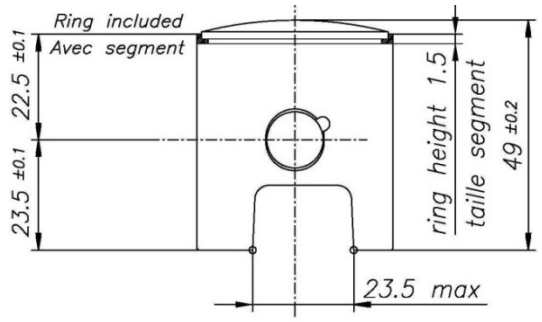
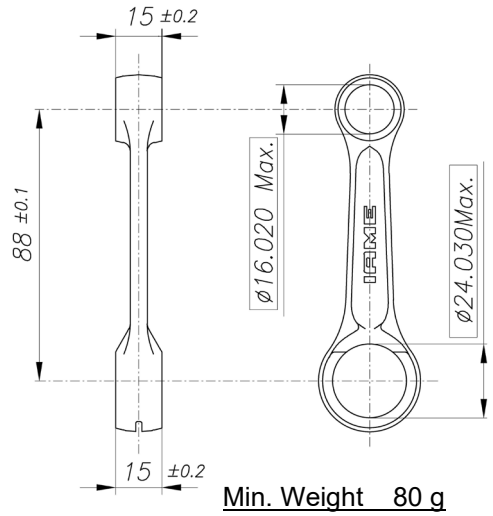
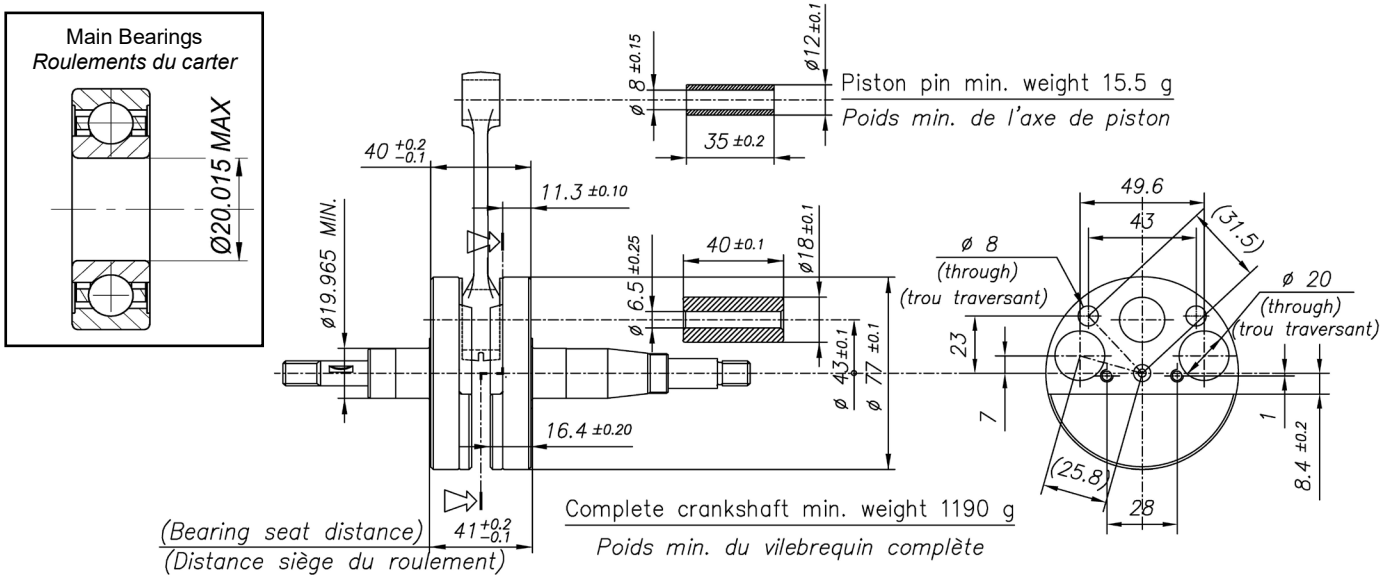
X30 WATERSWIFT 60CC - TAG

FEATURES - *CARACTERISTIQUES*	
Cylinder volume *Volume du cylindre*	59.17 cm³ (60.00 cm³ max)
Bore *Alésage*	41.81 mm
Max. bore *Alésage max.*	42.10 mm
Stroke *Course*	43mm
Cooling system *Système de refroidissement*	Water *Eau*
Inlet system *Système d'admission*	Piston valve *Jupe de piston*
Number of carbs *Nombre de carburateurs*	1

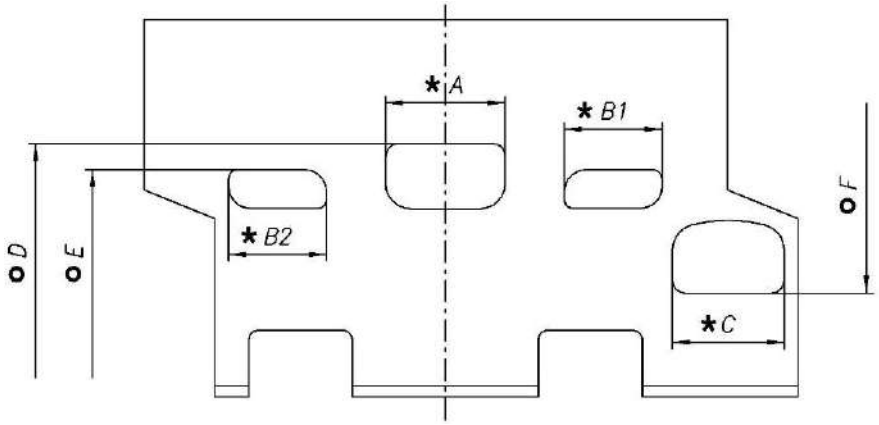
Tillotson Carburettor *Carburateur Tillotson*	HW-31A	Cylinder / crankcase transfers n° *N° de canaux cylindre / carter*	2
Number of piston rings *Nombre de segments*	1	Inlet / exhaust ports number *N° lumières admiss / échapp.*	1 / 1
Big end conrod bearing diam. *Diamètre palier tête de bielle*	18x24x15	Combustion chamber shape Forme chambre de combustion	Spherical *Sphérique*
Crankshaft ball-bearing diam. *Diamètre palier du vilebrequin*	20x47x14	Selettra ignition (adjustable) *Allumage Selettra (réglable)*	2 poles 2 pôles
Small end conr. bearing diam. *Diamètre palier pied de bielle*	12x16x16	Distance between Conrod centres *Longueur (entre axe) de la bielle*	88 mm

DESCRIPTION OF THE MATERIAL *DESCRIPTION DES MATERIAUX*		PISTON
Conrod material *Matériel de la bielle*	Steel *Acier*	
Crankshaft material *Matériel du vilebrequin*	Steel *Acier*	
Head Material *Matériel de la culasse*	Aluminium	
Cylinder Material *Matériel du cylindre*	Aluminium	Min. Weight Piston included ring = 60 g *Poids Min. Piston avec segment = 60 g*
Liner material *Matériel de la chemise*	Cast Iron *Fonte*	DISTANCE BETWEEN CONROD CENTERS *ENTRE AXE DE LA BIELLE*
Crankcase material *Matériel du carter*	Aluminium	
Piston material *Matériel du piston*	Aluminium	
Piston rings material *Matériel des segments*	Cast Iron *Fonte*	
Exhaust muffler material *Matériel du pot d'échappement*	Sheet-steel *Tôle acier*	
Ball-bearings *Roulements*	6204 type	Min. Weight 80 g *Poids min.*

CRANKSHAFT - *VILEBREQUIN*



CYLINDER DEVELOPMENT – *DEVELOPPEMENT DU CYLINDRE*

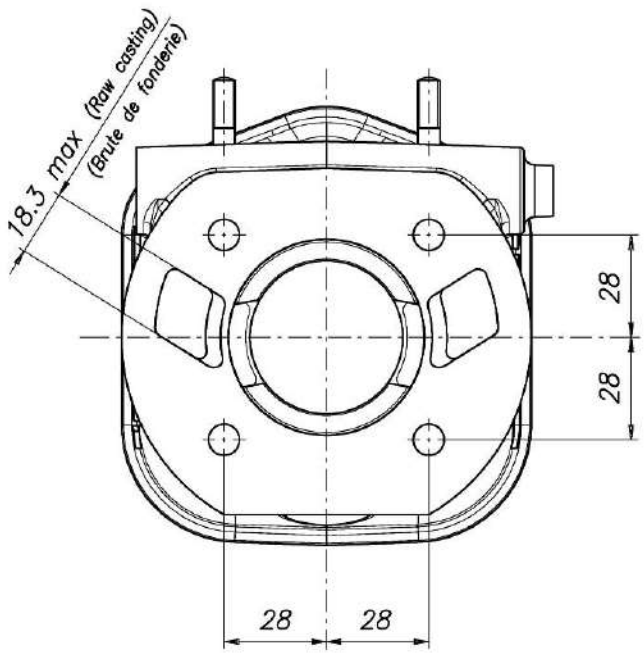
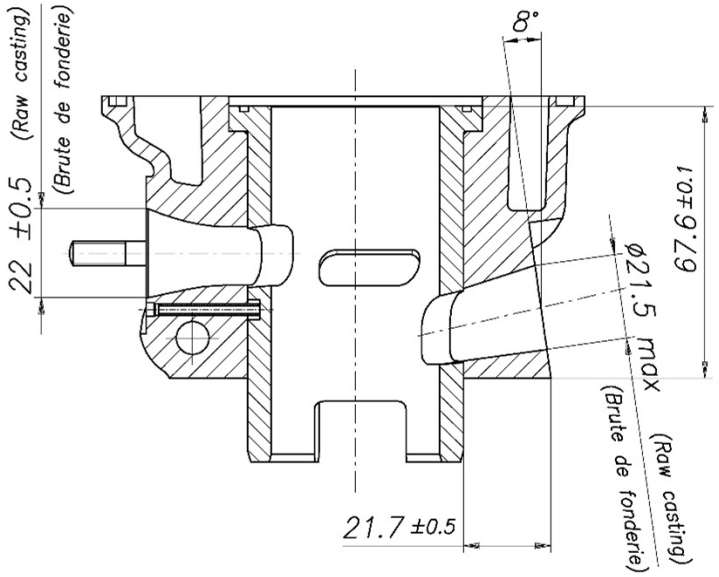


A	28±0.2 mm
B1 = B2	21.8±0.2 mm
C	26±0.2 mm
D	157° max
E	116° ±2°
F	145° max

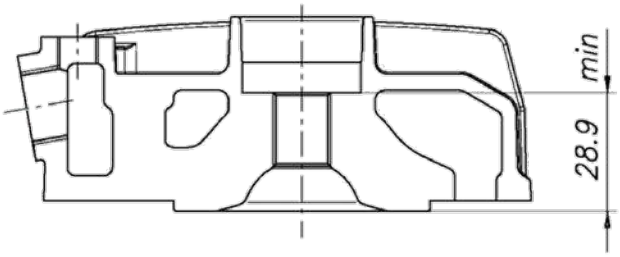
CHORDAL READING - *LECTURE CORDALE*

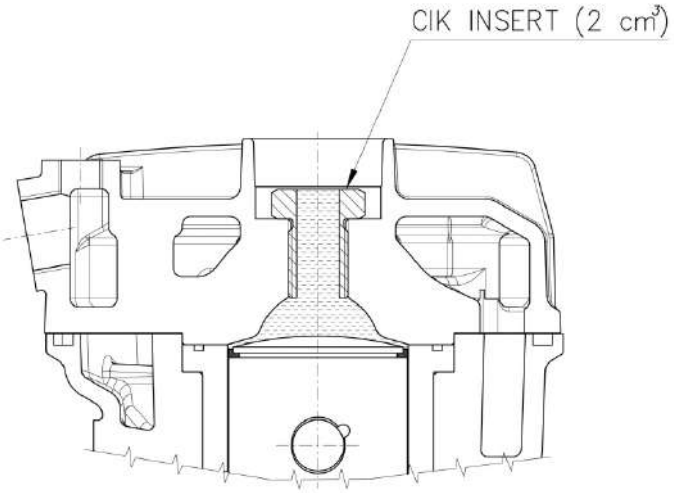
ANGULAR READING BY INSERT A 0.2 mm x 5 mm GAUGE -
LECTURE ANGULAIRE PAR INSERTION D'UNE CALE DE 0.2 mm x 5 mm

