
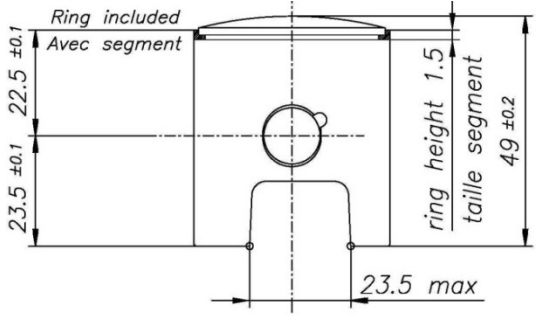
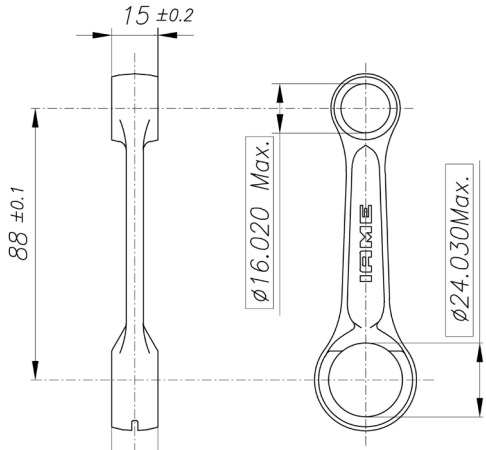
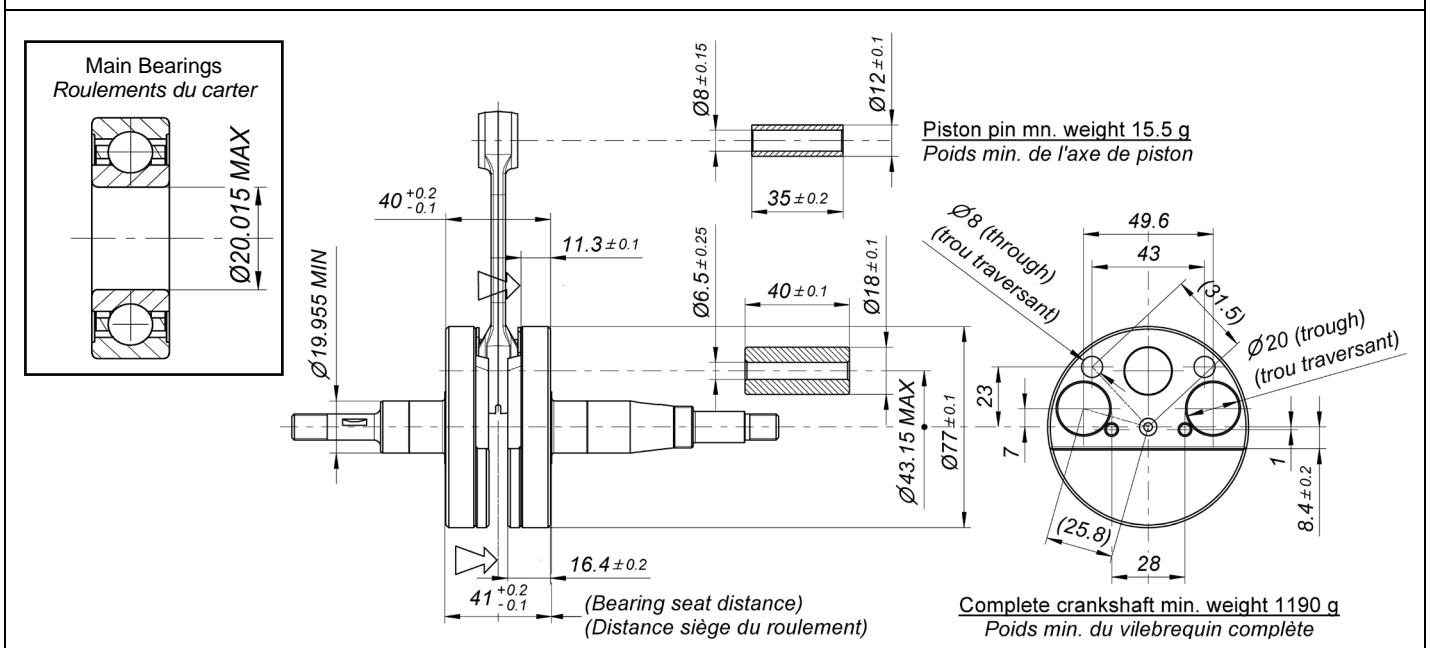


# X30 WATERSWIFT 60CC - TAG

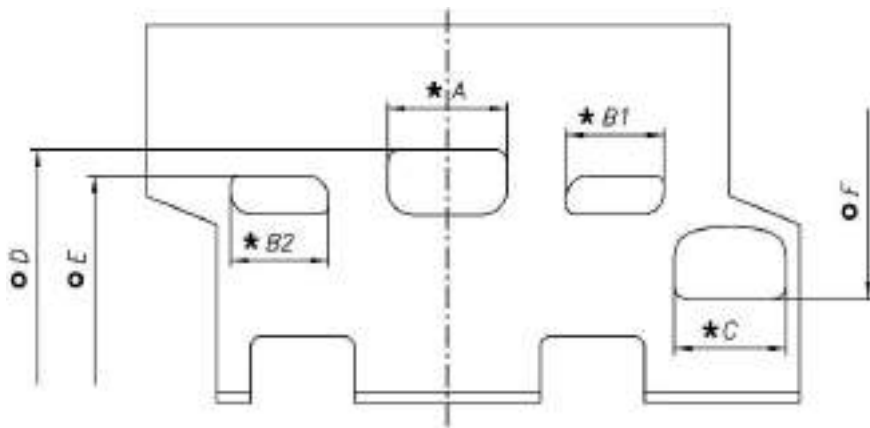
		FEATURES - CARACTERISTIQUES	
		Cylinder volume <i>Volume du cylindre</i>	59.17 cm <sup>3</sup> (60.00 cm <sup>3</sup> max)
		Bore <i>Alésage</i>	41.81 mm
		Max. bore <i>Alésage max.</i>	42.10 mm
		Max. Stroke <i>Course max.</i>	43.15 mm
		Cooling system <i>Système de refroidissement</i>	Water <i>Eau</i>
		Inlet system <i>Système d'admission</i>	Piston valve <i>Jupe de piston</i>
		Number of carbs <i>Nombre de carburateurs</i>	1
Tillotson Carburettor <i>Carburateur Tillotson</i>	HW-31A (Venturi Ø17)	Cylinder / crankcase transfers n° <i>N° de canaux cylindre / carter</i>	2
Number of piston rings <i>Nombre de segments</i>	1	Inlet / exhaust ports number <i>N° lumières admiss / échapp.</i>	1 / 1
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>
Crankshaft ball-bearing diam. <i>Diamètre palier du vilebrequin</i>	20x47x14	Selettra ignition (adjustable) <i>Allumage Selettra (réglable)</i>	2 poles 2 pôles
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

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



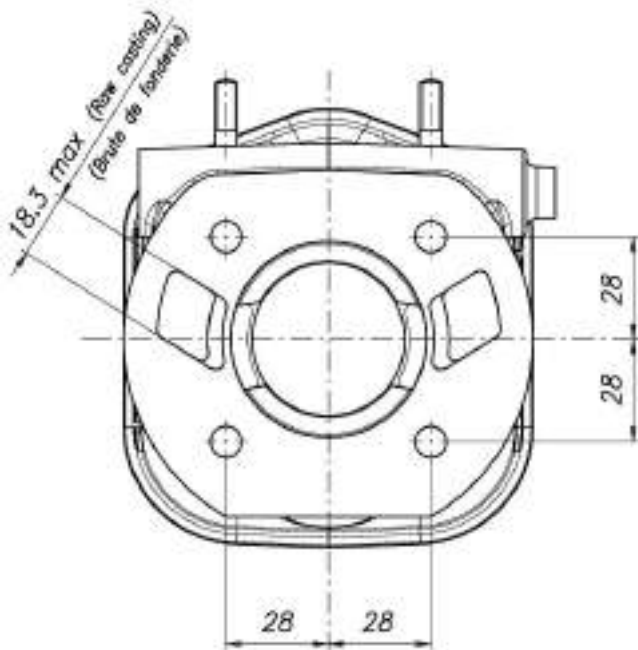
A	28±0.2 mm
B1 = B2	21.8±0.2 mm
C	26±0.2 mm
D	157° max
E	116° ±2°
F	145° max

CHORDAL READING – LECTURE CORDALE

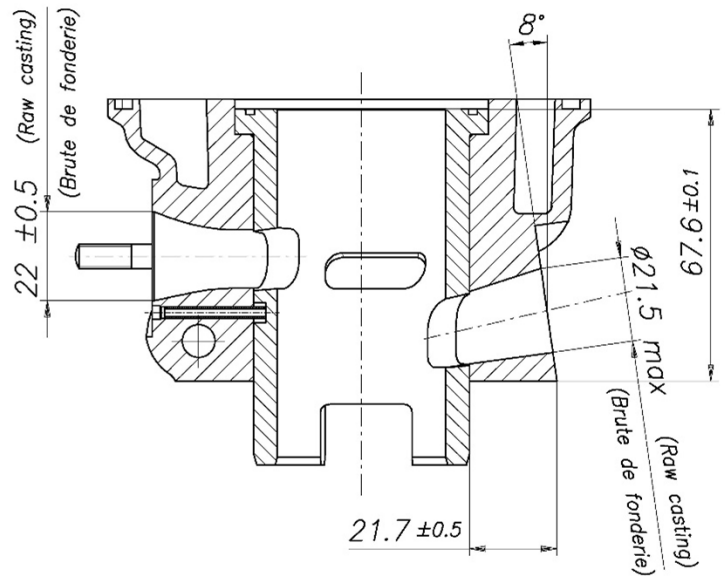
ANGULAR READING BY INSERT A 0.2 mm x 5 mm GAUGE –  
LECTURE ANGULAIRE PAR INSERTION D'UNE CALE DE 0.2 mm x 5 mm

USING IAME TOOL Cod. 10194 – *UTILISER OUTIL*

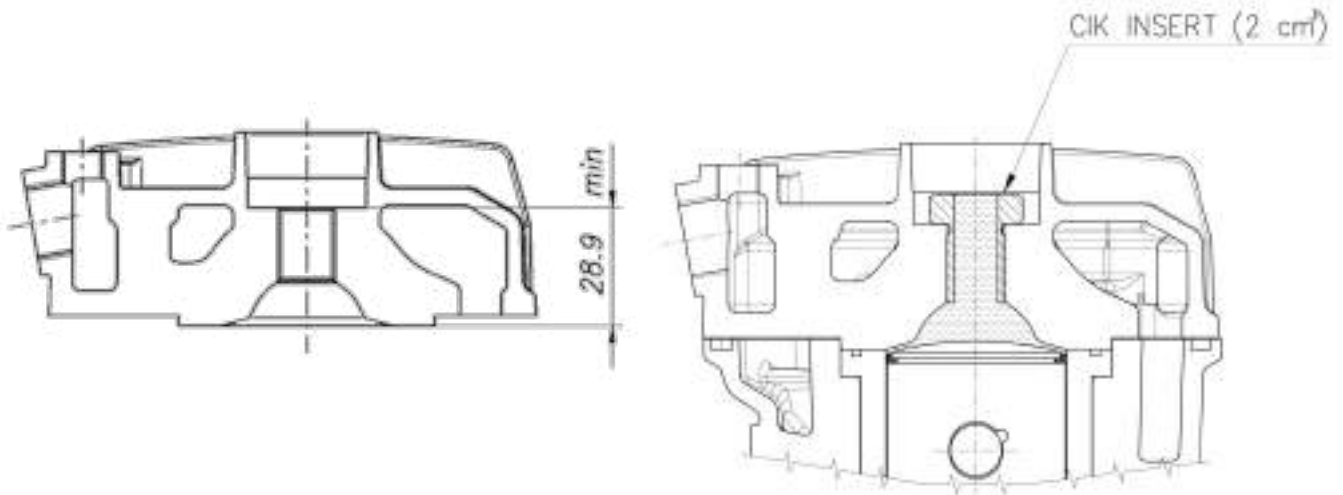
CYLINDER BASE VIEW  
VUE DE LA BASE DU CYLINDRE



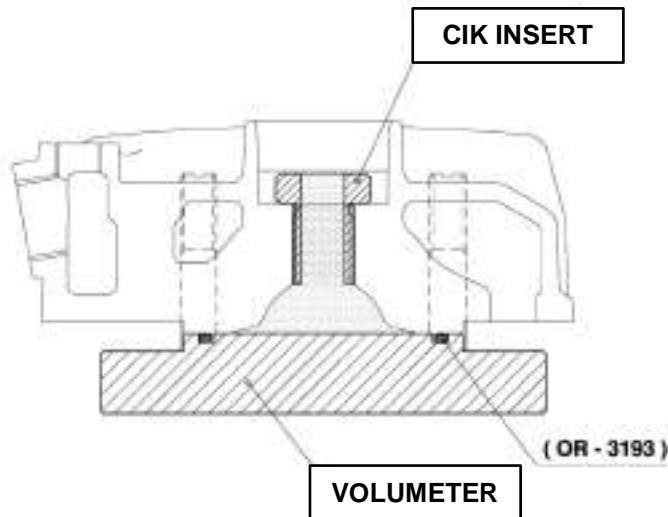
CYLINDER SECTION VIEW  
VUE EN SECTION DU CYLINDRE



