


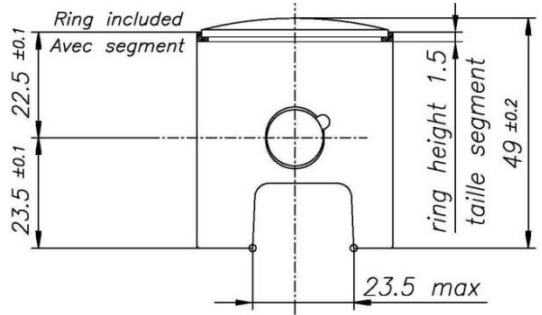
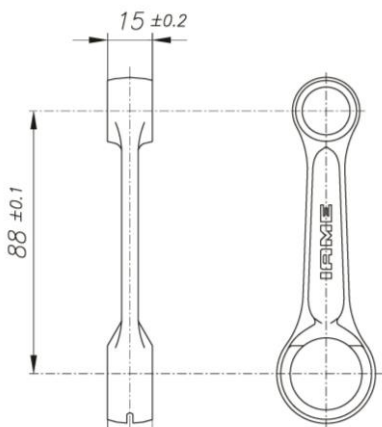


## WATERSWIFT 60cc - TaG

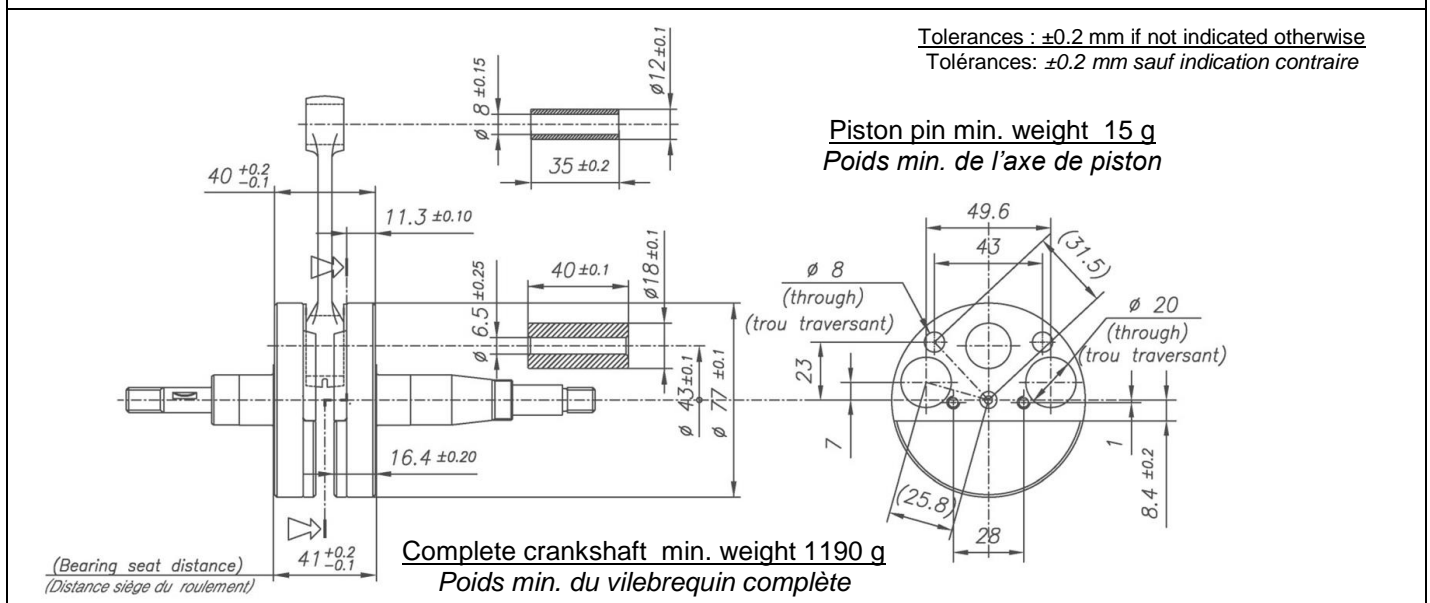


### FEATURES - CARACTERISTIQUES

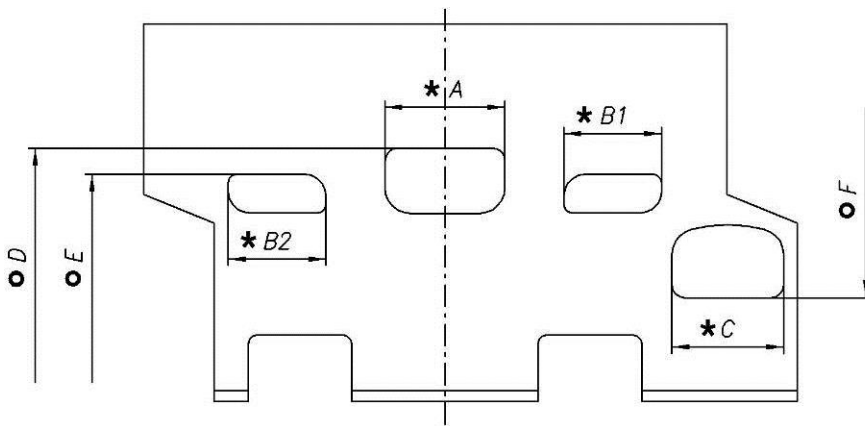
		FEATURES - CARACTERISTIQUES	
		Cylinder volume <i>Volume du cylindre</i>	59.17 cm <sup>3</sup> (60.00 cm <sup>3</sup> max)
		Bore <i>Alésage</i>	41.81 mm
		Max. theoretical bore <i>Alésage théorique max.</i>	42.10 mm
		Stroke <i>Course</i>	43mm
		Cooling system <i>Système de refroidissement</i>	Water <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	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 chamber de combustion</i>	Spherical <i>Spherique</i>
Crankshaft ball-bearing diam. <i>Diamètre palier du vilebrequin</i>	20x47x14	Selettra ignition (adjustable) <i>Allumage Selettra (réglable)</i>	2 poles <i>2 pôles</i>
Small end conr. bearing diam. <i>Diamètre palier pied de bielle</i>	12x16x16	Distance between Conrod centers <i>Lounguer (entre axe) de la bielle</i>	88 mm

DESCRIPTION OF THE MATERIAL <i>DESCRIPTION DES MATERIAUX</i>		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 <i>ENTRE AXE DE LA BIELLE</i>
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

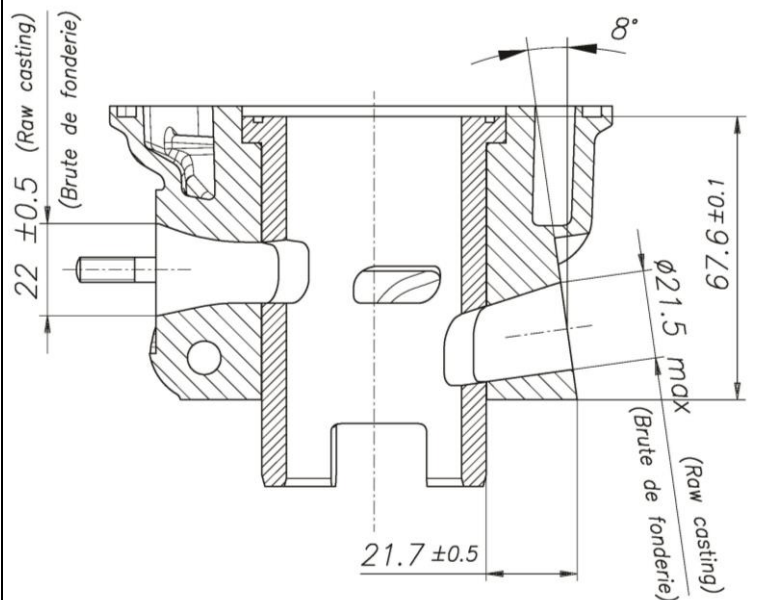
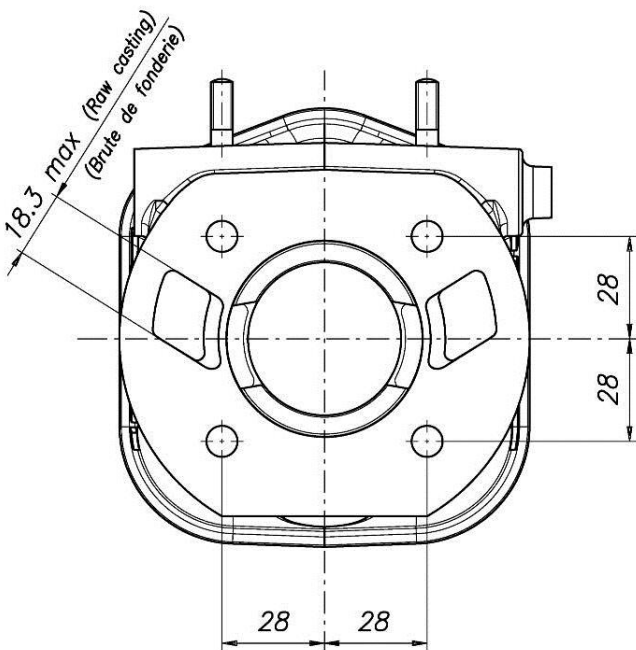
CHORDAL READING – LECTURE CORDALE