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



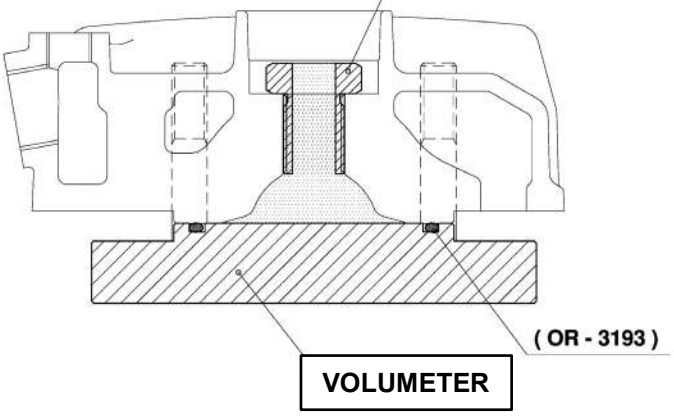


COMBUSTION CHAMBER VOLUME = 6.5 cm³ min.
VOLUME CHAMBRE COMBUSTION

CIK INSERT

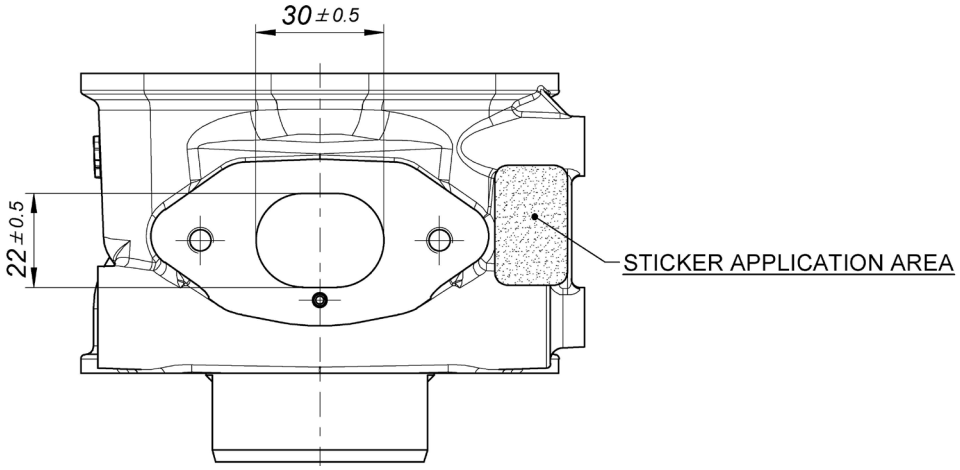
SQUISH MIN. = 0.75 mm

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

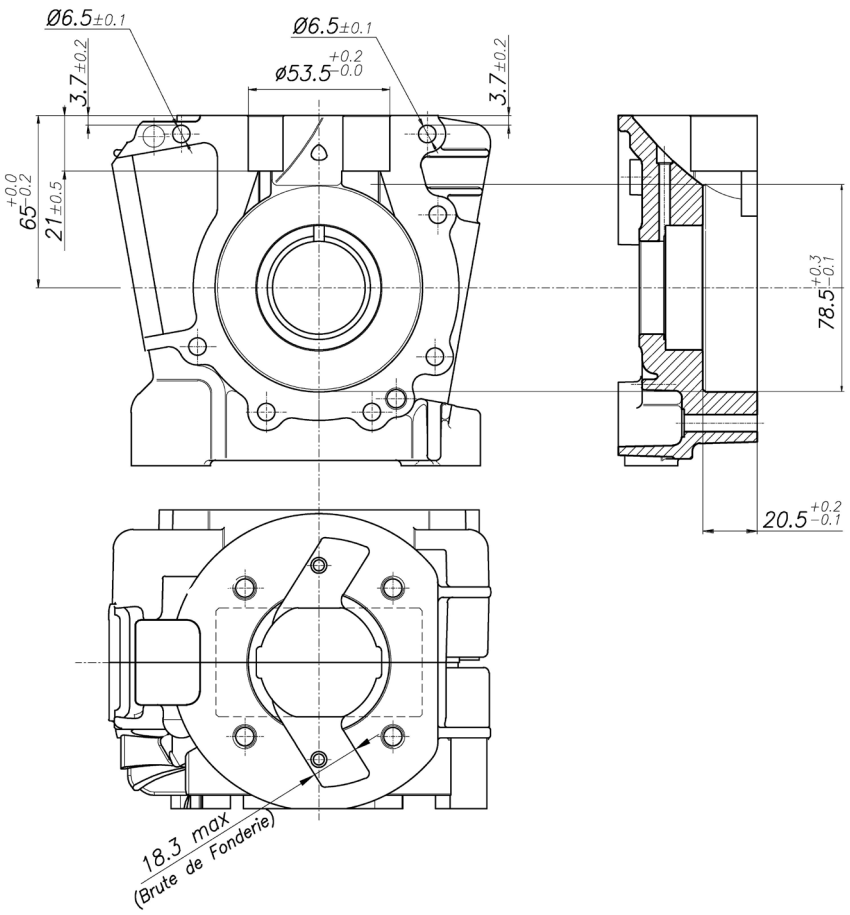


MIN. TOT. VOLUME OF CHAMBER IN THE CYLINDER HEAD = 7,4 cm³
VOLUME MIN. CHAMBRE DE COMBUSTION DANS LA CULASSE

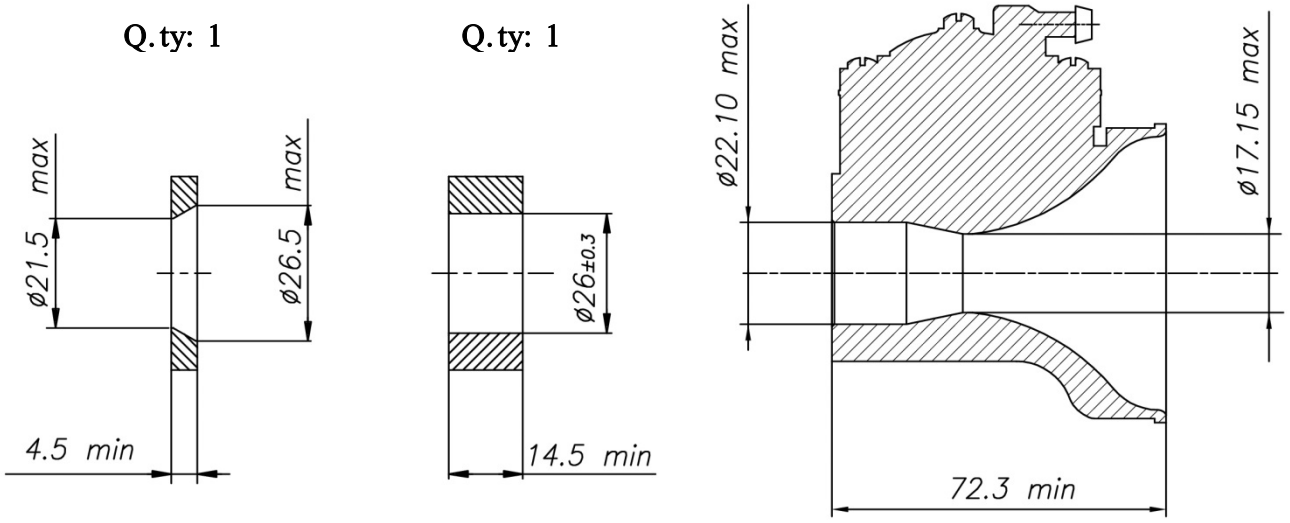
REAR VIEW AND DIMENSION
ARRIERE VUE ET DIMENSION



CRANKCASE INSIDE VIEW
VUE A' L'INTERIEUR DU CARTER

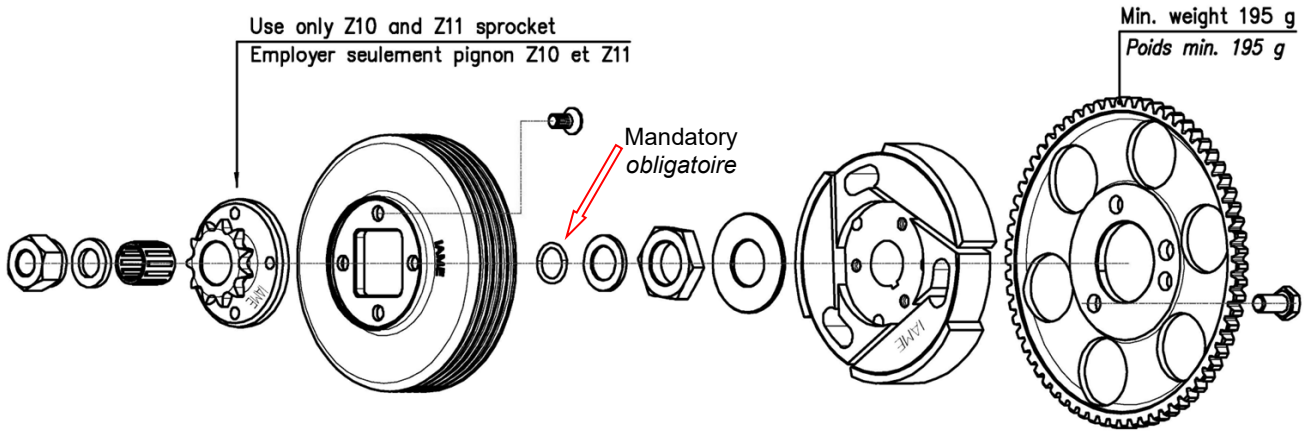


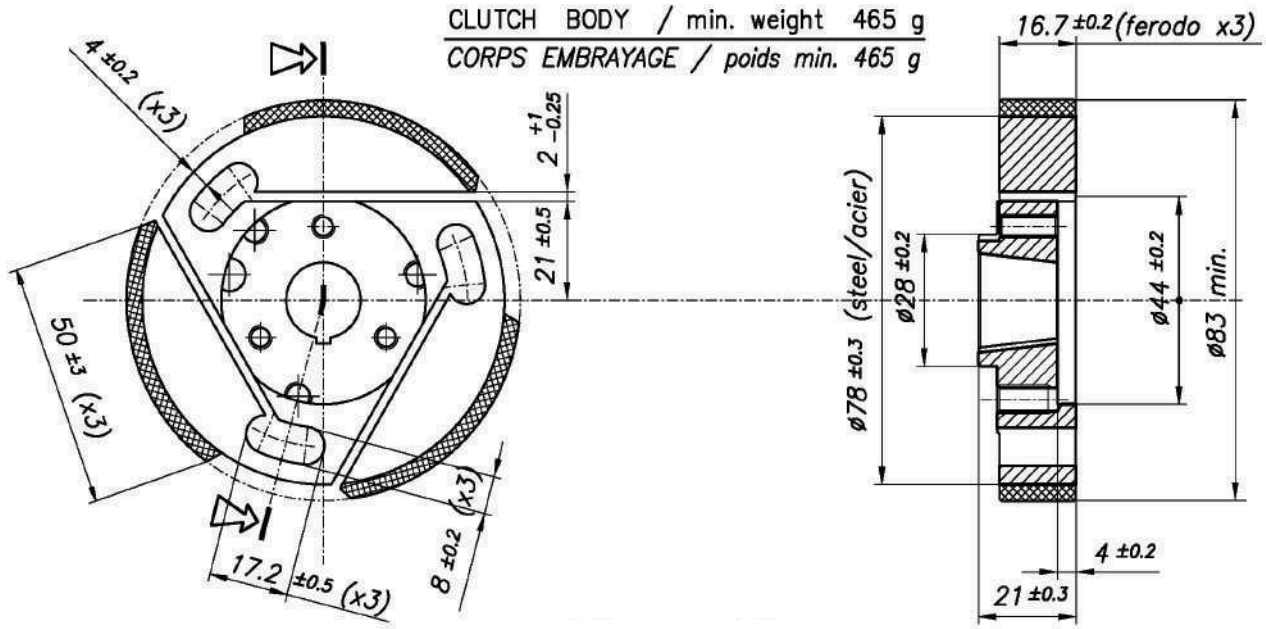
VENTURI CARB. DIMENSIONS and THERMAL SPACERS
CARBURATEUR ET SONS ENTRETOISES

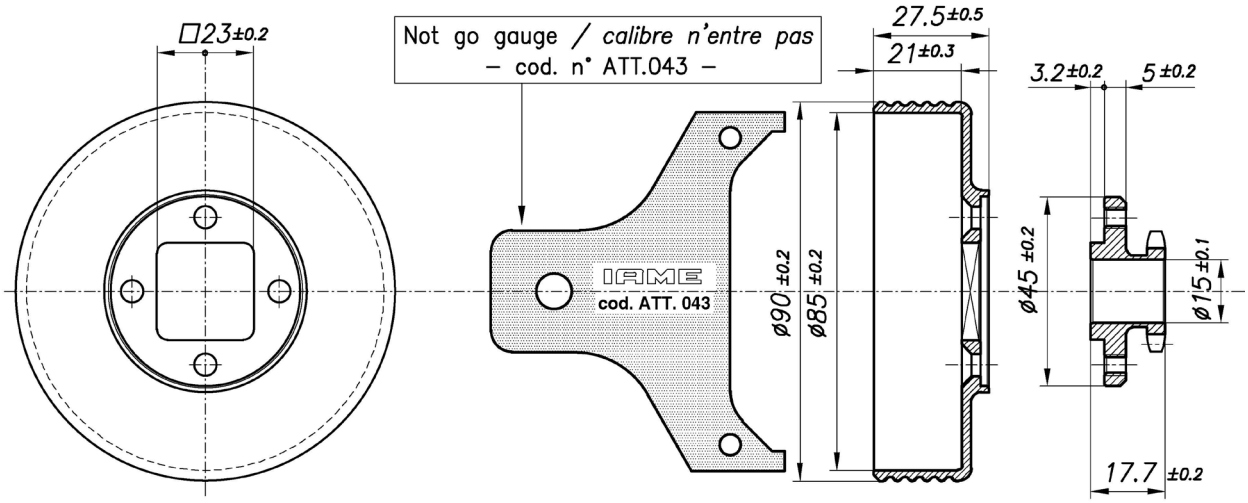


TILLOTSON MOD. HW-31A

DESCRIPTION OF THE CLUTCH – *DESCRIPTION DE L'EMBRAYAGE*







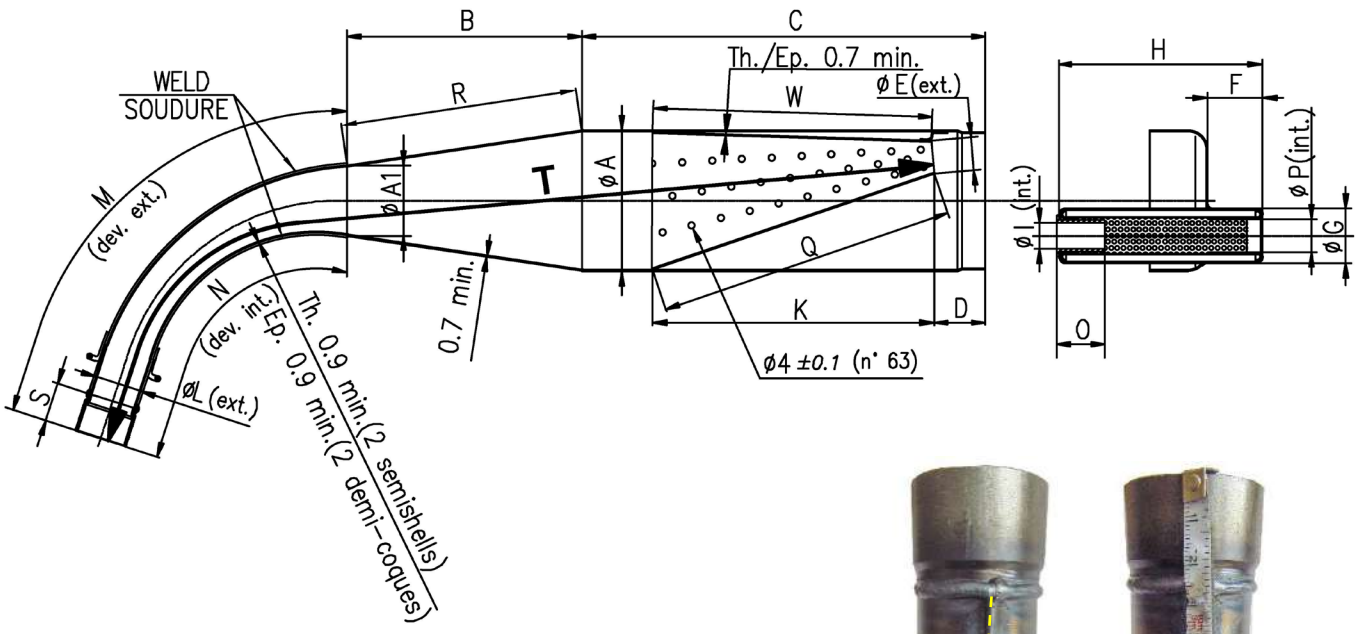
CLUTCH DRUM / min. weight 175 g

CLOCHE D'EMBRAYAGE / poids min. 175 g

DRIVE SPROCKET / min. weight 68 g

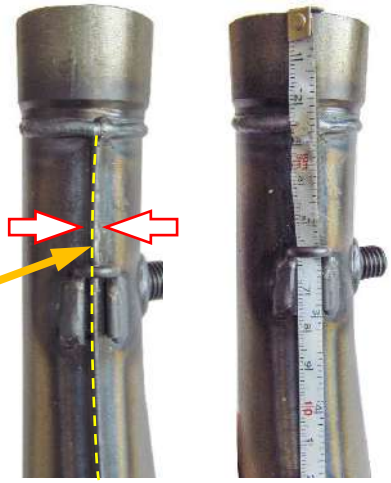
PIGNON / poids min. 68 g

EXHAUST VIEW AND DIMENSIONS (with and without embossed logo)
VUE ET DIMENSIONS DE L'ECHAPPEMENT (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.