COMBUSTION CHAMBER VIEW  
VUE DE LA CHAMBRE DE COMBUSTION



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

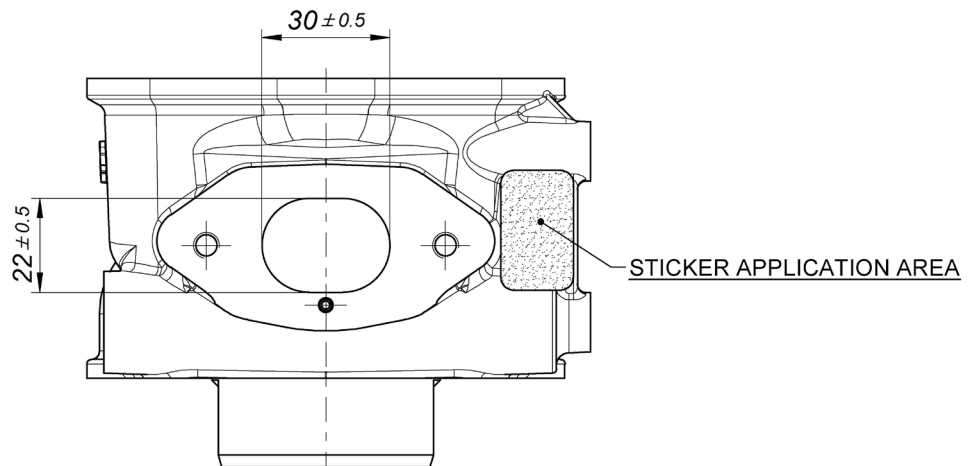


**SQUISH MIN. = 0.75 mm**

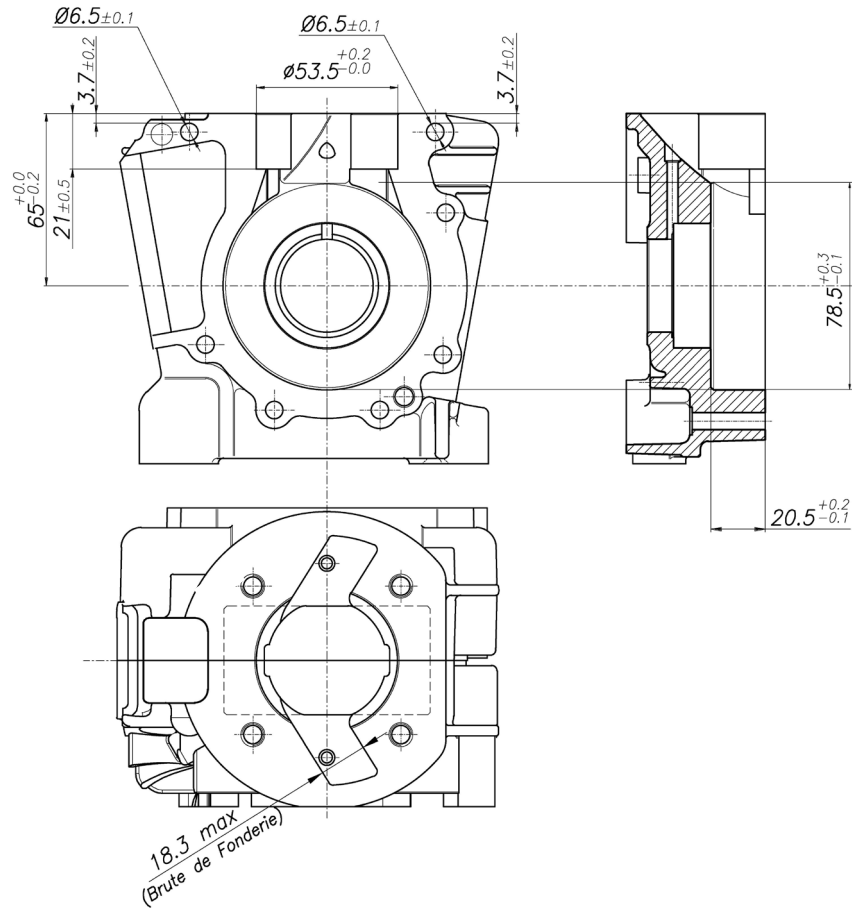
measured with Ø1.5mm TIN  
mesurée avec de l'étain Ø1.5mm

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

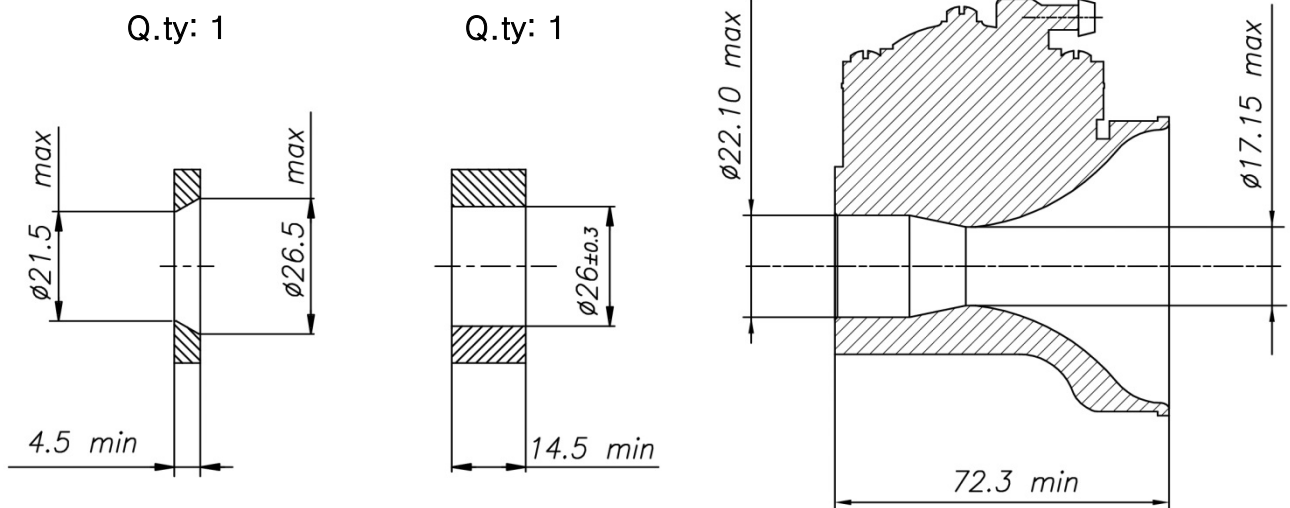
REAR VIEW AND DIMENSION  
ARRIERE VUE ET DIMENSION



CRANKCASE INSIDE VIEW  
VUE A L'INTERIEUR DU CARTER

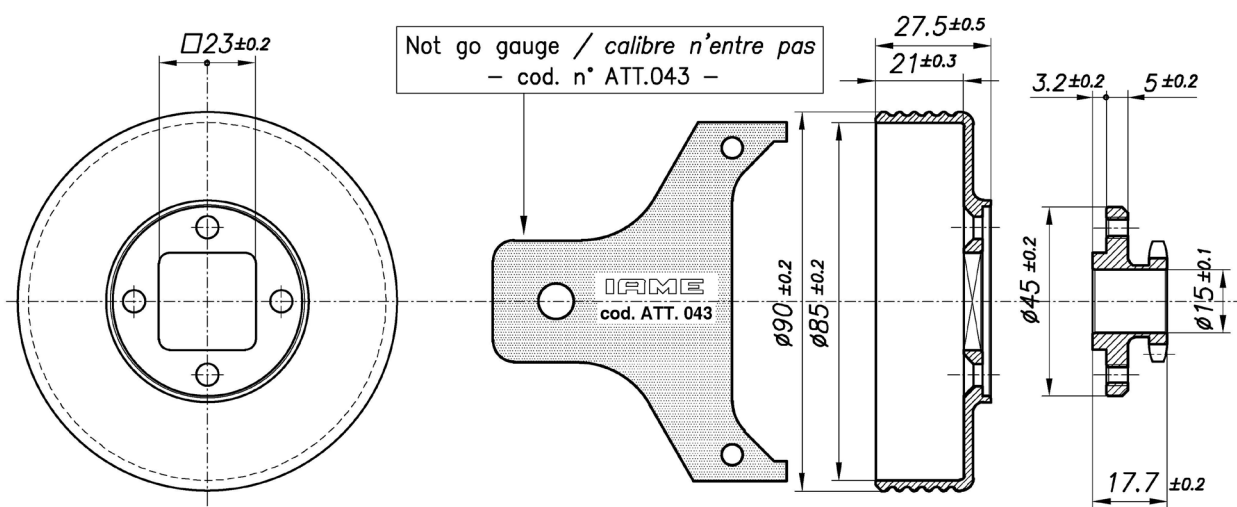
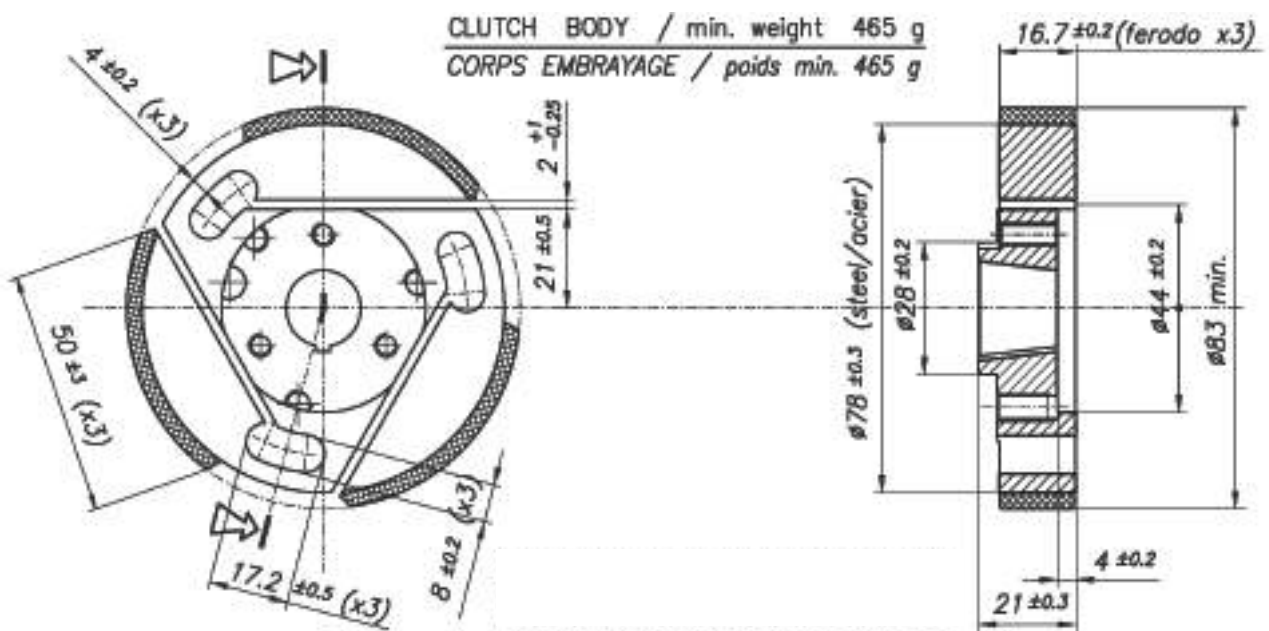
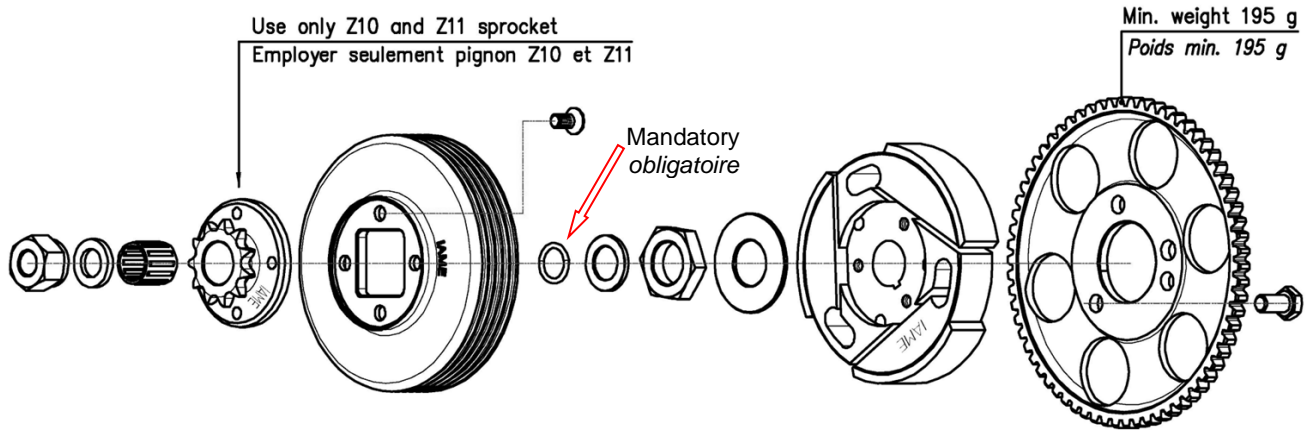


