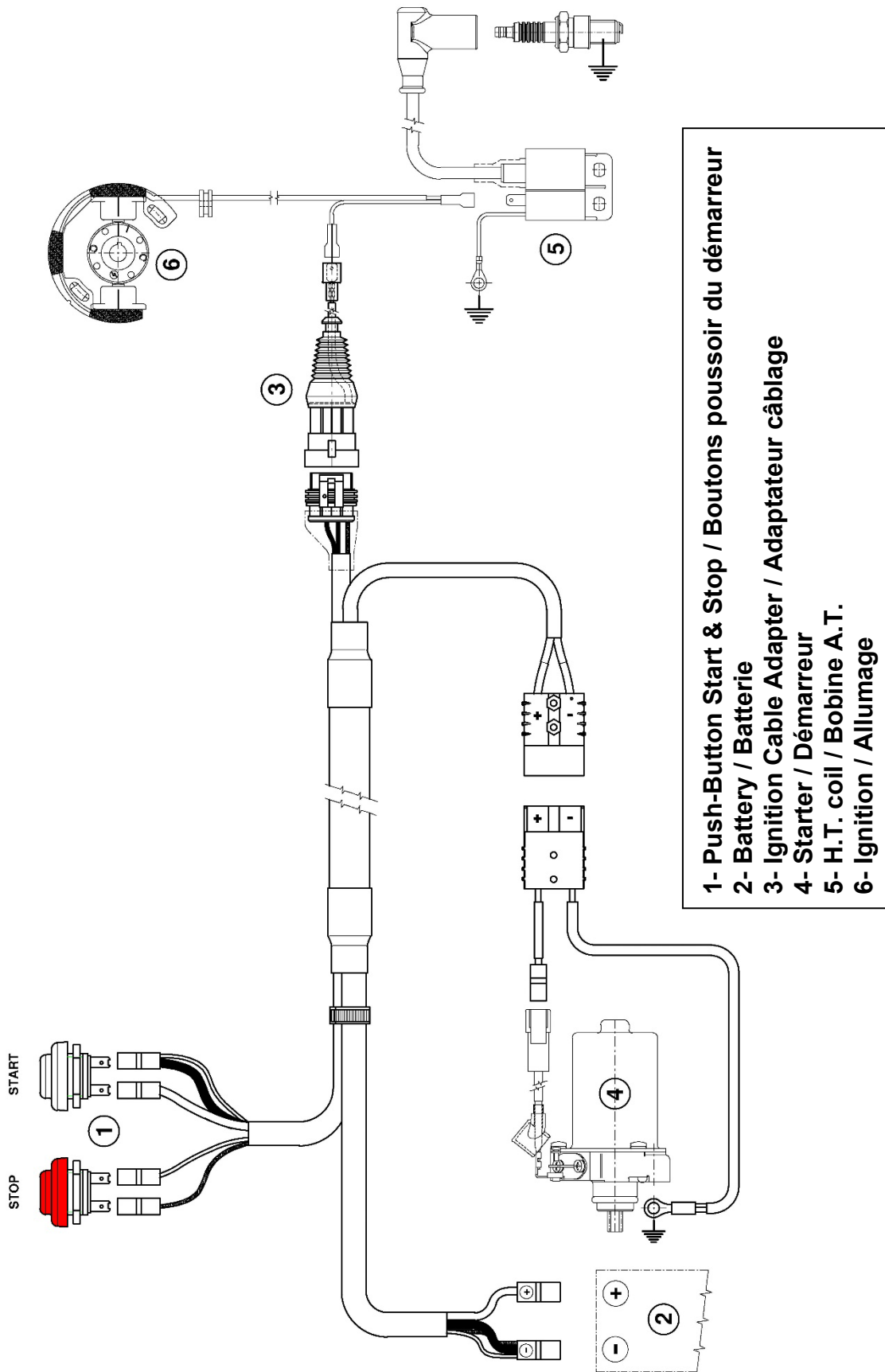
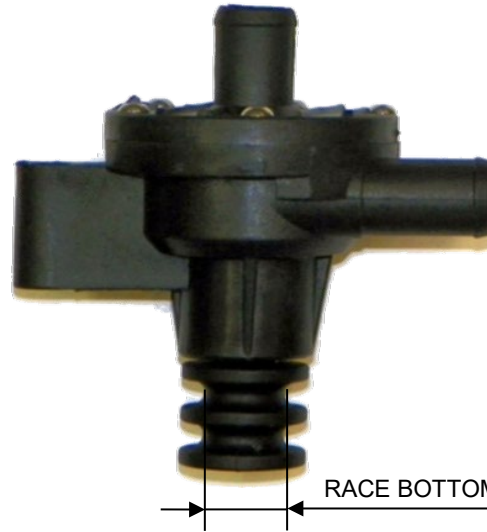


PHOTO OF ALTERNATIVE COMPLETE WIRING LOOM  
PHOTO DU CÂBLAGE ÉLECTRIQUE COMPLÈTE ALTERNATIF

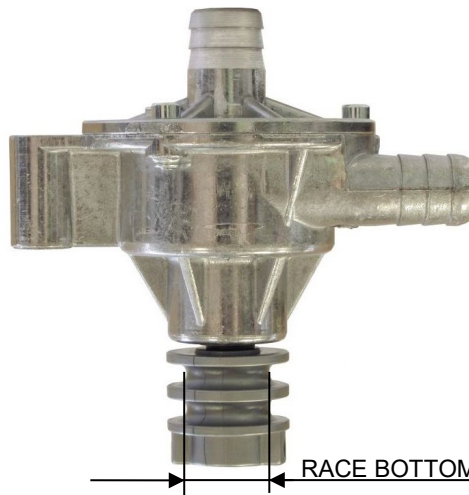


WATER PUMP ALTERNATIVES – ALTERNATIVES DU POMPE A' EAU

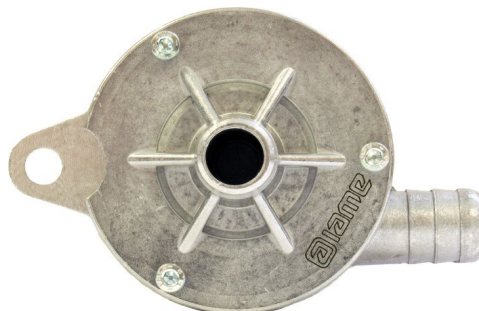


**PLASTIC**

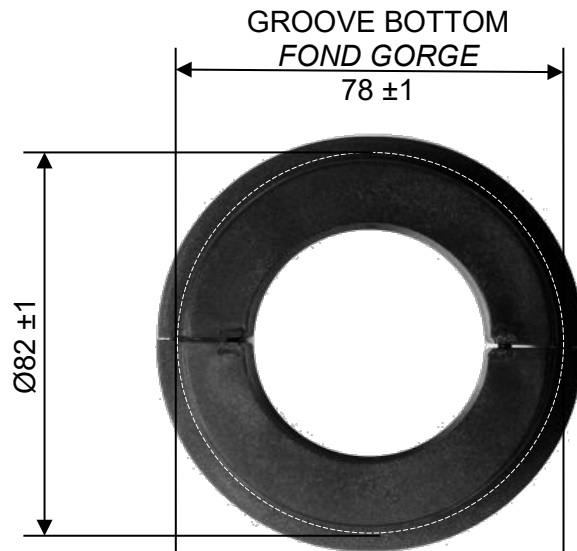
**ALTERNATIVE**



**ALUMINUM**



PULLEY ALTERNATIVE – ALTERNATIVE DU POULIE



**PLASTIC**



**ALTERNATIVE**



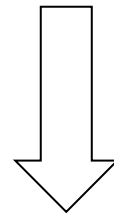
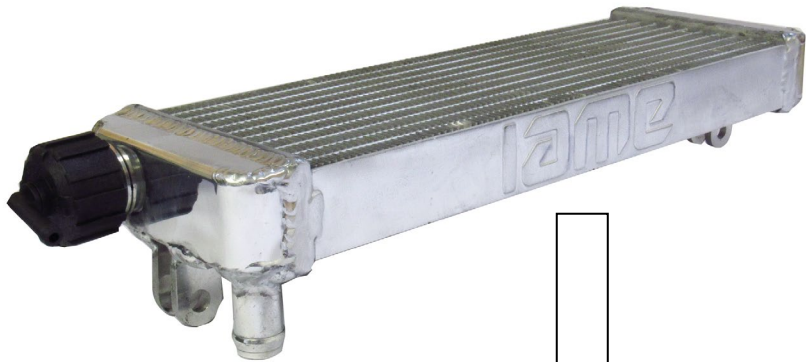
**ALUMINUM**