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

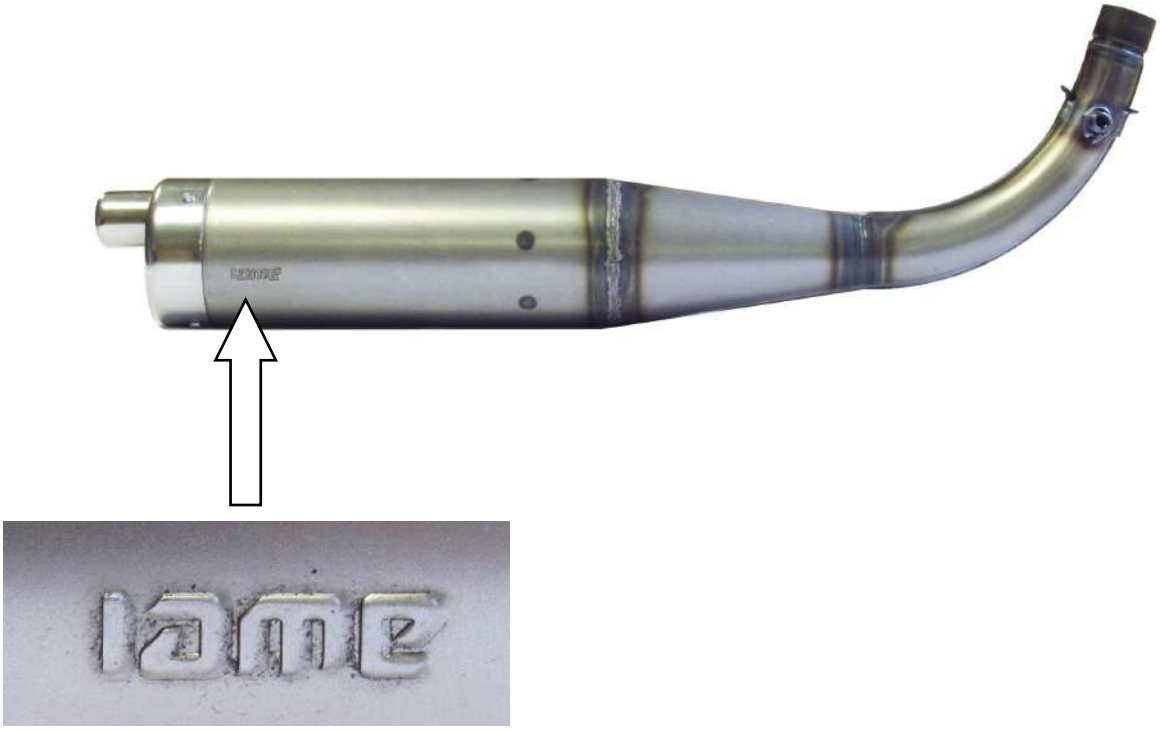
ATTENTION:

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.*

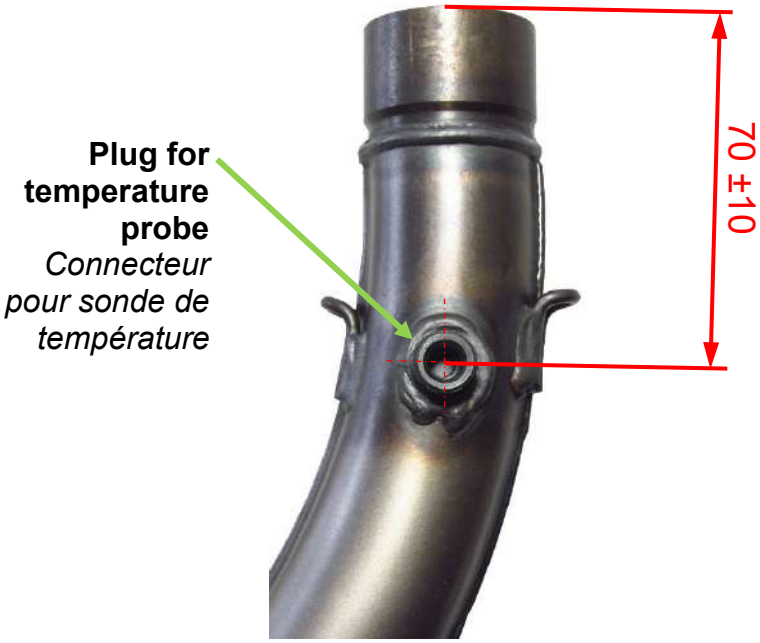
The dimensions "**M**" and "**N**" must be taken on the weld centerline.
*Les dimensions « **M** », « **N** » doivent être prises sur l'axe de la soudure.*

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.*

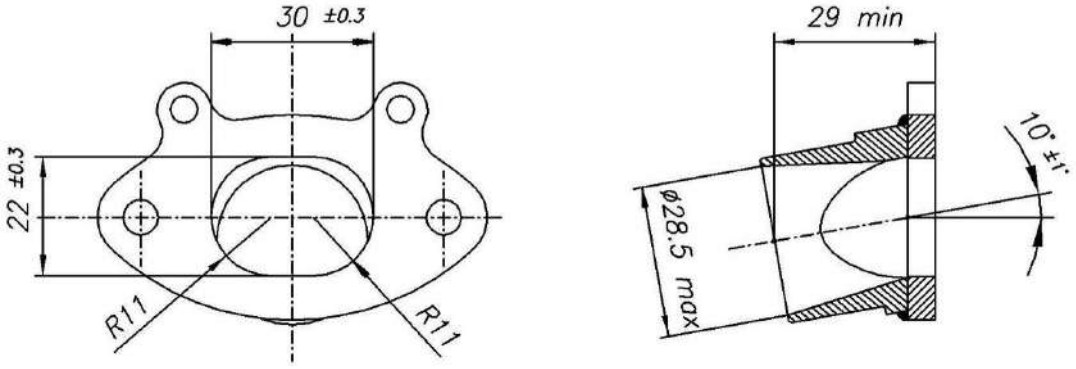
ALTERNATIVE EXHAUST MUFFLER with embossed logo
ECHAPPEMENT ALTERNATIVE avec logo en relief



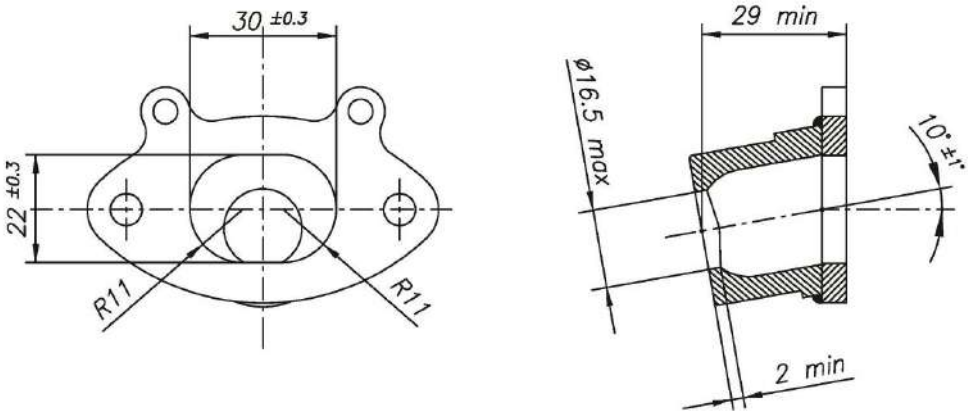
MARKING / MARQUAGE

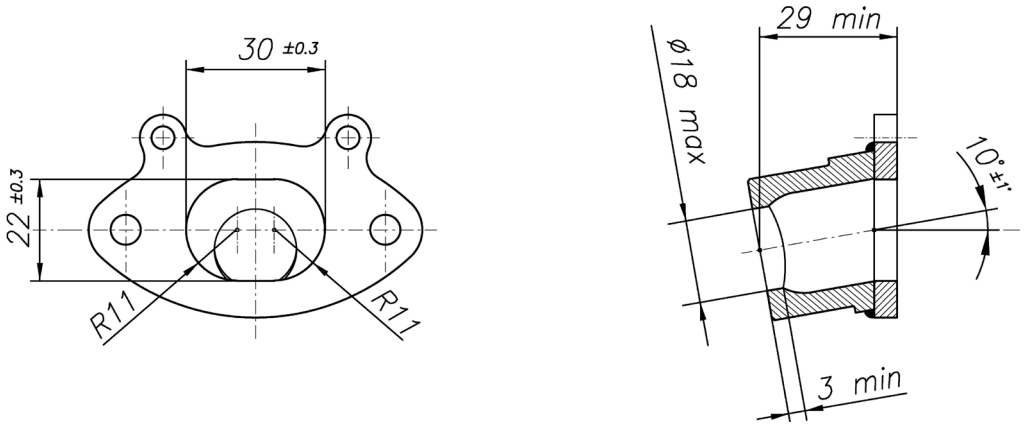


EXHAUST MANIFOLD
RACCORD D'ÉCHAPPEMENT



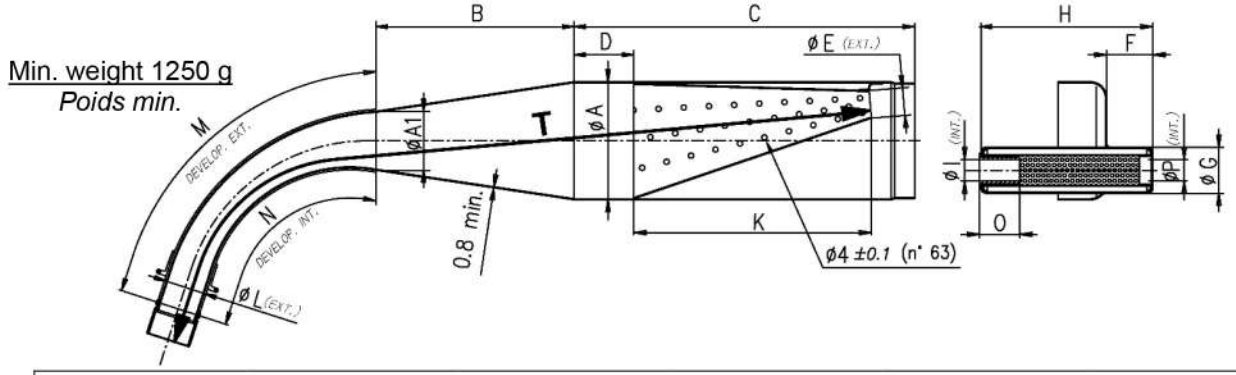
EXHAUST MANIFOLDS WITH RESTRICTED
RACCORDS AVEC RECSTRICTEUR D'ÉCHAPPEMENT





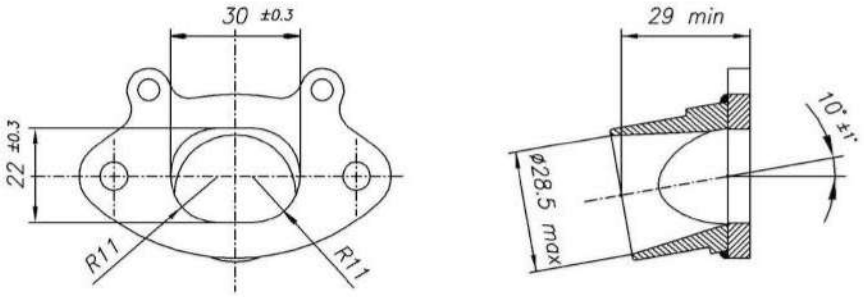
OLD TYPE EXHAUST MUFFLER
(WITHOUT TEMPERATURE SENSOR SEAT)

EXHAUST MUFFLER VIEW AND DIMENSIONS
VUE ET DIMENSIONS DU SILENCIEUX D'ECHAPPEMENT

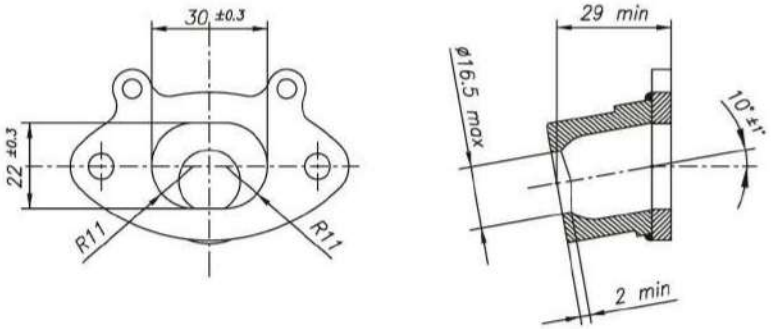


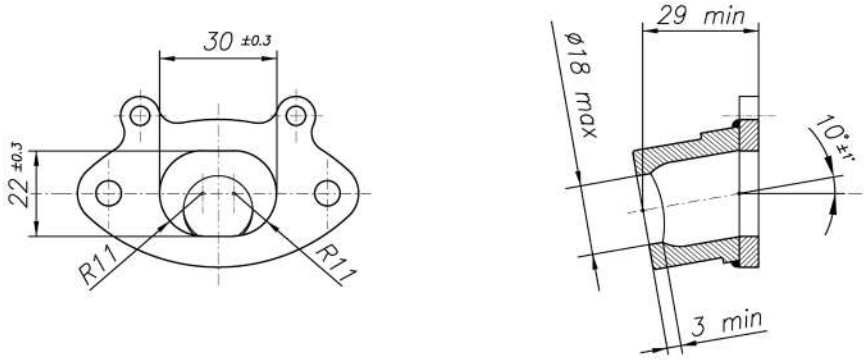
A: 90 ±1.5	**C:** 260 ±3	**F:** 35 ±3	**I:** 17 Max.	**M:** 240 ±3	**P:** 21 ±1
A1: 45 ±1	**D:** 47 ±5	**G:** 35 ±1	**K:** 181 ±3	**N:** 190 ±3	**T:** 600 ±5
B: 150 ±3	**E:** 20 ±1	**H:** 132 ±2	**L:** 31 ±1.5	**O:** 30 Min.	