VENTURI CARB. DIMENSIONS and THERMAL SPACERS  
CARBURATEUR ET SONS ENTRETOISES



TILLOTSON MOD. HW-31A

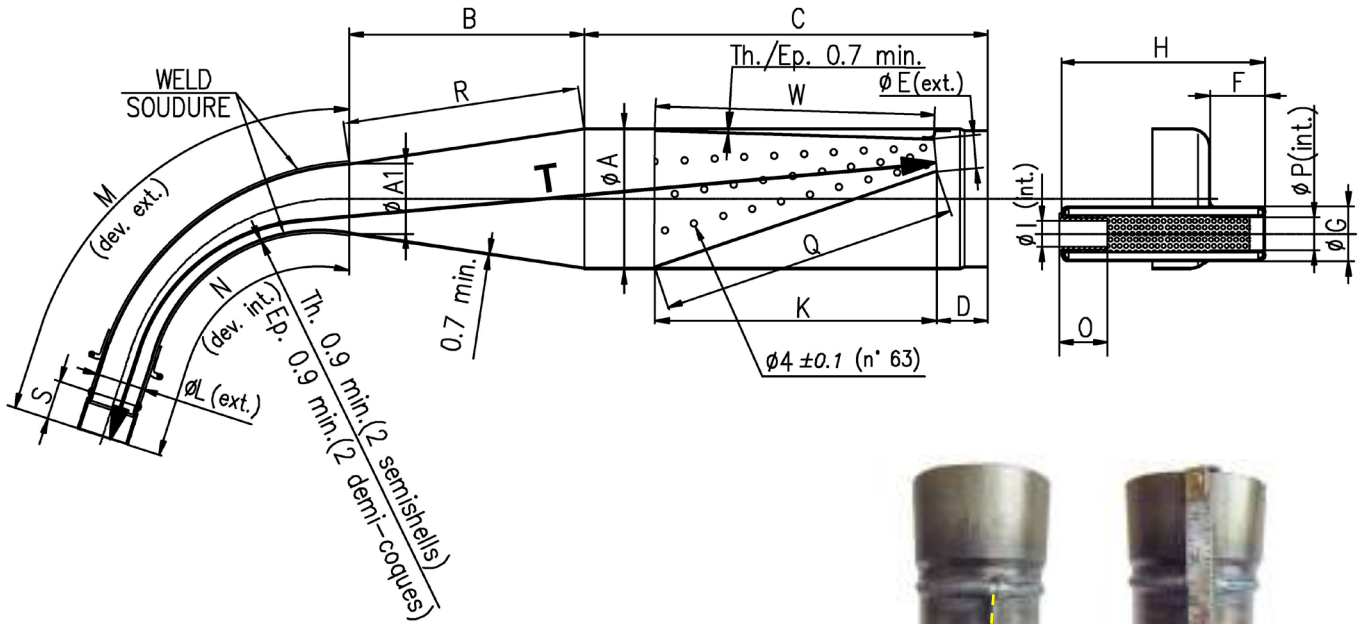
# DESCRIPTION OF THE CLUTCH – DESCRIPTION DE L'EMBRAYAGE



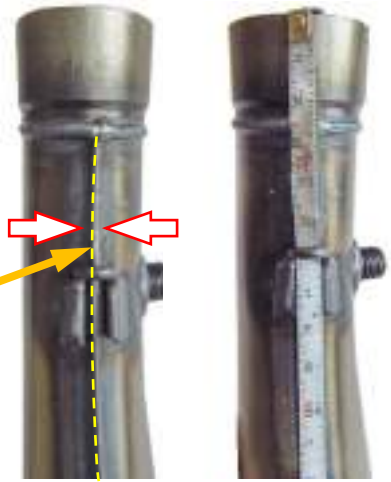
CLUTCH DRUM / min. weight 175 g  
CLOCHE D'EMBRAYAGE / poids min. 175 g

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

EXHAUST VIEW AND DIMENSIONS (with and without embossed logo)  
 VUE ET DIMENSIONS DE L'ÉCHAPPEMENT (avec et sans logo en relief)



The tape must follow the centerline of the weld at all points.  
 Le ruban doit suivre l'axe de la soudure en tous points.



Min. weight 1250 g  
 Poids min.

<b>ØA:</b> 90 ±1.5 Øext.	<b>D:</b> 30 ±2	<b>H:</b> 132 ±2	<b>M:</b> 265 ±3	<b>R:</b> 152 ±3	<b>T:</b> 601 ±3
<b>ØA1:</b> 45 ±1 Øext.	<b>ØE:</b> 20 ±1 Øext.	<b>ØI:</b> 17 max Øint.	<b>N:</b> 215 ±3	<b>S:</b> 25 ±1	
<b>B:</b> 150 ±3	<b>F:</b> 35 ±2	<b>K:</b> 181 ±3	<b>O:</b> 30 min.	<b>Q:</b> 192 ±3	
<b>C:</b> 260 ±3	<b>ØG:</b> 35 ±1 Øext.	<b>ØL:</b> 31 ±1.5 Øext.	<b>ØP:</b> 21 ±1 Øint.	<b>W:</b> 181 ±3	

**ATTENTION:**

The dimensions "M", "N" and "T" must be taken by steel tape measure 6mm wide.  
 Les dimensions « M », « N » et « T » doivent être à l'aide d'un ruban à mesurer en acier 6 mm de large.

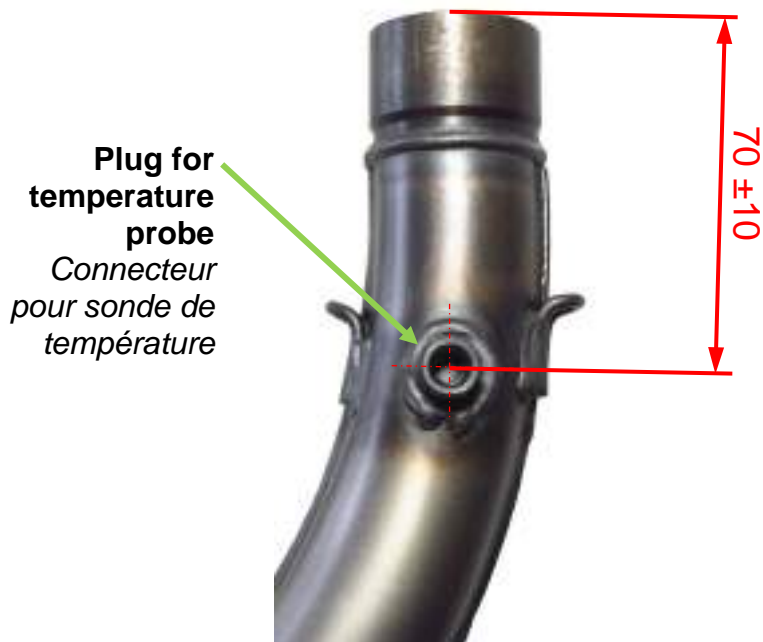
The dimensions "M" and "N" must be taken on the weld centerline.  
 Les dimensions « M », « N » doivent être prises sur l'axe de la soudure.

The dimensions "Q" and "W" must be taken by steel tape measure 12mm wide.  
 Les dimensions « Q » et « W » doivent être prises à l'aide d'un ruban à mesurer en acier 12 mm de large.

ALTERNATIVE EXHAUST MUFFLER with embossed logo  
ECHAPPEMENT ALTERNATIVE avec logo en relief

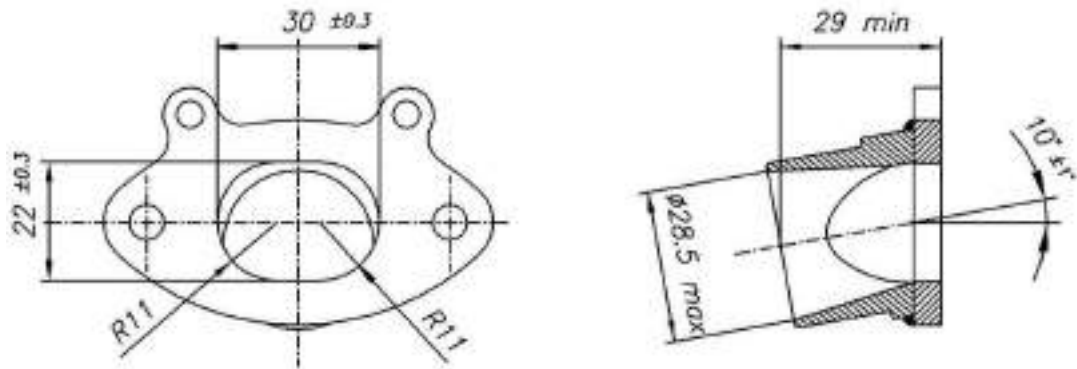


MARKING / MARQUAGE

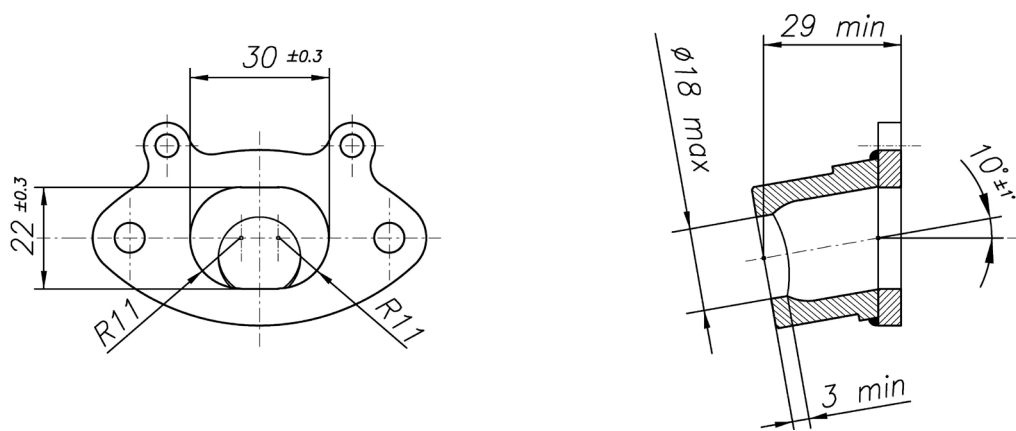
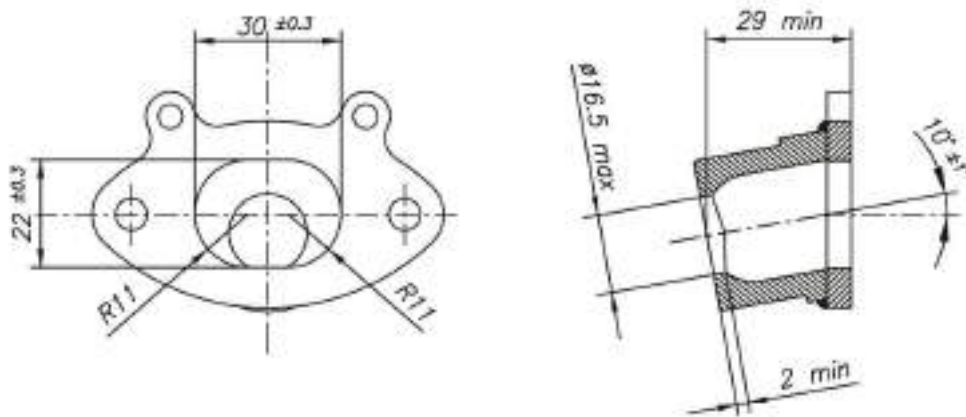




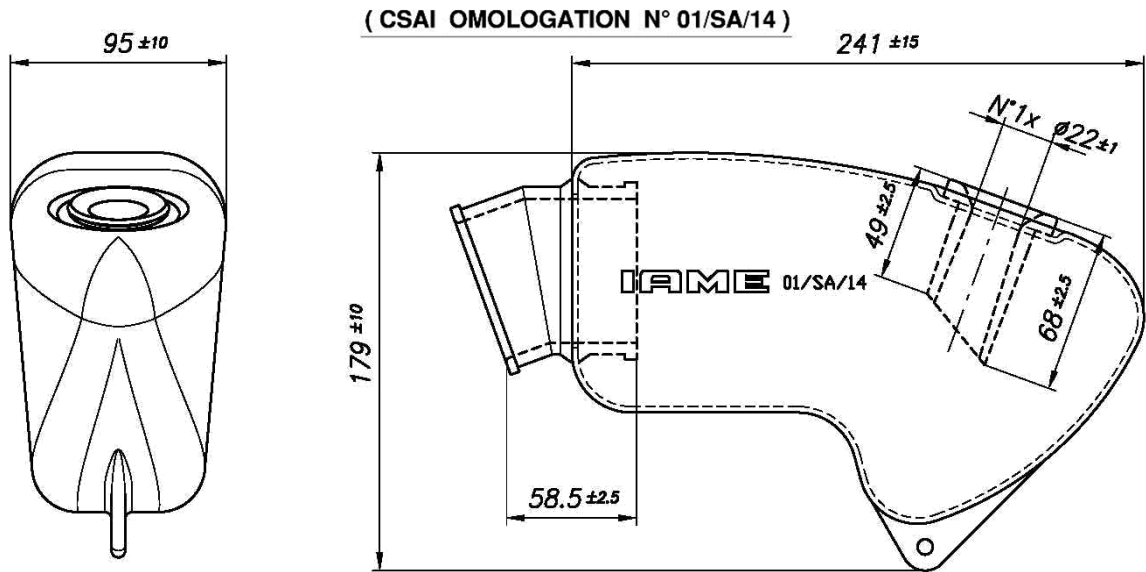
EXHAUST MANIFOLD  
RACCORD D'ÉCHAPPEMENT