RADIATOR AND ITS SUPPORTS  
RADIATEUR ET SES SUI TIEN

PAINTED AND NOT PAINTED / PEINT ET PAS PEINT



ALTERNATIVE RADIATOR  
RADIATEUR ALTERNATIF



ALTERNATIVE RADIATOR SUPPORT  
*ALTERNATIVE SUI TIEN DU RADIATEUR*





EXHAUST IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION ECHAPPEMENT



PHOTO IDENTIFICATION OF CONROD – TYPES ALTERNATIVE  
PHOTO D'IDENTIFICATION DE LA BIELLE – TYPES ALTERNATIFS

TYPE 1

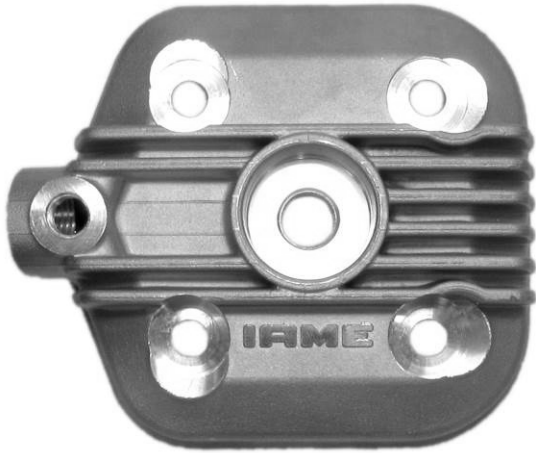


TYPE 2



**PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"**  
**PARTICULARITÉS AVEC NOUVEAU LOGO ALTERNATIF "IAME"**

**CYLINDER HEAD**  
**CULASSE**



**NEW / NOUVEAU LOGO**



**CYLINDER**  
**CILINDRE**



**NEW / NOUVEAU LOGO**



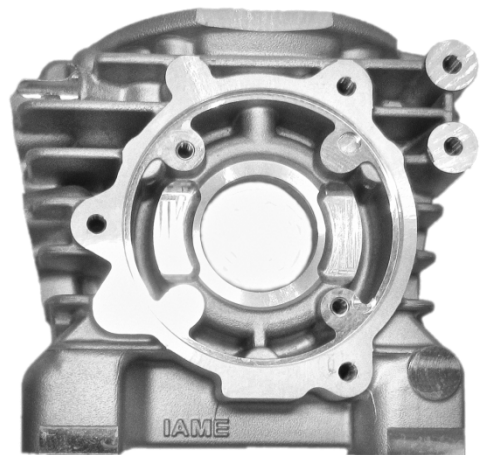
**SEMICARTER TRANSMISSION SIDE**  
**SEMICARTER CÔTÉ PIGNON**



**NEW / NOUVEAU LOGO**



**SEMICARTER IGNITION SIDE**  
**SEMICARTER CÔTÉ ALLUMAGE**



**NEW / NOUVEAU LOGO**



PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"  
 PARTICULARITÉS AVEC NOUVEAU LOGO ALTERNATIF "IAME"

IGNITION COVER  
 COUVERCLE DU ALLUMAGE



NEW / NOUVEAU LOGO



CLUTCH COVER  
 COUVERCLE D'EMBRAYAGE



NEW / NOUVEAU LOGO



INLET SILENCER  
 SILENCIEUX D'ASPIRATION



NEW / NOUVEAU LOGO



EXHAUST  
 ECHAPPEMENT



NEW / NOUVEAU LOGO



**THE OTHERS COMPONENTS OF ENGINE THAT ARE MARKED (LASER OR PUNCHING) UNTIL TODAY WITH LOGO OR WRITTEN "IAME"**

**LES AUTRES COMPOSANTS DU MOTEUR AVEC MARQUAGE (LASER OU POINÇONNEUSE) AUJOURD'HUI AVEC LE LOGO OU ÉCRIT «IAME»**

I A M E

or

**IAME**

**NOW COULD BE MARKED WITH NEW LOGO "IAME"**  
**MAINTENANT POURRAIT EST MARQUAGE AVEC UN NOUVEAU LOGO**  
**"IAME"**

IAME

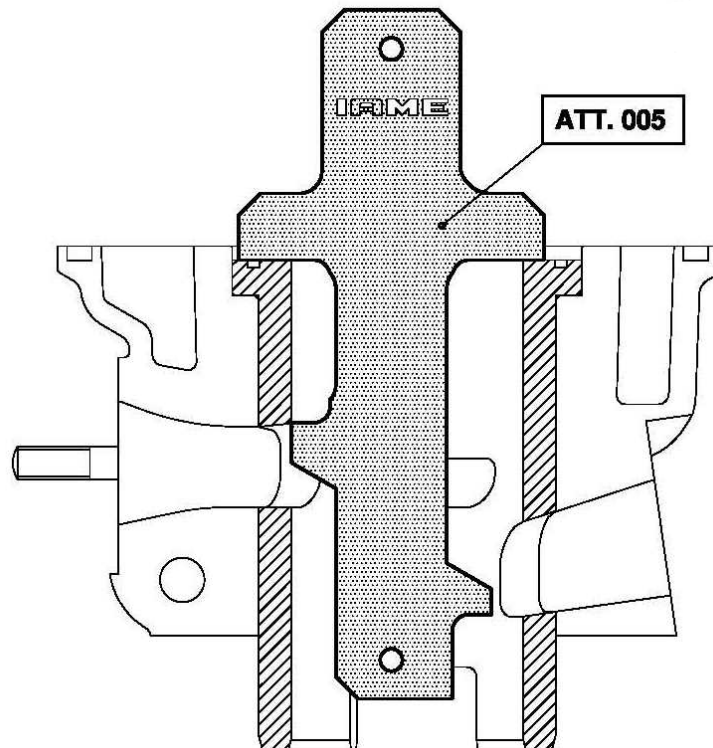
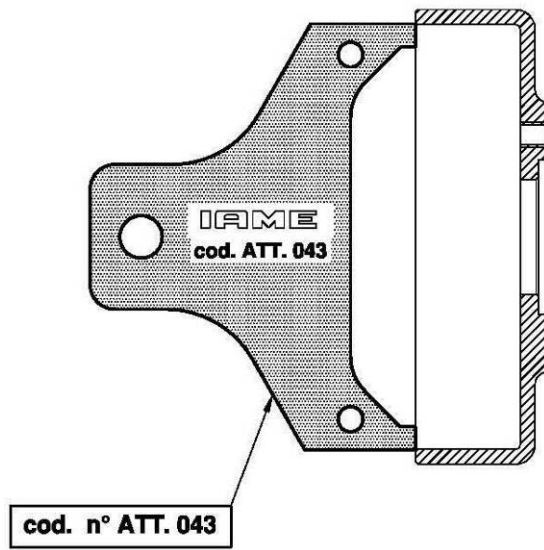
or

