
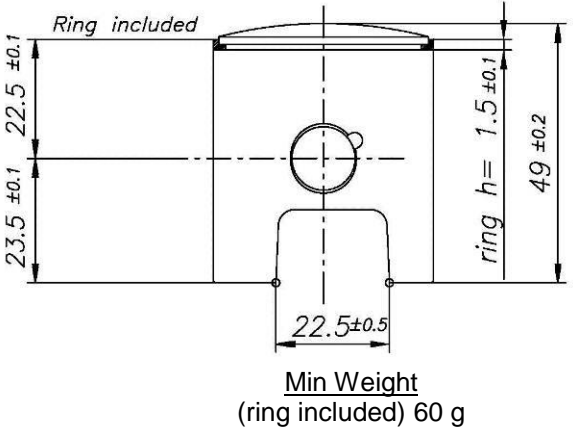
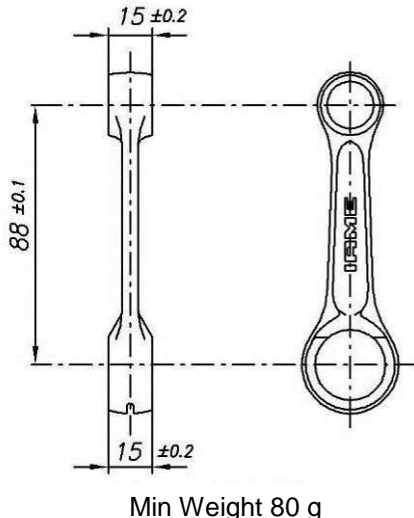
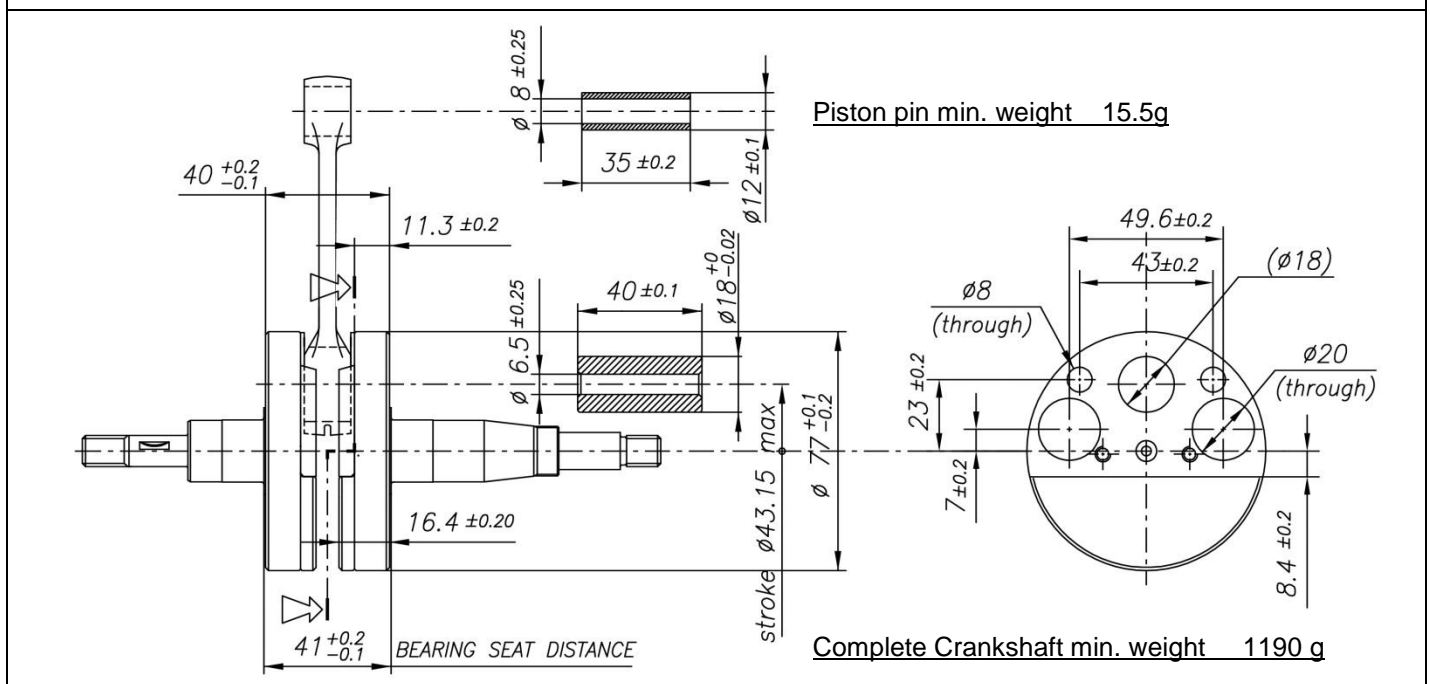


# 60cc Mini Swift USA - TaG

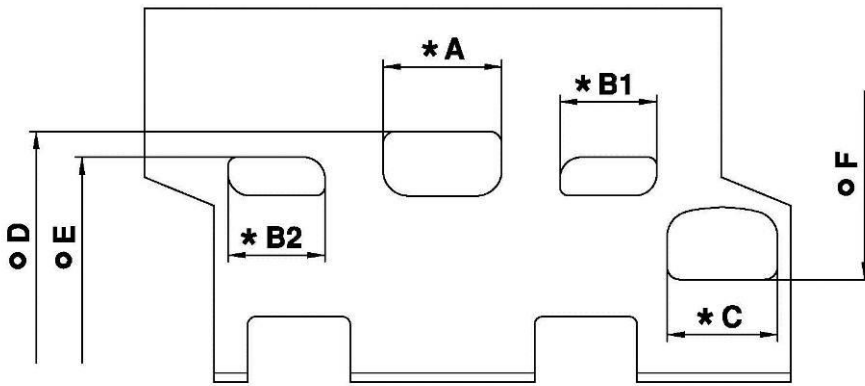
		FEATURES	
		Cylinder Volume	60.00 cm <sup>3</sup> max
		Bore	41.80 mm
		Max. theoretical bore	42.07 mm
		Stroke	43.15 mm max
		Cooling system	Air
		Inlet system	Piston valve
		Number of carbs	1
Tillotson Carburettor	<b>HW-31A</b> (Venturi Ø17mm)	Cylinder / crankcase transfers n°	2 / 2
Number of piston rings	1	Inlet / exhaust ports number	1 / 1
Big end conr. ball-bearing diam.	18x24x15	Combustion chamber shape	Spherical
Crankshaft ball-bearing diam.	20x47x14	Selettra ignition (adjustable)	Analogue 2 Poles
Small end conr. ball-bearing diam.	12x16x16	Distance between Conrod centers	88 mm

DESCRIPTION OF THE MATERIAL		PISTON	
Conrod material	Steel	 <p>Min Weight (ring included) 60 g</p>	
Crankshaft material	Steel		
Head Material	Aluminum		
Cylinder Material	Aluminum		
Liner material	Cast Iron		DISTANCE BETWEEN CONROD CENTERS
Crankcase material	Aluminum		 <p>Min Weight 80 g</p>
Piston material	Aluminum		
Piston rings material	Cast Iron		
Exhaust muffler material	Sheet-steel		
Ball-bearings	6204 type		