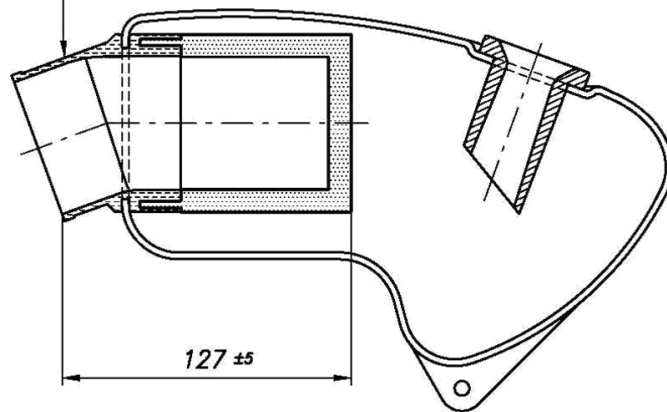
EXHAUST MANIFOLDS WITH RESTRICTED  
RACCORDS AVEC RECSTRICTEUR D'ÉCHAPPEMENT



# INLET SILENCER – SILENCIEUX D'ASPIRATION



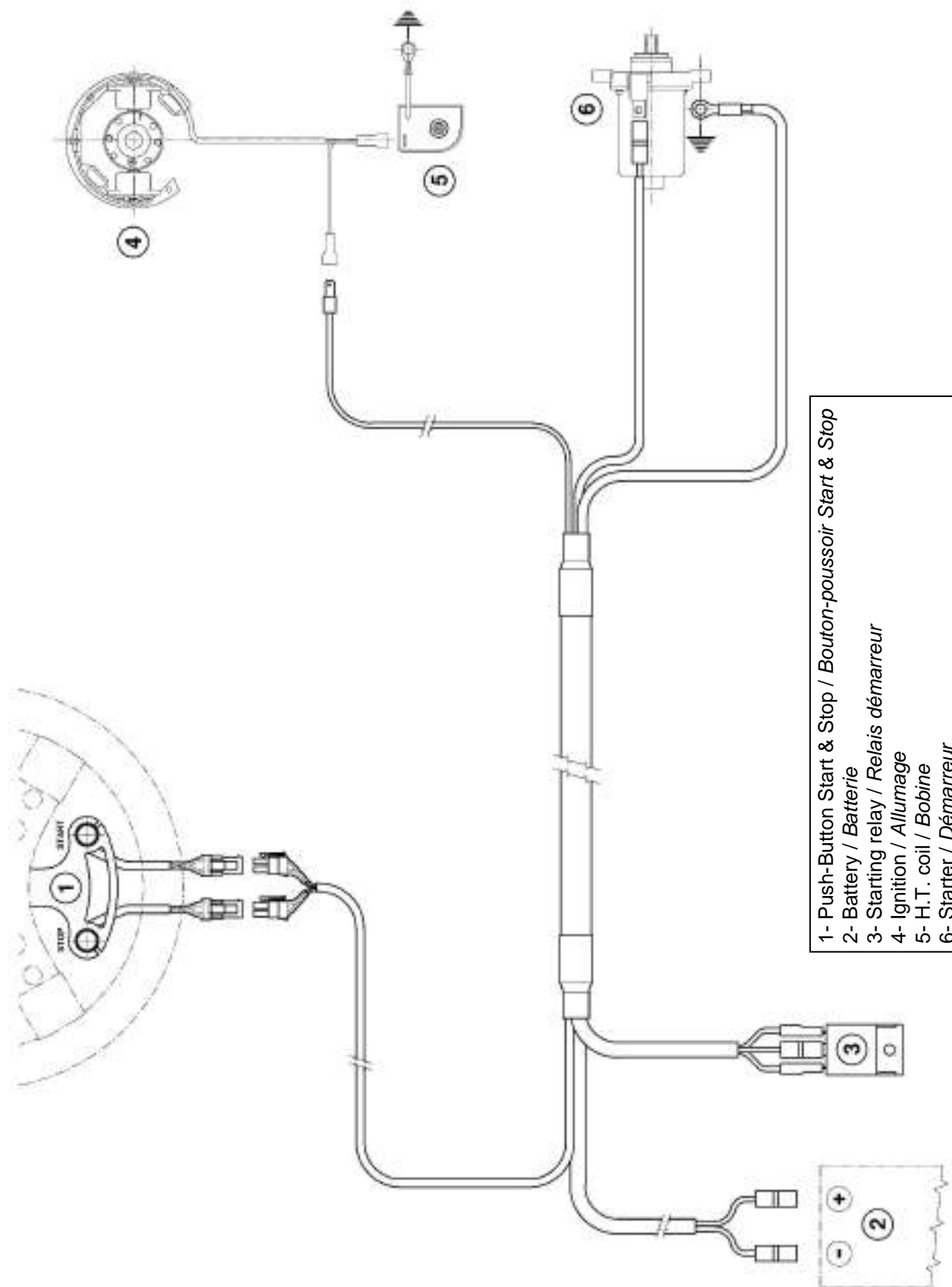
**ALTERNATIVE**  
MANIFOLD WITH SPONGE FILTER  
COLLECTEUR AVEC UNE EPONGE  
FILTRE



INLET SILENCER - PHOTO  
PHOTO - SILENCIEUX D'ASPIRATION



WIRING DIAGRAM  
SCHÉMA CIRCUIT ÉLECTRIQUE



- 1- Push-Button Start & Stop / Bouton-poussoir Start & Stop
- 2- Battery / Batterie
- 3- Starting relay / Relais démarreur
- 4- Ignition / Allumage
- 5- H.T. coil / Bobine
- 6- Starter / Démarreur

PHOTO COMPLETE WIRING  
PHOTO DU CÂBLAGE ÉLECTRIQUE COMPLÈTE

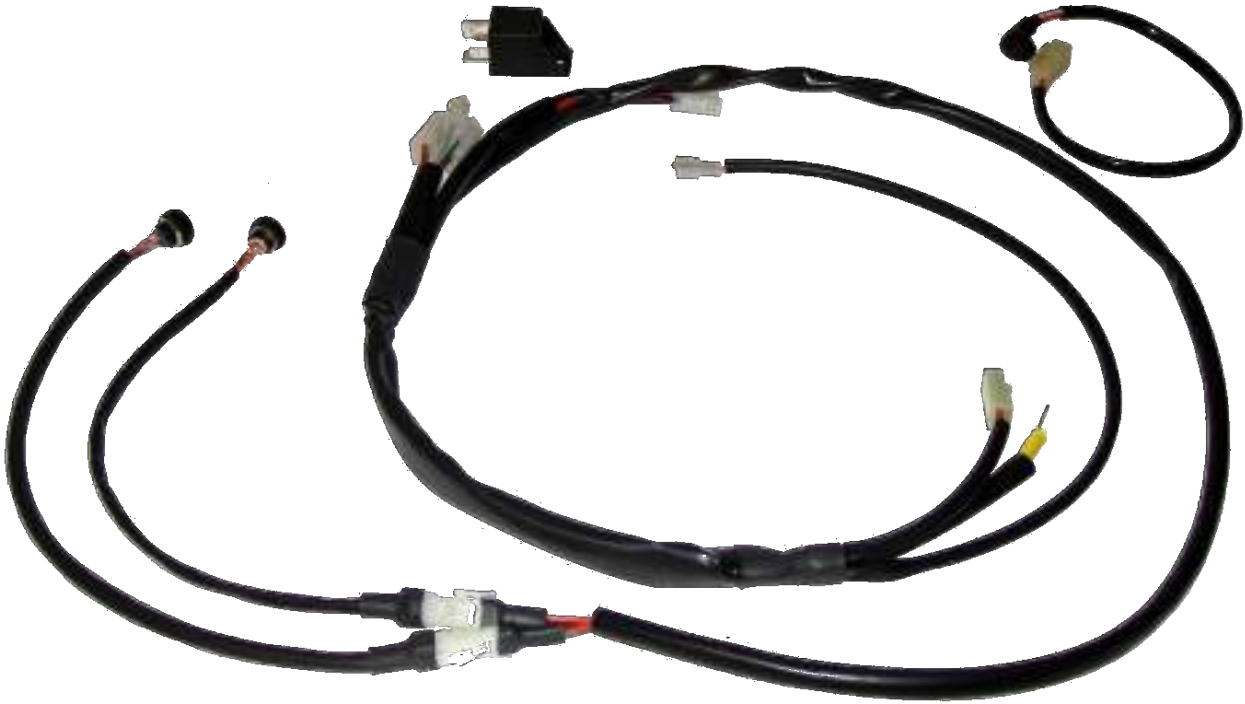
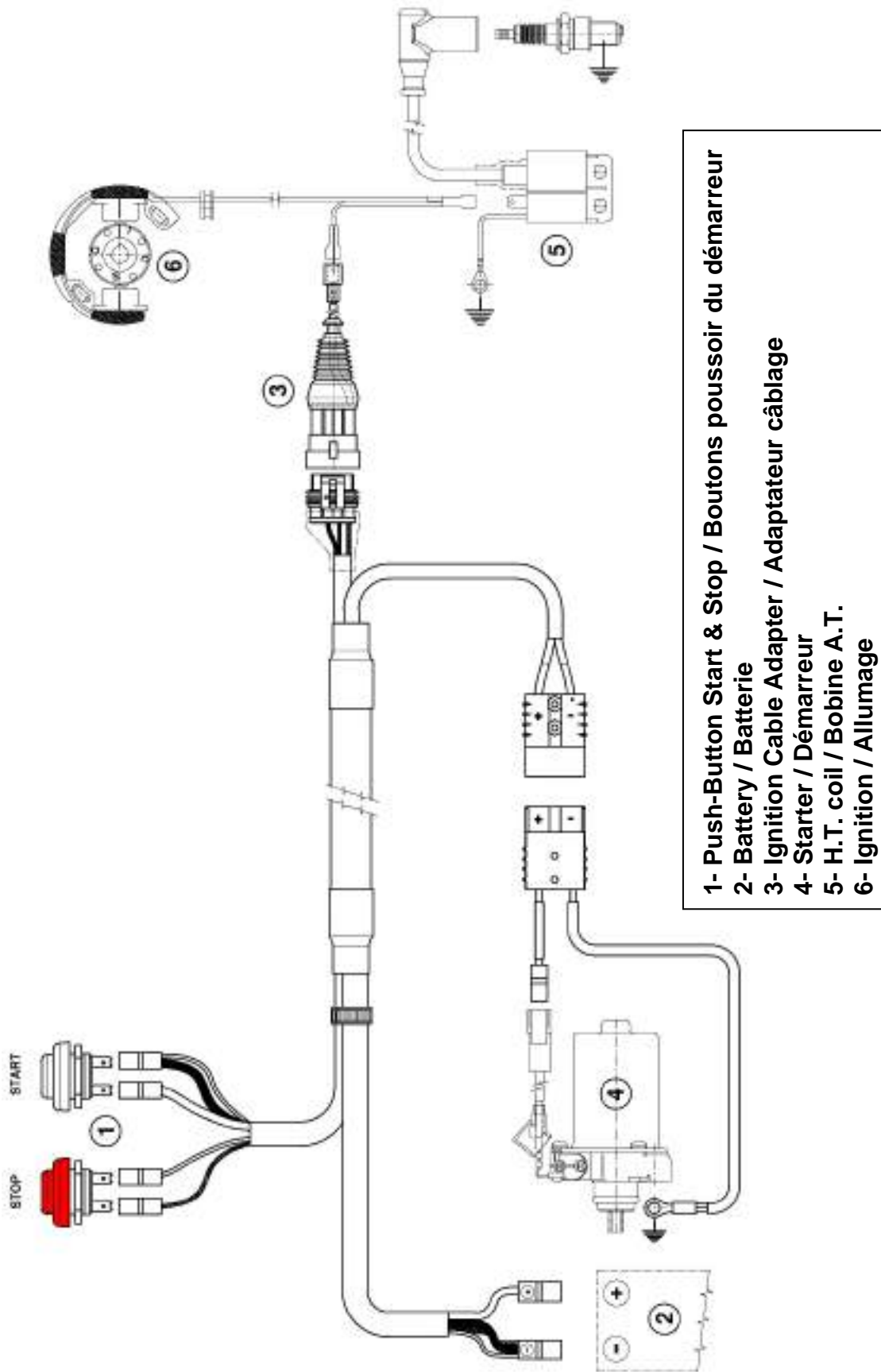


PHOTO IGNITION / PHOTO H.T. COIL (SELETTRA ANALOGUE 2 POLES)  
PHOTO ALLUMAGE / PHOTO BOBINE (SELETTRA ANALOGIQUE 2 POLES)



ALTERNATIVE WIRING LOOM DIAGRAM  
SCHÉMA CIRCUIT ÉLECTRIQUE ALTERNATIF



- 1- Push-Button Start & Stop / Boutons poussoir du démarreur  
2- Battery / Batterie  
3- Ignition Cable Adapter / Adaptateur câblage  
4- Starter / Démarreur  
5- H.T. coil / Bobine A.T.  
6- Ignition / Allumage