IAME

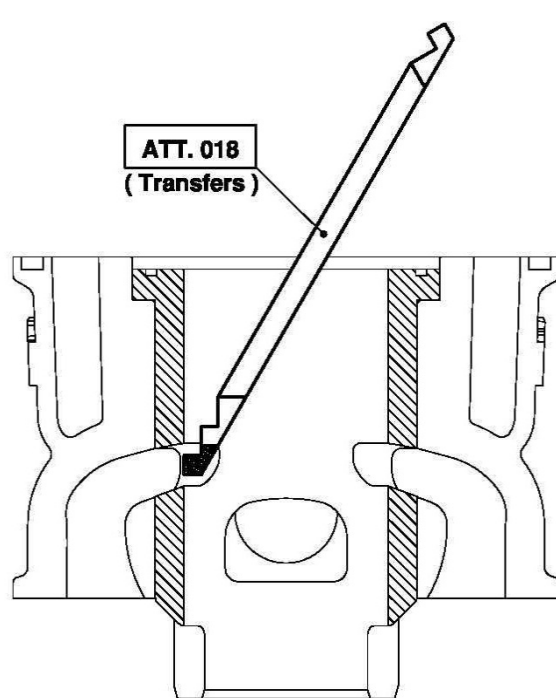
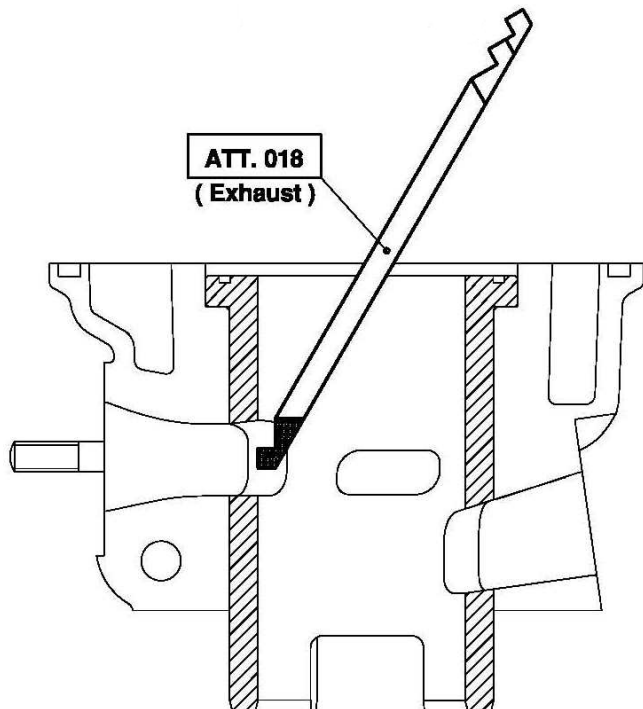
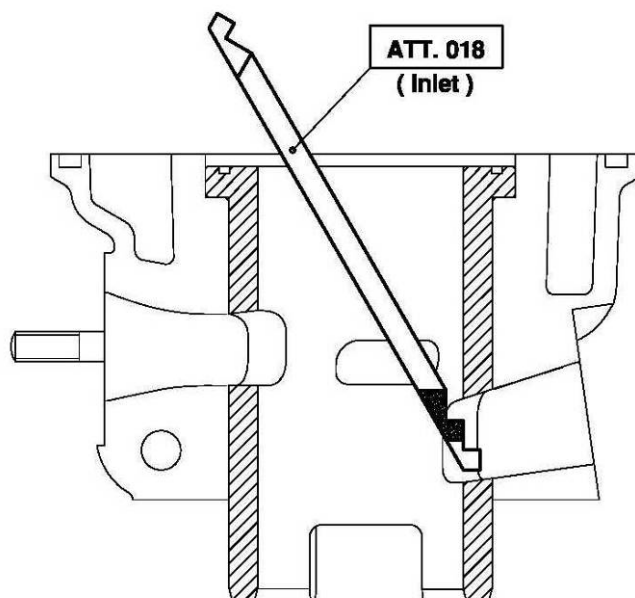
or

IAME

**NO GO GAUGES**  
**OUTILS N'ENTRE PAS DANS**

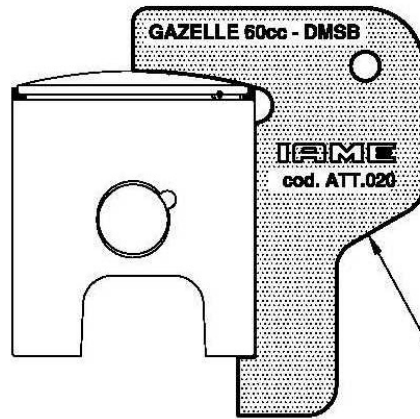
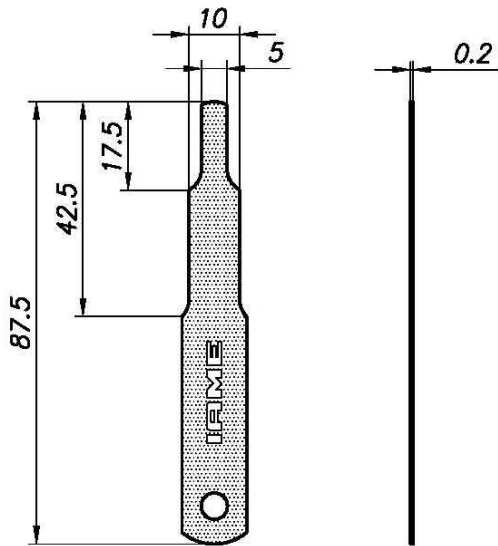