### CRANKSHAFT



# CYLINDER DEVELOPMENT

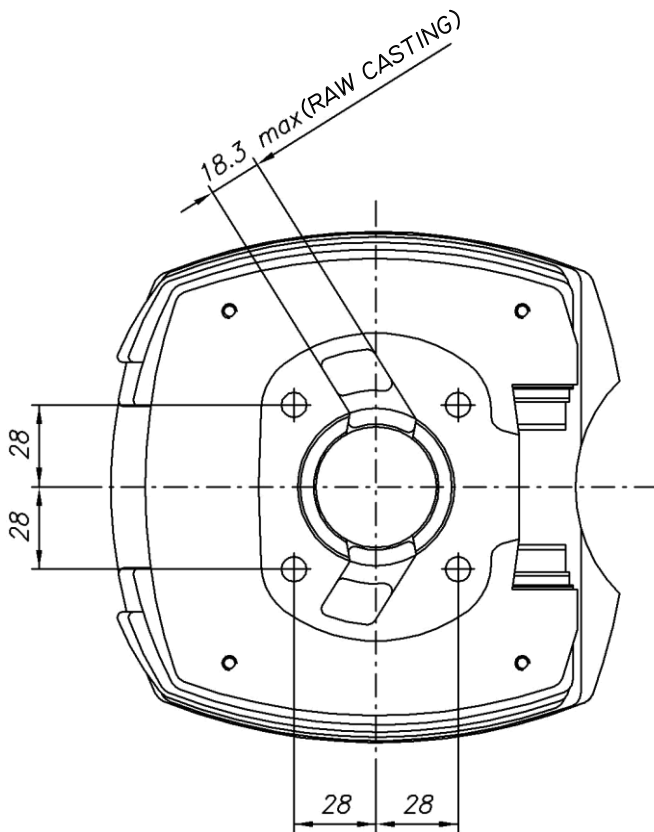


A	$\leq 28.5$ mm
B1 = B2	$\leq 22.3$ mm
C	$\leq 26.5$ mm
D	$155.5^\circ \pm 2^\circ$
E	$115.5^\circ \pm 2^\circ$
F	$143.0^\circ \pm 2^\circ$

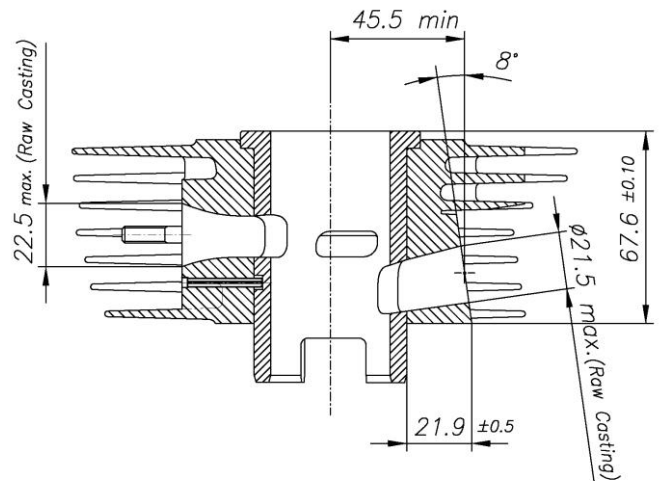
\* CHORDAL READING

o ANGULAR READING BY INSERT A 0.2x5 mm GAUGE

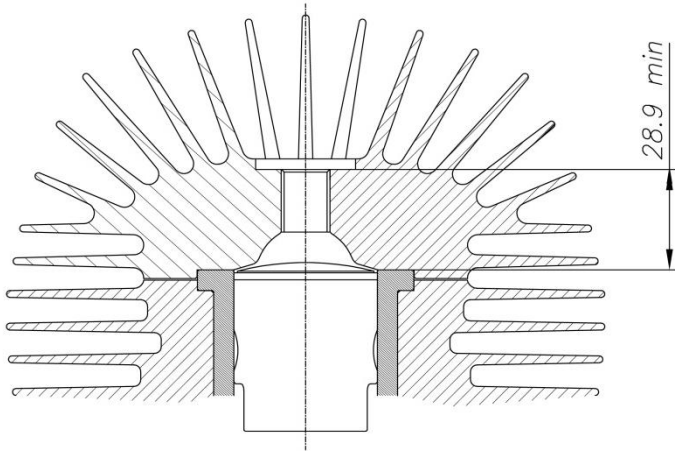
## CYLINDER BASE VIEW



## CYLINDER SECTION VIEW

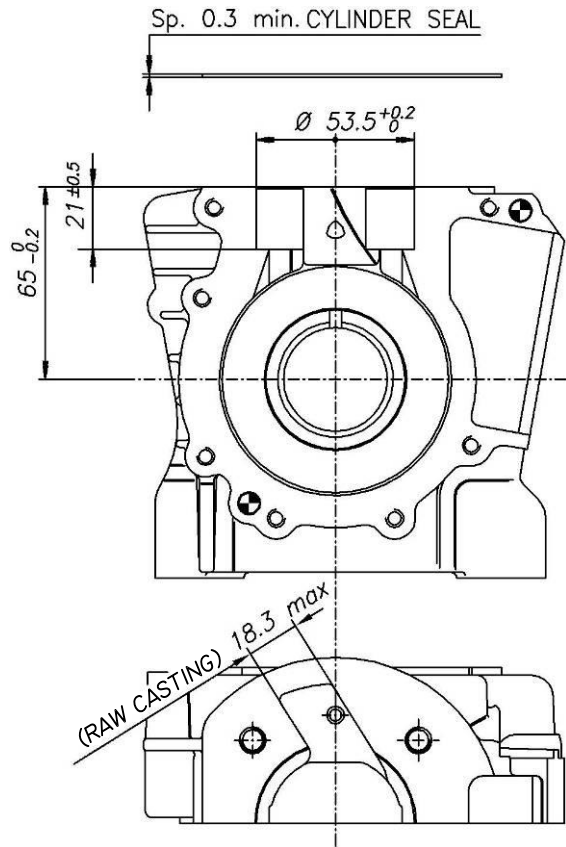


COMBUSTION CHAMBER VIEW

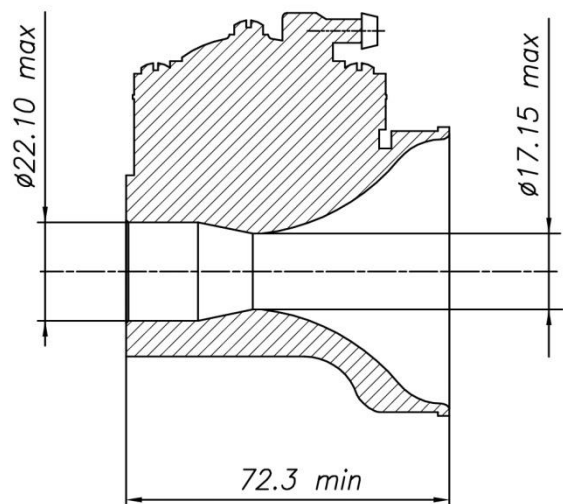
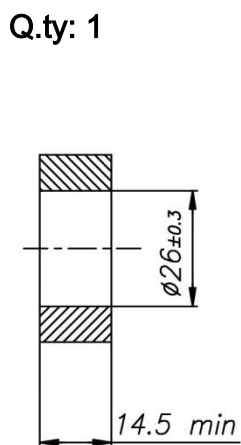
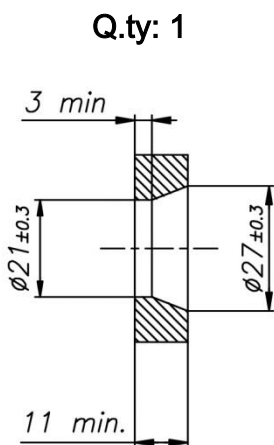