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



WATER PUMP ALTERNATIVES – ALTERNATIVES DU POMPE A' EAU



**PLASTIC**

RACE BOTTOM *FOND GORGE*  $\varnothing 19 \pm 1$

**ALTERNATIVE**

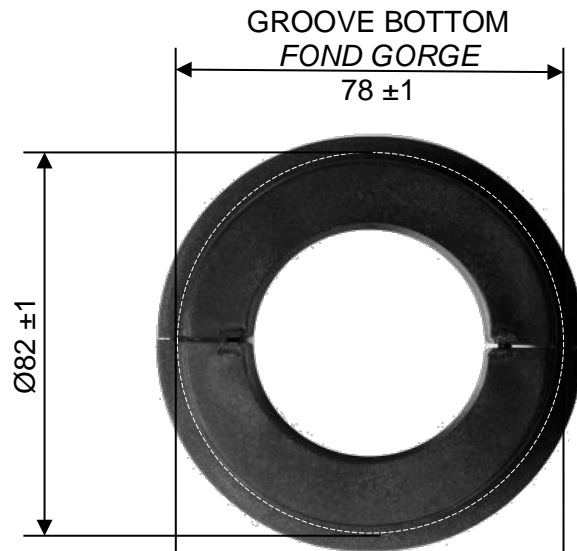


**ALUMINUM**

RACE BOTTOM - *FOND GORGE*  $\varnothing 20 \pm 1$



PULLEY ALTERNATIVE – ALTERNATIVE DU POULIE



**PLASTIC**



**ALTERNATIVE**



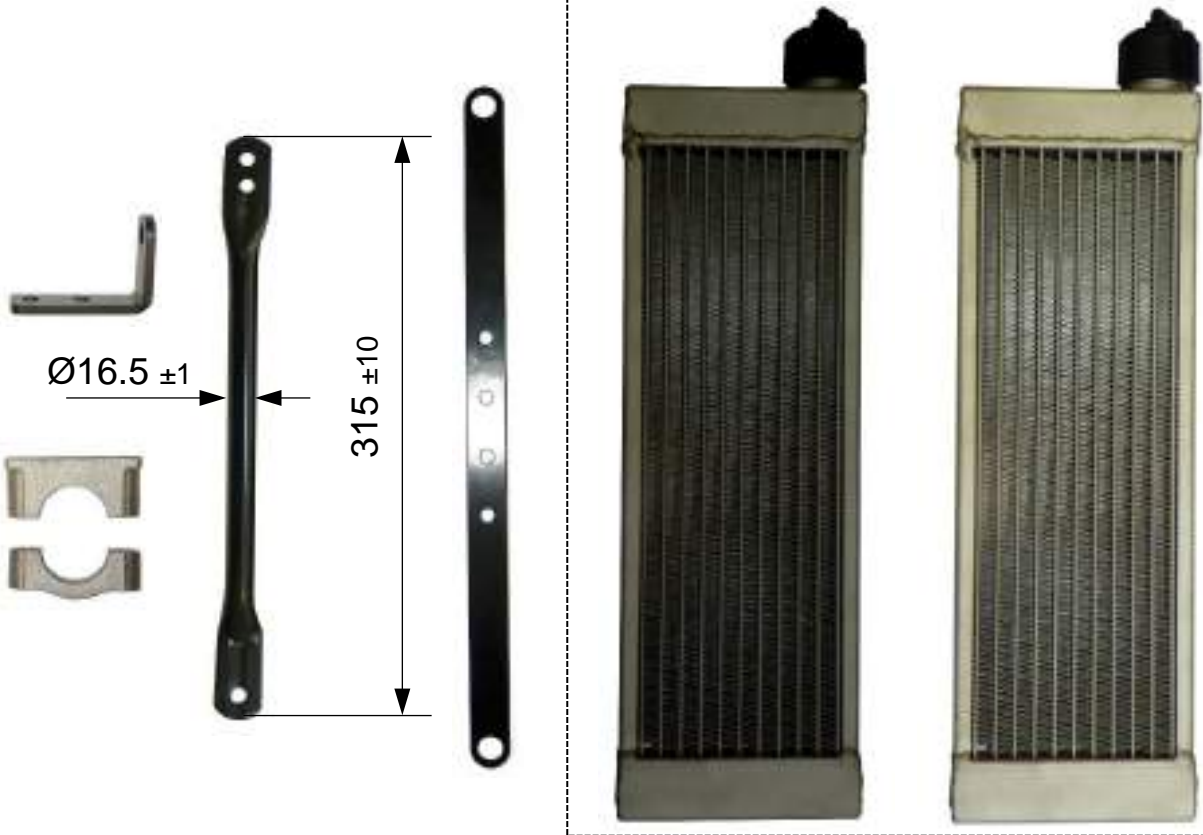
**ALUMINUM**

GROOVE BOTTOM  
FOND GORGE Ø82 ±1



RADIATOR AND ITS SUPPORTS  
RADIATEUR ET SES SUI TIEN

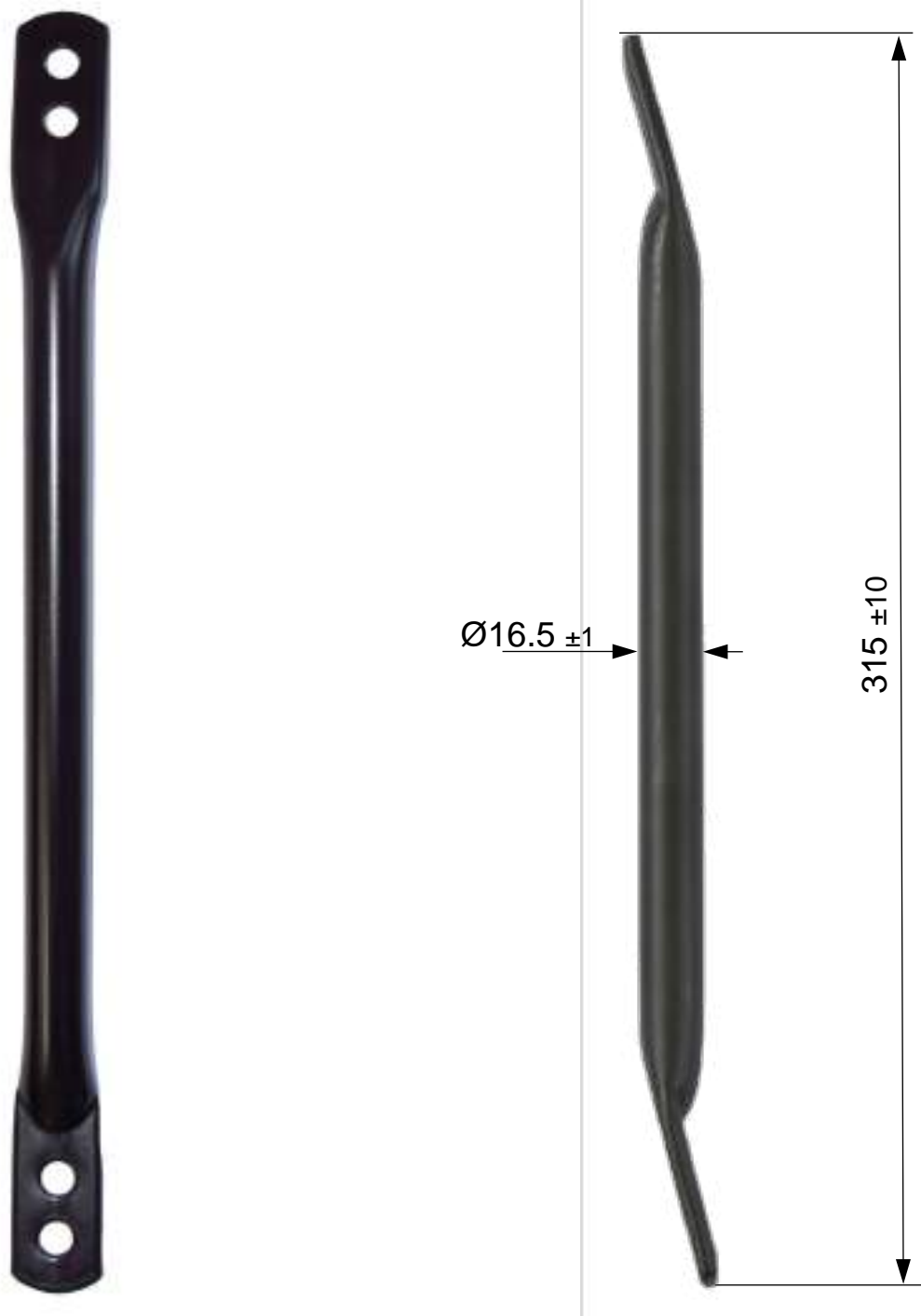
PAINTED AND NOT PAINTED  
PEINT ET PAS PEINT



ALTERNATIVE RADIATOR  
RADIATEUR ALTERNATIF



ALTERNATIVE RADIATOR SUPPORT  
ALTERNATIVE SUI TIEN DU RADIATEUR



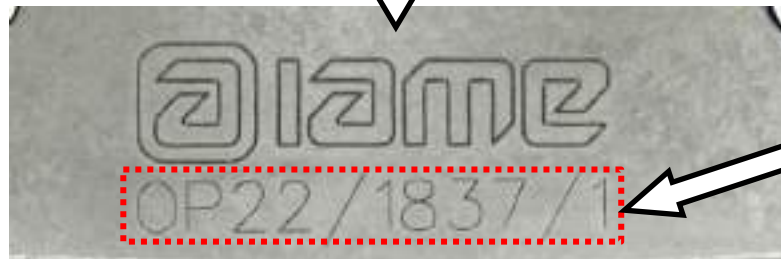
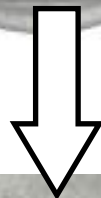
CYLINDER IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU CYLINDRE



**\* Compulsory from engine n. 011150**  
**\* Obligatoire à partir du moteur no. 011150**

CYLINDER BASE ALTERNATIVE MARKING  
MARQUAGE ALTERNATIF DU LA BASE CYLINDRE

**ALTERNATIVE**



**VARIABLE**



CYLINDER HEAD MARKING  
 MARQUAGE D'IDENTIFICATION DU CULASSE



OR



SEMICARTER TRANSMISSION SIDE  
 SEMICARTER CÔTÉ PIGNON

SEMICARTER IGNITION SIDE  
 SEMICARTER CÔTÉ ALLUMAGE



OR



OR



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

TYPE 1



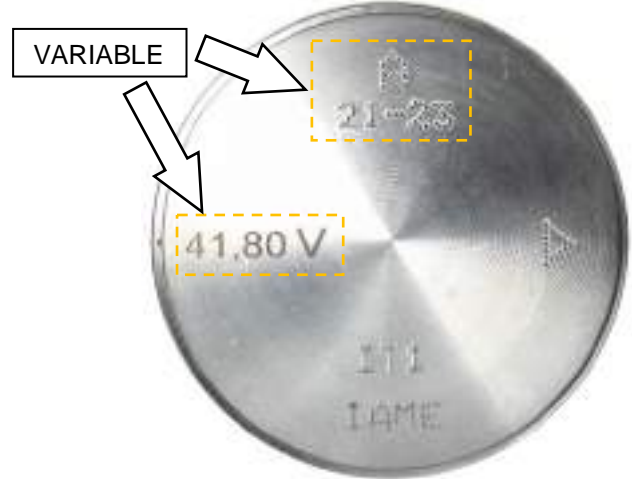
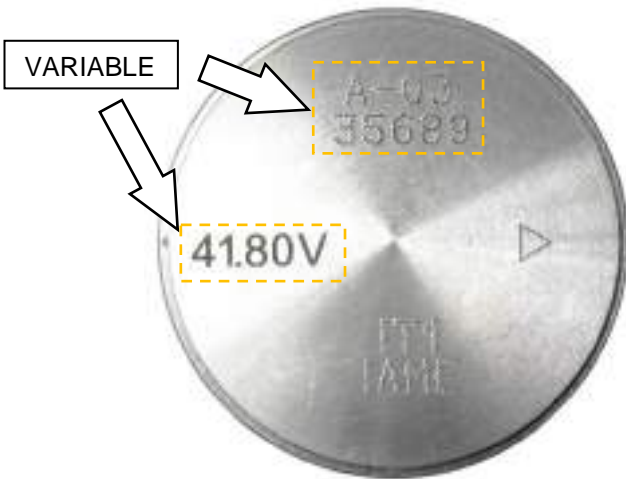
TYPE 2



**PISTON IT1 TYPES IDENTIFICATION**  
**IDENTIFICATION DES TYPES DU PISTON IT1**  
*(dimensions and weight are the same for both types /  
 les dimensions et le poids sont les mêmes pour les deux types)*

**CURRENT / COURANT**

**ALTERNATIVE / ALTERNATIF**



SPROCKET IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU PIGNON



CLUTCH DRUM IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DE LA CALOTTE



CLUTCH BODY IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU CORPS DE L'EMBRAYAGE



STARTER RING IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DE LA COURONNE DE DEMARRAGE





CRANKSHAFT AND HIS COMPONENTS IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU VILEBREQUIN ET SES COMPOSANTS



BENDIX COVER IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU COUVERCLE  
DU CONTRE-ARBRE DE DEMARRAGE



STARTER IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION DU DEMARREUR

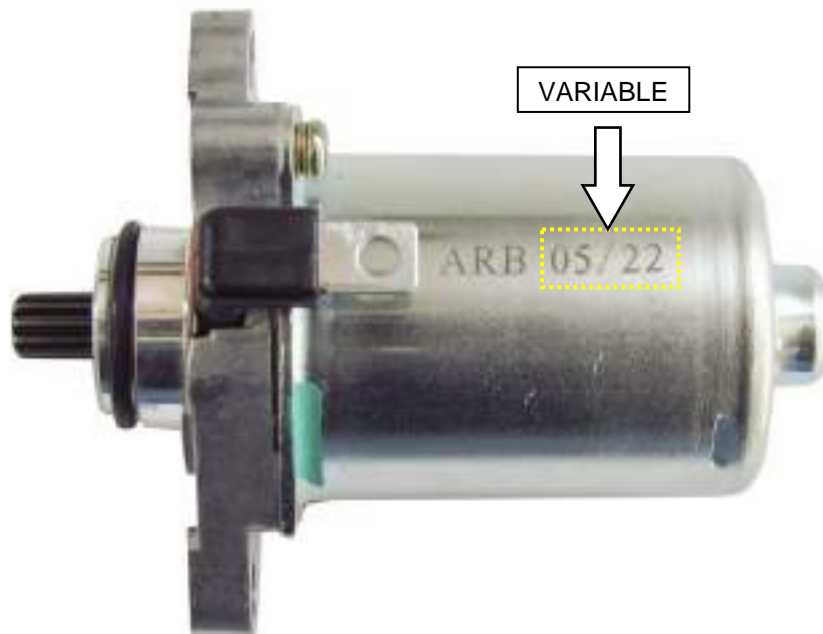
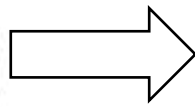
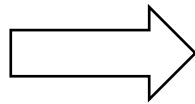


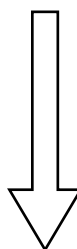
PHOTO IDENTIFICATION: SMALL & BIG END CONROD BEARING AND MAIN BEARING  
*PHOTO D'IDENTIFICATION DU ROULEMENT PIED/TÊTE DE BIELLE ET PRINCIPAUX*



ALTERNATIVE



EXHAUST IDENTIFICATION MARKING without embossed logo  
*MARQUAGE D'IDENTIFICATION ECHAPPEMENT sans logo en relief*