**NO GO GAUGES**  
**OUTILS N'ENTRE PAS DANS**

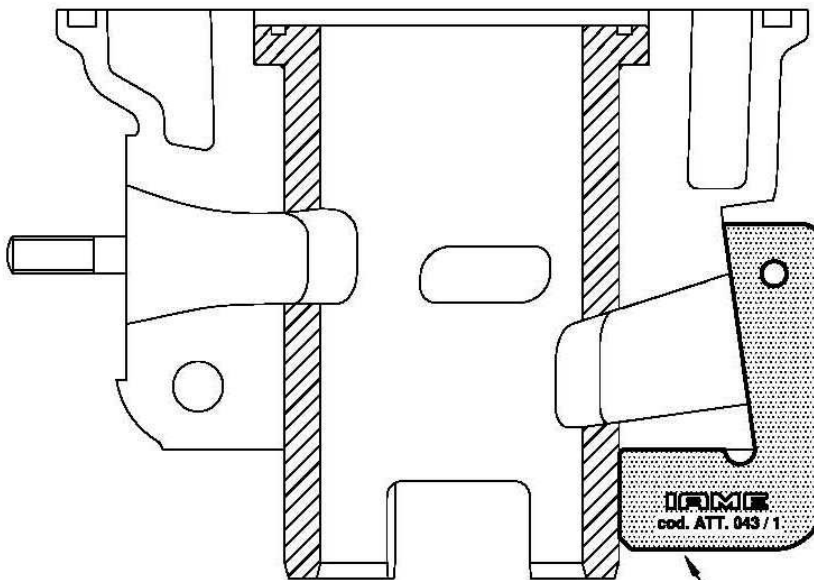


**CONTROL GAUGES**  
**OUTILS DE CONTROLL**

**TOOL IAME Cod. 10194**

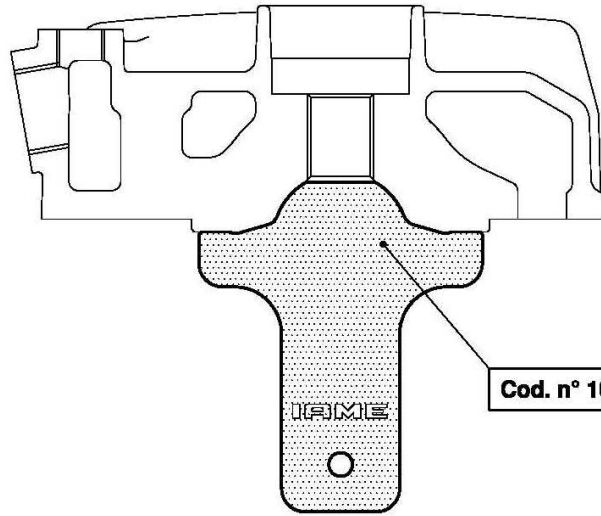


**cod. n° ATT. 020**

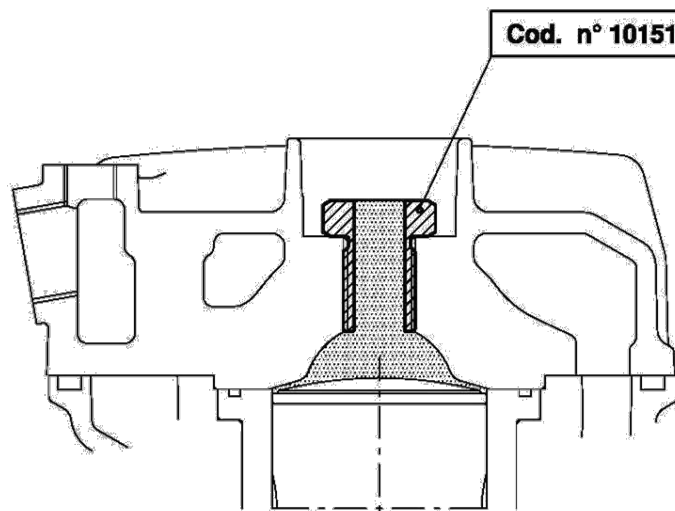


**cod. n° ATT. 043 / 1**

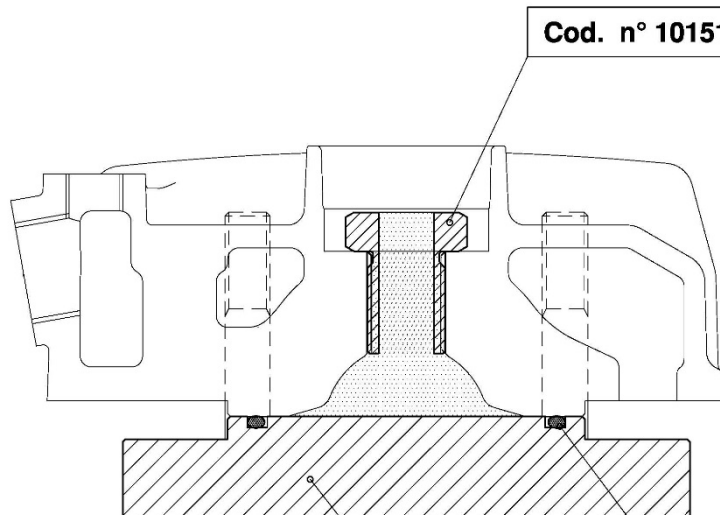
**CONTROL GAUGES  
OUTILS DE CONTROLL**



Cod. n° 10215



Cod. n° 10151



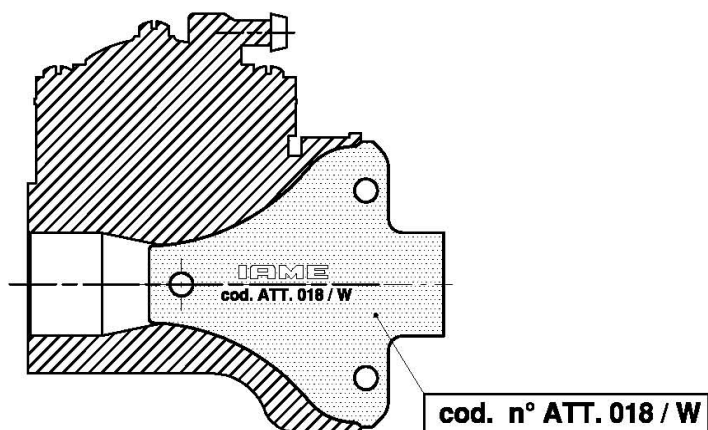
Cod. n° 10151

( OR - 3193 )

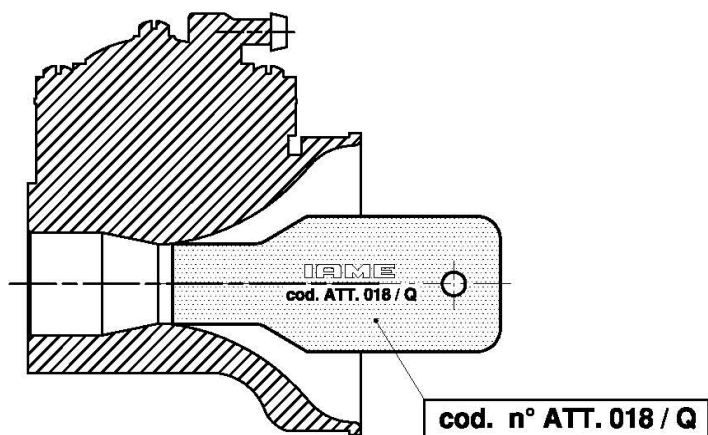
Cod. n° 10276



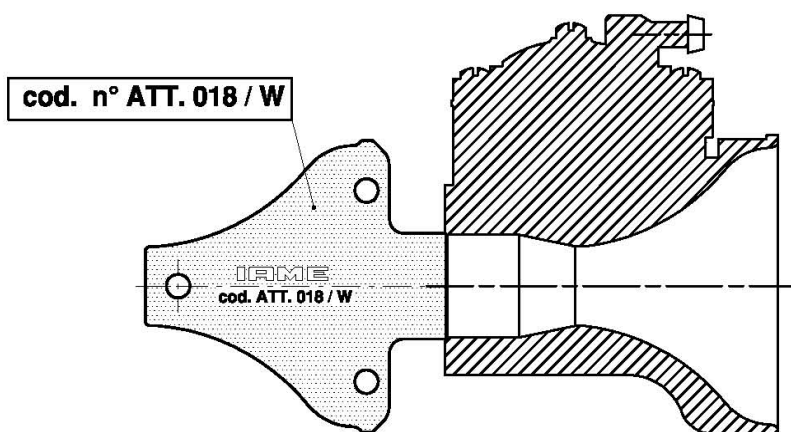
**CONTROL GAUGES  
OUTILS DE CONTROLL**



Check that the tool must be the same shape of the inlet carburettor.  
*Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.*