**SQUISH MIN.= 0.025" (0.635 mm)**  
 (measured with 0.0625" (1/16") / Ø1.6mm solder)

CRANKCASE INSIDE VIEW



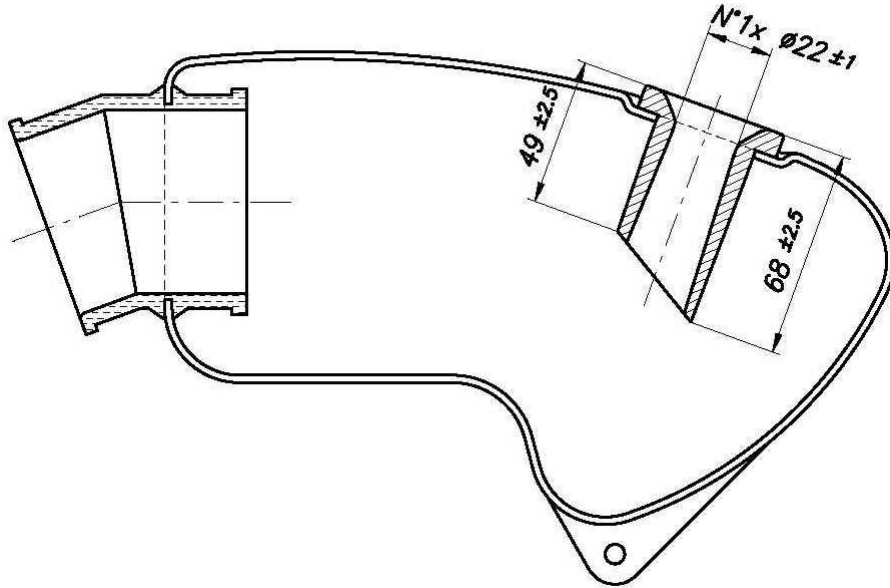
VENTURI CARB. DIMENSIONS and THERMAL SPACERS



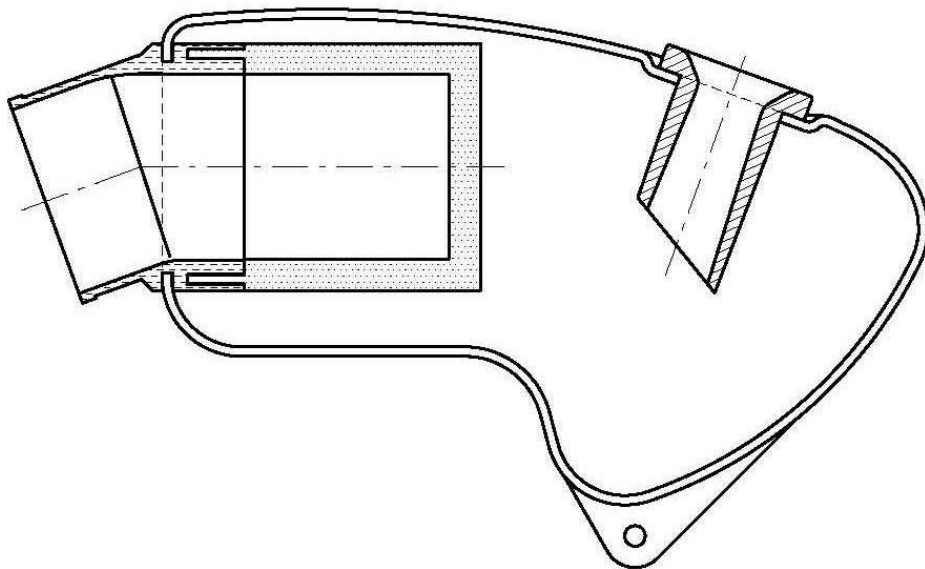
TILLOTSON MOD. HW-31A

INLET SILENCER

( CSAI OMOLOGATION N° 01/SA/14 )

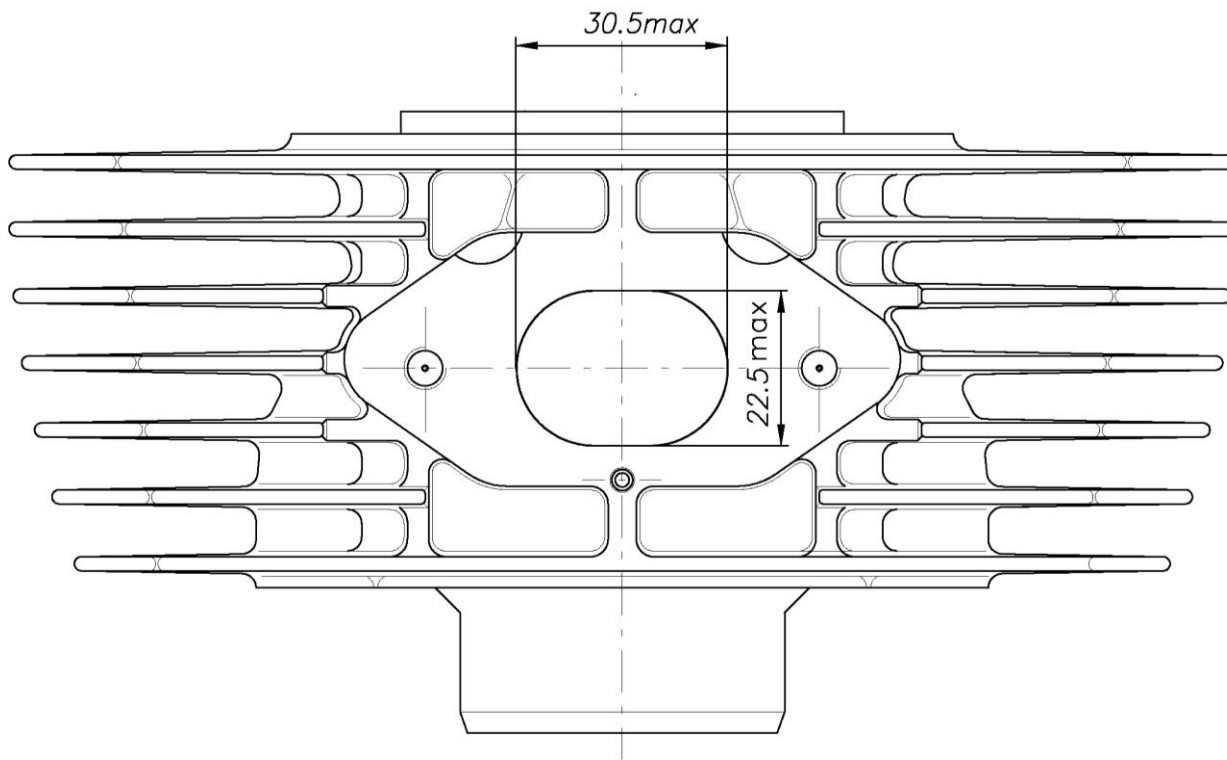


INLET SILENCER ALTERNATIVE MANIFOLD WITH SPONGE FILTER



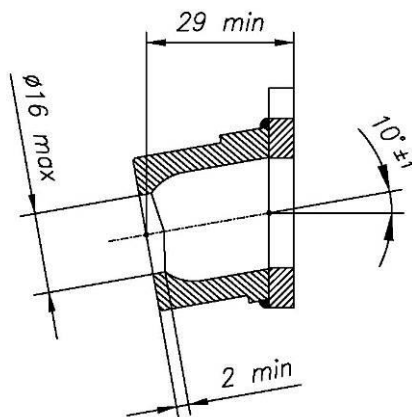
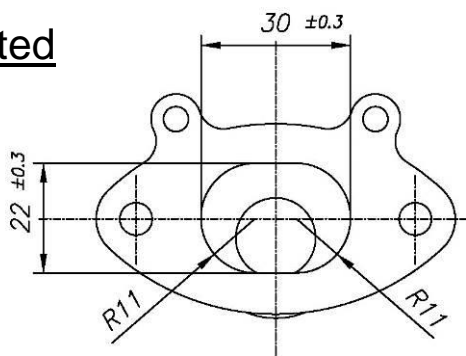