IGNITION COVER  
COUVERCLE DU ALLUMAGE



OR



CLUTCH COVER  
COUVERCLE D'EMBAYAGE



OR



INLET FILTER  
SILENCIEUX D'ASPIRATION



OR



**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

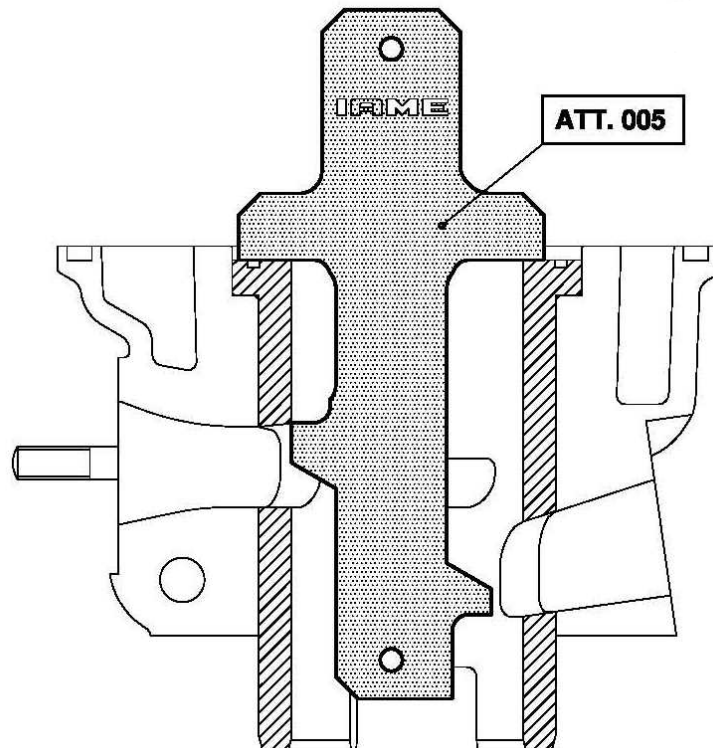
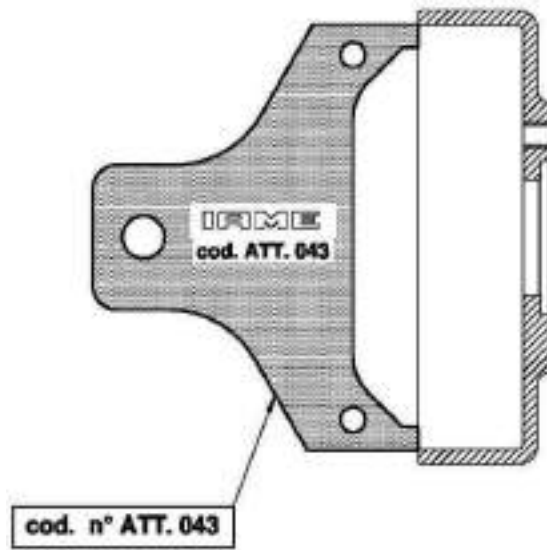
or

IAME

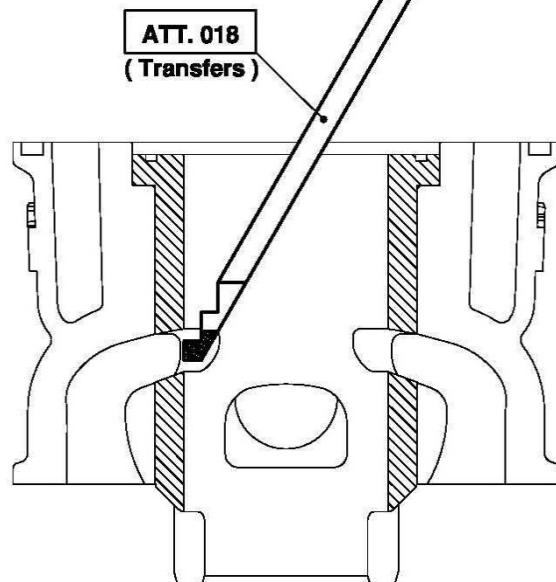
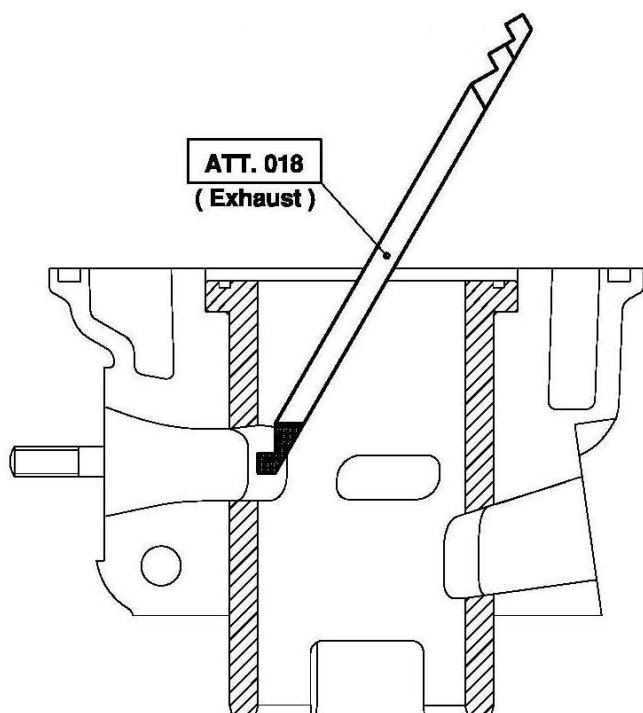
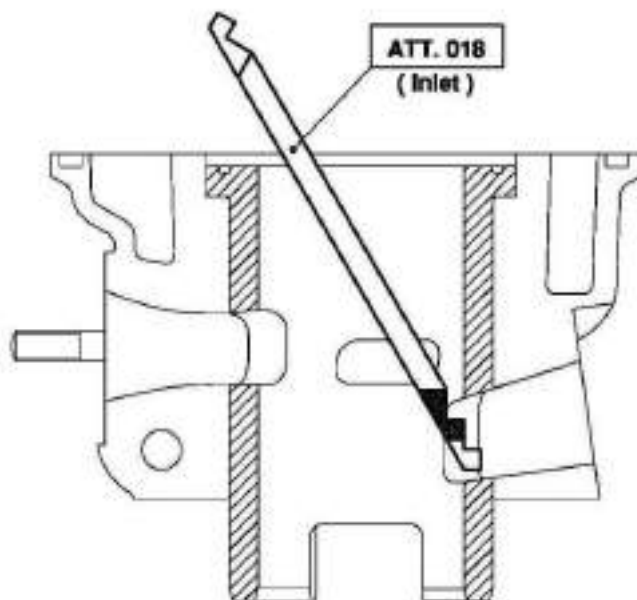
or

IAME

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



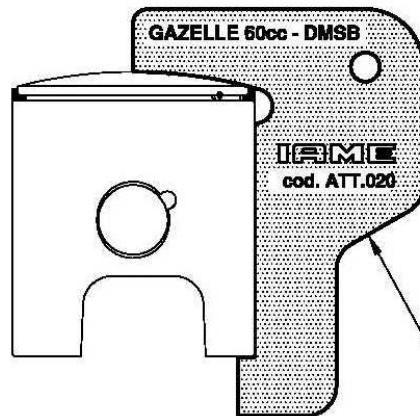
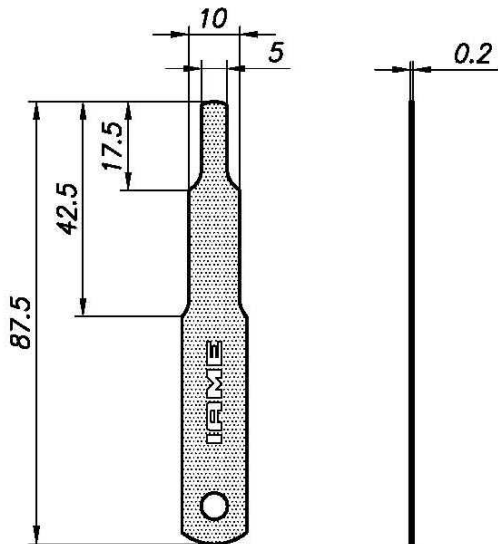
**NO GO GAUGES**  
**OUTILS N'ENTRE PAS DANS**



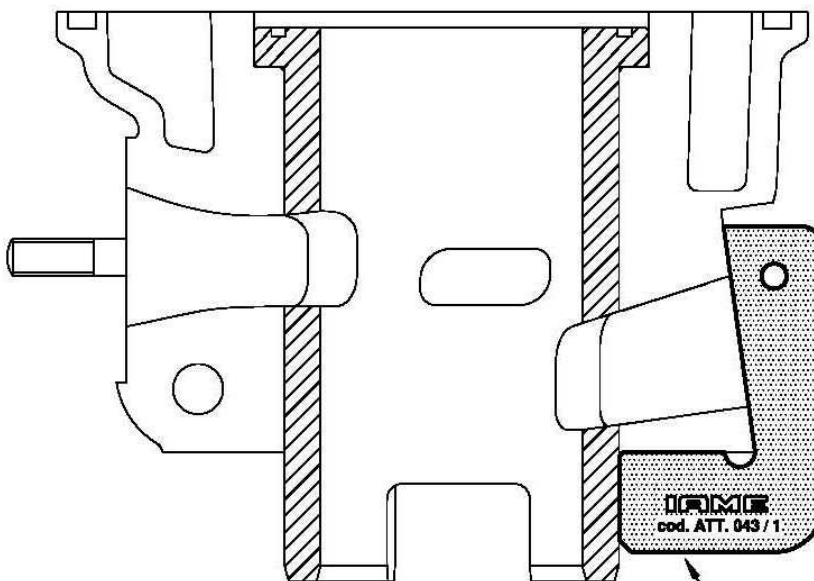


**CONTROL GAUGES**  
**OUTILS DE CONTROL**

**TOOL IAME Cod. 10194**

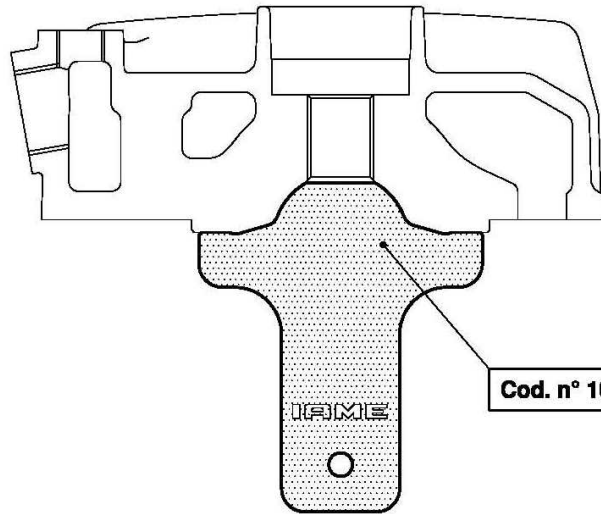


**cod. n° ATT. 020**

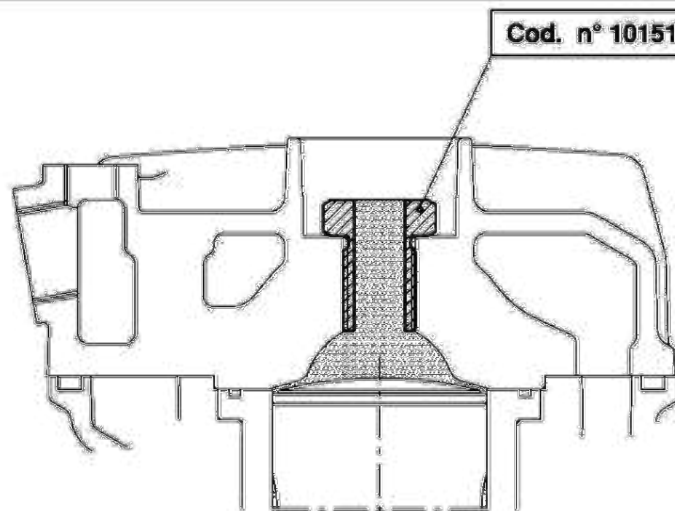


**cod. n° ATT. 043 / 1**

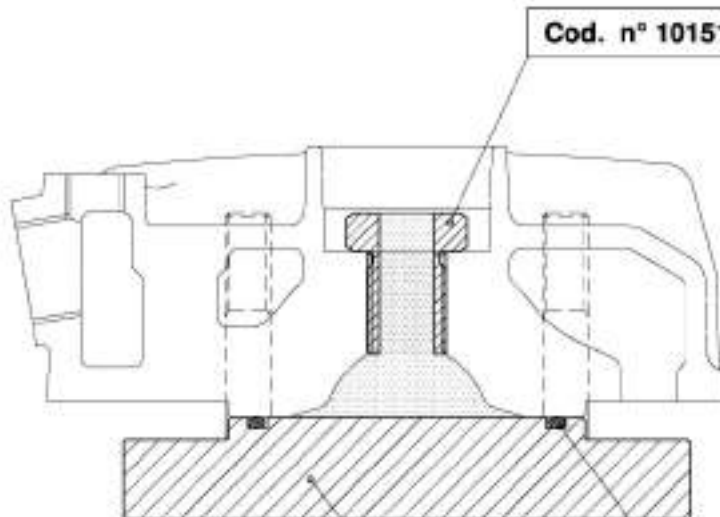
**CONTROL GAUGES  
OUTILS DE CONTROLL**



Cod. n° 10215



Cod. n° 10151

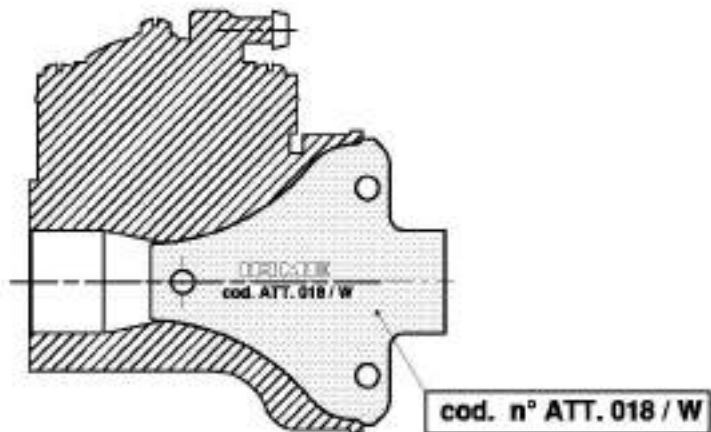


Cod. n° 10151

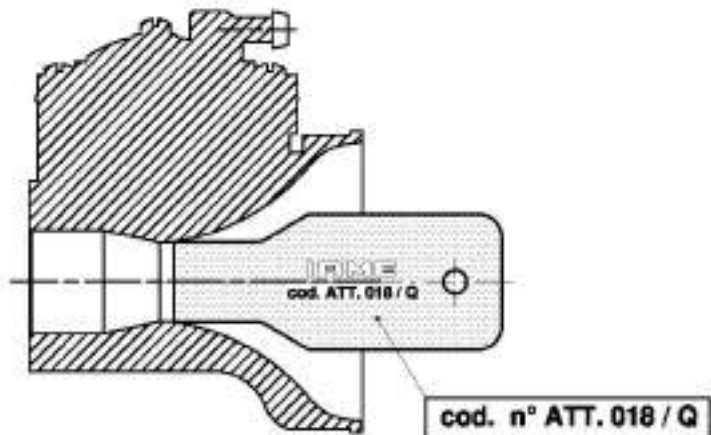
Cod. n° 10276

( OR - 3193 )