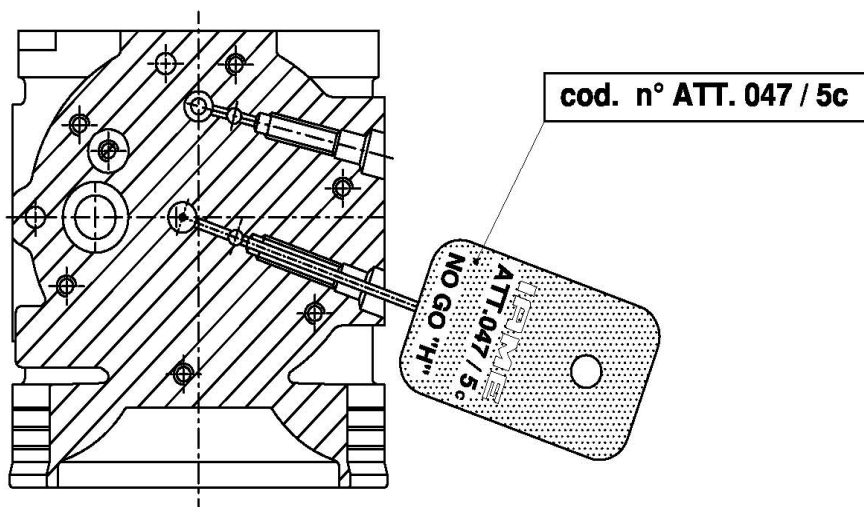
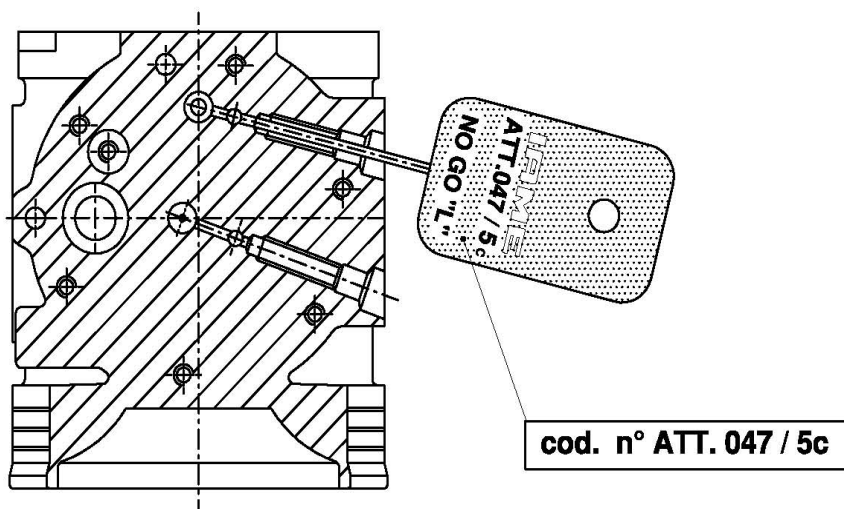


Check that the tool does not enter into the venturi duct inlet of carburettor.  
*Vérifier que l'outil n'entre pas dans l'entrée du conduit Venturi du carburateur.*



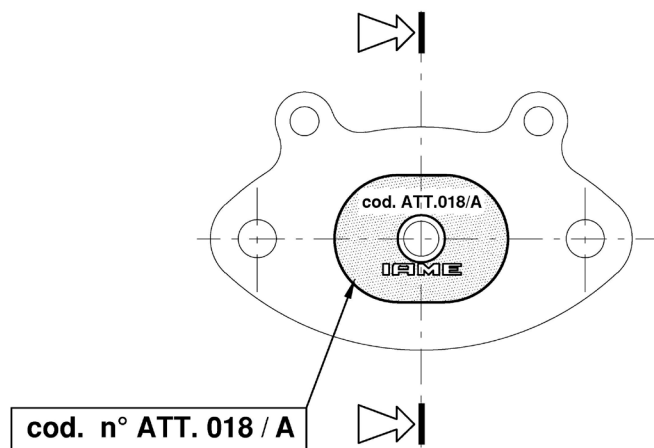
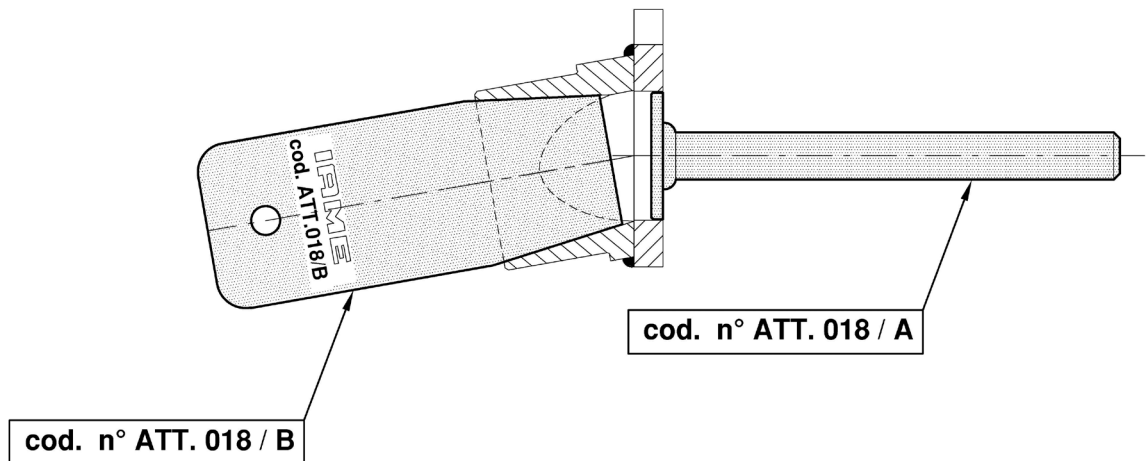
Check that the tool does not enter into the venturi duct outlet of carburettor.  
*Vérifier que l'outil n'entre pas dans la sortie du conduit Venturi du carburateur.*

**CONTROL GAUGES  
OUTILS DE CONTROLL**



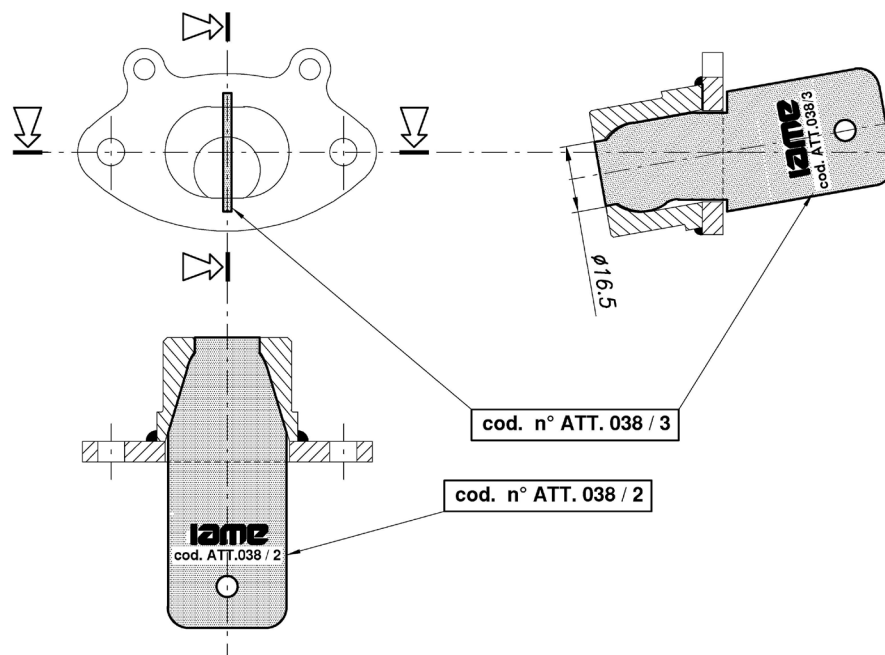
Check that the spikes does not enter into the holes.  
Vérifiez que les pointes n'entrent pas dans les trous.