# EXHAUST EXIT VIEW AND DIMENSION

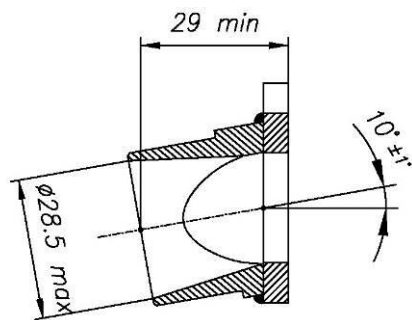
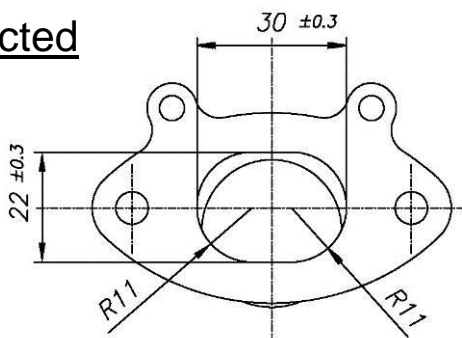


# EXHAUST FITTING

## Restricted



## Unrestricted



# WIRING DIAGRAM

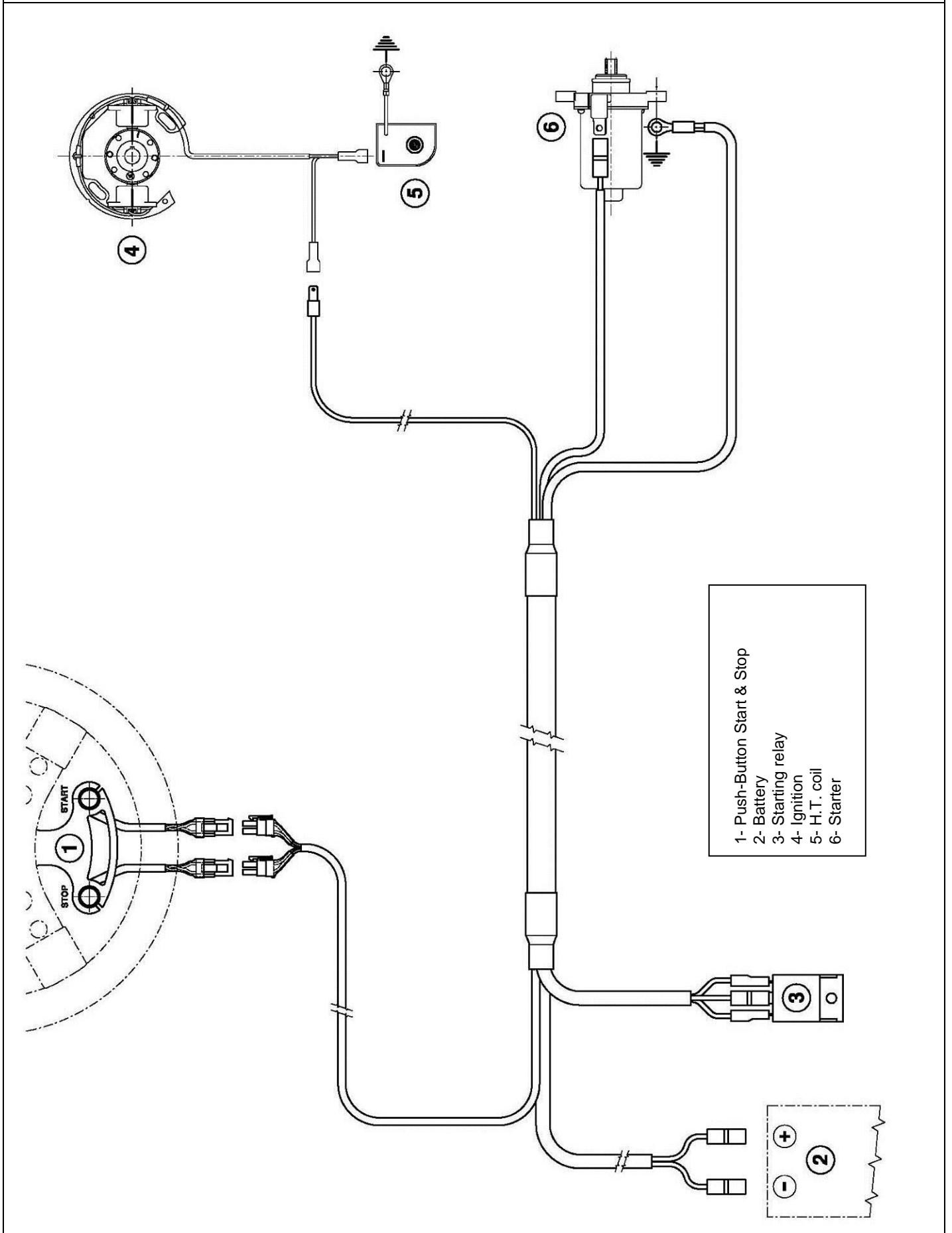