EXHAUST MANIFOLD
RACCORD D'ÉCHAPPEMENT

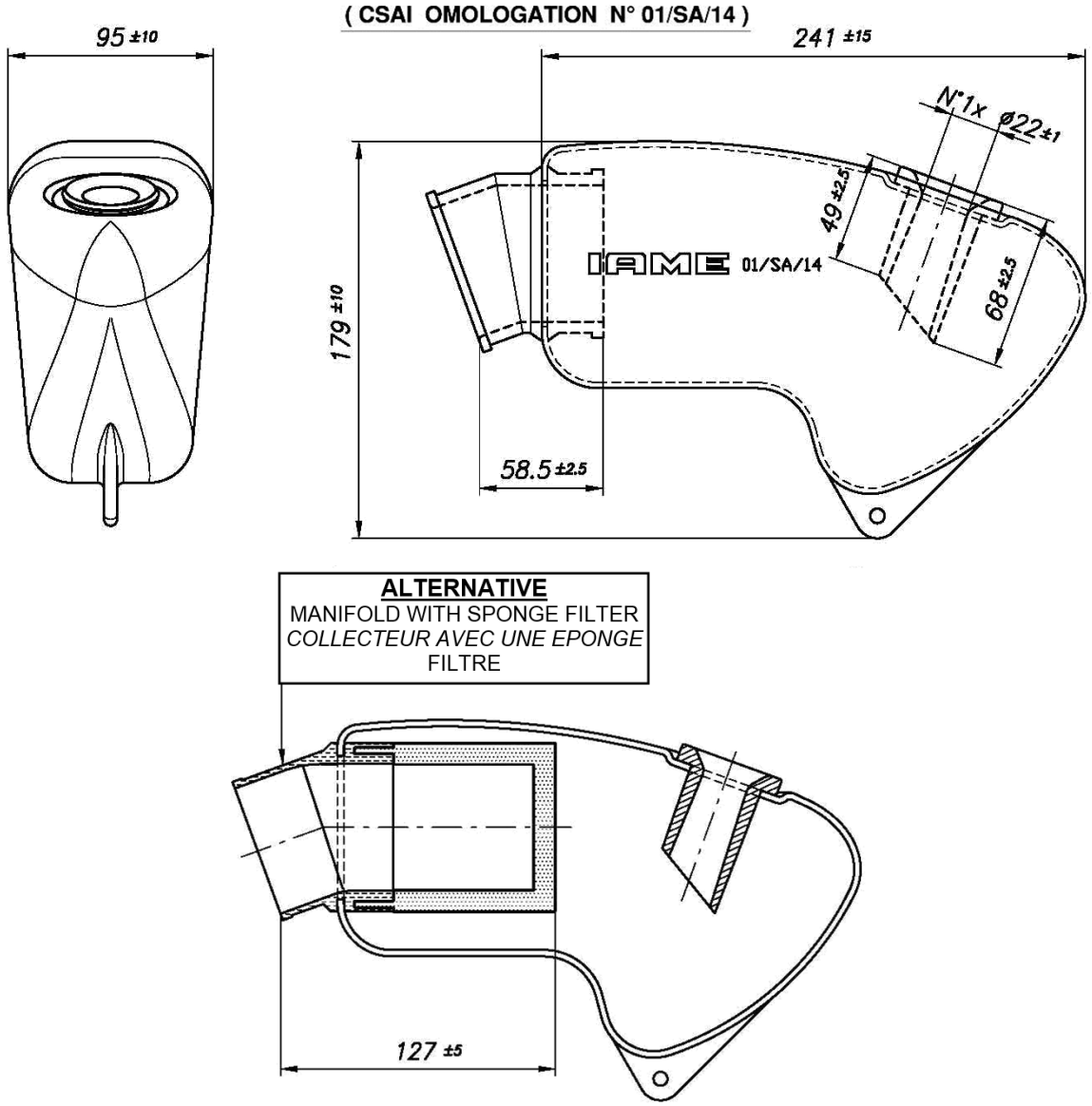


EXHAUST MANIFOLDS WITH RESTRICTED
RACCORDS AVEC RECSTRICTEUR D'ÉCHAPPEMENT





INLET SILENCER – *SILENCIEUX D'ASPIRATION*



INLET SILENCER - PHOTO
PHOTO - SILENCIEUX D'ASPIRATION

WIRING DIAGRAM
SCHÉMA CIRCUIT ÉLECTRIQUE

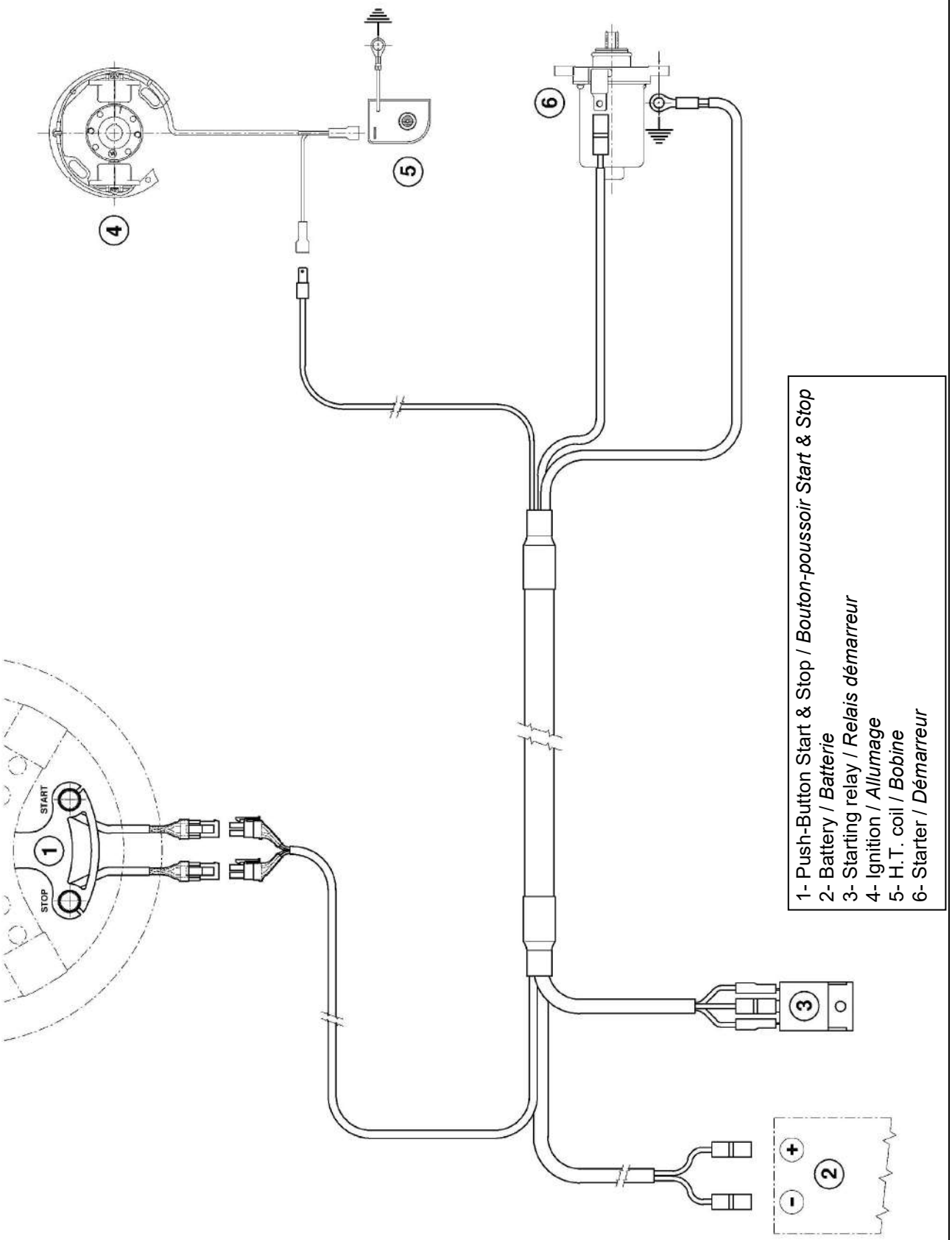


PHOTO COMPLETE WIRING
PHOTO DU CÂBLAGE ÉLECTRIQUE COMPLÈTE

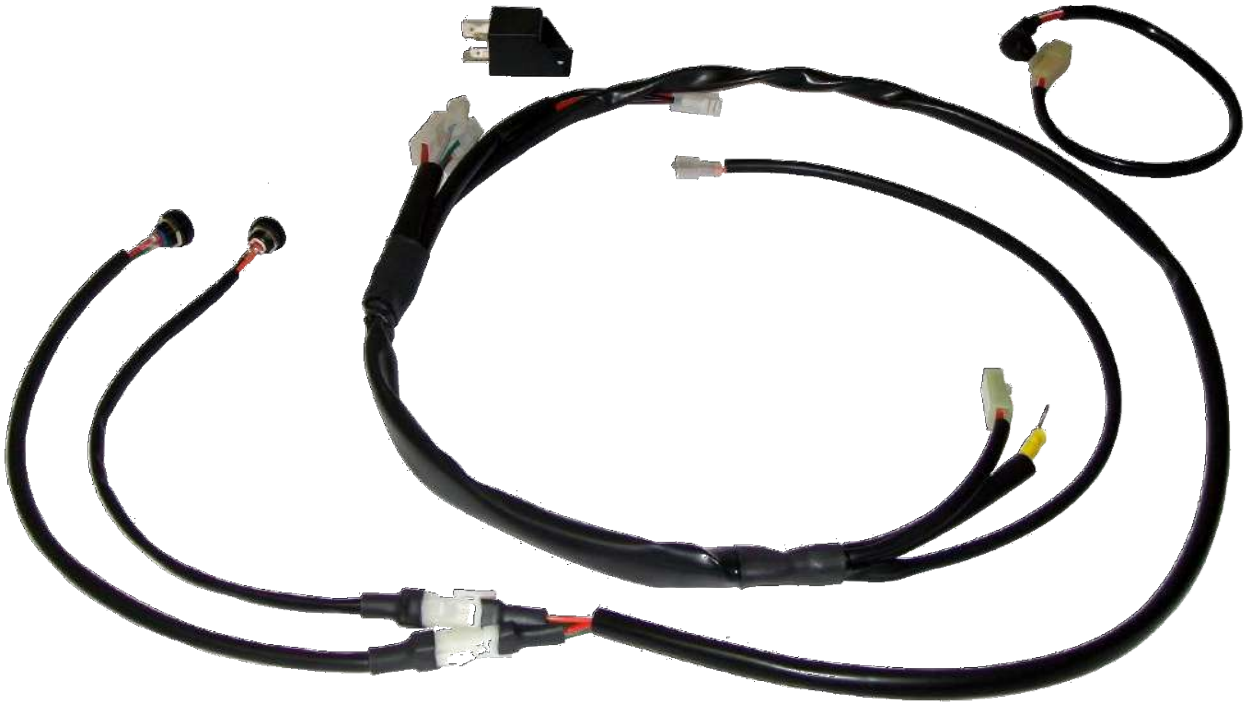
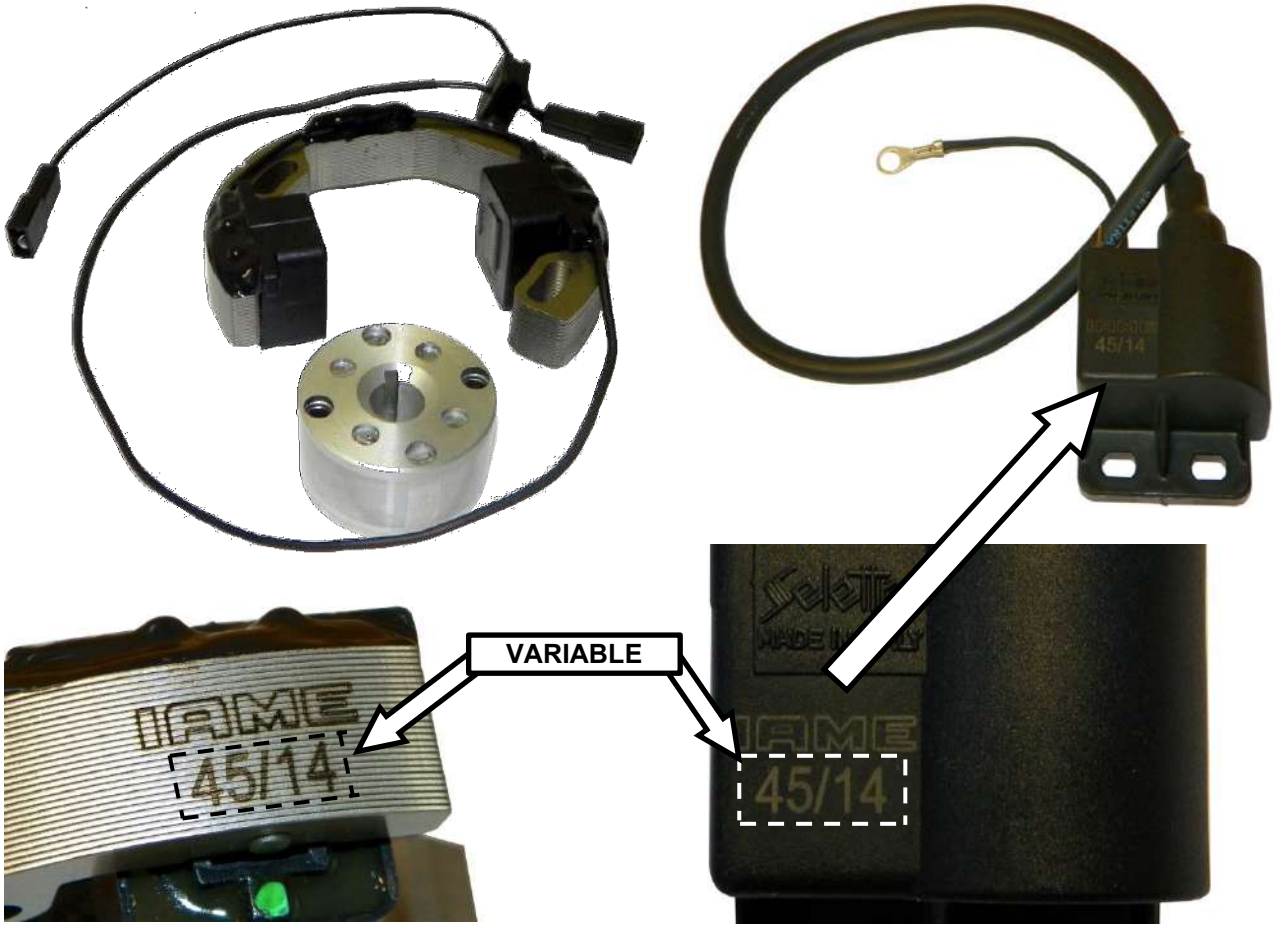


PHOTO IGNITION / PHOTO H.T. COIL (SELETTRA ANALOGUE 2 POLES)
PHOTO ALLUMAGE / PHOTO BOBINE (SELETTRA ANALOGIQUE 2 POLES)



ALTERNATIVE WIRING LOOM DIAGRAM
SCHÉMA CIRCUIT ÉLECTRIQUE ALTERNATIF

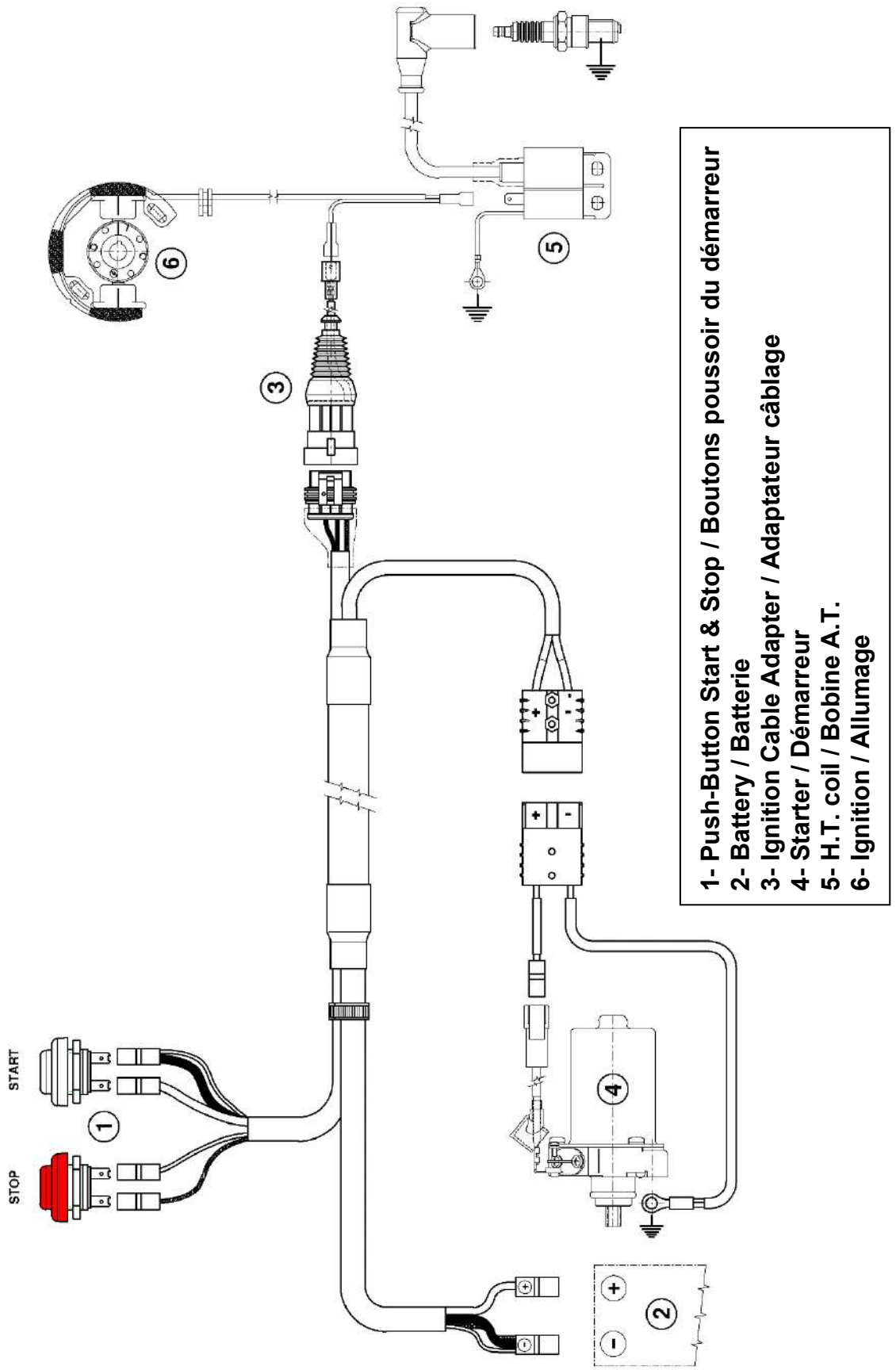
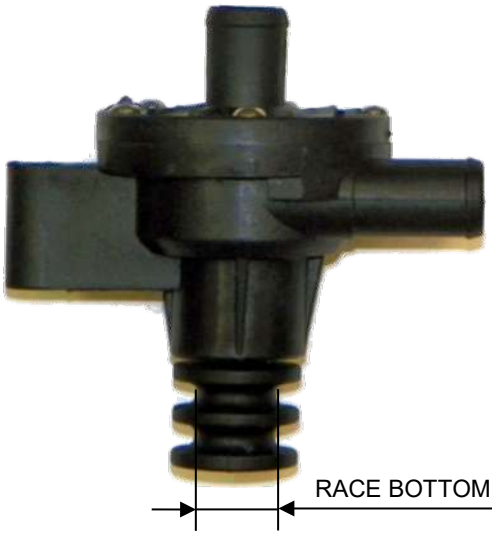