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

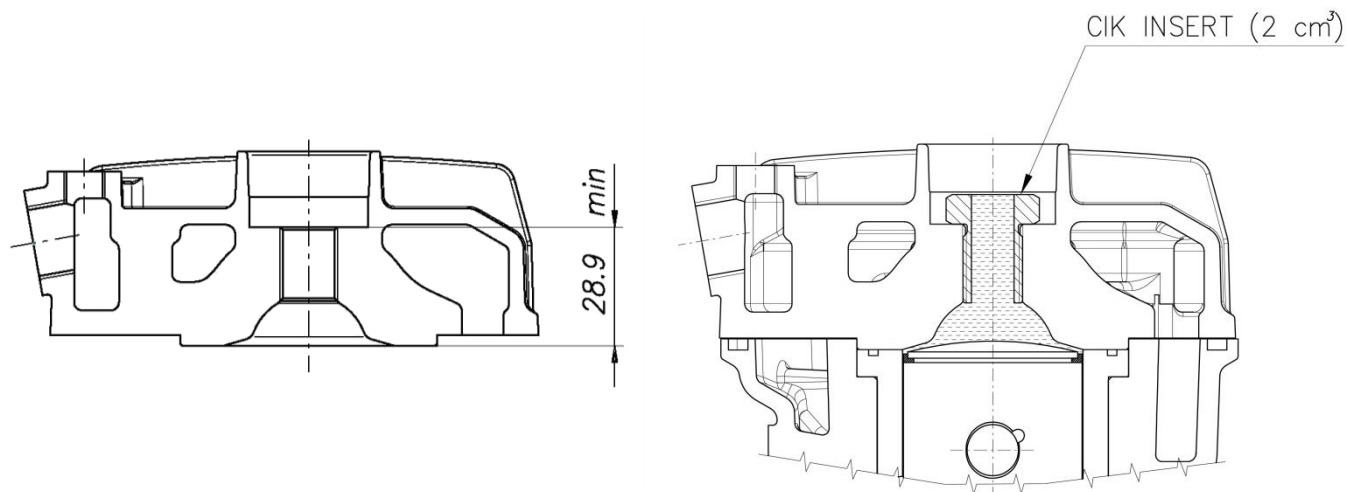
USING IAME TOOL Cod. 10194 – UTILISER OUTIL

CYLINDER BASE VIEW  
VUE DE LA BASE DU CYLINDRE

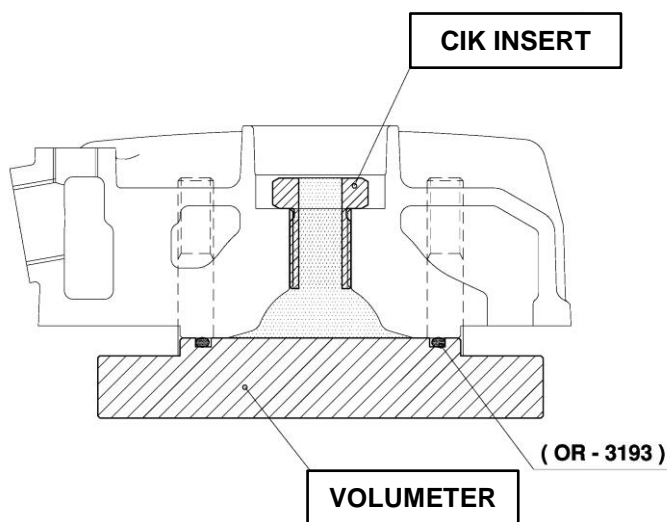
CYLINDER SECTION VIEW  
VUE EN SECTION DU CYLINDRE



COMBUSTION CHAMBER VIEW  
VUE DE LA CHAMBRE DE COMBUSTION



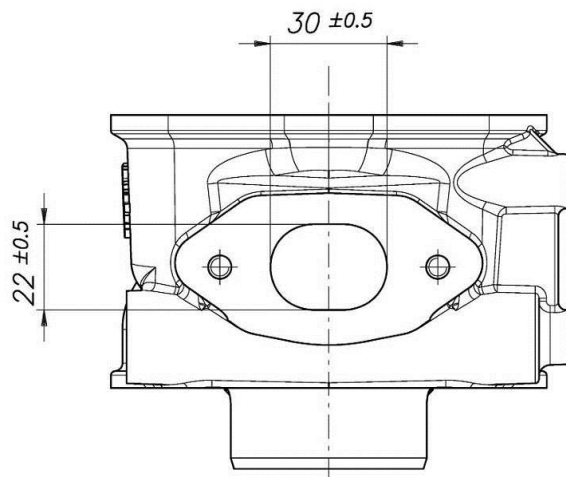
COMBUSTION CHAMBER VOLUME = 6.5 cm<sup>3</sup> min.  
VOLUME CHAMBRE COMBUSTION



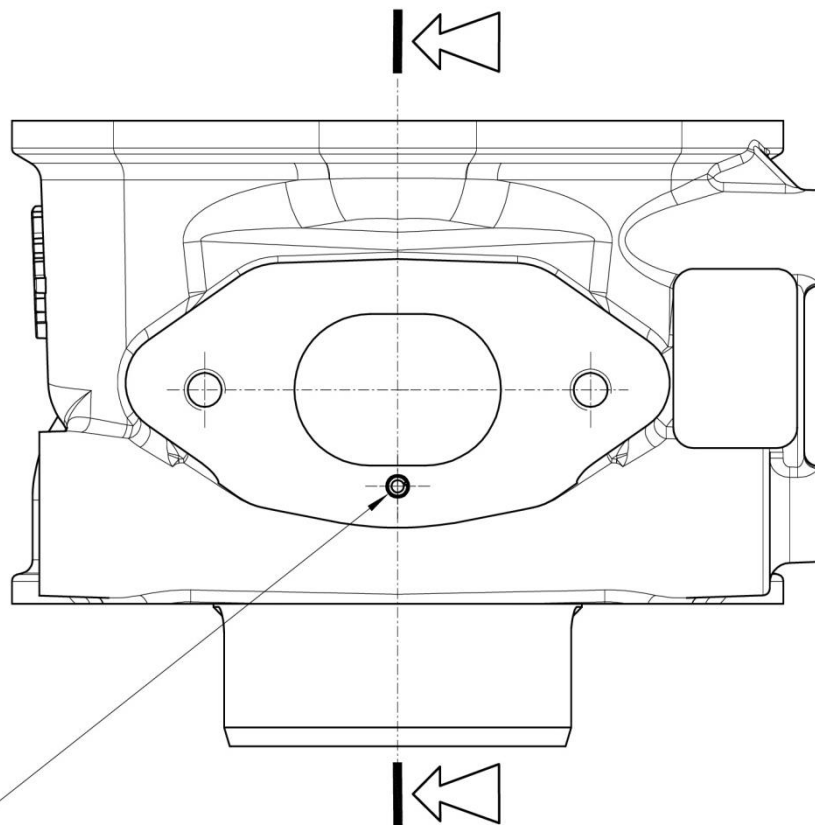
**SQUISH MIN. = 0.55 mm**  
measured with Ø1.5mm TIN  
mesurée avec de l'étain Ø1.5mm

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

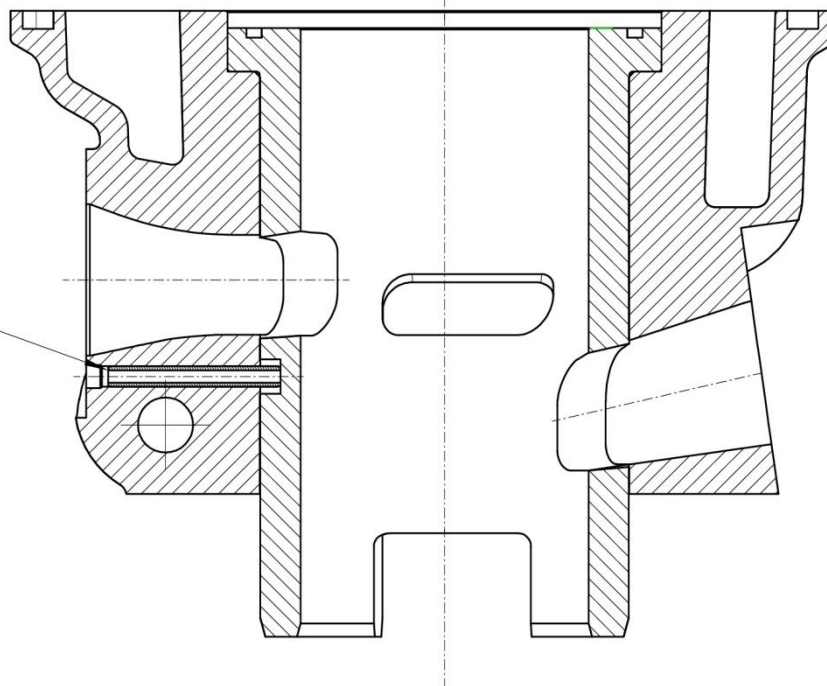
REAR VIEW AND DIMENSION  
ARRIERE VUE ET DIMENSION



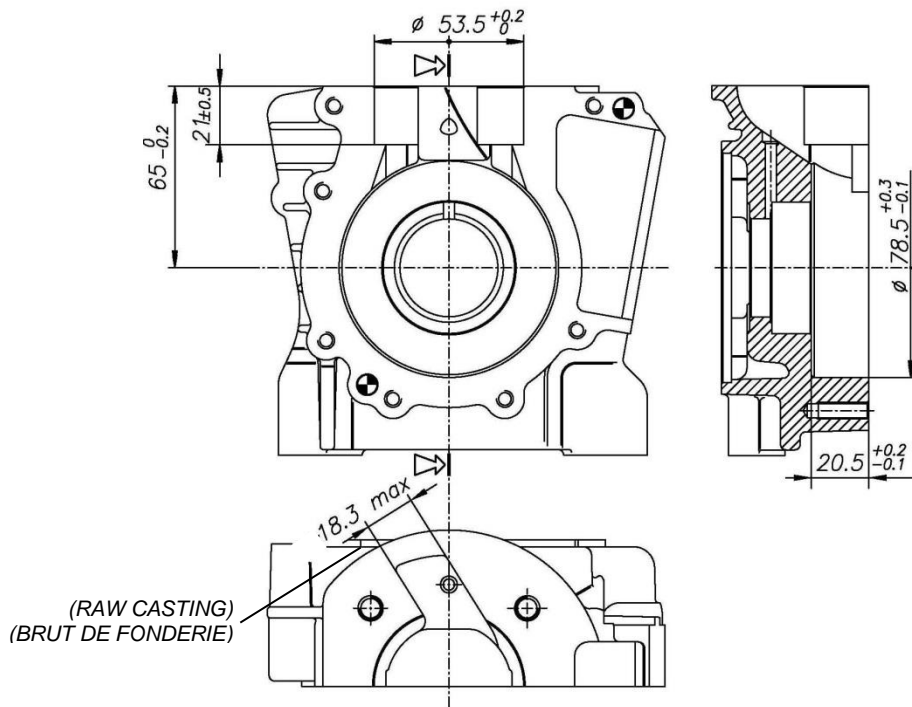
ALTERNATIVE CYLINDER VIEWS AND SECTION (WITH SPRING PIN)  
VUE ET SECTION DU CYLINDRE ALTERNATIVE (AVEC GOUPILLE ÉLASTIQUE)