PHOTO COMPLETE WIRING

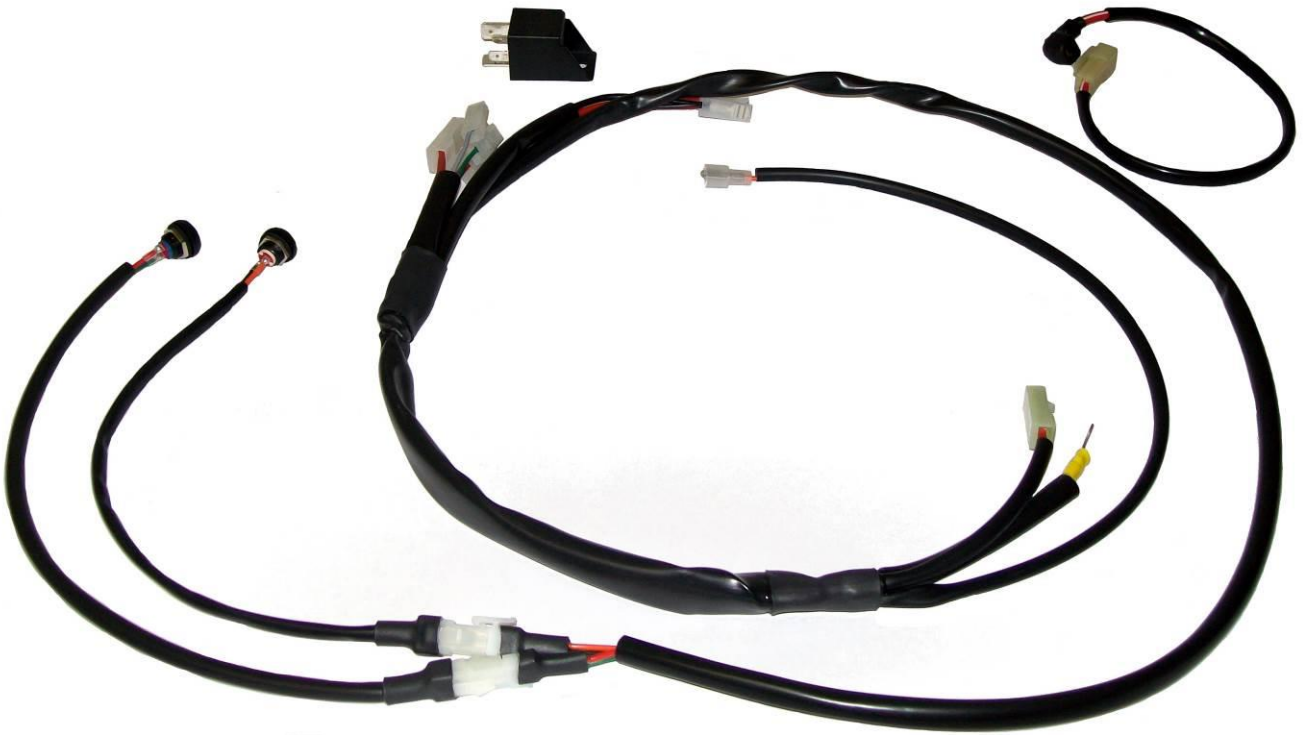
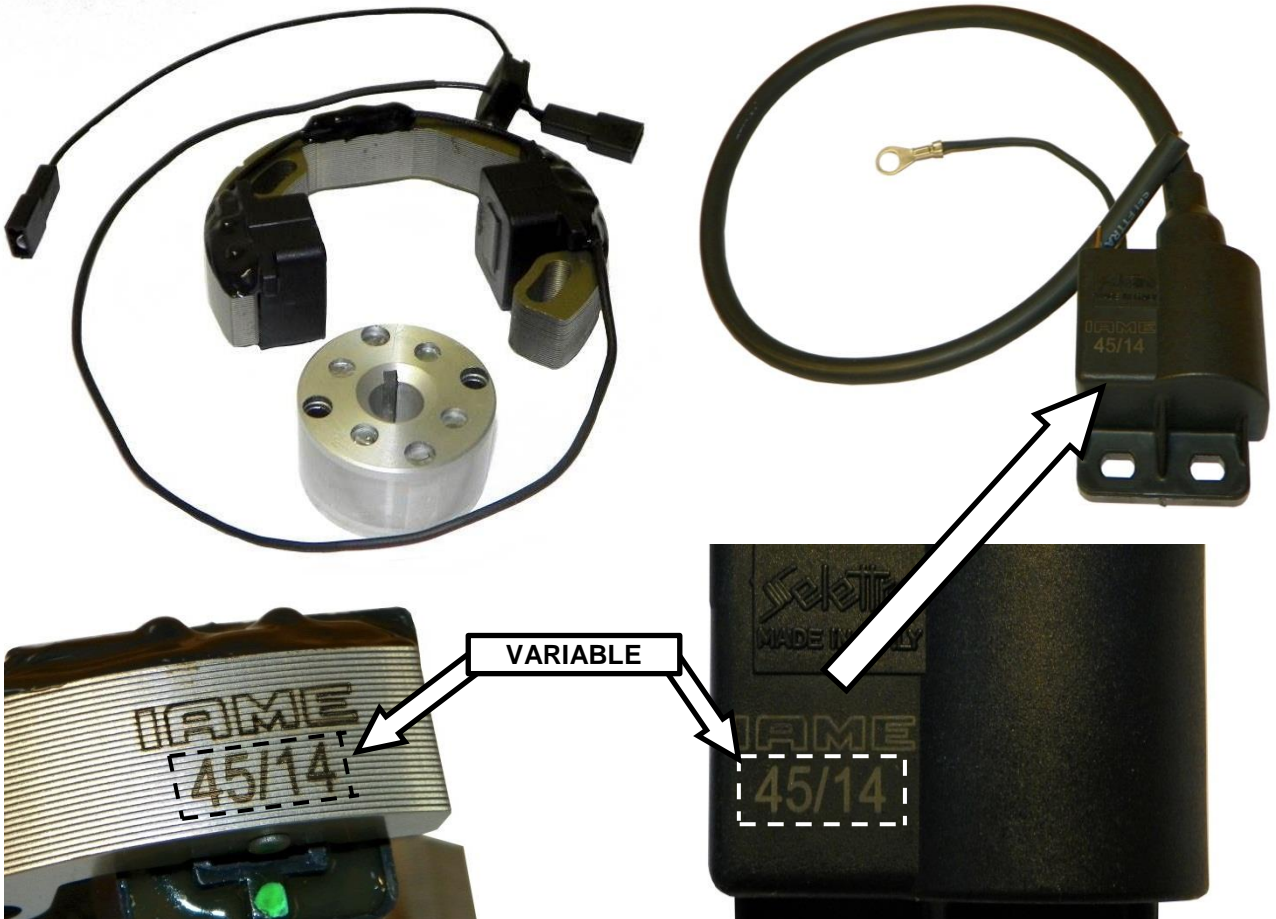
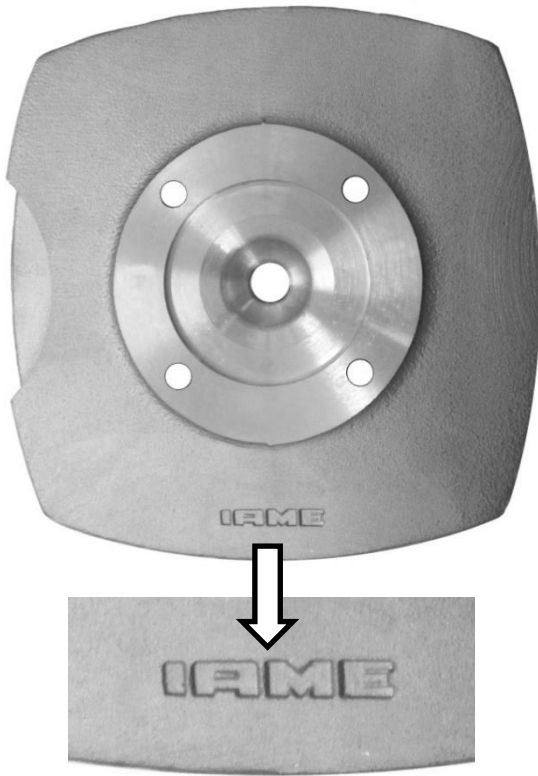


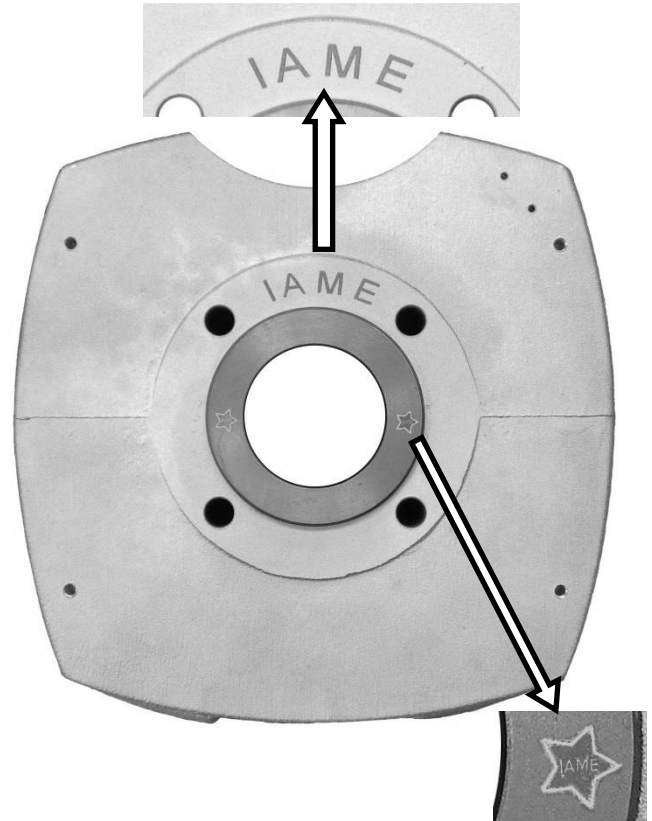
PHOTO OF IGNITION / PHOTO OF H.T. COIL ( SELETTRA ANALOGUE 2 POLES)