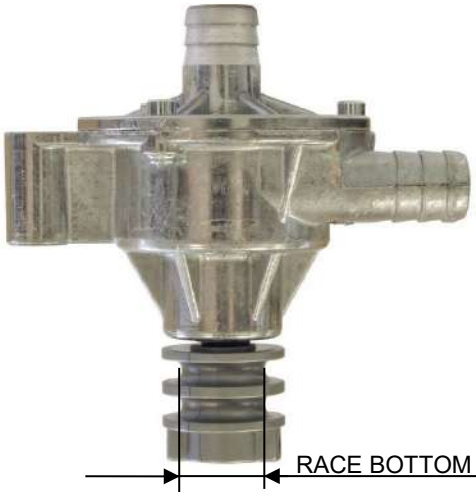
PHOTO OF ALTERNATIVE COMPLETE WIRING LOOM
PHOTO DU CÂBLAGE ÉLECTRIQUE COMPLÈTE ALTERNATIF

WATER PUMP ALTERNATIVES – ALTERNATIVES DU POMPE A' EAU



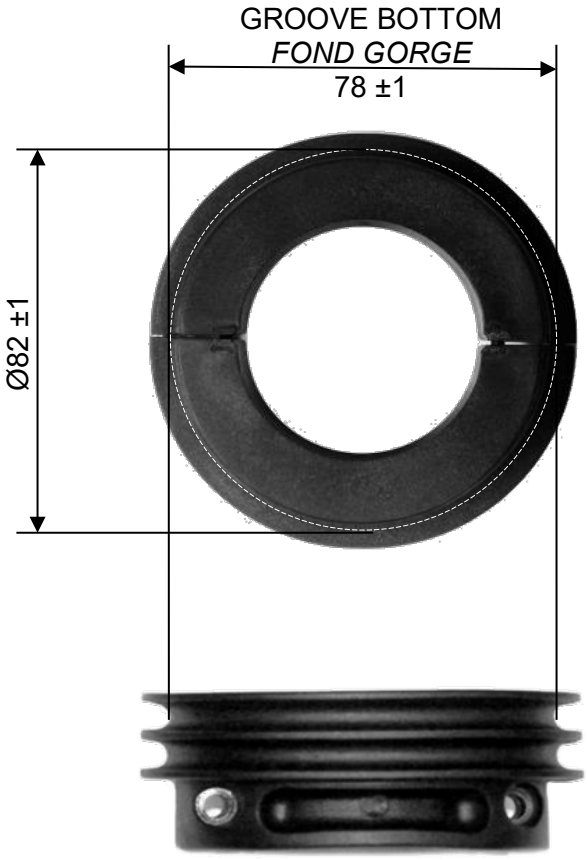
PLASTIC

ALTERNATIVE



ALUMINUM

PULLEY ALTERNATIVE – ALTERNATIVE DU POULIE

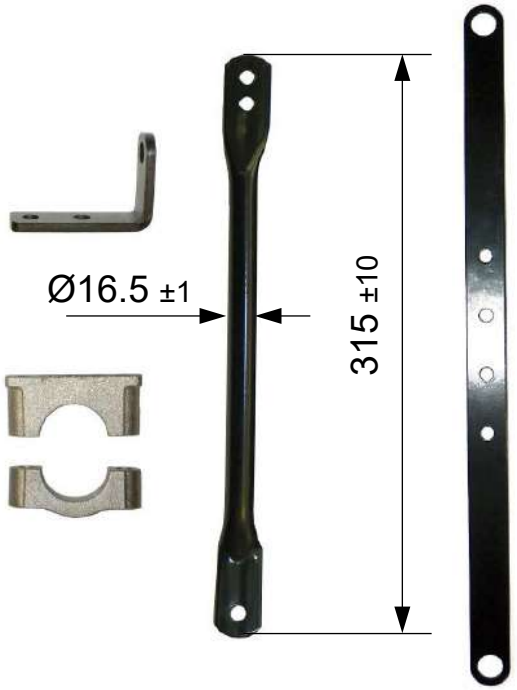


PLASTIC

ALTERNATIVE

ALUMINUM

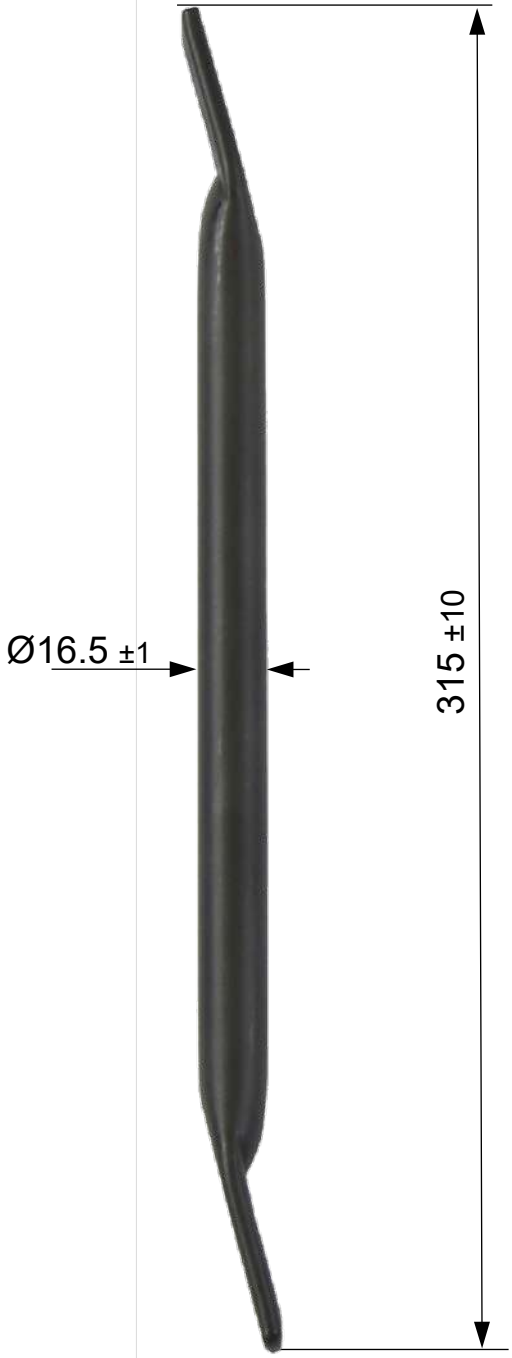
RADIATOR AND ITS SUPPORTS
RADIATEUR ET SES SUITIEN



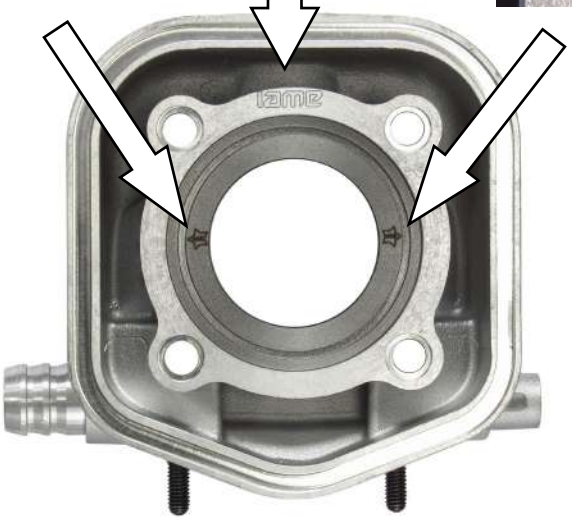
PAINTED AND NOT PAINTED
PEINT ET PAS PEINT

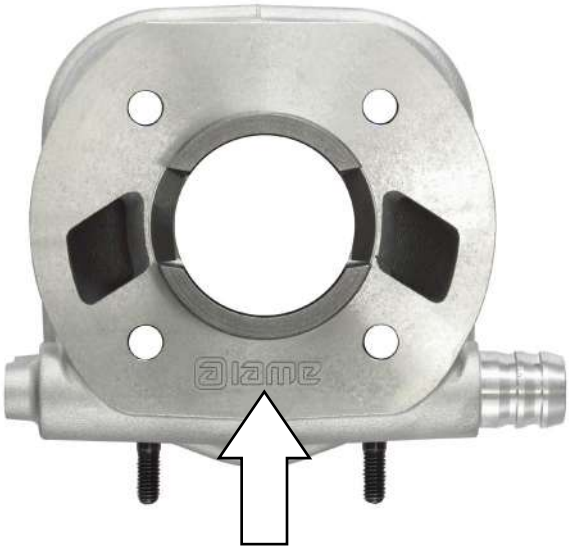
ALTERNATIVE RADIATOR
RADIATEUR ALTERNATIF

ALTERNATIVE RADIATOR SUPPORT
ALTERNATIVE SUITIEN DU RADIATEUR



CYLINDER IDENTIFICATION MARKING
MARQUAGE D'IDENTIFICATION DU CYLINDRE





OR

*

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

CYLINDER HEAD MARKING
MARQUAGE D'IDENTIFICATION DU CULASSE

OR

SEMICARTER TRANSMISSION SIDE *SEMICARTER CÔTÉ PIGNON*	SEMICARTER IGNITION SIDE *SEMICARTER CÔTÉ ALLUMAGE*

OR

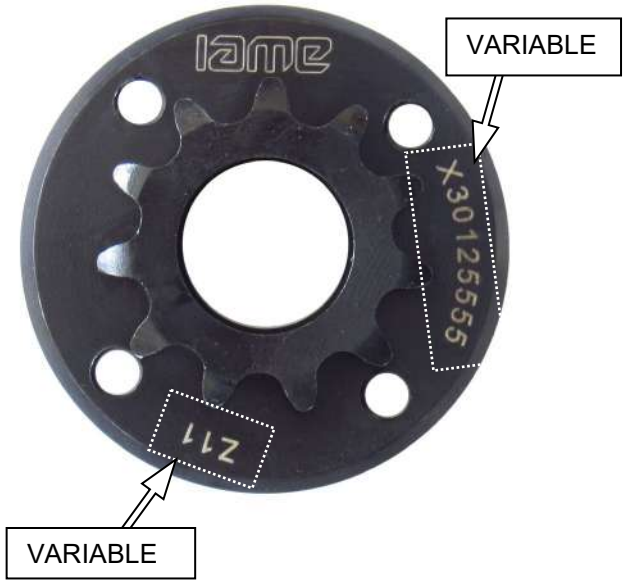
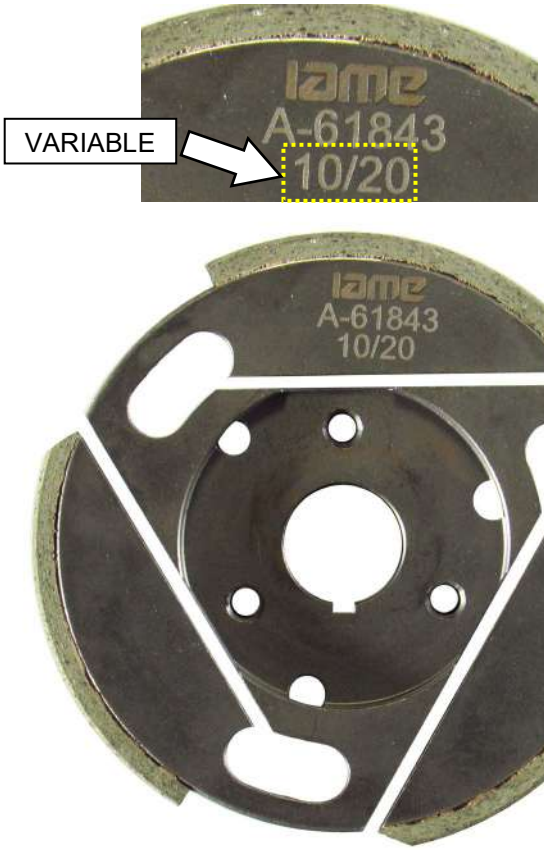
OR

PISTON IDENTIFICATION MARKING
MARQUAGE D'IDENTIFICATION PISTON

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

TYPE 1

TYPE 2

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

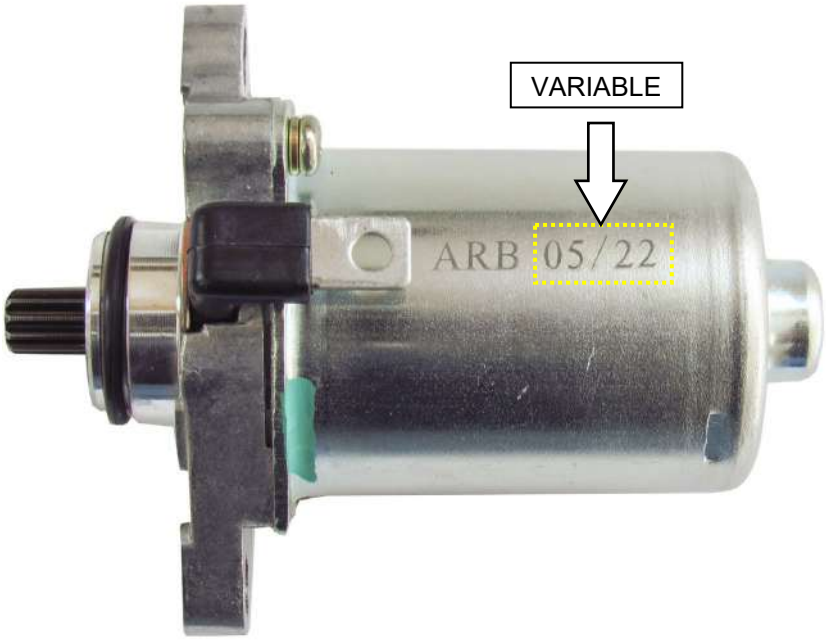
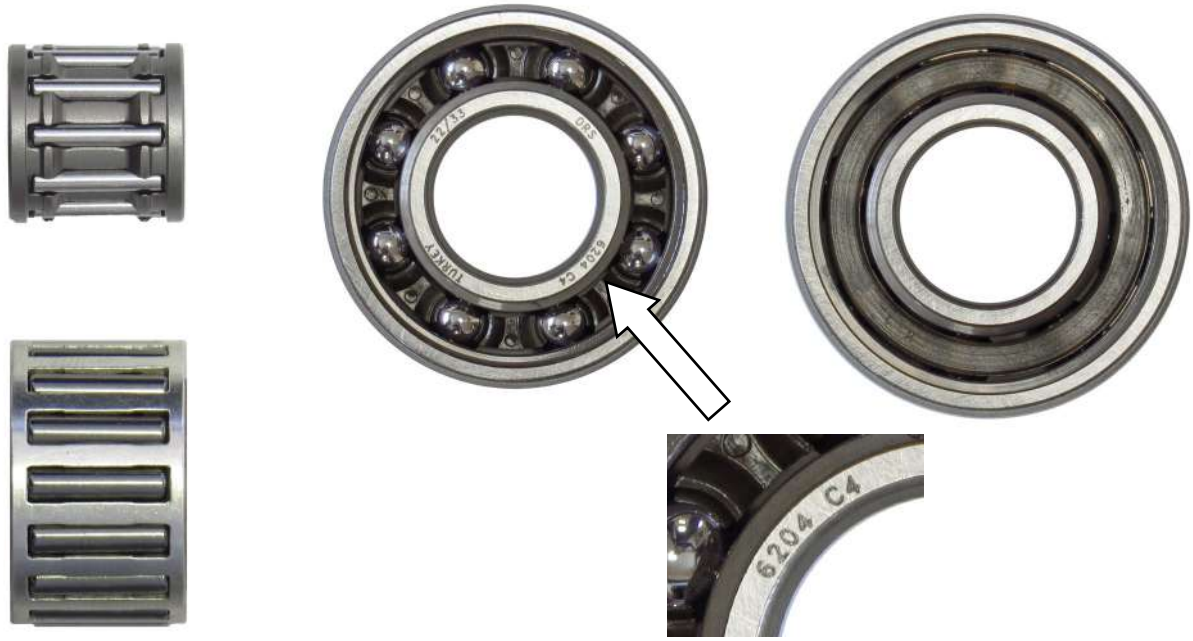