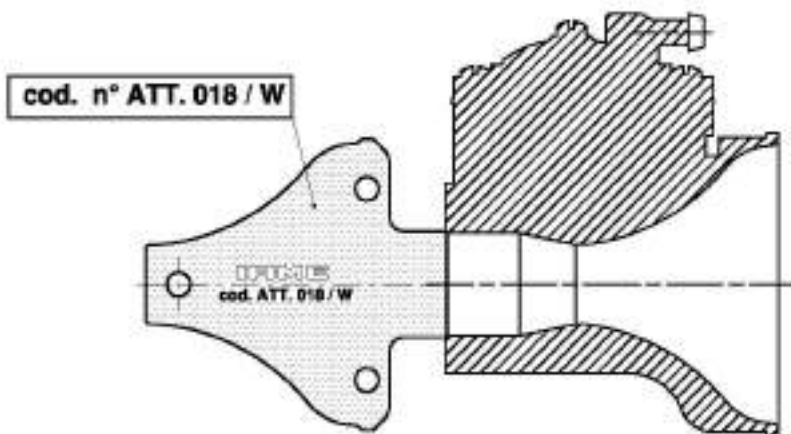
**CONTROL GAUGES  
OUTILS DE CONTROLL**



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.*

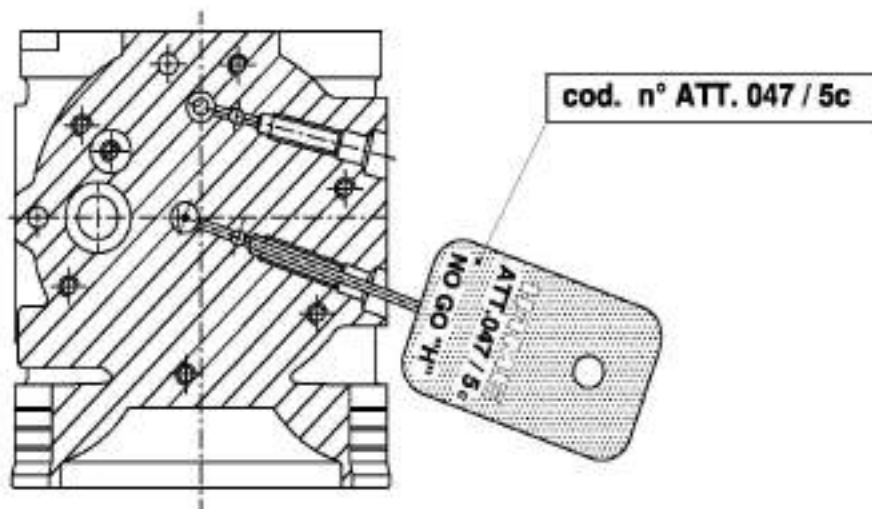
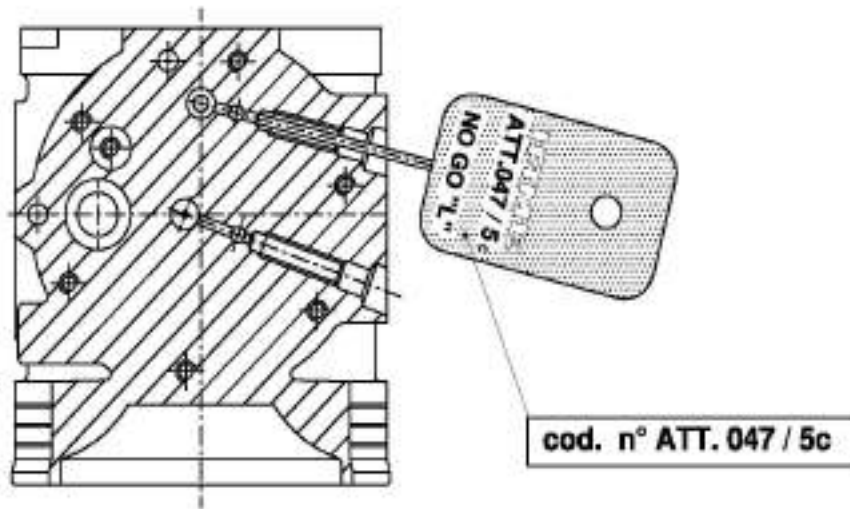


Check that the tool does not enter into the venturi duct inlet of carburettor.  
*Vérifier que l'outil n'entre pas dans l'entrée du conduit Venturi du carburateur.*



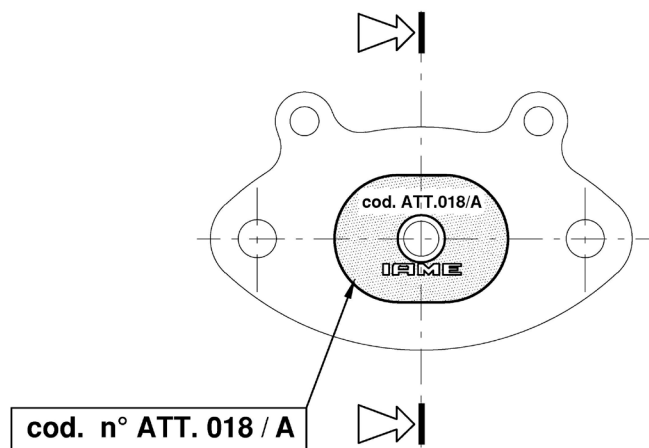
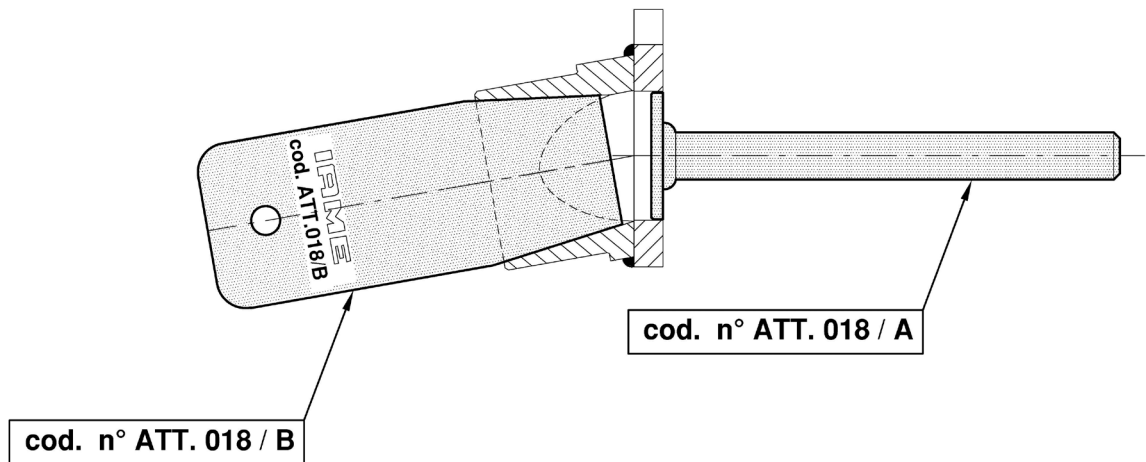
Check that the tool does not enter into the venturi duct outlet of carburettor.  
*Vérifier que l'outil n'entre pas dans la sortie du conduit Venturi du carburateur.*

**CONTROL GAUGES  
OUTILS DE CONTROLL**



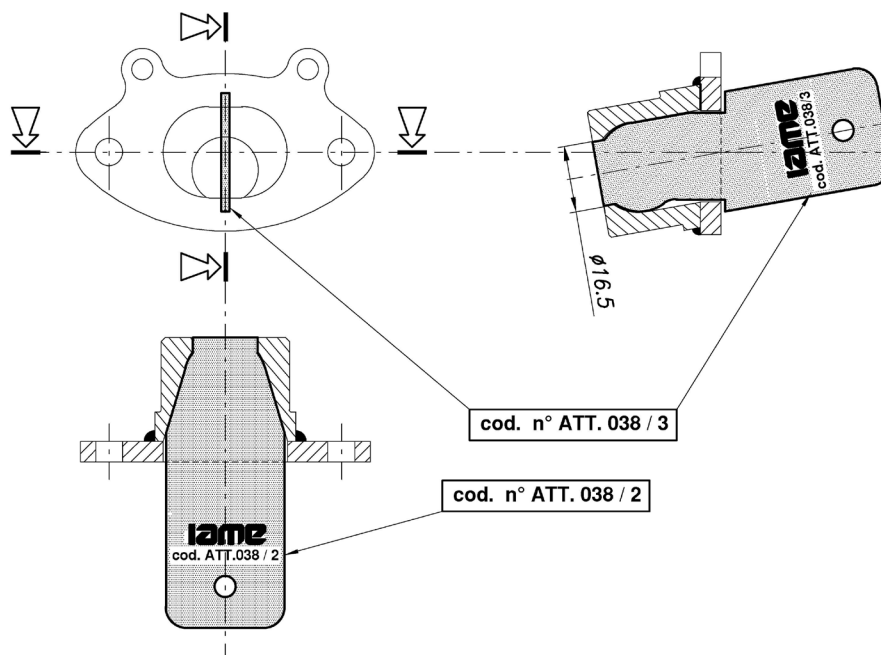
Check that the spikes does not enter into the holes.  
Vérifiez que les pointes n'entrent pas dans les trous.

**CONTROL GAUGES  
OUTILS DE CONTROLL**

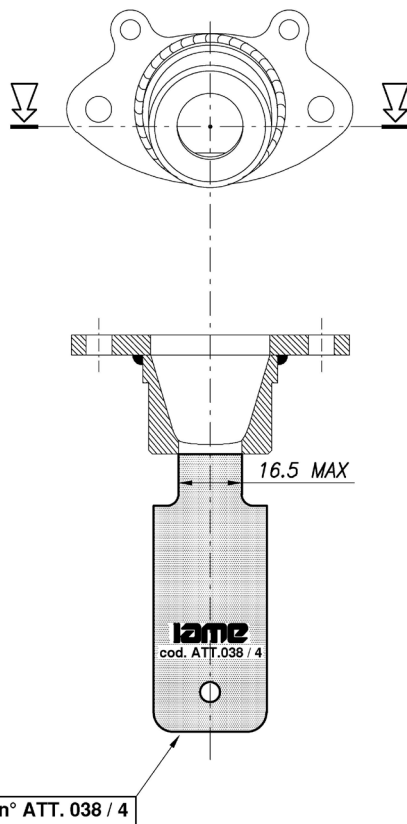


Check that the tool must be the same shape of the exhaust manifold.  
*Vérifiez que l'outil doit être de la même forme du collecteur d'échappement*

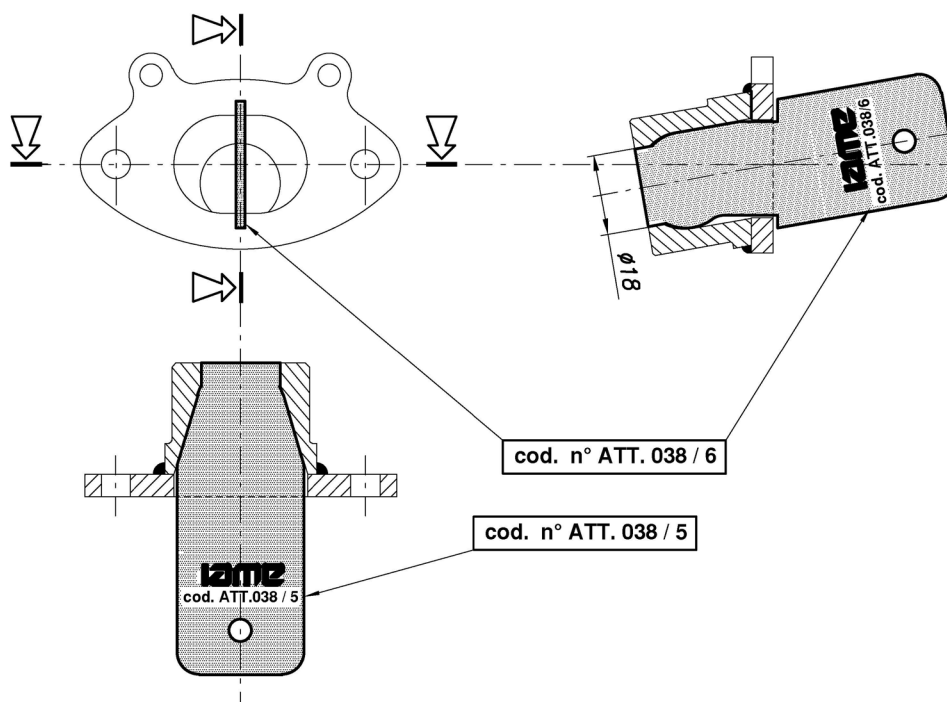
IAME TOOLS – GABARIT DE CONTROL IAME



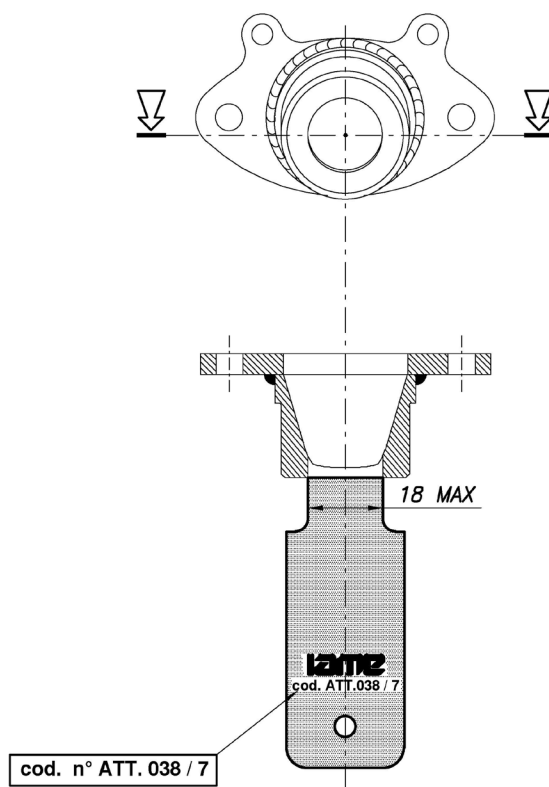
Check that the tool must be the same shape of the inlet carburettor.  
*Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.*