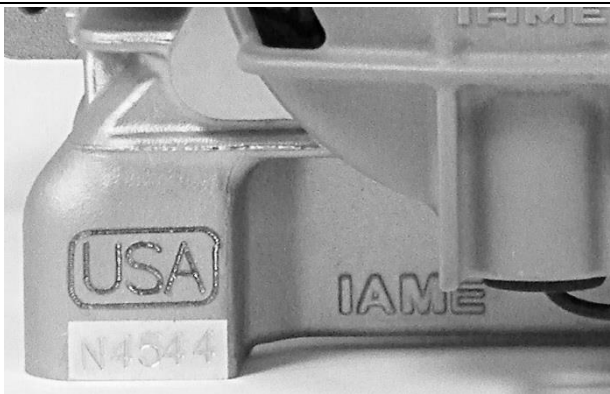
HEAD IDENTIFICATION MARKING



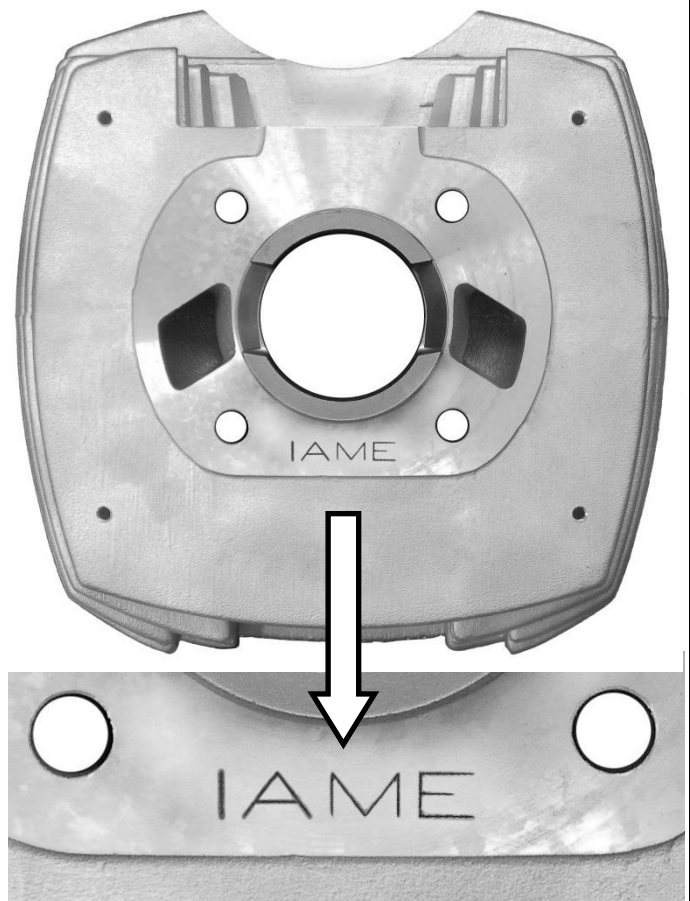
CYLINDER IDENTIFICATION UPPER MARKING



CRANKCASE IDENTIFICATION MARKING



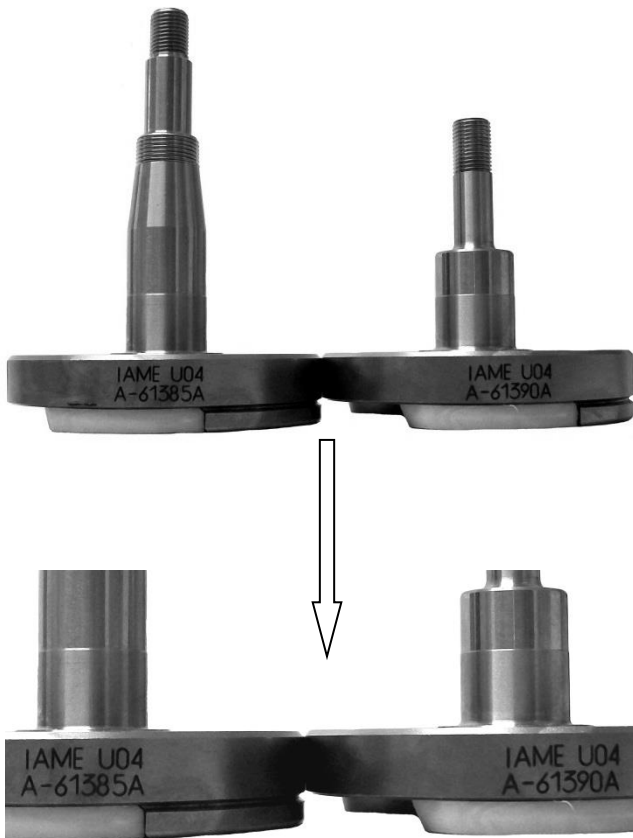
CYLINDER IDENTIFICATION LOWER MARKING



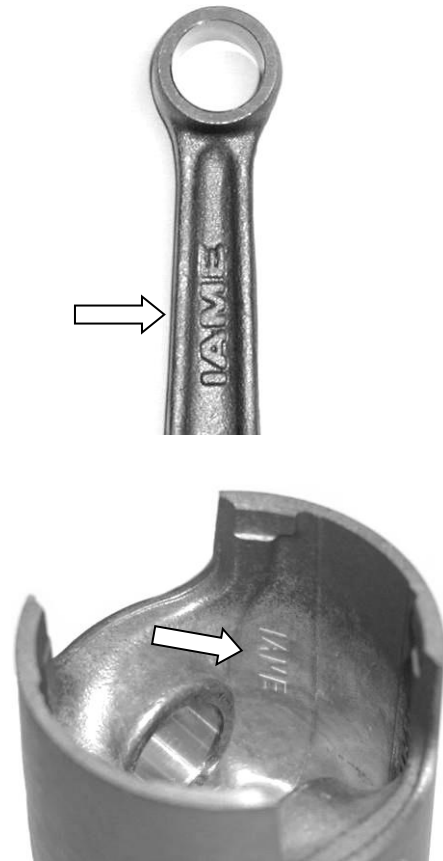
ENGINE STICKER "USA"