PHOTO IDENTIFICATION: SMALL & BIG END CONROD BEARING AND MAIN BEARING
PHOTO D'IDENTIFICATION DU ROULEMENT PIED/TÊTE DE BIELLE ET PRINCIPAUX



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

IGNITION COVER *COUVERCLE DU ALLUMAGE*	CLUTCH COVER *COUVERCLE D'EMBRAYAGE*
   OR 	 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»

or

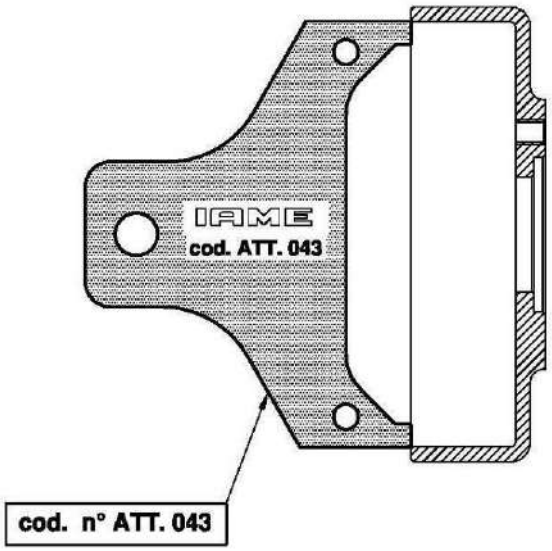
IAME

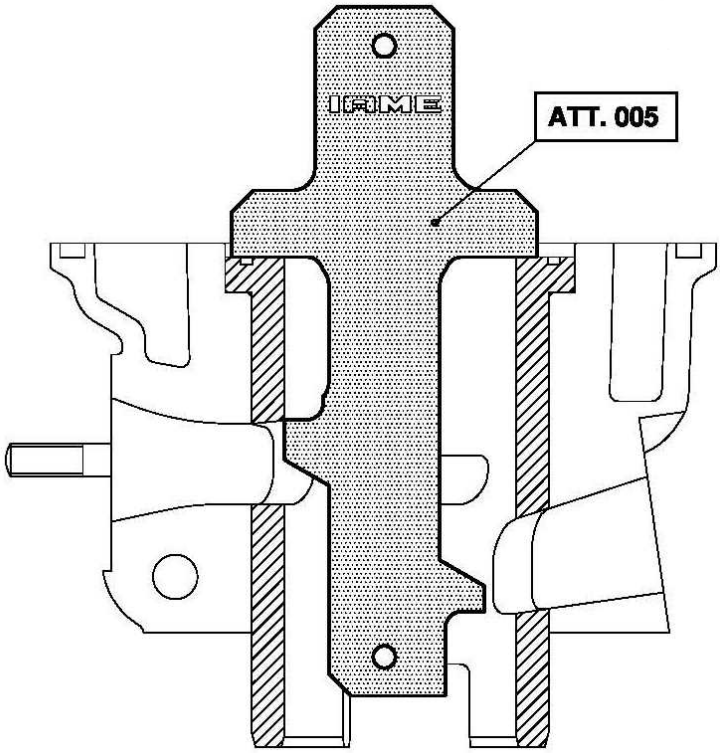
NOW COULD BE MARKED WITH NEW LOGO "IAME"
MAINTENANT POURRAIT EST MARQUAGE AVEC UN NOUVEAU LOGO "IAME"