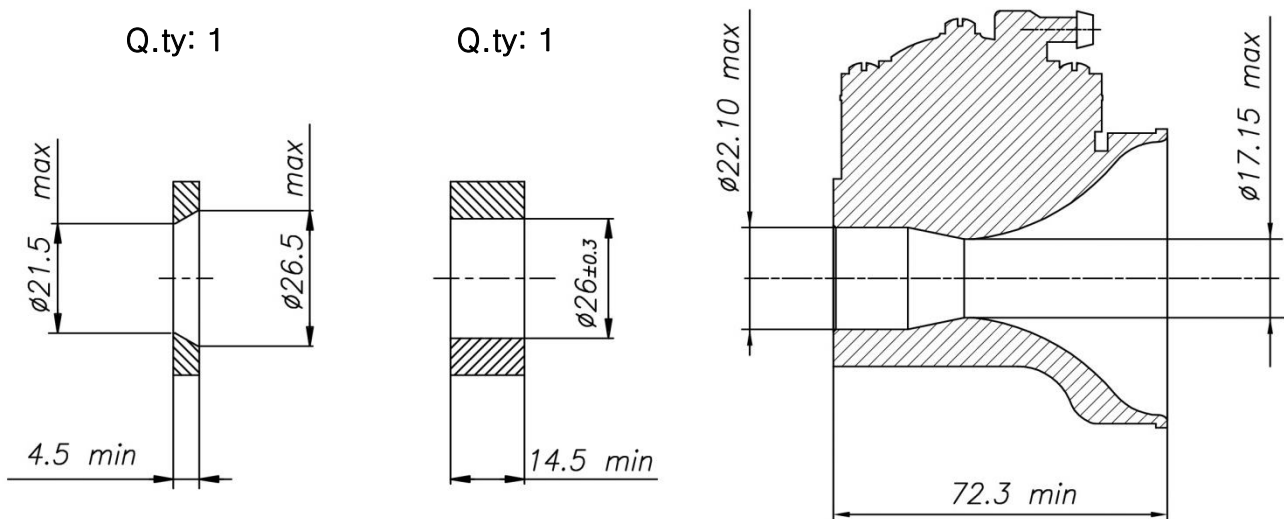
SPRING PIN  
GOUPILLE ELASTIQUE



CRANKCASE INSIDE VIEW  
VUE A' L'INTERIEUR DU CARTER



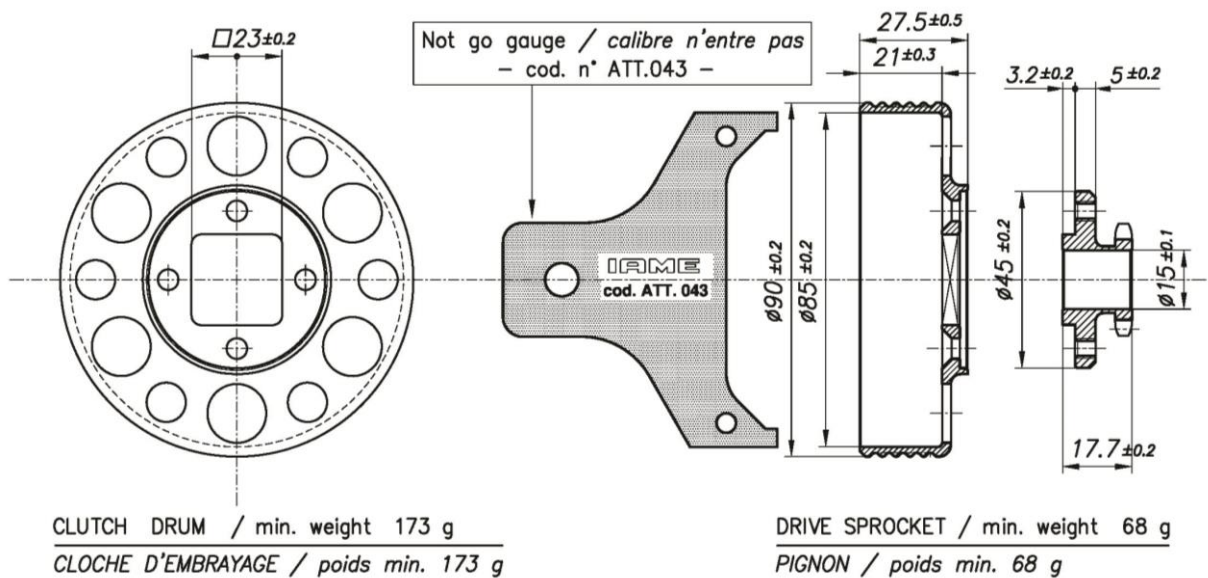
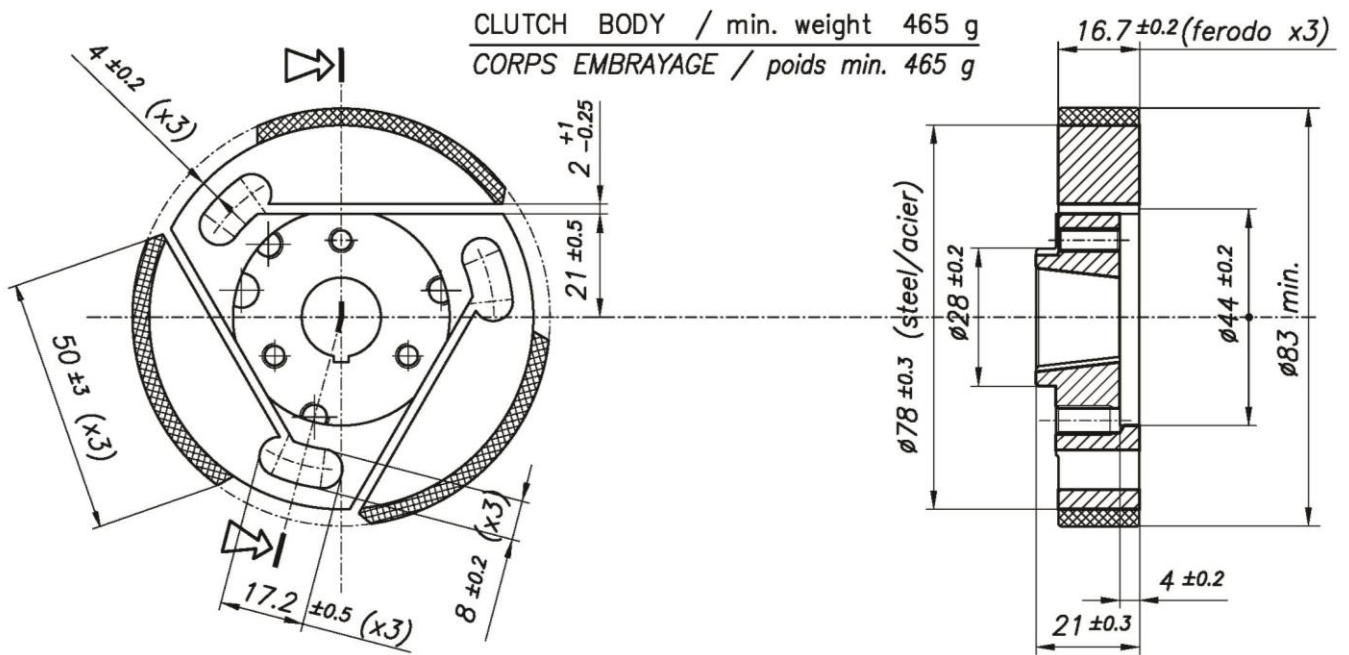
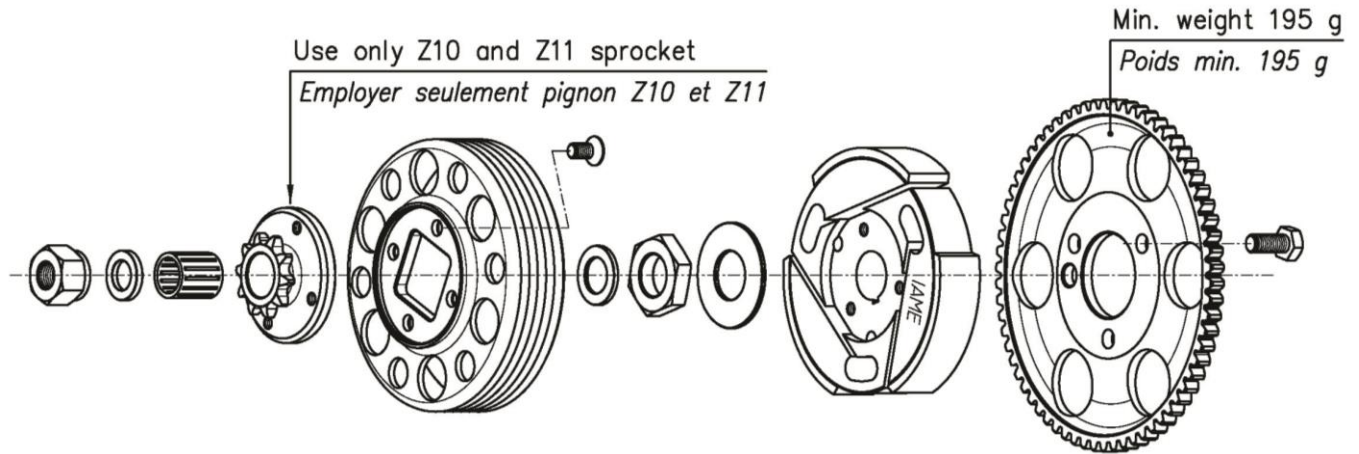
VENTURI CARB. DIMENSIONS and THERMAL SPACERS  
CARBURATEUR ET SONS ENTRETOISES