**CONTROL GAUGES  
OUTILS DE CONTROL**

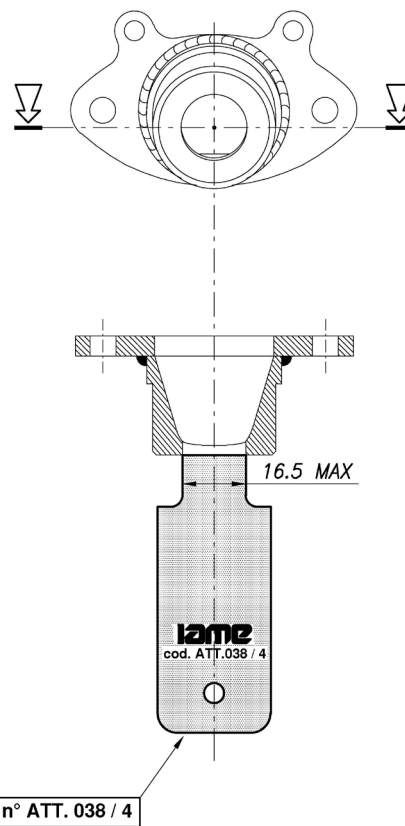


Check that the tool must be the same shape of the exhaust manifold.  
*Vérifiez que l'outil doit être de la même forme du collecteur d'échappement*

IAME TOOLS – GABARIT DE CONTROL IAME

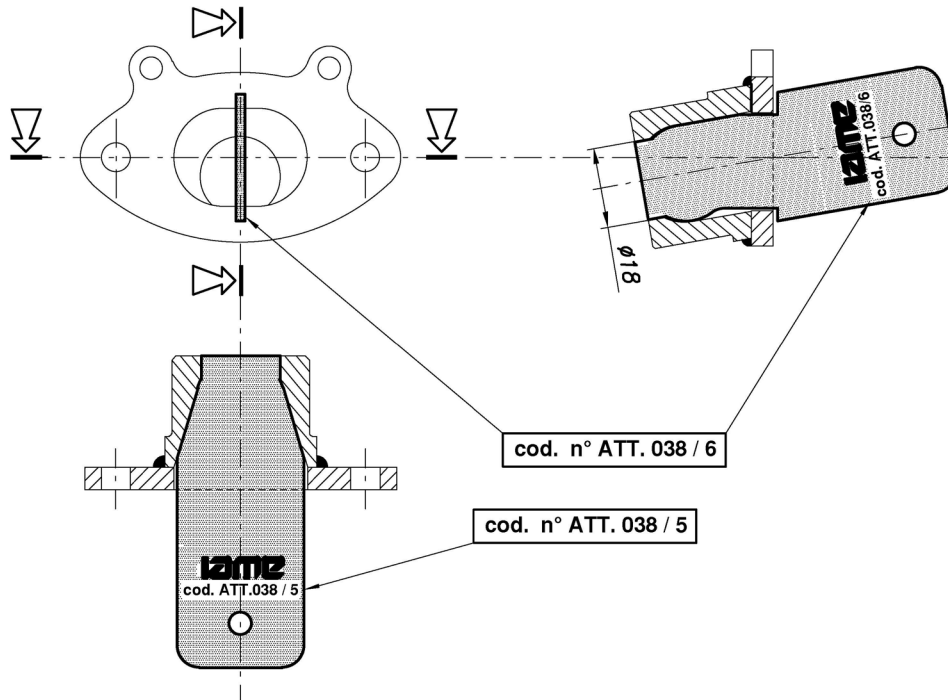


Check that the tool must be the same shape of the inlet carburettor.  
*Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.*

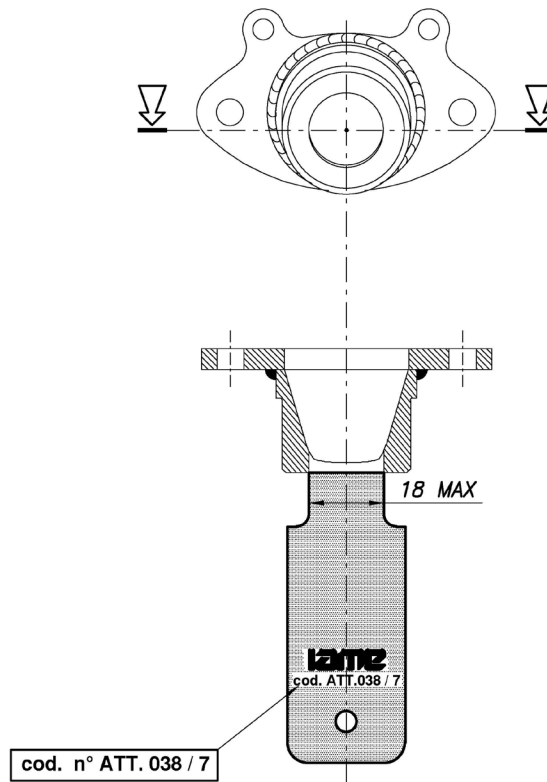


Check that the tool does not enter into the exhaust restrictor.  
*Vérifier que l'outil n'entre pas dans le restricteur d'échappement*

IAME TOOLS – GABARIT DE CONTROL IAME



Check that the tool must be the same shape of the inlet carburettor.  
*Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.*



Check that the tool does not enter into the exhaust restrictor.  
*Vérifier que l'outil n'entre pas dans le restricteur d'échappement*



**CARBURETTOR / CARBURATEUR**  
**Tillotson HW-31A**



PHOTO OF ADJUSTING SIDE  
 PHOTO CÔTÉ RÉGLAGE

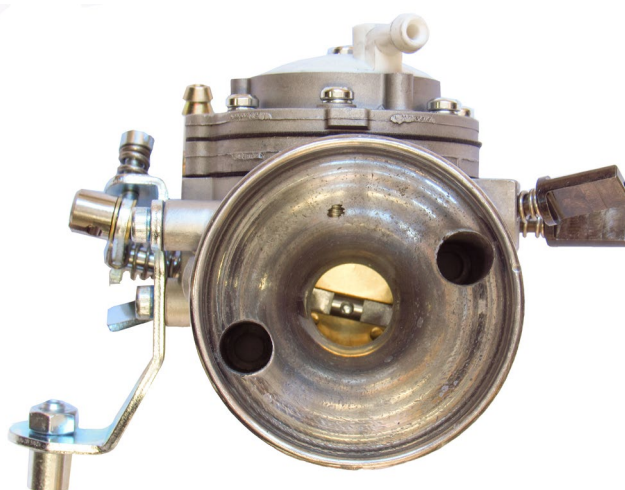
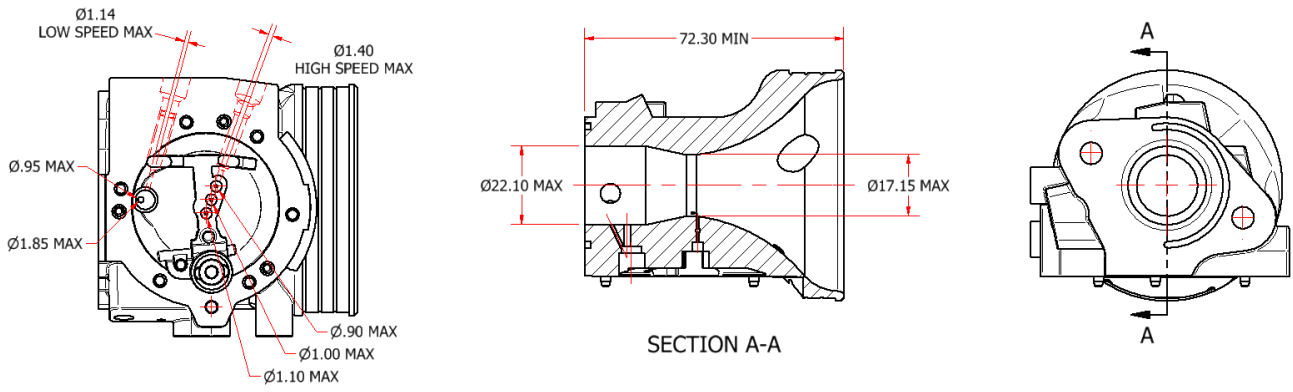