or

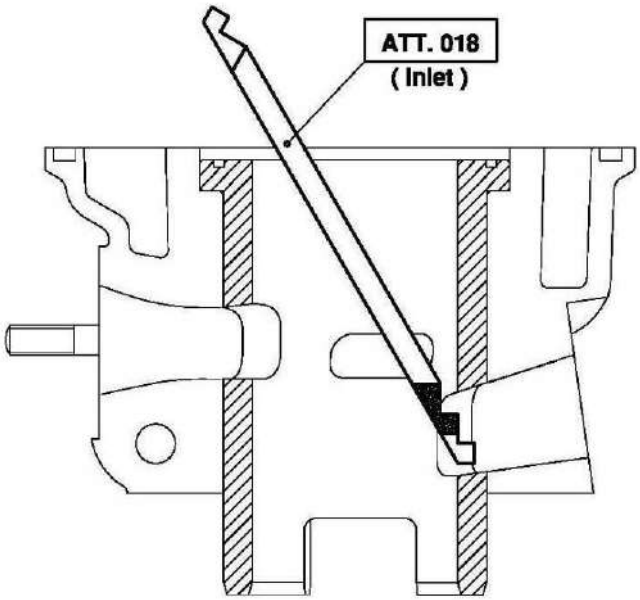
or

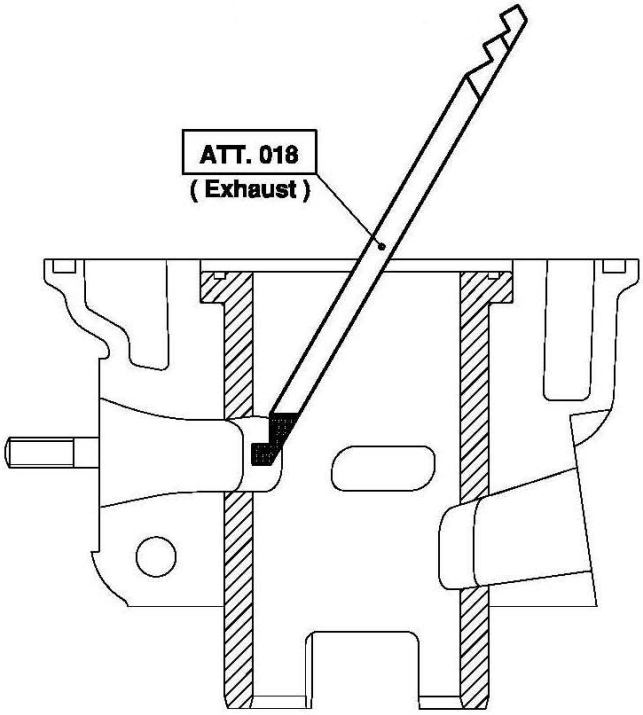
NO GO GAUGES
OUTILS N'ENTRE PAS DANS

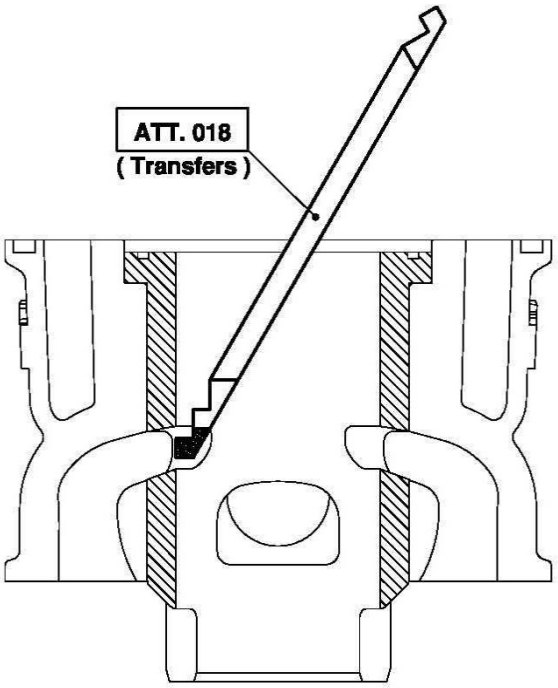




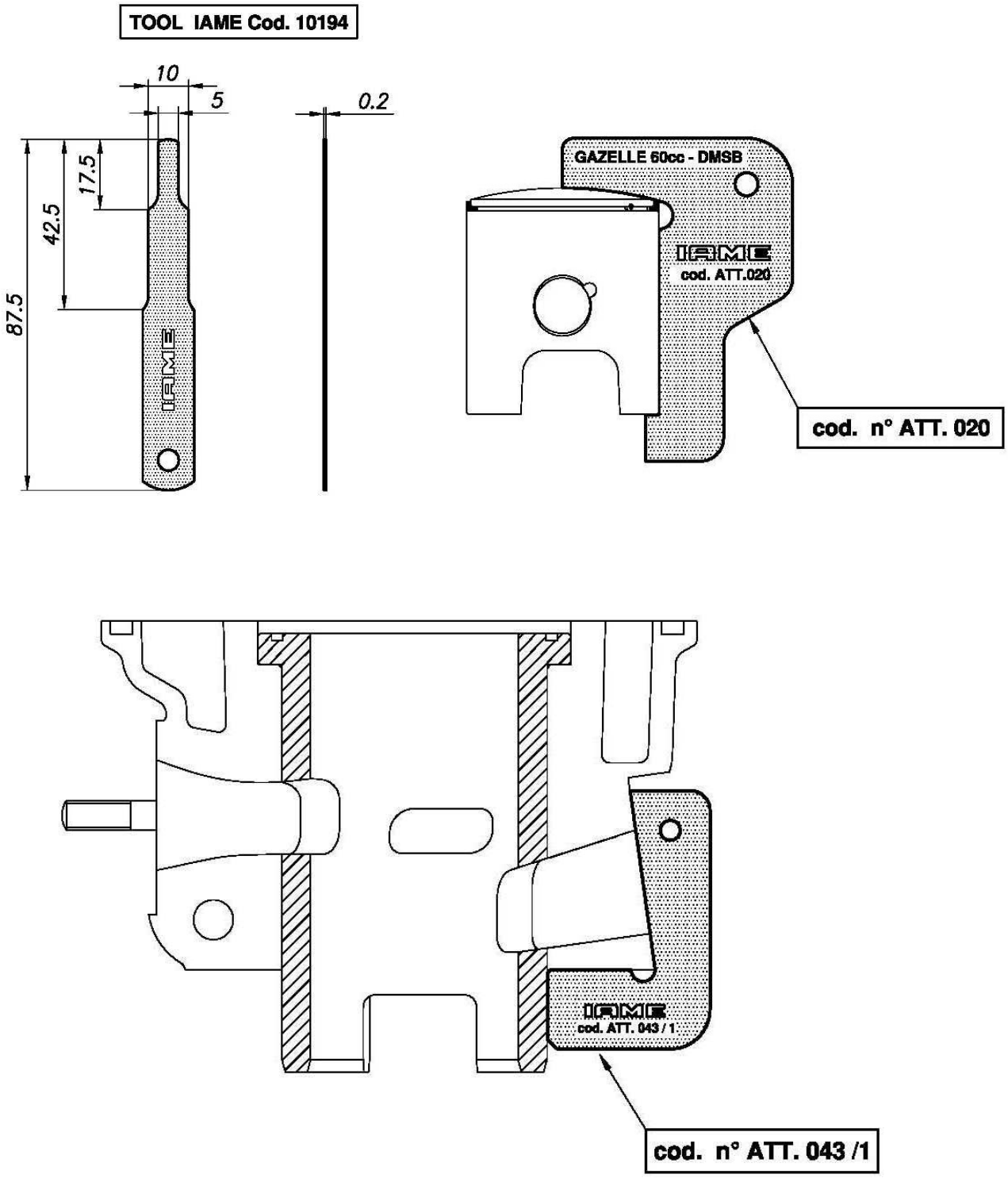
NO GO GAUGES
OUTILS N'ENTRE PAS DANS



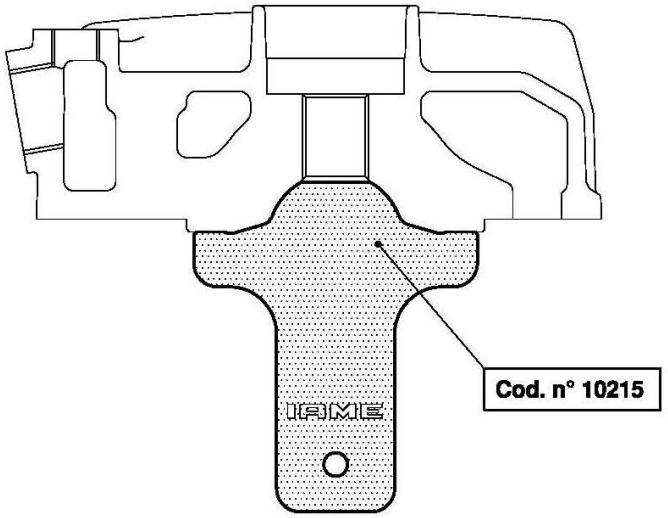


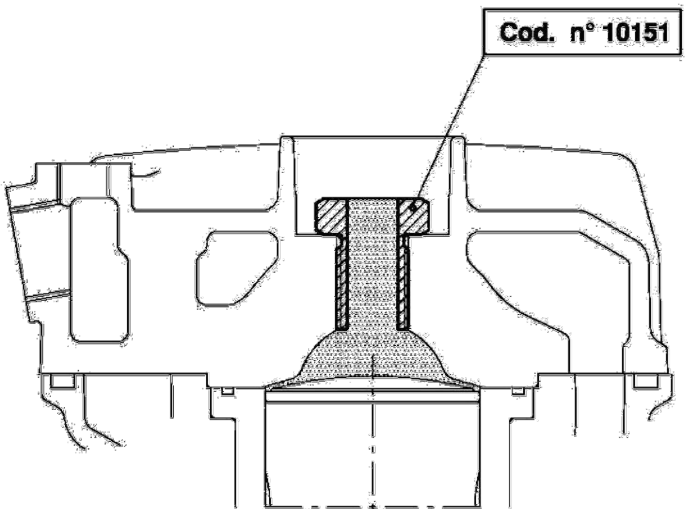


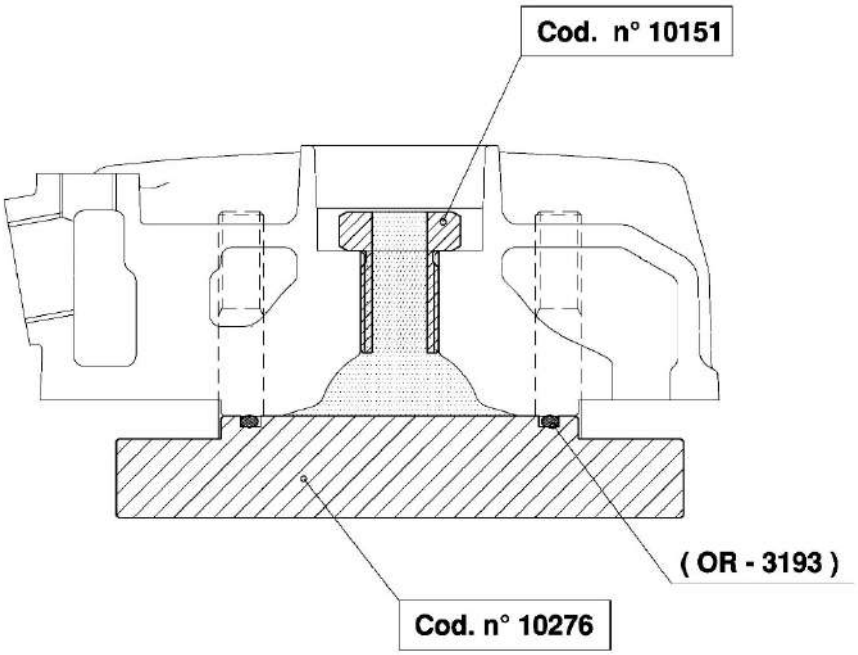
CONTROL GAUGES
OUTILS DE CONTROLL



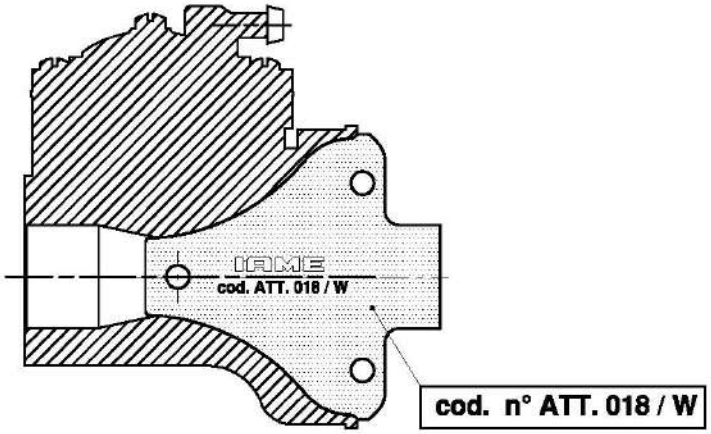
CONTROL GAUGES
OUTILS DE CONTROLL



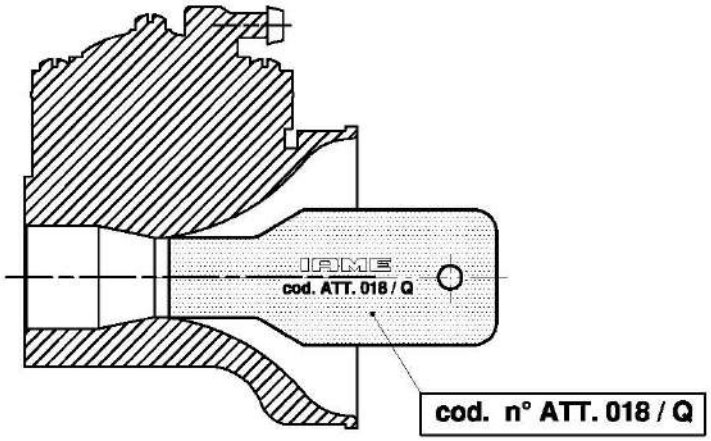




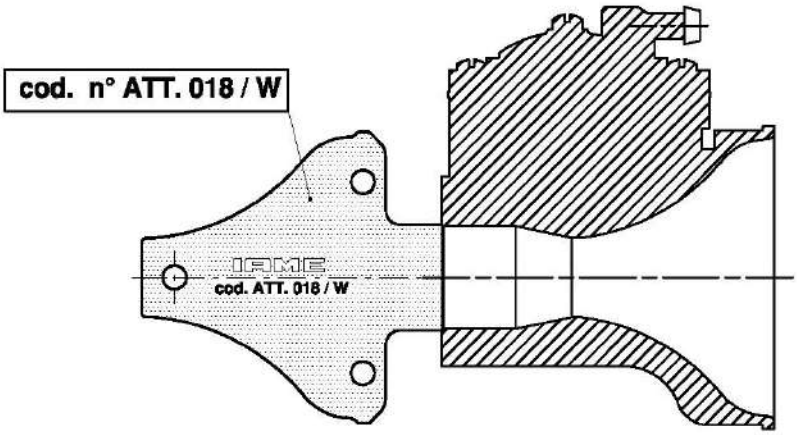
CONTROL GAUGES
OUTILS DE CONTROLL



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.

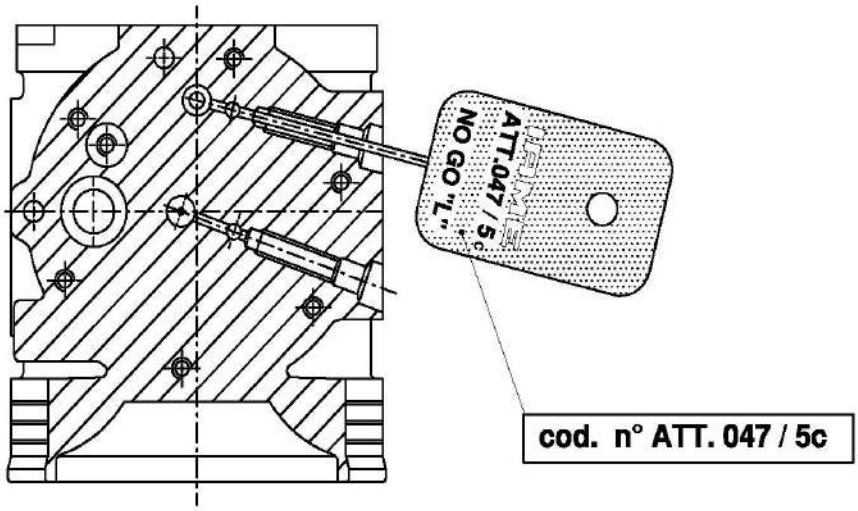


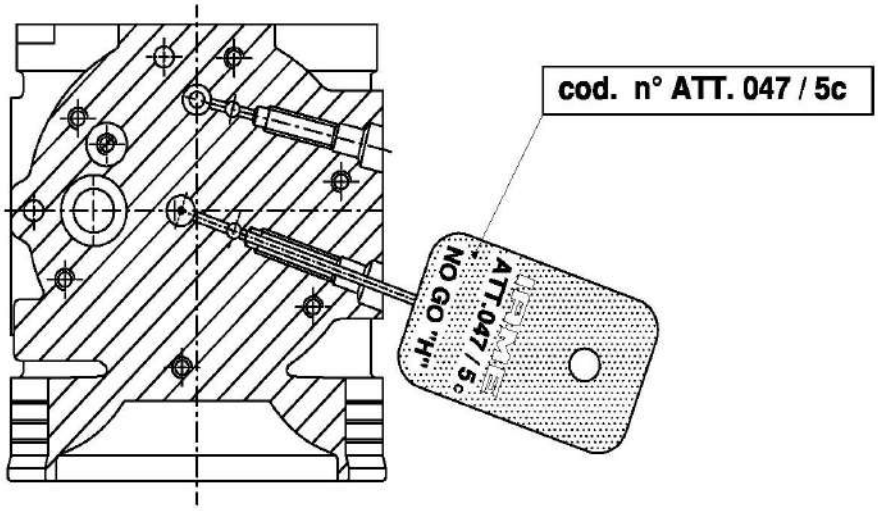
Check that the tool does not enter into the venture duct inlet of carburettor.
Vérifier que l'outil n'entre pas dans l'entrée du conduit Venturi du carburateur.



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

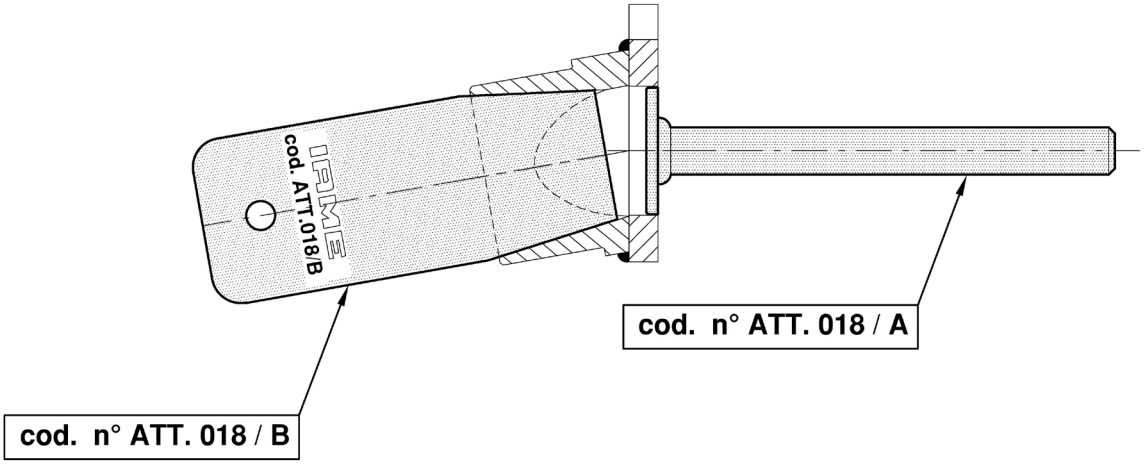
CONTROL GAUGES
OUTILS DE CONTROLL

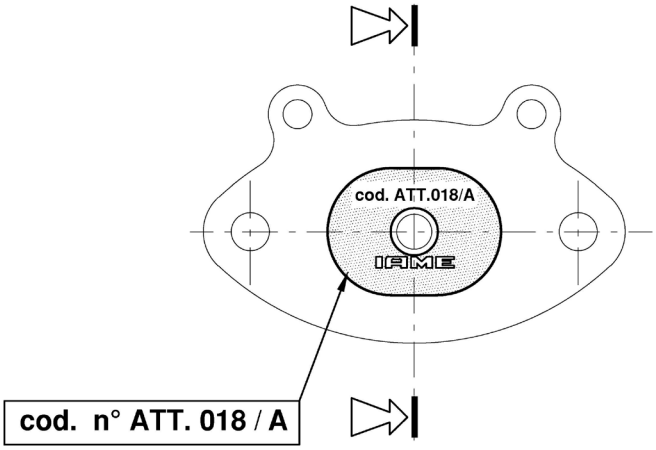




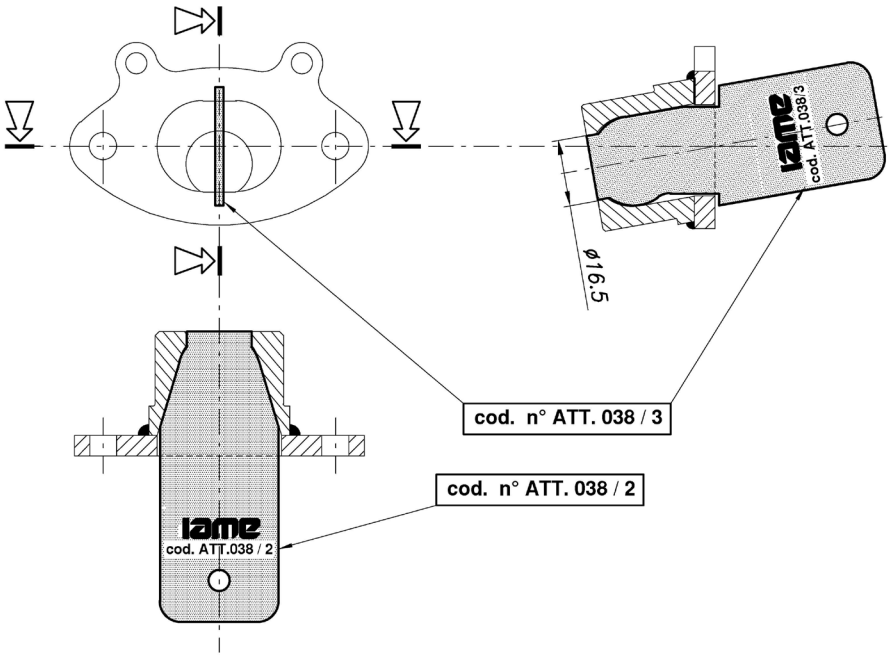
Check that the spikes does not enter into the holes.
Vérifiez que les pointes n'entrent pas dans les trous.

CONTROL GAUGES
OUTILS DE CONTROLL

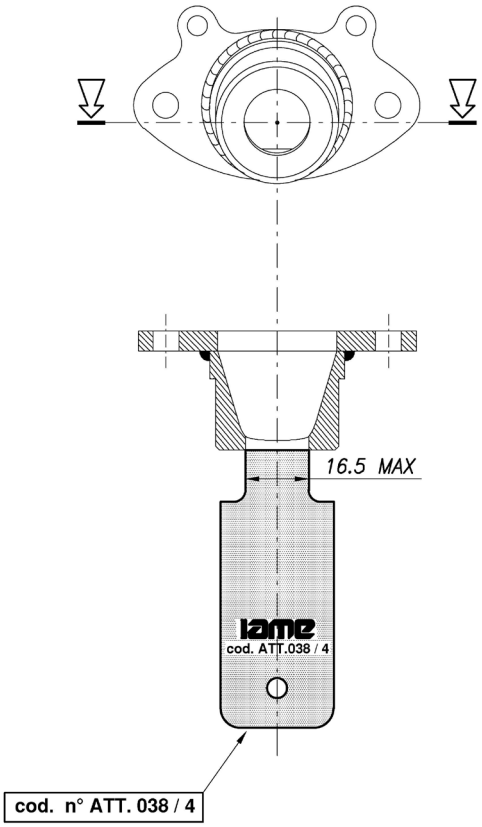




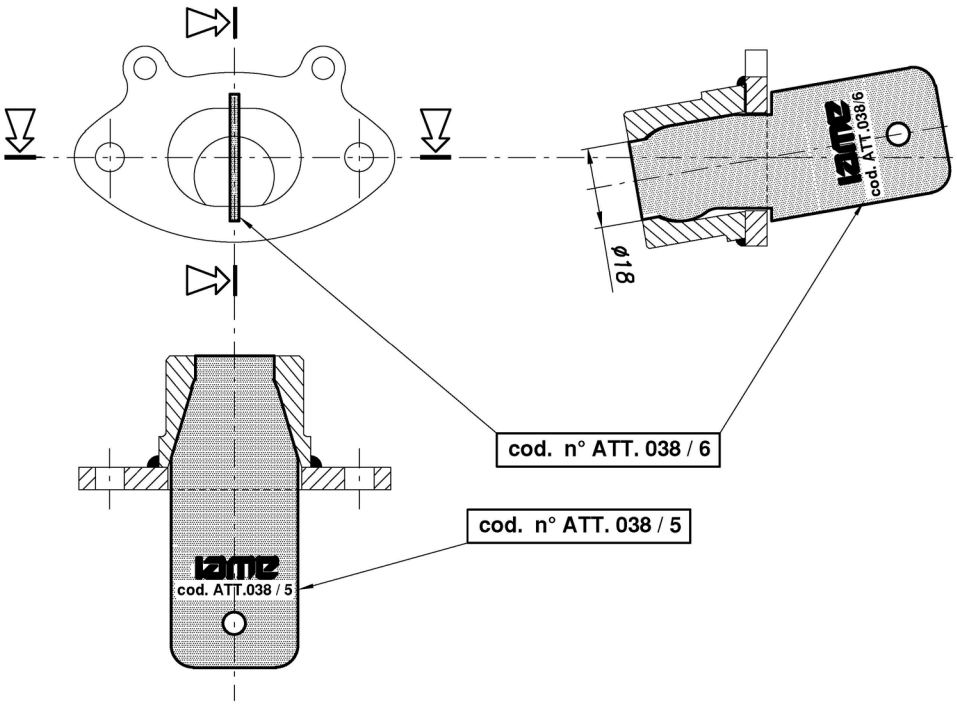
Check that the tool must be the same shape of the exhaust manifold.
Vérifiez que l'outil doit être de la même forme du collecteur d'échappement



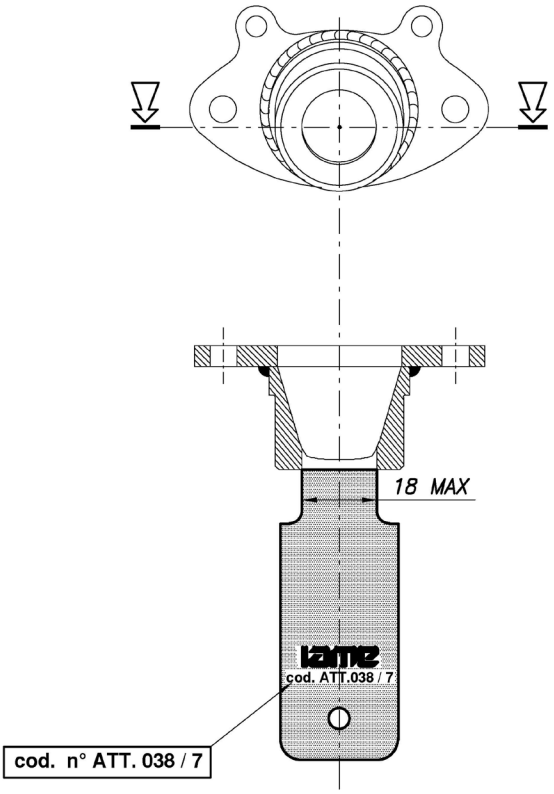
Check that the tool must be the same shape of the inlet carburettor.
Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.