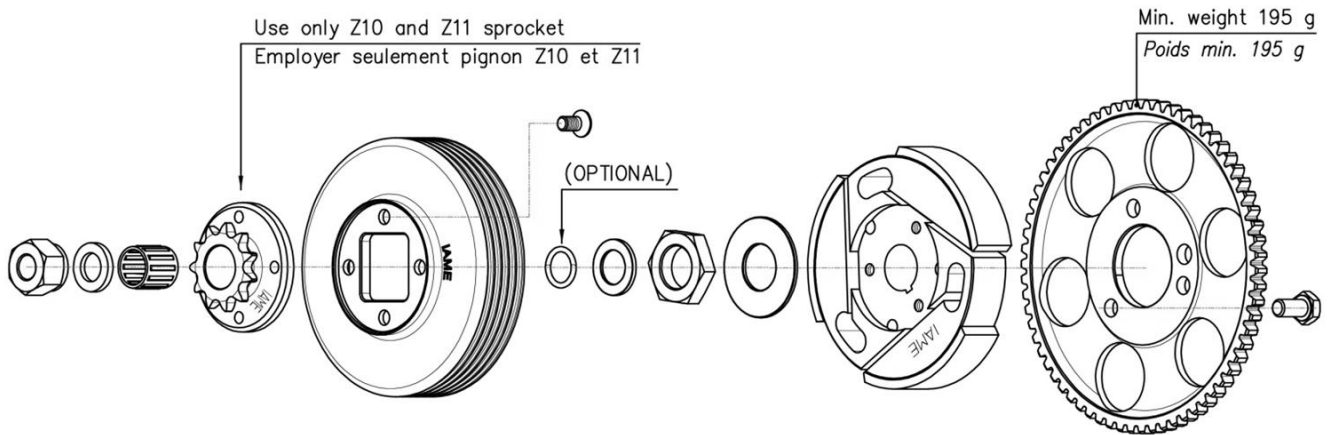
TILLOTSON MOD. HW-31A



DESCRIPTION OF THE CLUTCH – DESCRIPTION DE L'EMBRAYAGE

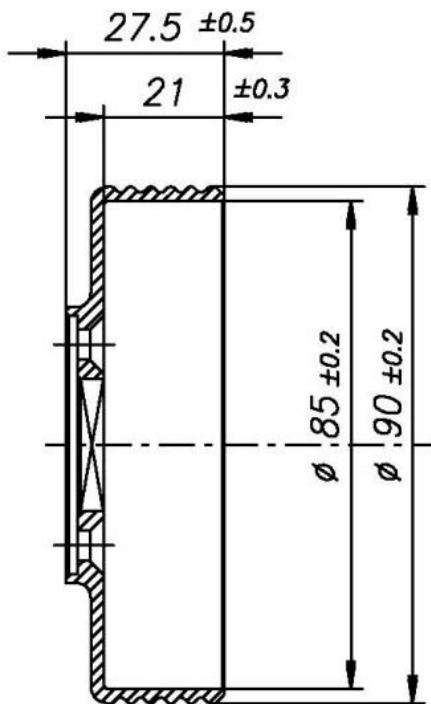


DESCRIPTION OF THE CLUTCH ALTERNATIVE  
 DESCRIPTION DE L'EMBAYAGE ALTERNATIVE

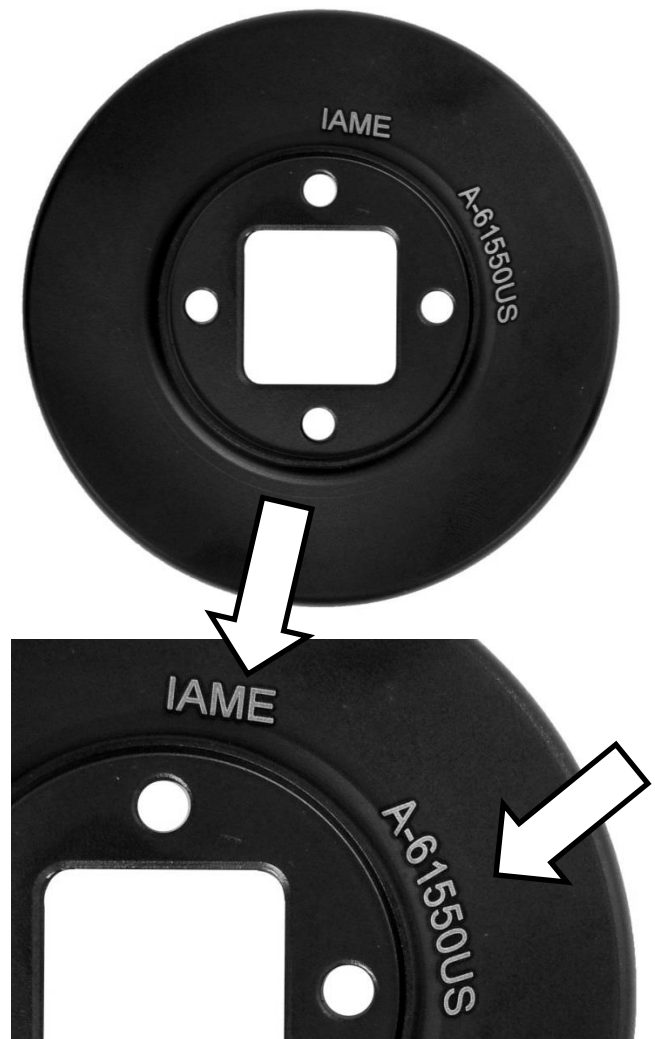


ALTERNATIVE CLUTCH DRUM DRAWING  
 DESSIN DE LA CLOCHE D'EMBAYAGE ALTERNATIVE

ALTERNATIVE CLUTCH DRUM IDENTIFICATION MARKING  
 MARQUAGE D'IDENTIFICATION DE LA CALOTTE D'EMBAYAGE ALTERNATIVE

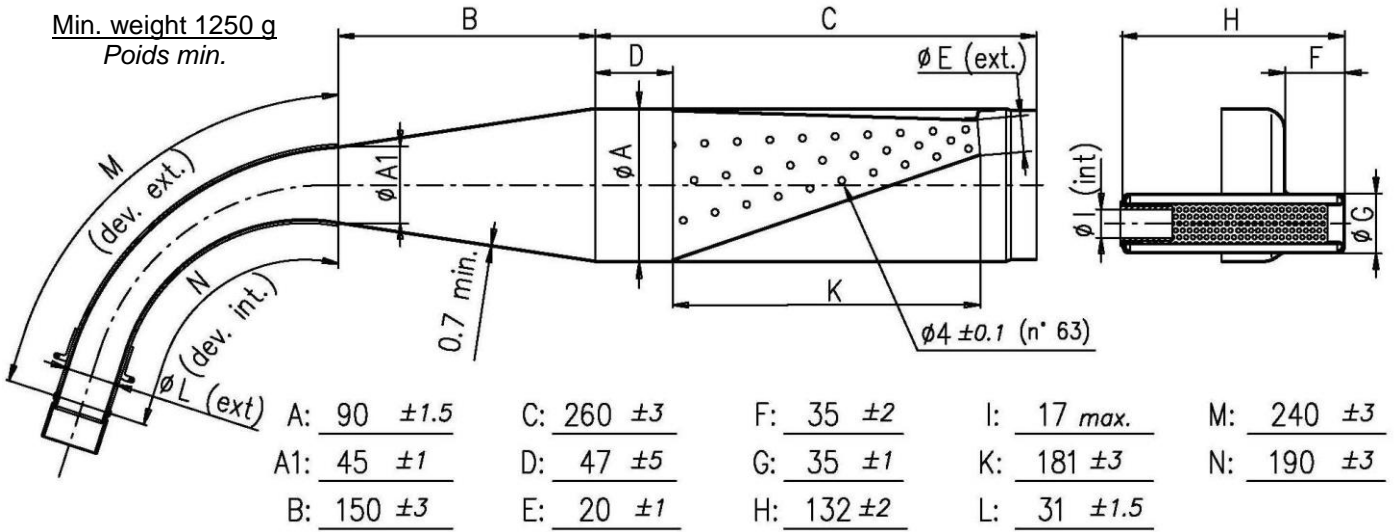


Min. weight 175 g  
 Poids min. 175 g

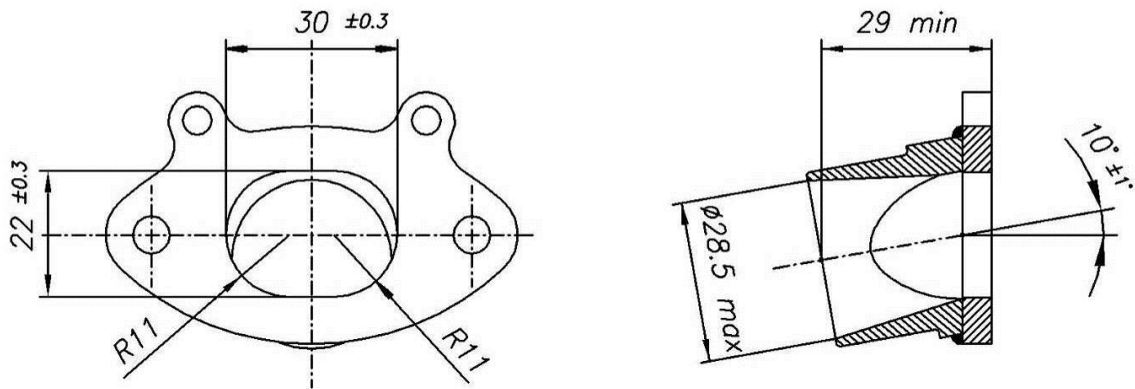




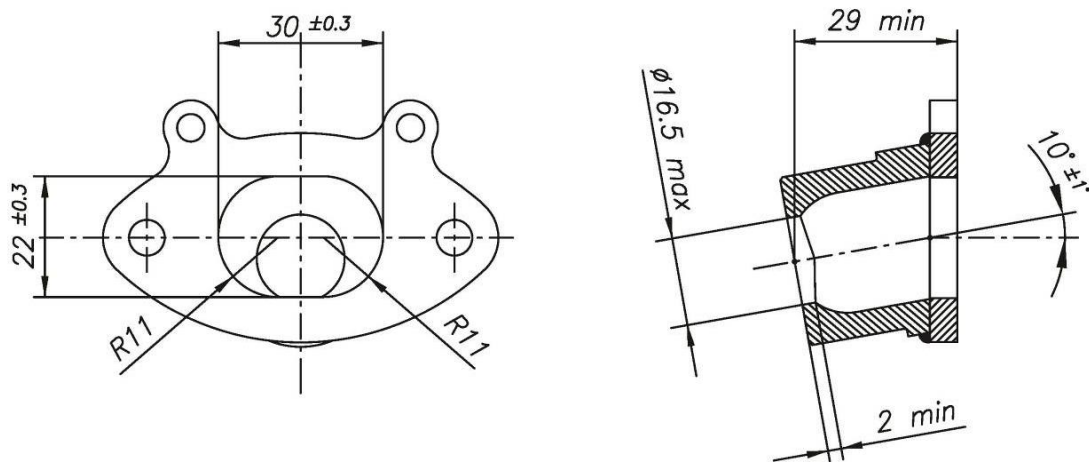
**EXHAUST MUFFLER VIEW AND DIMENSIONS**  
**VUE ET DIMENSIONS DU SILENCIEUX D'ÉCHAPPEMENT**