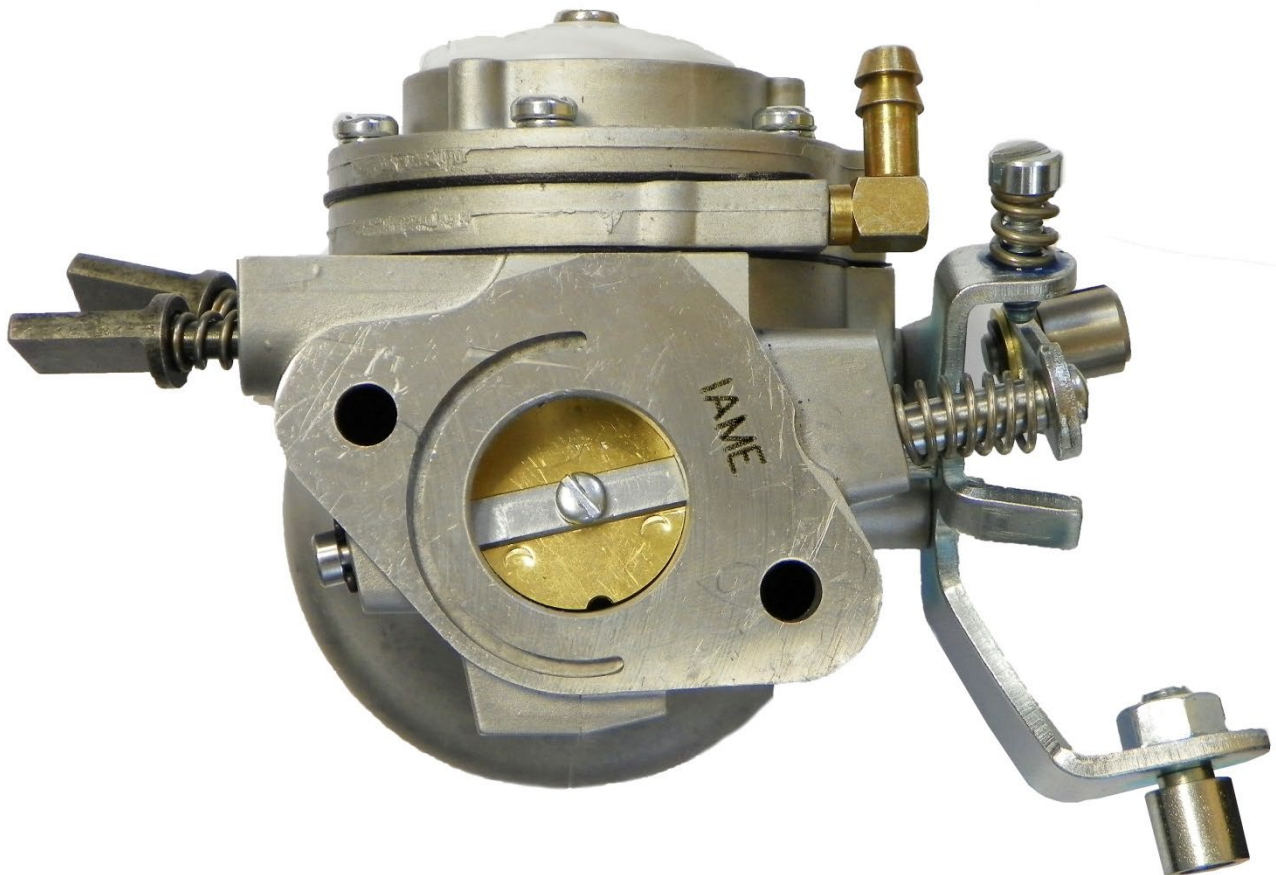
PHOTO OF INLET SIDE  
 PHOTO CÔTÉ ASPIRATION

Manufacturer - <i>Constructeur</i>	<b>TILLOTSON LTD.</b>
Make - <i>Marque</i>	<b>TILLOTSON</b>
Model - <i>Modèle</i>	<b>HW-31A</b>

SECTION VIEW – VUE DE SECTION AVEC DIMENSIONS

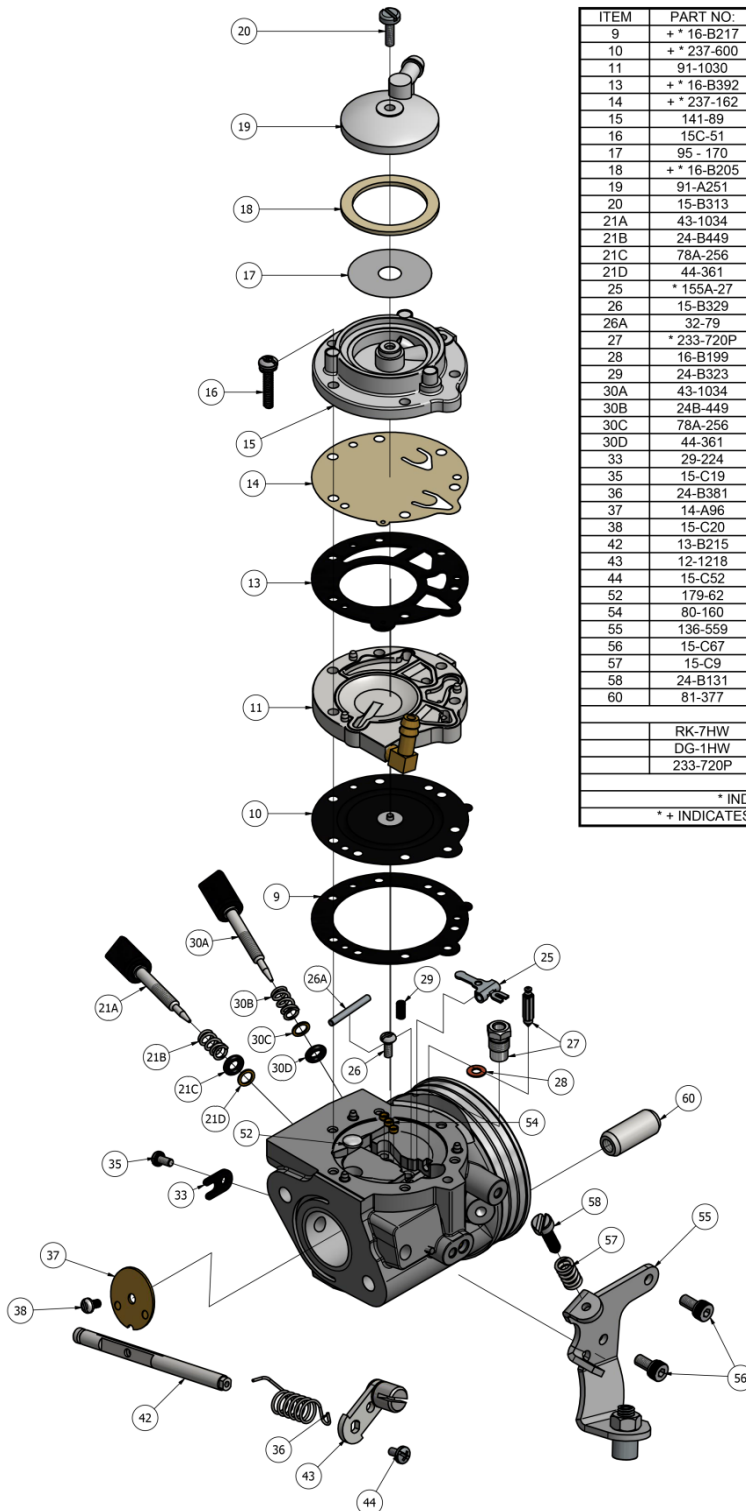


“IAME” MARKING – MARQUAGE “IAME”