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



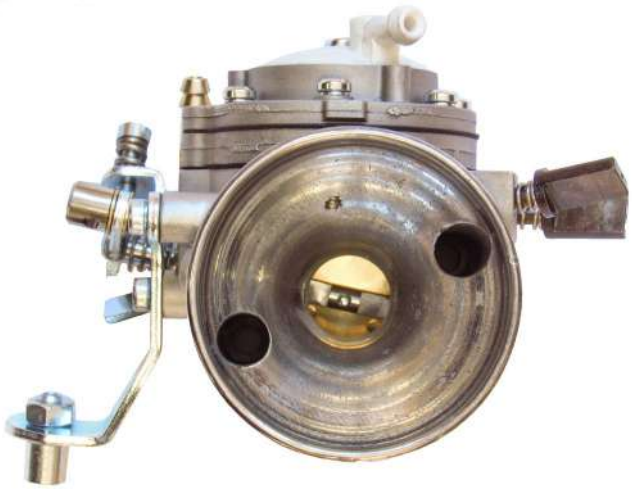
Check that the tool must be the same shape of the inlet carburettor.
Vérifier que l'outil doit avoir la même forme que l'admission du carburateur.



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

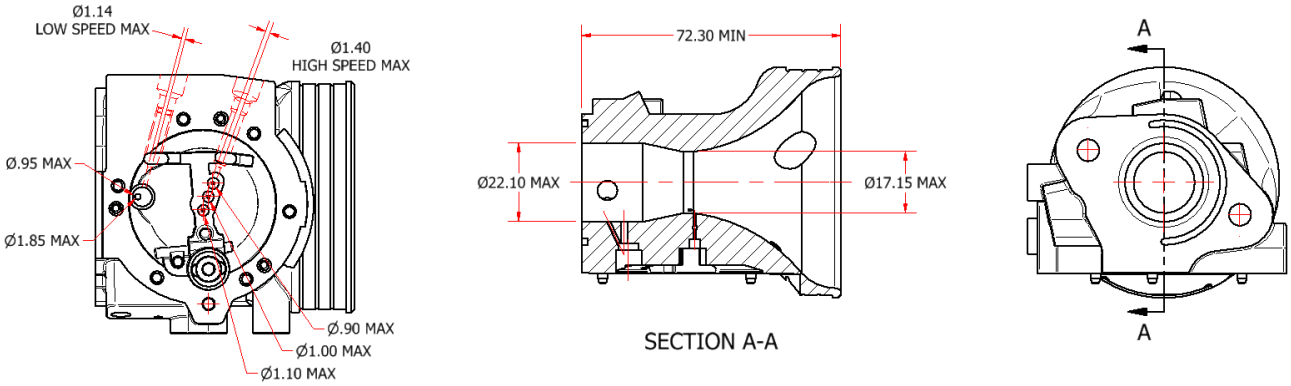
CARBURETTOR / *CARBURATEUR*

Tillotson HW-31A

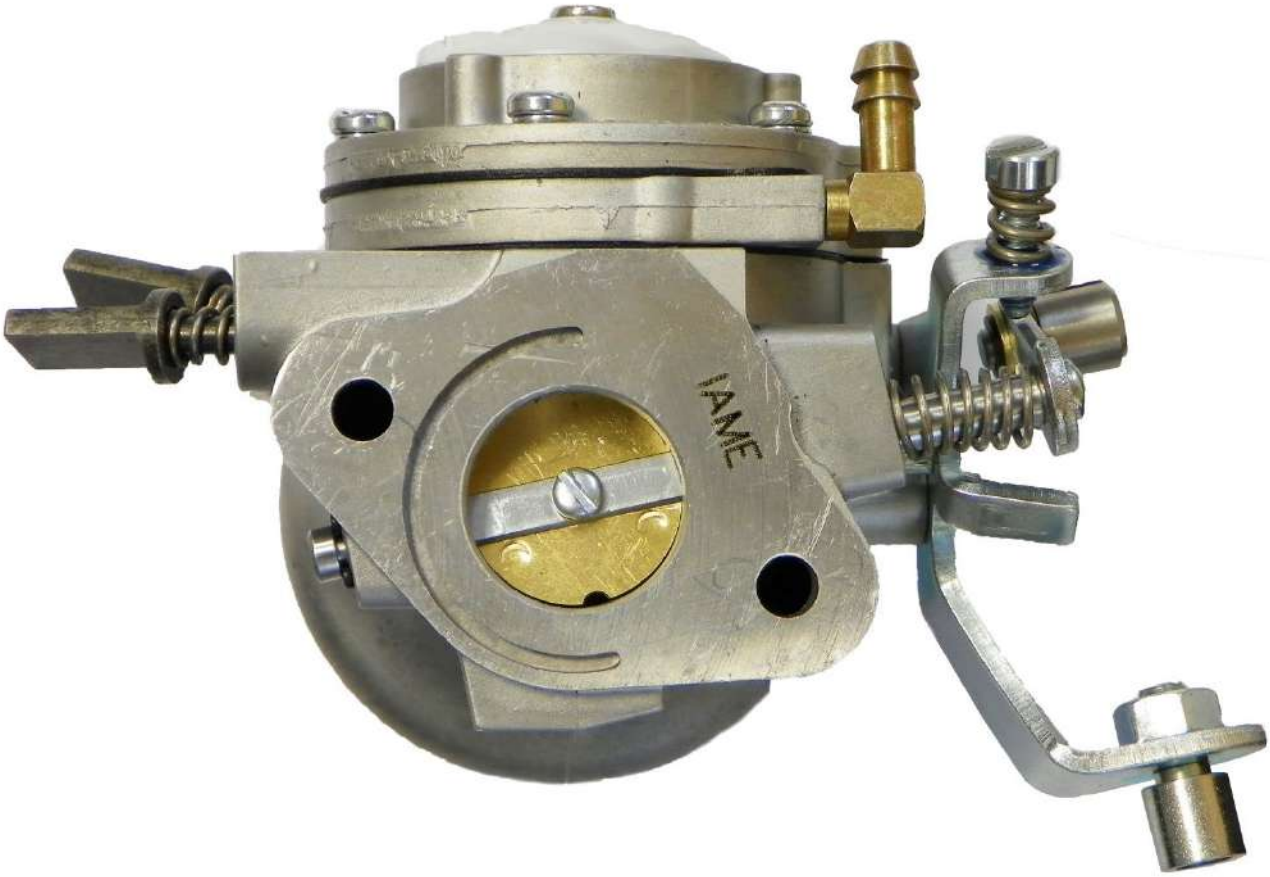
	
PHOTO OF ADJUSTING SIDE *PHOTO CÔTÉ RÉGLAGE*	PHOTO OF INLET SIDE *PHOTO CÔTÉ ASPIRATION*

Manufacturer - *Constructeur*	**TILLOTSON LTD.**
Make - *Marque*	**TILLOTSON**
Model - Modèle	**HW-31A**

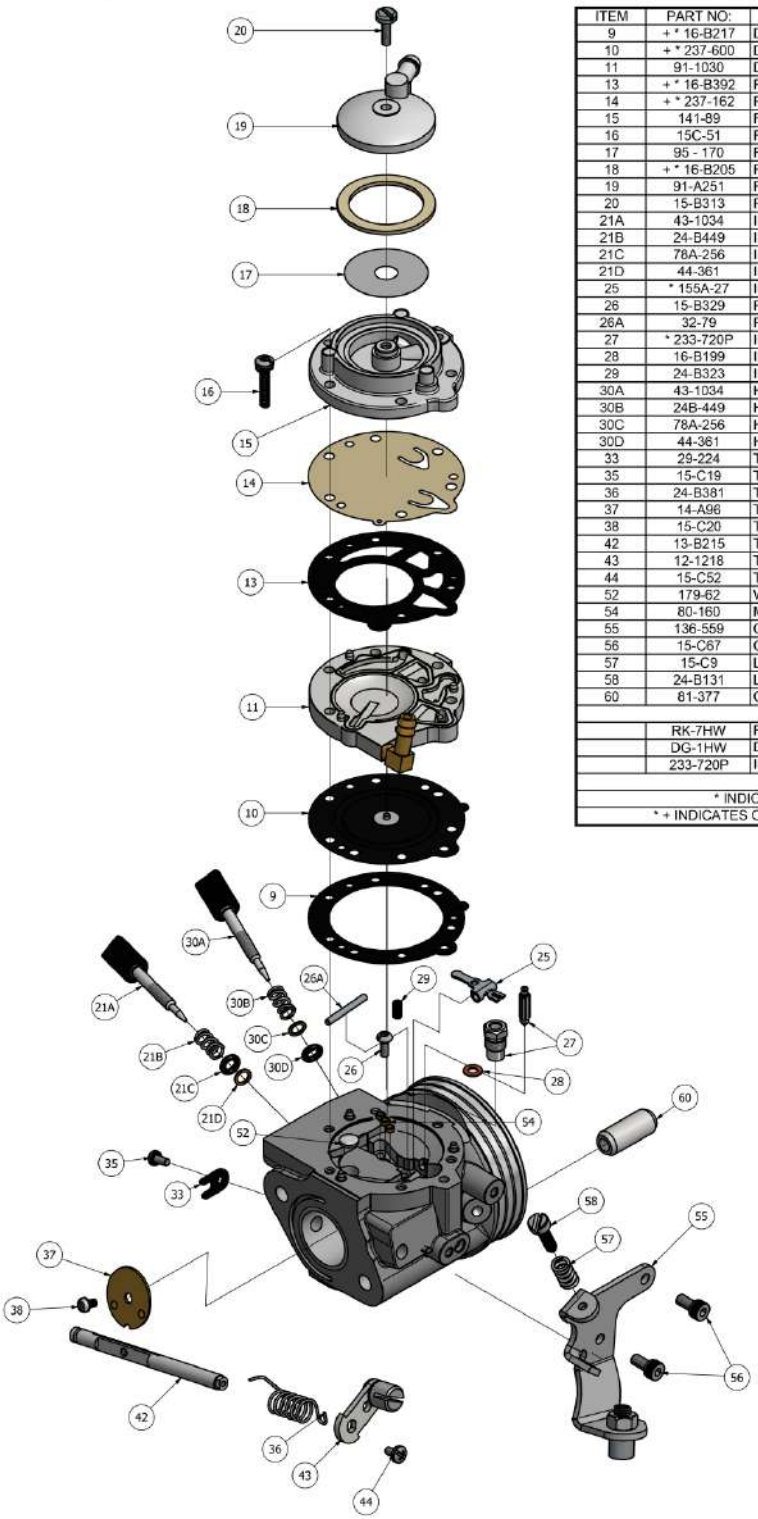
SECTION VIEW – *VUE DE SECTION AVEC DIMENSIONS*



"IAME" MARKING – *MARQUAGE "IAME"*



HW-31A



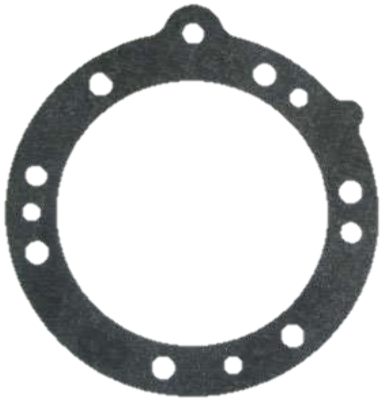
ITEM	PART NO:	DESCRIPTION	QTY
9	+ * 16-B217	DIAPHRAGM GASKET	1
10	+ * 237-600	DIAPHRAGM	1
11	91-1030	DIAPHRAGM COVER	1
13	+ * 16-B392	FUEL PUMP GASKET	1
14	+ * 237-162	FUEL PUMP DIAPHRAGM	1
15	141-89	FUEL PUMP BODY	1
16	15C-51	FUEL PUMP BODY SCREW	6
17	95 - 170	FUEL STRAINER SCREEN	1
18	+ * 16-B205	FUEL 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 BRAKET	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			

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

iame

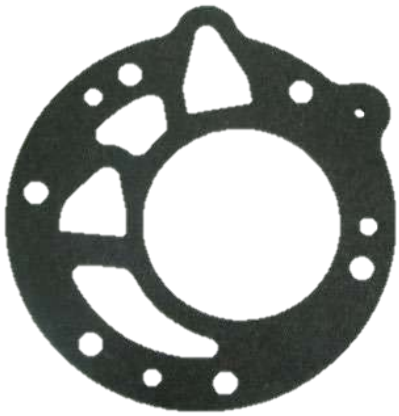
PARTS OF CARBURETTOR – *PIÈCES DU CARBURATEUR*

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

ALTERNATIVE

Thickness / *Epaisseur* = 0.10 ±0.063 mm

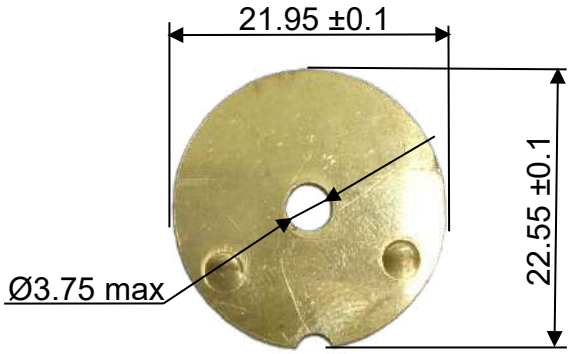
REF.11 - P. N° 91-1031
DIAPHRAGM COVER
COUVERCLE DE DIAPHRAGME

Thickness / *Epaisseur* = 6.75 ±0.15 mm

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

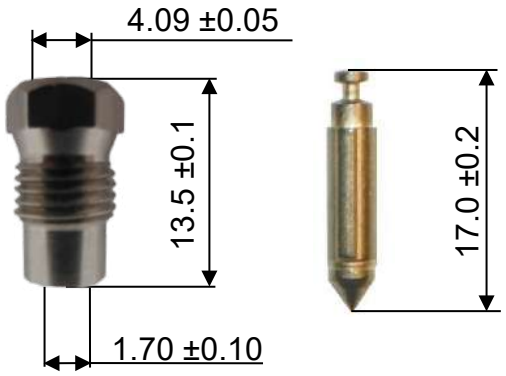
Thickness / *Epaisseur* = 12.5 ±0.15 mm

REF.37 - P. N° 14-A96
THROTTLE SHUTTER
PAPILLON



Thickness / *Epaisseur* = 0.81 ±0.1 mm

REF.27 - P. N° 233-720P
SEAT + NEEDLE
SIEGE + POINTEAU



REF.21A - P. N° 43-1034
NEEDLE LOW SPEED
VIS DE RAGLAGE BAS-REGIME

REF.30A - P. N° 43-1034
NEEDLE HIGH SPEED
VIS DE RAGLAGE HAUT-REGIME

NEEDLE FUEL ALTERNATIVE
POINTEAU ALTERNATIVE

REF.27 - P. N° 233-720P

HOLE FOR CARBURETTOR SEALING
TROU POUR LE PLOMBAGE

The carburettor can have this hole for sealing.
Le carburateur peut avoir ce trou pour le plombage