**EXHAUST MANIFOLD**  
**RACCORD D'ÉCHAPPEMENT**

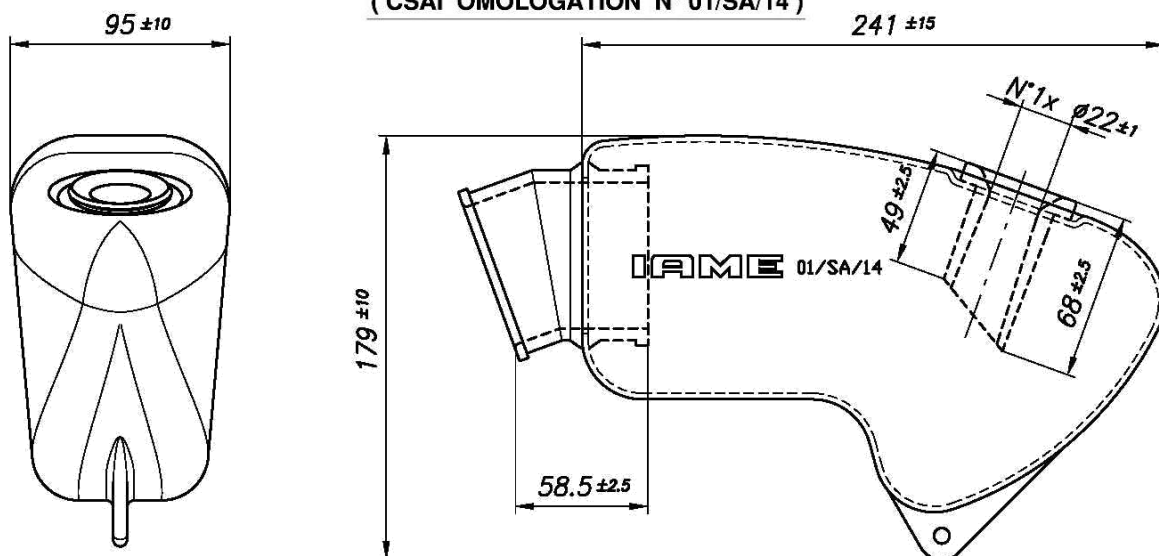


**EXHAUST MANIFOLD RESTRICTED**  
**RACCORD AVEC RECSTRICTEUR D'ÉCHAPPEMENT**



# INLET SILENCER – SILENCIEUX D'ASPIRATION

( CSAI OMOLOGATION N° 01/SA/14 )



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

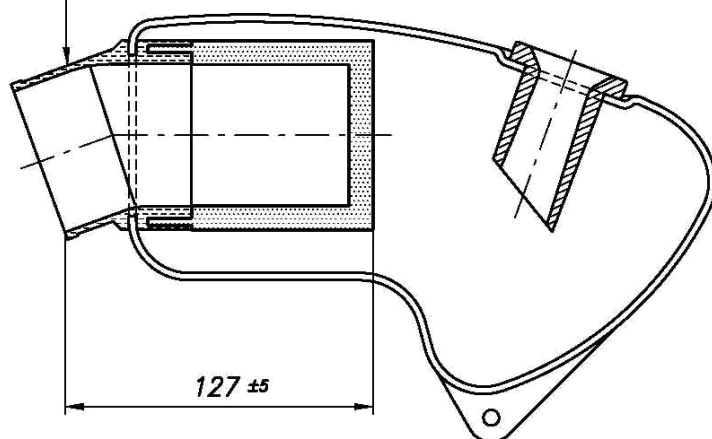
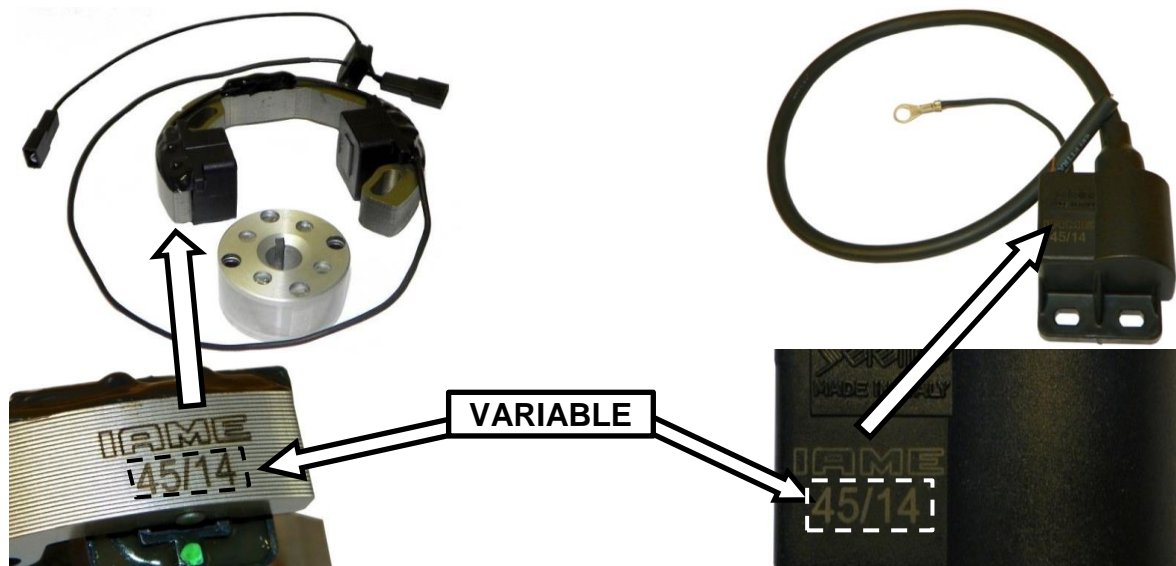
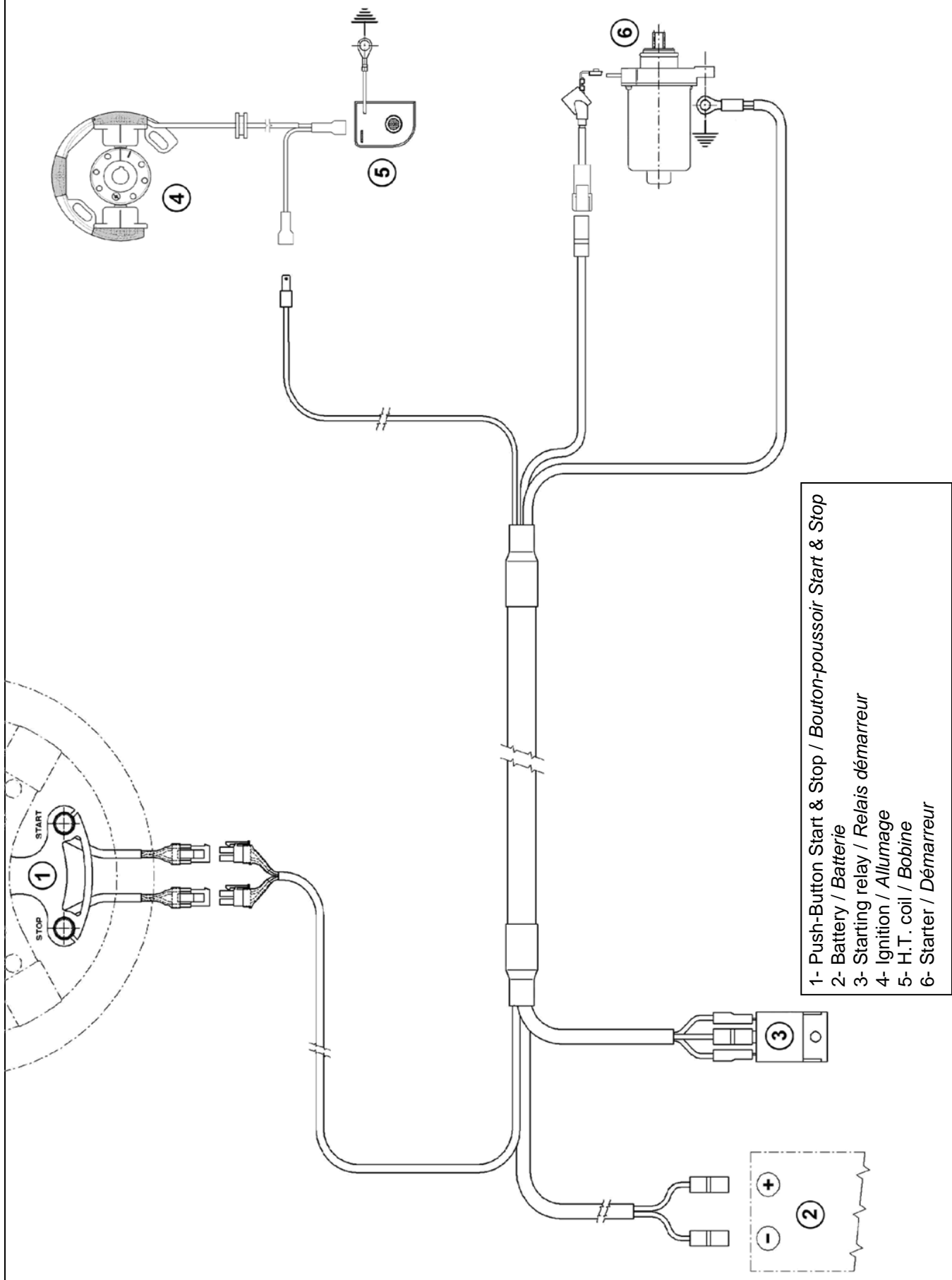