# CARBURETTOR - DESCRIPTION AND SKETCH OF PARTS CARBURATEUR - DESCRIPTION ET DESSIN DES PIÈCES

**HW-31A**



ITEM	PART NO.	DESCRIPTION	QTY
9	+ * 16-B217	DIAPHRAGM GASKET	1
10	+ * 237-600	DIAPHRAGM	1
11	91-1030	DIAPHRAGM COVER	1
13	+ * 16-B392	FUEL PUMP GASKET	1
14	+ * 237-162	FUEL PUMP DIAPHRAGM	1
15	141-89	FUEL PUMP BODY	1
16	15C-51	FUEL PUMP BODY SCREW	6
17	95 - 170	FUEL STRAINER SCREEN	1
18	+ * 16-B205	FUEL STRAINER COVER GASKET	1
19	91-A251	FUEL STRAINER COVER	1
20	15-B313	FUEL STRAINER COVER RETAINING SCREW	1
21A	43-1034	IDLE MIXTURE SCREW	1
21B	24-B449	IDLE MIXTURE SCREW SPRING	1
21C	78A-256	IDLE MIXTURE SCREW WASHER	1
21D	44-361	IDLE MIXTURE SCREW PACKING	1
25	* 155A-27	INLET CONTROL LEVER	1
26	15-B329	FULCRUM LEVER SCREW	1
26A	32-79	FULCRUM LEVER PIN	1
27	* 233-720P	INLET NEEDLE & SEAT SET	1
28	16-B199	INLET SEAT GASKET	1
29	24-B323	INLET TENSION SPRING	1
30A	43-1034	HIGH SPEED MIXTURE SCREW	1
30B	24B-449	HIGH SPEED MIXTURE SCREW SPRING	1
30C	78A-256	HIGH SPEED MIXTURE SCREW WASHER	1
30D	44-361	HIGH SPEED MIXTURE SCREW PACKING	1
33	29-224	THROTTLE SHAFT CLIP	1
35	15-C19	THROTTLE SHAFT CLIP RETAINING SCREW	1
36	24-B381	THROTTLE RETURN SPRING	1
37	14-A96	THROTTLE SHUTTER	1
38	15-C20	THROTTLE SHUTTER SCREW	1
42	13-B215	THROTTLE SHAFT	1
43	12-1218	THROTTLE LEVER ASSEMBLY	1
44	15-C52	THROTTLE LEVER RETAINING SCREW	1
52	179-62	WELCH PLUG	1
54	80-160	MAIN PLUG	3
55	136-559	CABLE BRACKET	1
56	15-C67	CABLE BRACKET RETAINING SCREW	2
57	15-C9	LIMITER SCREW	2
58	24-B131	LIMITER SPRING	2
60	81-377	CARBURETTOR MOUNTING NUT	2
	RK-7HW	REPAIR KIT	
	DG-1HW	DIAPHRAGM & GASKET (STANDARD)	
	233-720P	INLET NEEDLE & SEAT SET	
* INDICATES CONTENTS OF REPAIR KIT			
* + INDICATES CONTENTS OF DIAPHRAGM & GASKET SET			



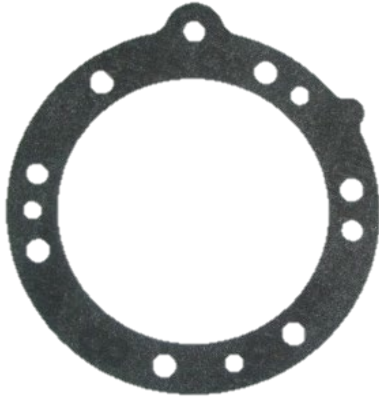
Clash Industrial Estate - Tralee - Ireland  
www.tillotson-racing.com





PARTS OF CARBURETTOR – PIÈCES DU CARBURATEUR

REF.9 - P. N°16-B217  
DIAPHRAGM GASKET  
JOINT DE DIAPHRAGME



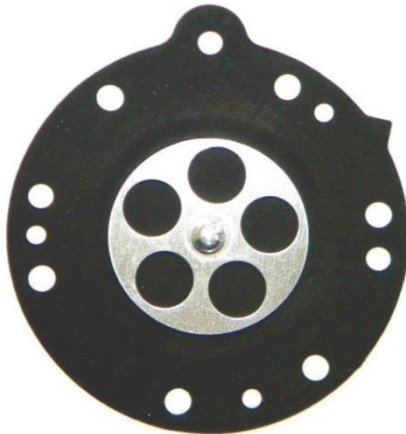
Thickness / *Epaisseur* = 0.5 ±0.1 mm

REF.13 - P. N° 16-B392  
PUMP DIAPHRAGM GASKET  
JOINT DE POMPE A ESSENCE



Thickness / *Epaisseur* = 0.8 ±0.1 mm

REF.10 - P. N°237-600  
DIAPHRAGM  
DIAPHRAGME ASSEMBLE



Thickness / *Epaisseur* = 0.13 ±0.07 mm

REF.14 - P. N°237-162  
PUMP DIAPHRAGM  
MEMBRANE DE POMPE A ESSENCE



Thickness / *Epaisseur* = 0.10 ±0.063 mm

REF.11 - P. N° 91-1031  
DIAPHRAGM COVER  
COUVERCLE DE DIAPHRAGME

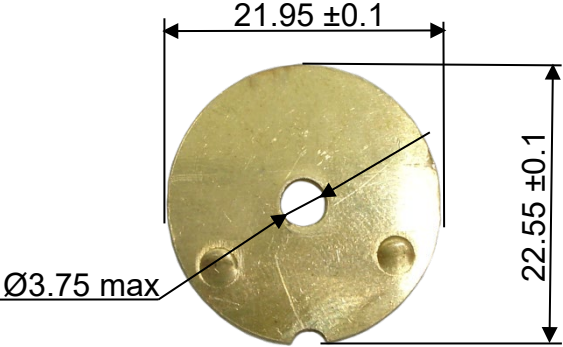
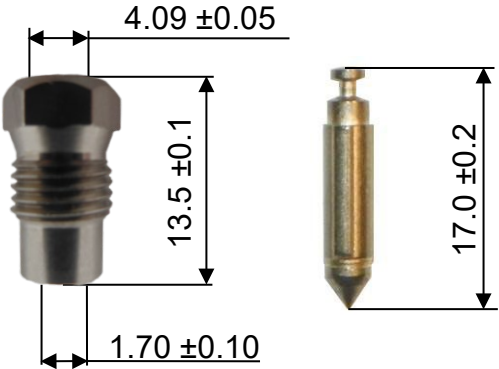
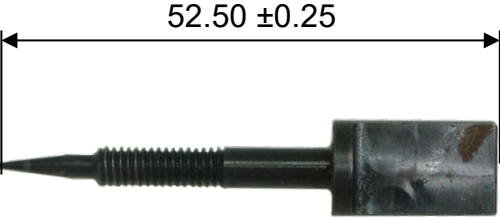
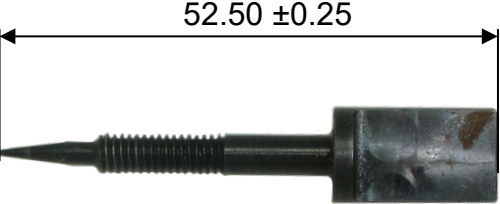




Thickness / *Epaisseur* = 6.75 ±0.15 mm

REF.15 - P. N° 141-89  
PUMP COVER  
CORPS DE POMPE A ESSENCE



Thickness / *Epaisseur* = 12.5 ±0.15 mm

<p>REF.37 - P. N° 14-A96 THROTTLE SHUTTER PAPILLON</p>  <p>Thickness / <i>Epaisseur</i> = 0.81 ± 0.1 mm</p>	<p>REF.27 - P. N° 233-720P SEAT + NEEDLE SIEGE + POINTEAU</p> 
<p>REF.21A - P. N° 43-1034 NEEDLE LOW SPEED VIS DE RAGLAGE BAS-REGIME</p> 	<p>REF.30A - P. N° 43-1034 NEEDLE HIGH SPEED VIS DE RAGLAGE HAUT-REGIME</p> 
<p>NEEDLE FUEL ALTERNATIVE POINTEAU ALTERNATIVE</p>	<p>HOLE FOR CARBURETTOR SEALING TROU POUR LE PLOMBAGE</p>
<p>REF.27 - P. N° 233-720P</p> 	<p>The carburettor can have this hole for sealing. <i>Le carburateur peut avoir ce trou pour le plombage</i></p>  <p>Ø3 HOLE / TROU</p>