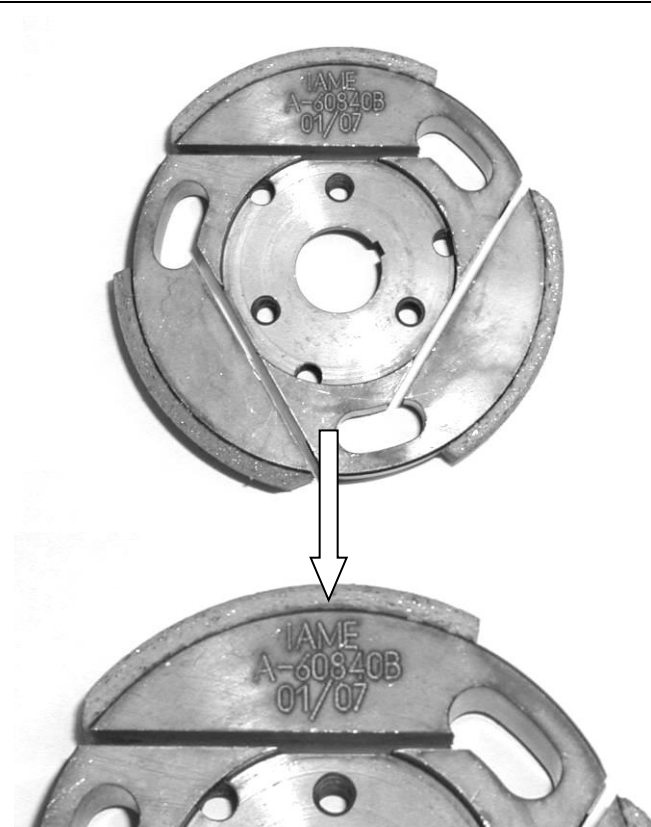
CRANKSHAFT IDENTIFICATION MARKINGS



CONROD AND PISTON IDENTIFICATION MARKINGS



CLUTCH HUB IDENTIFICATION MARKING



CLUTCH DRUM IDENTIFICATION MARKING



CRANKSHAFT PHOTOS

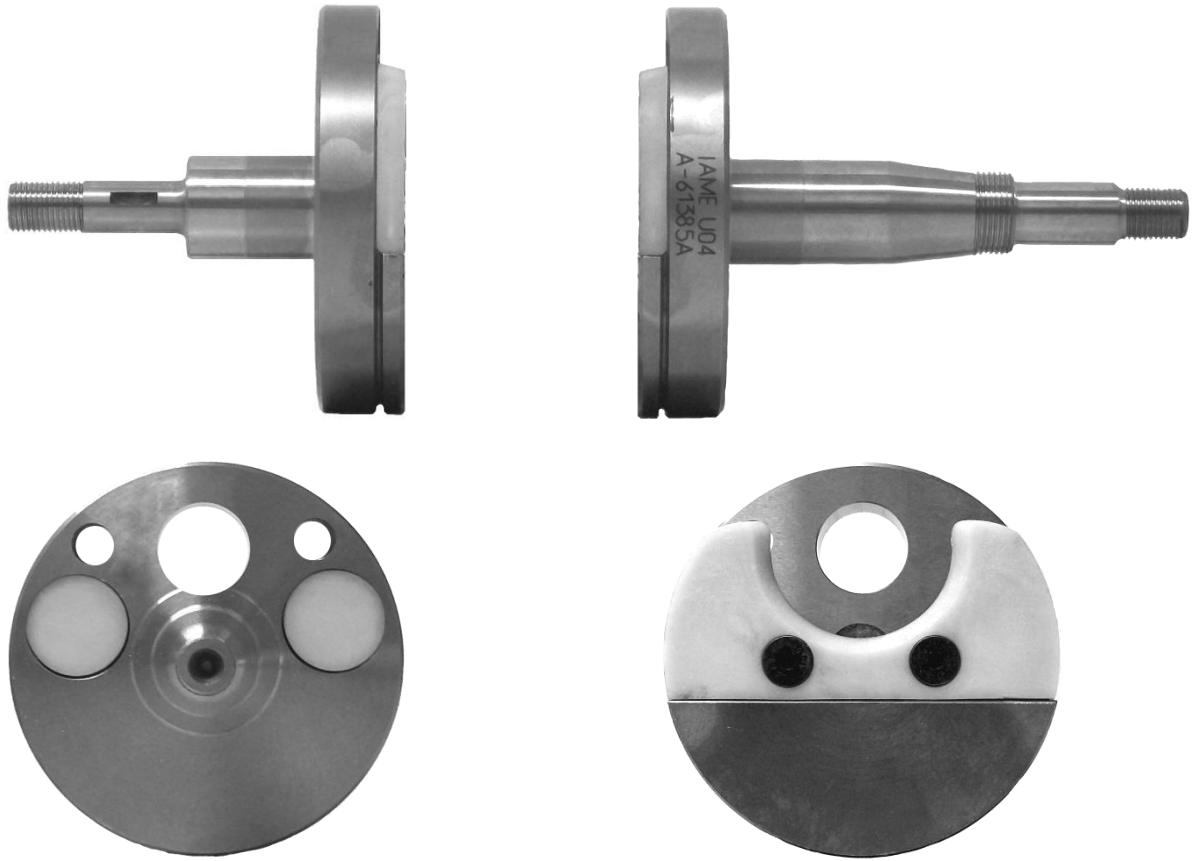




PHOTO OF COMPLETE CRANKSHAFT

EXHAUST IDENTIFICATION MARKING



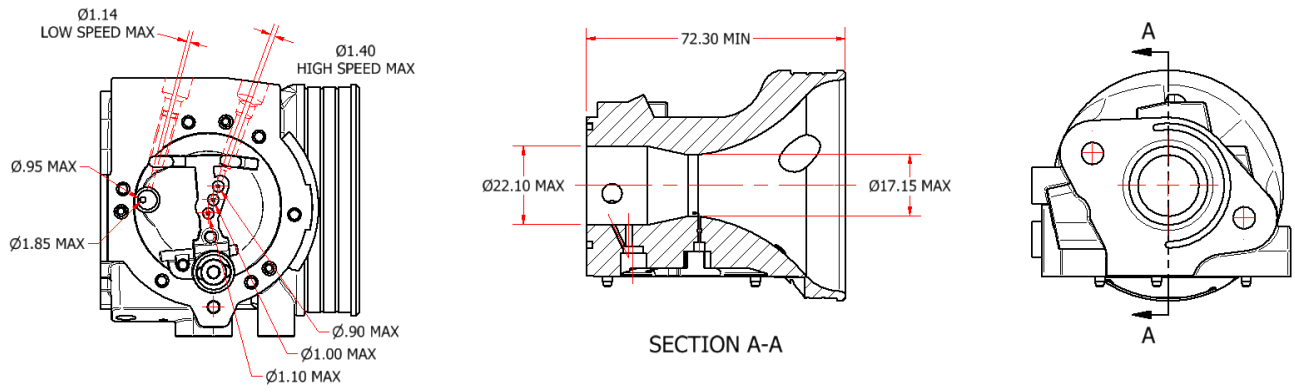


**CARBURETTOR**  
**Tillotson HW-31A**

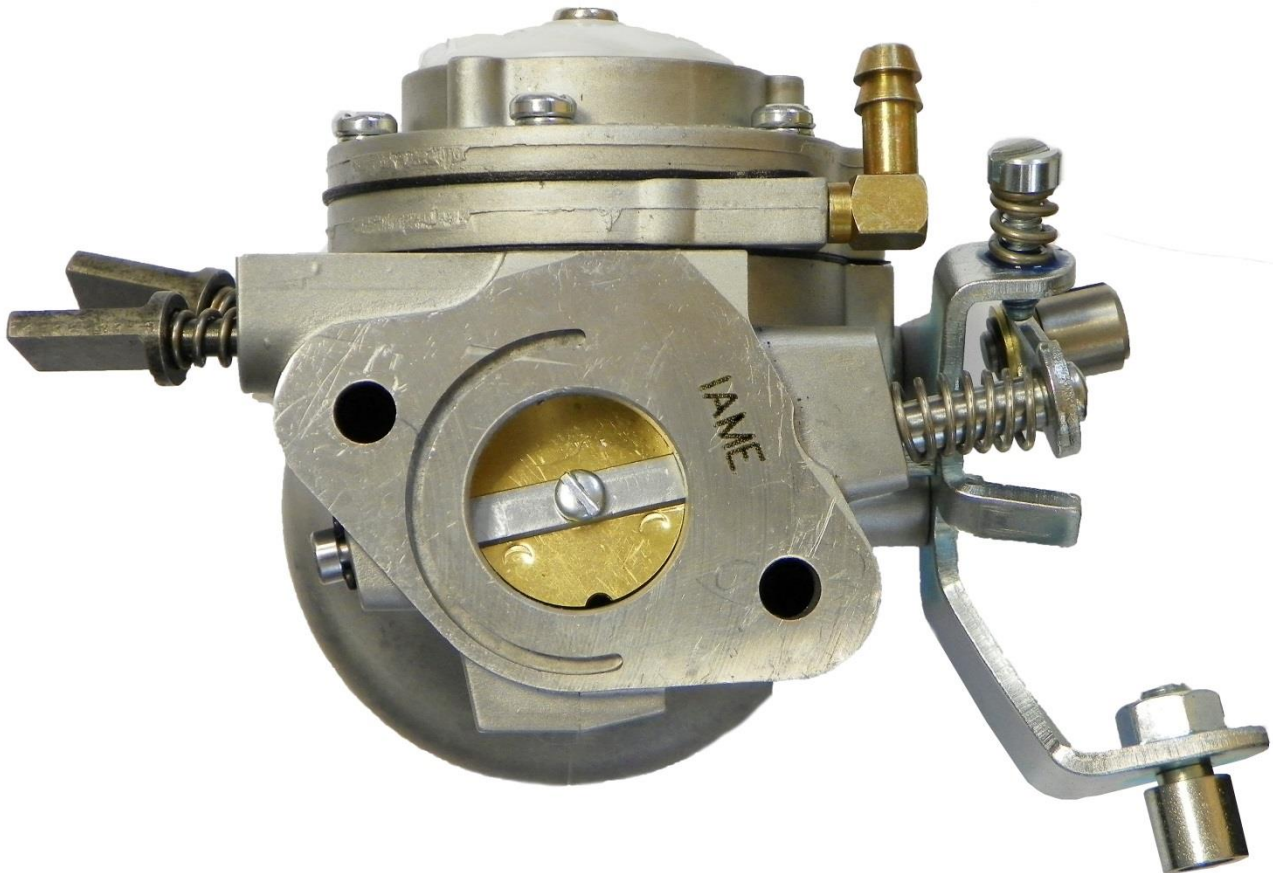
	
<p>PHOTO OF ADJUSTING SIDE</p>	<p>PHOTO OF INLET SIDE</p>

<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

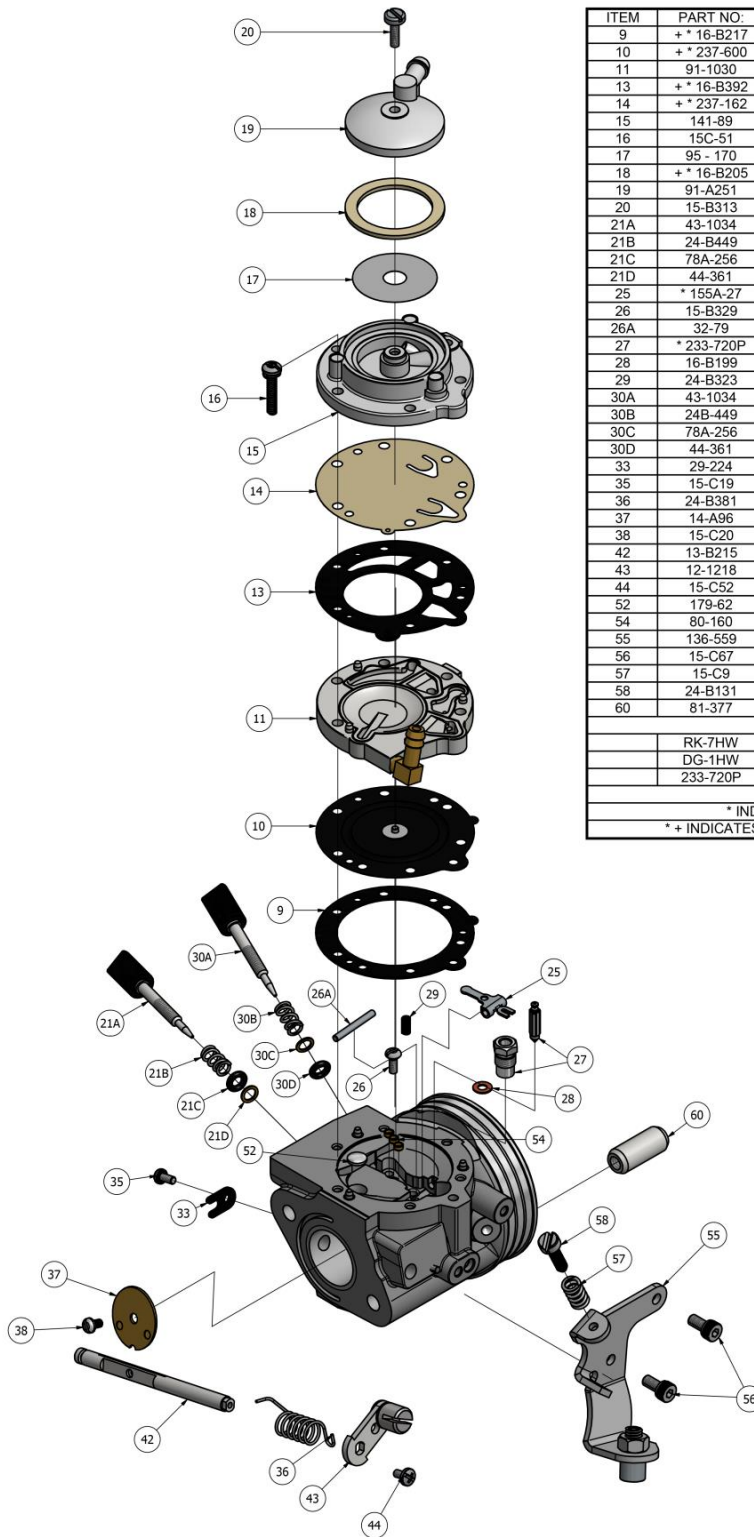


## "IAME" MARKING



# 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			



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



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

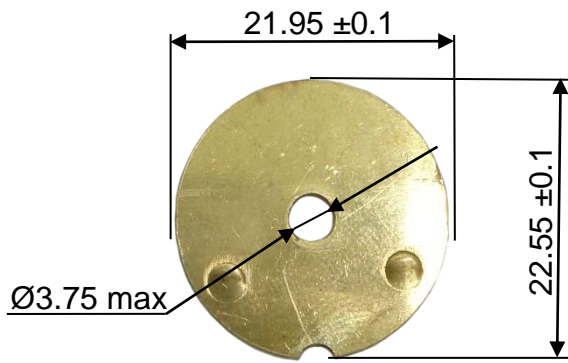
REF.15 - P. N° 141-89  
PUMP COVER



Thickness =  $12.5 \pm 0.15$  mm