PHOTO IGNITION / PHOTO H.T. COIL ( SELETTRA ANALOGUE 2 POLES)  
 PHOTO ALLUMAGE / PHOTO BOBINE (SELETTRA ANALOGIQUE 2 POLES)



WIRING DIAGRAM  
SCHEMA CIRCUIT ELECTRIQUE



- 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

RADIATOR AND ITS SUPPORTS  
RADIATEUR ET SES SUI TIEN

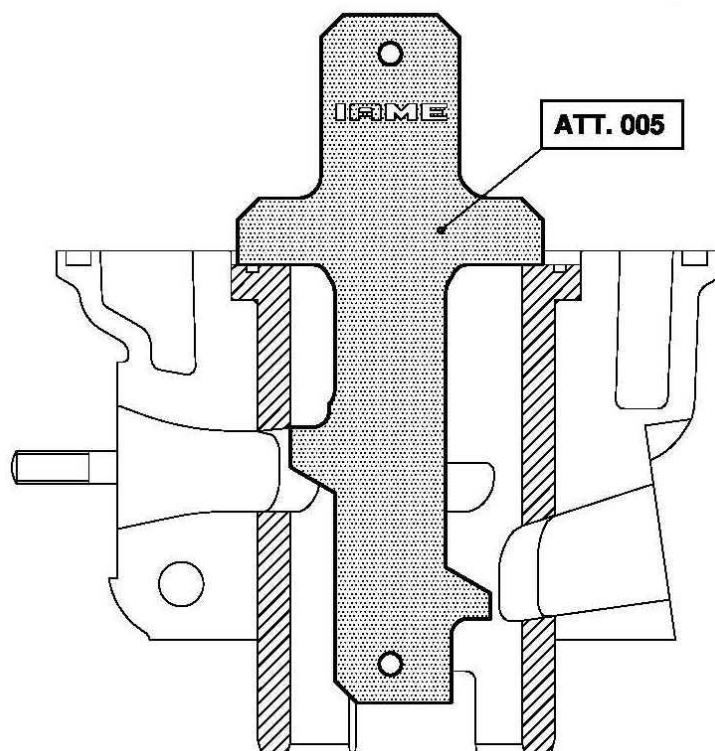
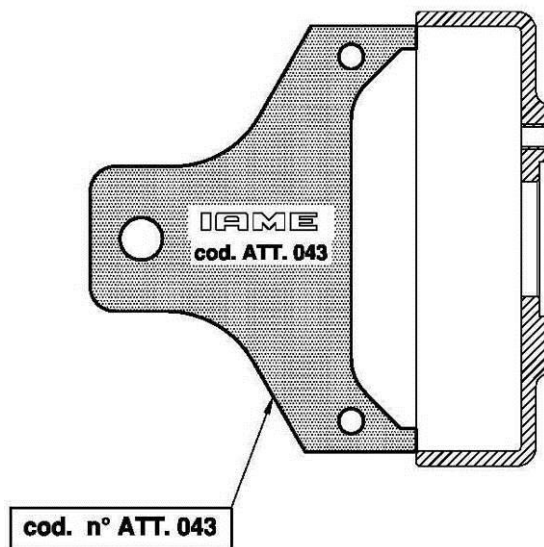
PAINTED AND NOT PAINTED / PEINT ET PAS PEINT



EXHAUST IDENTIFICATION MARKING  
MARQUAGE D'IDENTIFICATION ECHAPPEMENT

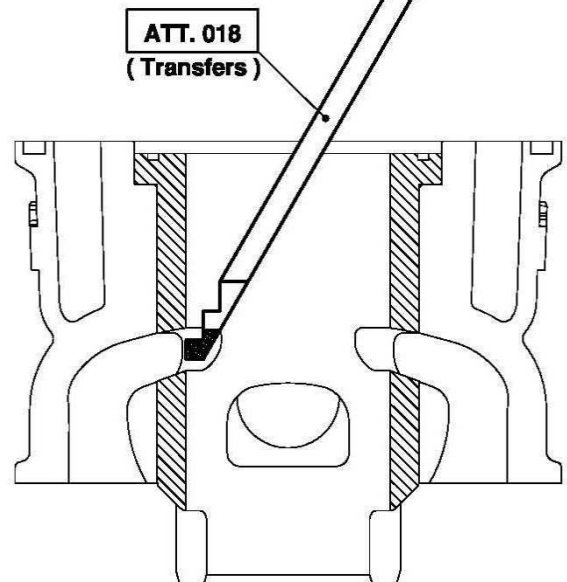
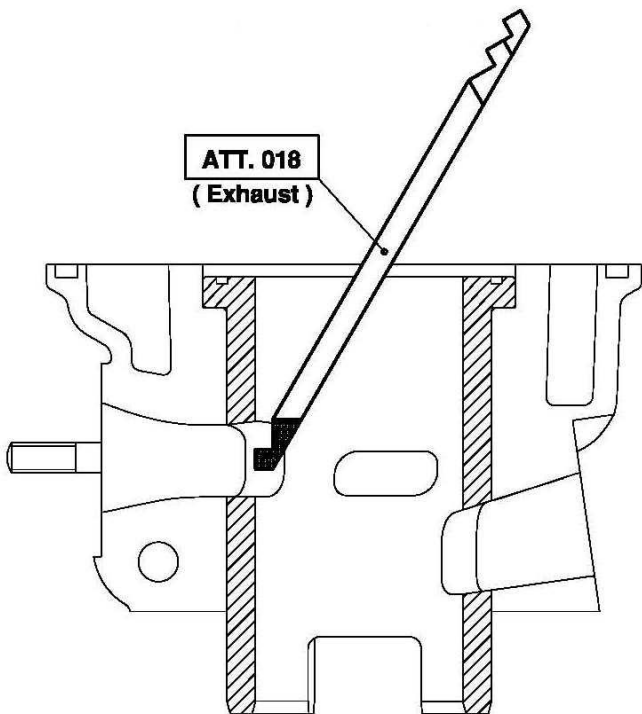
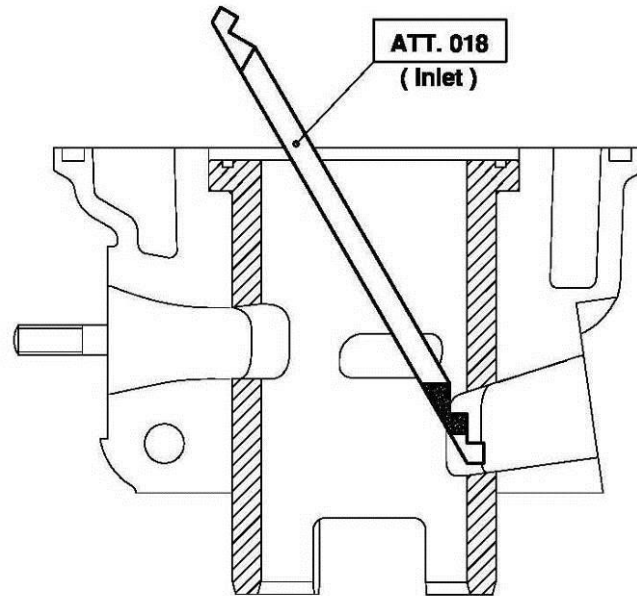


**NO GO GAUGES**  
**OUTILS N'ENTRE PAS DANS**



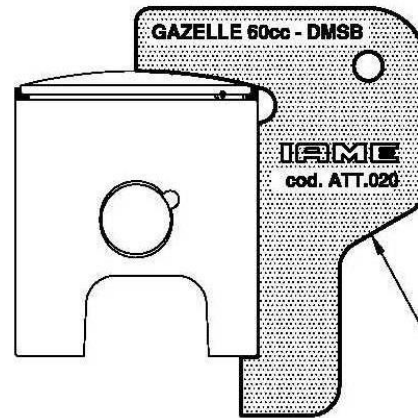
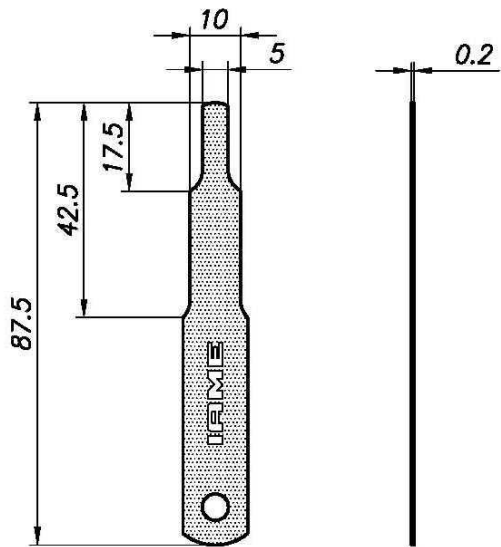