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



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

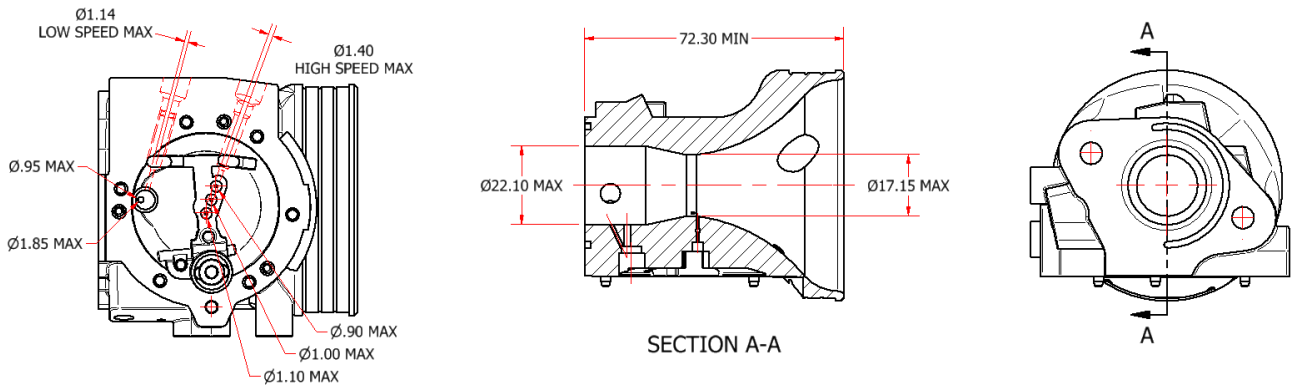


PHOTO OF INLET SIDE  
 PHOTO CÔTÉ ASPIRATION

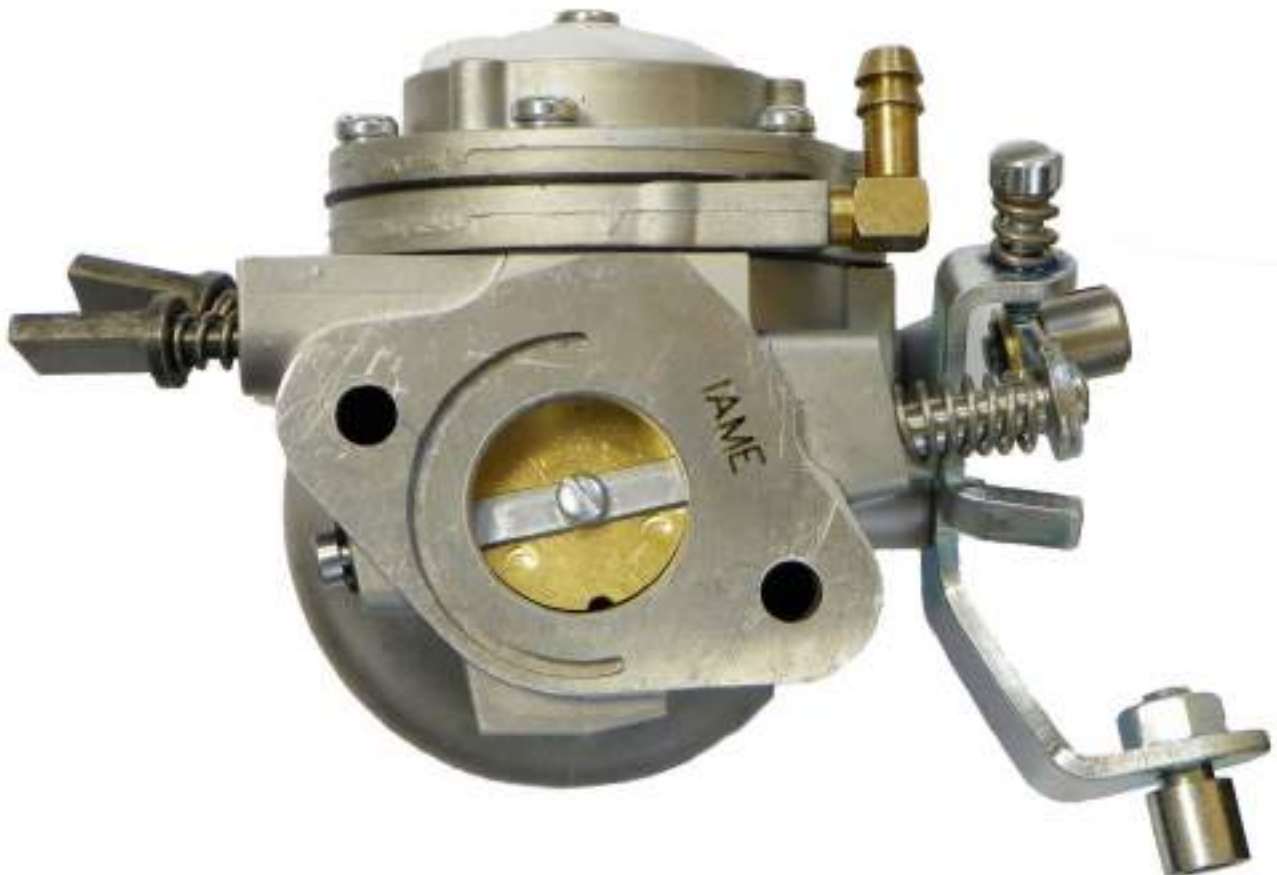
Manufacturer - <i>Constructeur</i>	<b>TILLOTSON LTD.</b>
Make - <i>Marque</i>	<b>TILLOTSON</b>
Model - <i>Modèle</i>	<b>HW-31A</b>



SECTION VIEW – VUE DE SECTION AVEC DIMENSIONS

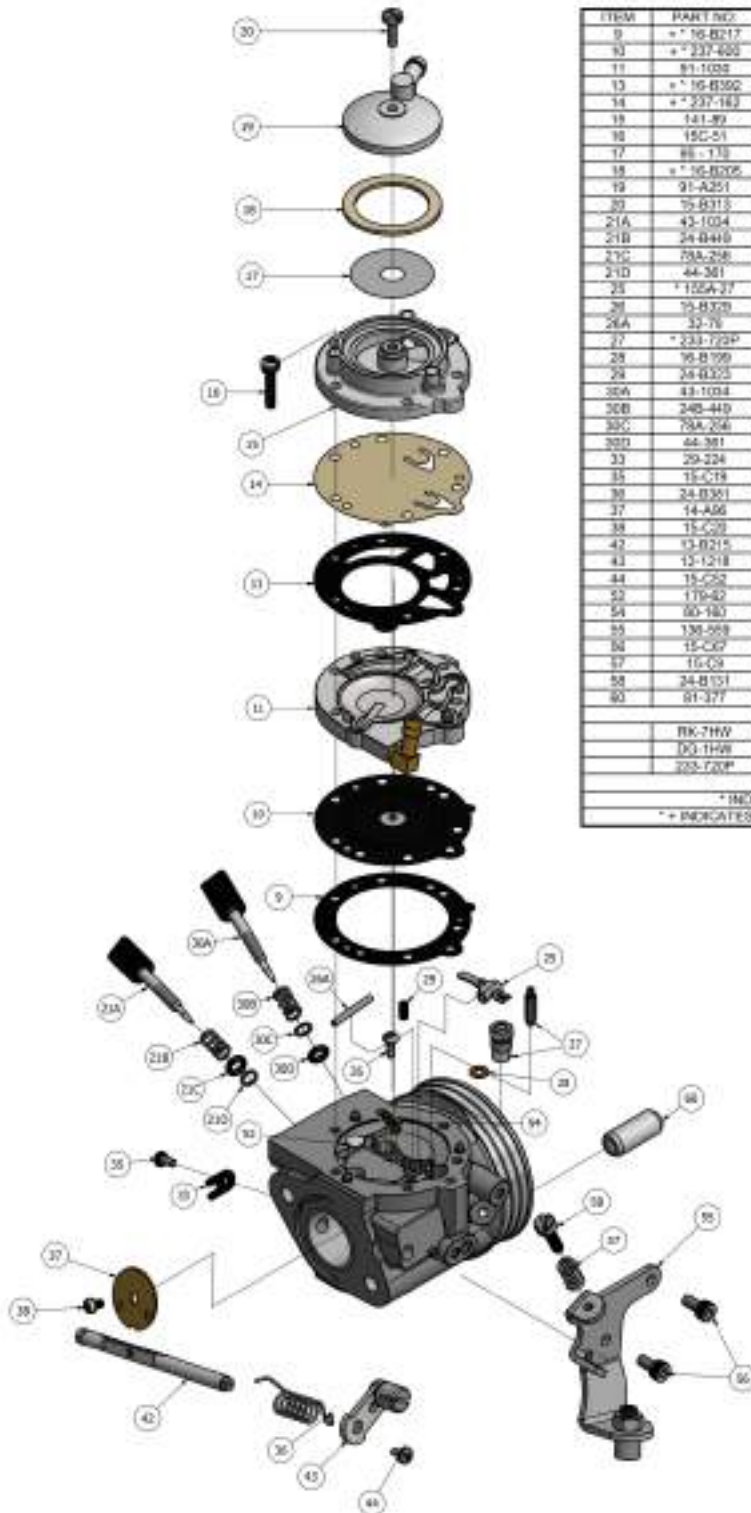


“IAME” MARKING – MARQUAGE “IAME”



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	* 237-200	DIAPHRAGM	1
11	81-1002	DIAPHRAGM COVER	1
13	* 16-B362	FUEL PUMP GASKET	1
14	* 237-163	FUEL PUMP DIAPHRAGM	1
15	141-89	FUEL PUMP BODY	1
16	15C-51	FUEL PUMP BODY SCREW	6
17	86-173	FUEL STRAINER SCREEN	1
18	* 16-B206	FUEL STRAINER COVER GASKET	1
19	91-A251	FUEL STRAINER COVER	1
20	75-B313	FUEL STRAINER COVER RETAINING SCREW	1
21A	43-1004	IDLE MIXTURE SCREW	1
21B	24-B440	IDLE MIXTURE SCREW SPRING	1
21C	79A-246	IDLE MIXTURE SCREW WASHER	1
21D	44-361	IDLE MIXTURE SCREW PACKING	1
25	* 155A-27	INLET CONTROL LEVER	1
26	16-B320	FULCRUM LEVER SCREW	1
26A	33-75	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	43-1004	HIGH SPEED MIXTURE SCREW	1
30B	24B-440	HIGH SPEED MIXTURE SCREW SPRING	1
30C	79A-246	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-B301	THROTTLE RETURN SPRING	1
37	14-A66	THROTTLE SHUTTER	1
38	15-C20	THROTTLE SHUTTER SCREW	1
42	13-B215	THROTTLE SHAFT	1
43	13-1218	THROTTLE LEVER ASSEMBLY	1
44	15-C22	THROTTLE LEVER RETAINING SCREW	1
52	170-62	WELCH PLUG	1
54	60-180	MAIN PLUG	3
55	136-593	CABLE BRACKET	1
56	15-C67	CABLE BRACKET RETAINING SCREW	2
57	15-C24	LEVER SCREW	2
58	24-B151	LEVER SPRING	2
60	91-277	CARBURETTOR MOUNTING NUT	2
RK-THW		REPAIR KIT	
DS-THW		DIAPHRAGM & GASKET (STANDARD)	
233-720P		INLET NEEDLE & SEAT SET	
* INDICATES CONTENTS OF REPAIR KIT			
** INDICATES CONTENTS OF DIAPHRAGM & GASKET SET			

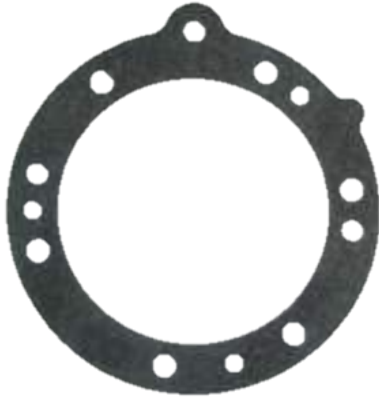


Clash Industrial Estate - Tralee - Ireland  
 www.tillotson-racing.com



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

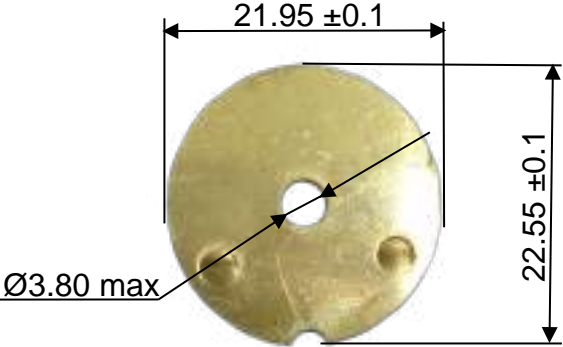
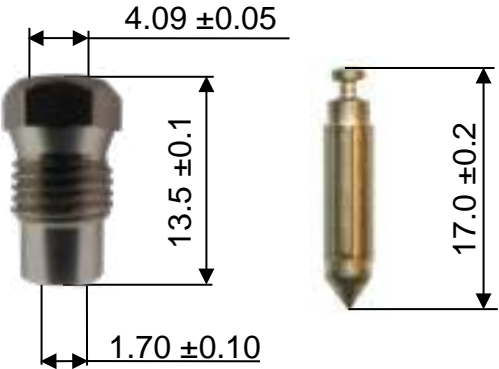





Thickness / *Epaisseur* = 6.75 ±0.15 mm

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>ALTERNATIVE NEEDLE FUEL 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>