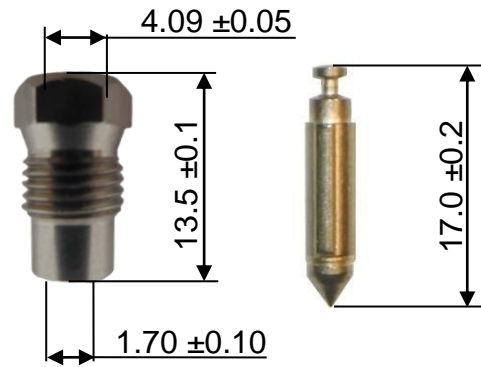


REF.37 - P. N° 14-A96  
THROTTLE SHUTTER

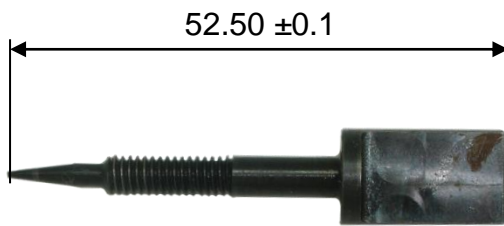


Thickness =  $0.81 \pm 0.1$  mm

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

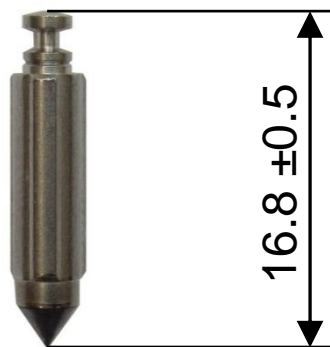


PHOTO IDENTIFICATION OF CONROD – TYPES ALTERNATIVE

TYPE 1



TYPE 2



PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

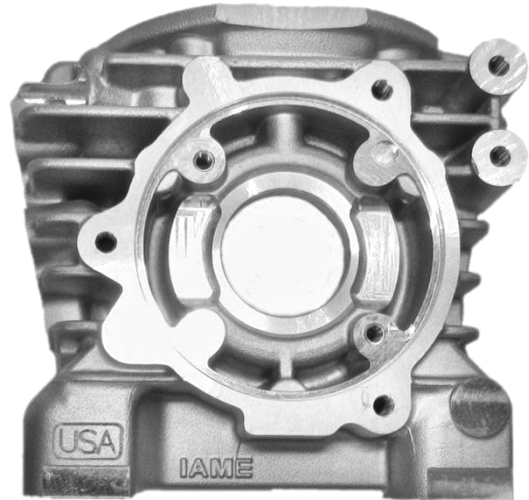
CYLINDER HEAD



**NEW LOGO**



SEMICARTER IGNITION SIDE



**NEW LOGO**



SEMICARTER TRANSMISSION SIDE



**NEW LOGO**



PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

IGNITION COVER



NEW LOGO



CLUTCH COVER



NEW LOGO



INLET FILTER



NEW LOGO



EXHAUST



NEW LOGO



PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

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

I A M E

or

**IAME**

**NOW COULD BE MARKED WITH NEW LOGO "IAME"**

I a m e

or

ⓐ I a m e

or

ⓐ