**NO GO GAUGES**  
**OUTILS N'ENTRE PAS DANS**

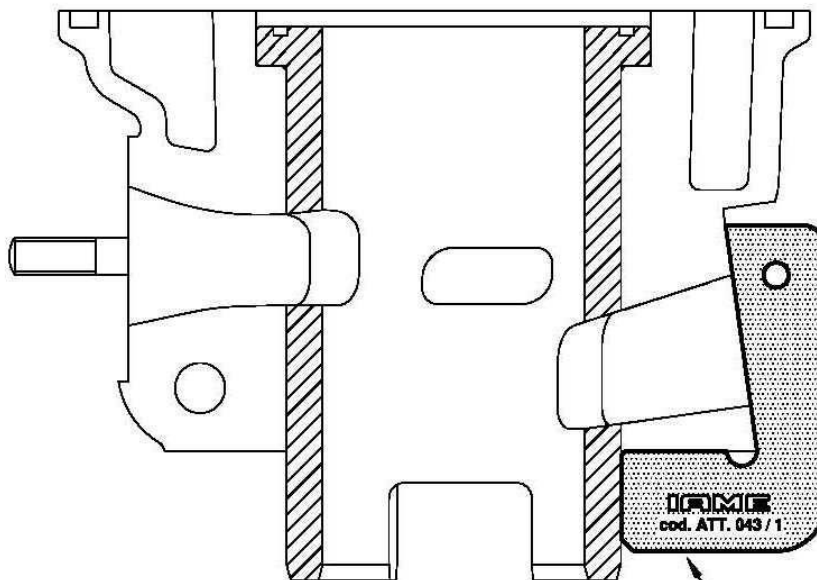


**CONTROL GAUGES  
OUTILS DE CONTROL**

**TOOL IAME Cod. 10194**

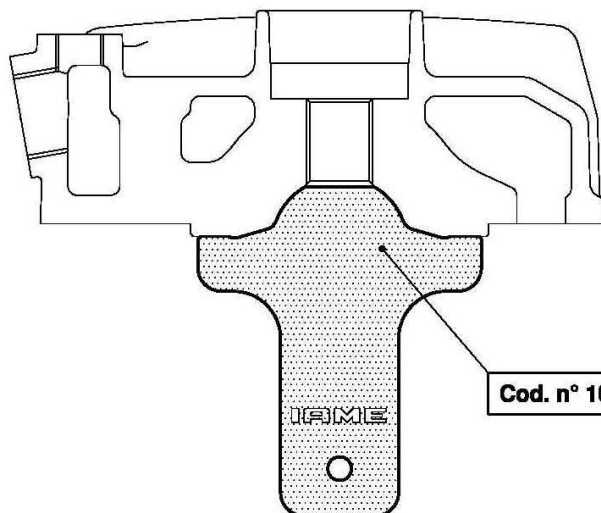


**cod. n° ATT. 020**

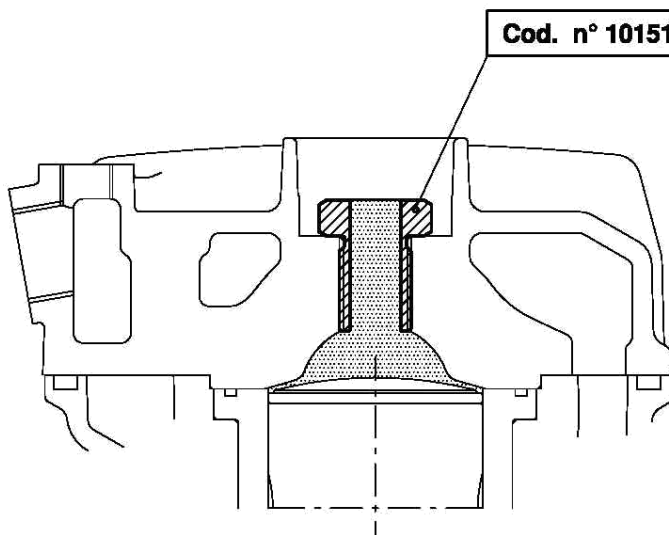


**cod. n° ATT. 043 / 1**

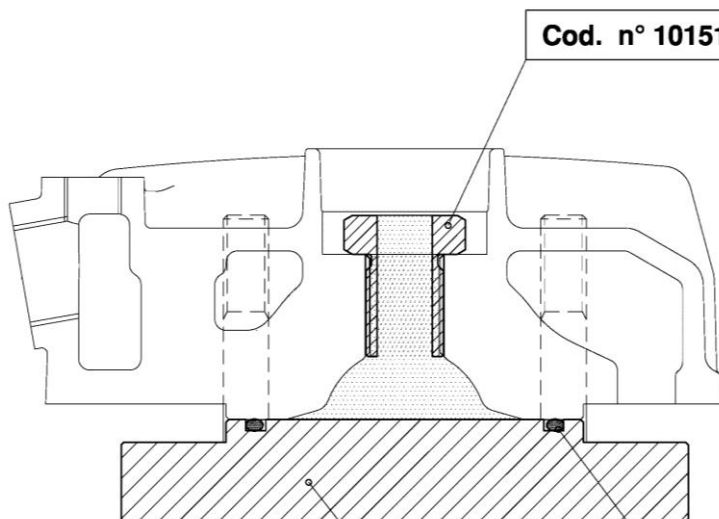
**CONTROL GAUGES**  
**OUTILS DE CONTROL**



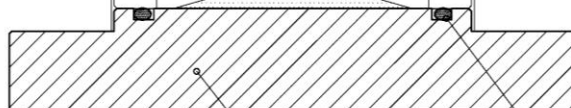
Cod. n° 10215



Cod. n° 10151



Cod. n° 10151





Cod. n° 10276

( OR - 3193 )

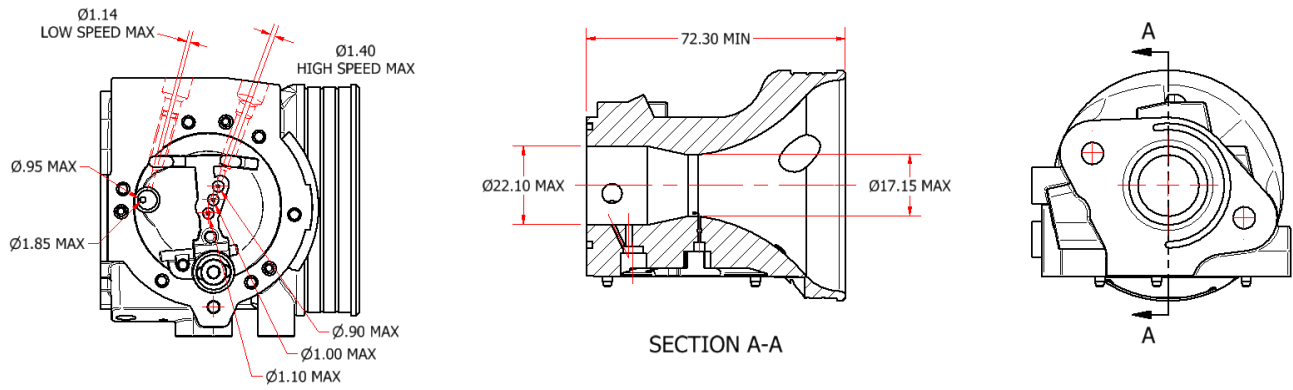


**CARBURETTOR**  
**Tillotson HW-31A**

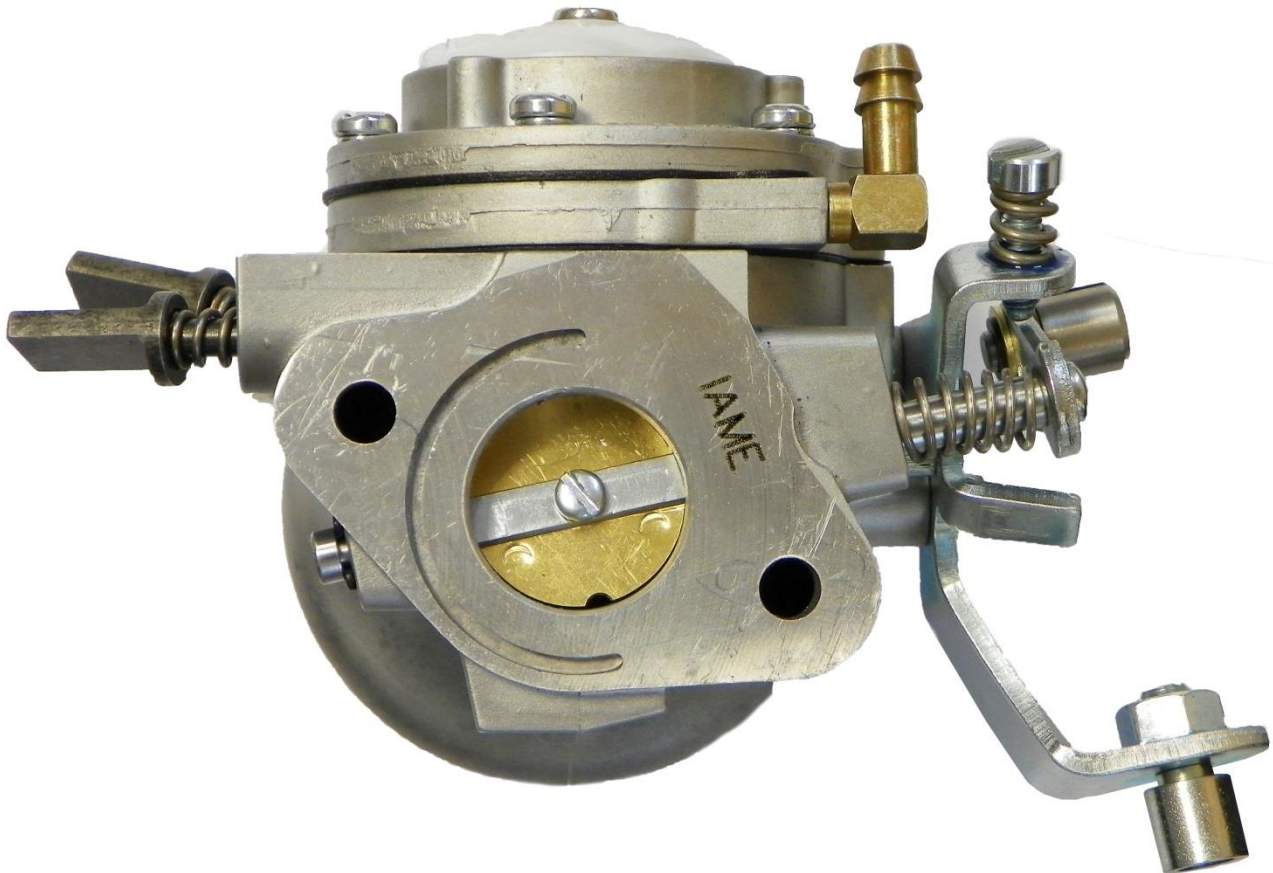
	
<p>PHOTO OF ADJUSTING SIDE</p>	<p>PHOTO OF INLET SIDE</p>

<p>Manufacturer</p>	<p><b>TILLOTSON LTD.</b></p>
<p>Make</p>	<p><b>TILLOTSON</b></p>
<p>Model</p>	<p><b>HW-31A</b></p>

## SECTION VIEW



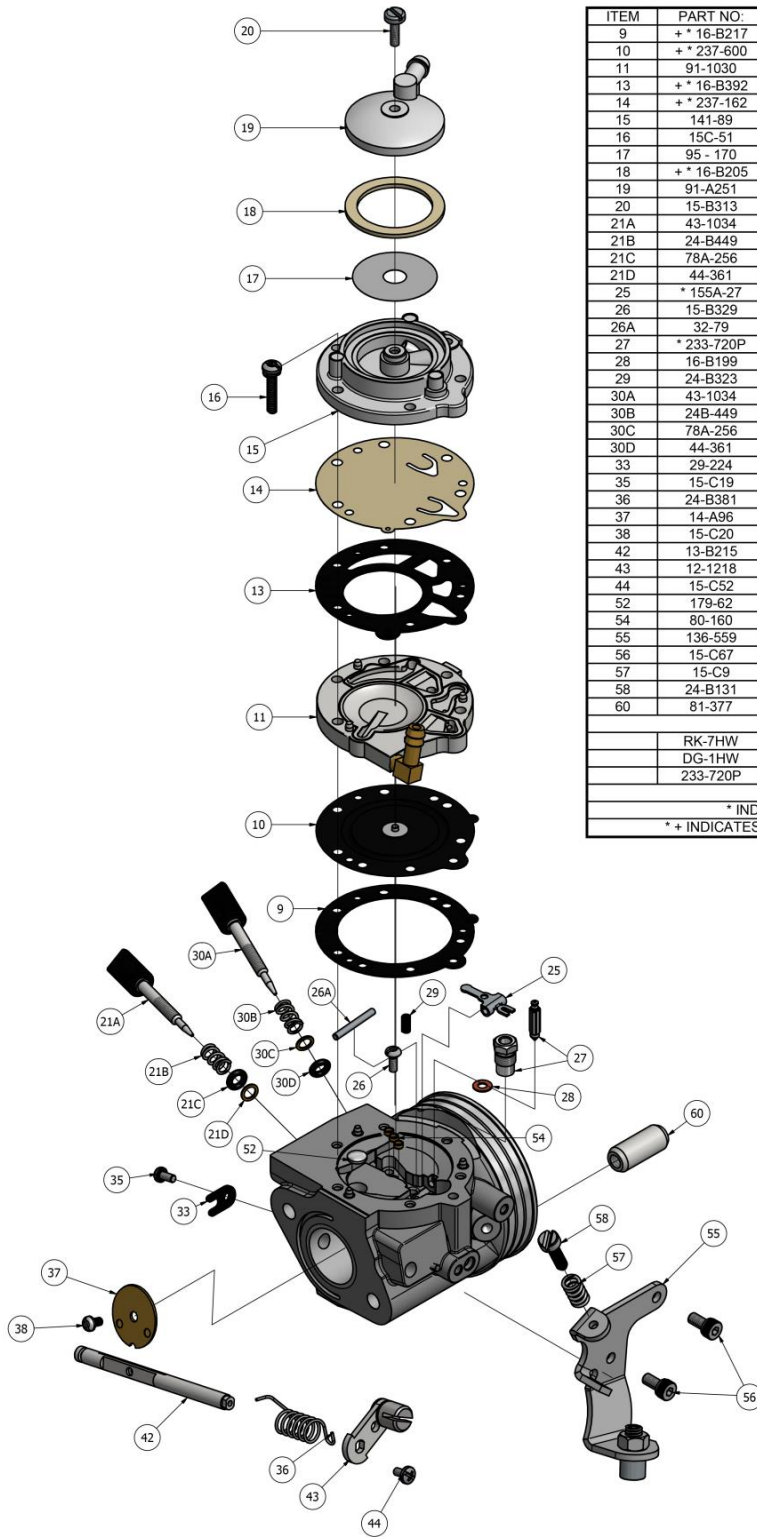
## "IAME" MARKING





# CARBURETTOR DESCRIPTION AND SKETCH OF PARTS

## 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			

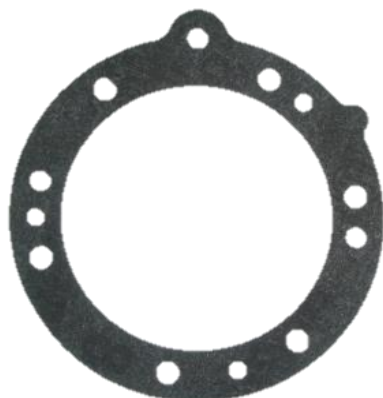
**Tillotson**  
RACING

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

**IAME**

PARTS OF CARBURETTOR

REF.9 - P. N°16-B217  
DIAPHRAGM GASKET



Thickness =  $0.5 \pm 0.1$  mm

PUMP DIAPHRAGM GASKET  
REF.13 - P. N° 16-B392



Thickness =  $0.8 \pm 0.1$  mm

REF.10 - P. N°237-600  
DIAPHRAGM



Thickness =  $0.13 \pm 0.07$  mm

REF.14 - P. N°237-162  
PUMP DIAPHRAGM



Thickness =  $0.10 \pm 0.063$  mm

REF.11 - P. N° 91-1031  
DIAPHRAGM COVER



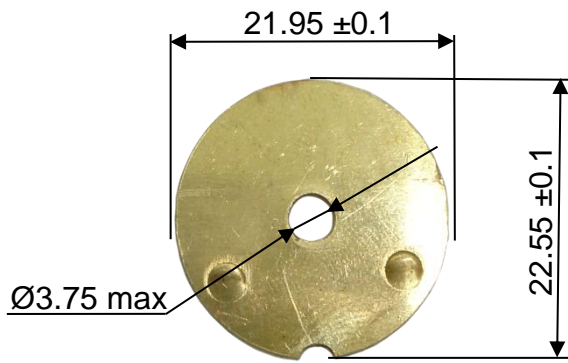
Thickness =  $6.75 \pm 0.15$  mm

REF.15 - P. N° 141-89  
PUMP COVER



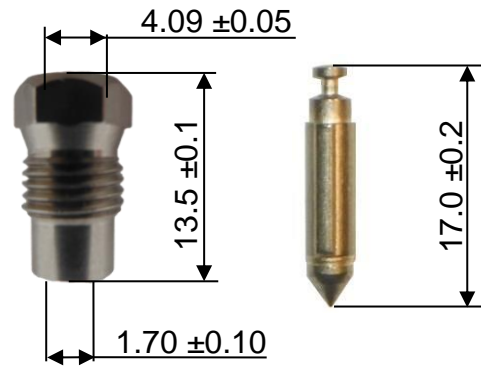
Thickness =  $12.5 \pm 0.15$  mm

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

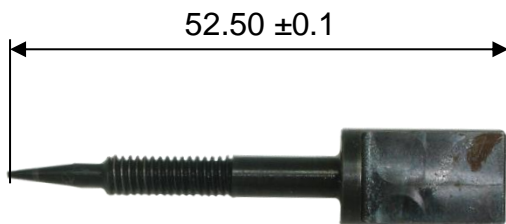


Thickness = 0.81 ±0.1 mm

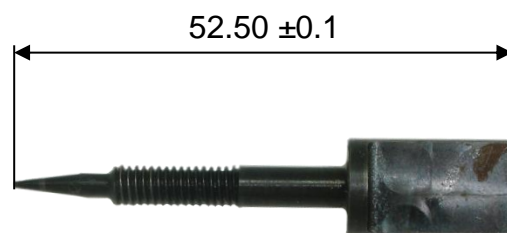
REF.27 - P. N° 233-720P  
SEAT + NEEDLE



REF.21A - P. N° 43-1034  
NEEDLE LOW SPEED

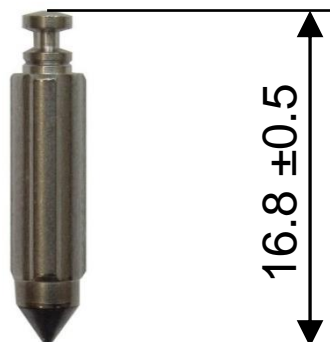


REF.30A - P. N° 43-1034  
NEEDLE HIGH SPEED



NEEDLE FUEL ALTERNATIVE

REF.27 - P. N° 233-720P



INFORMATION PAGE – UPDATE COMPONENTS

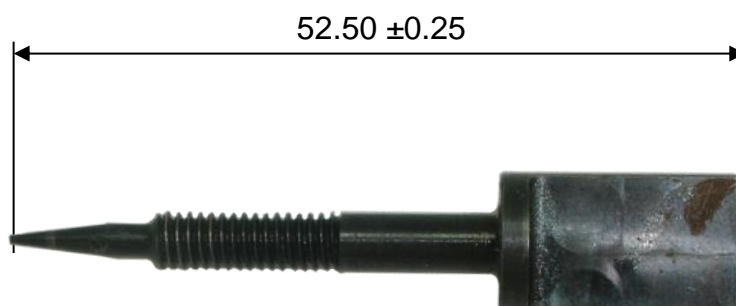


**CARBURETTOR**  
**Tillotson HW-31A**



**NEW CLEARANCE NEEDLE LOW SPEED**  
*NEW TOLLERANCE DES VIS DE RAGLAGE BAS-REGIME*

**P. N. 43-1034**



**NEW CLEARANCE NEEDLE HIGH SPEED**  
*NEW TOLLERANCE DES VIS DE RAGLAGE HAUT-REGIME*

**P. N. 43-1034**

