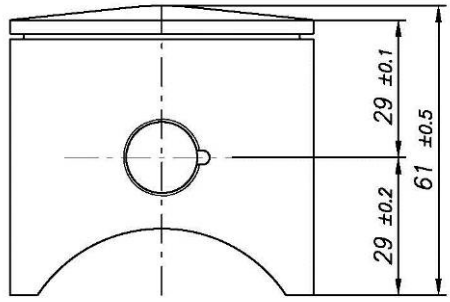
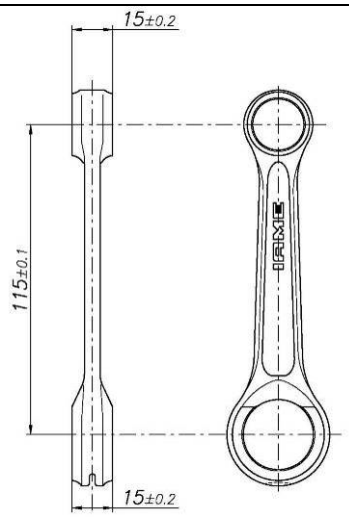
X30 SUPER SHIFTER 175CC TAG (TILLOTSON EQUIPPED)

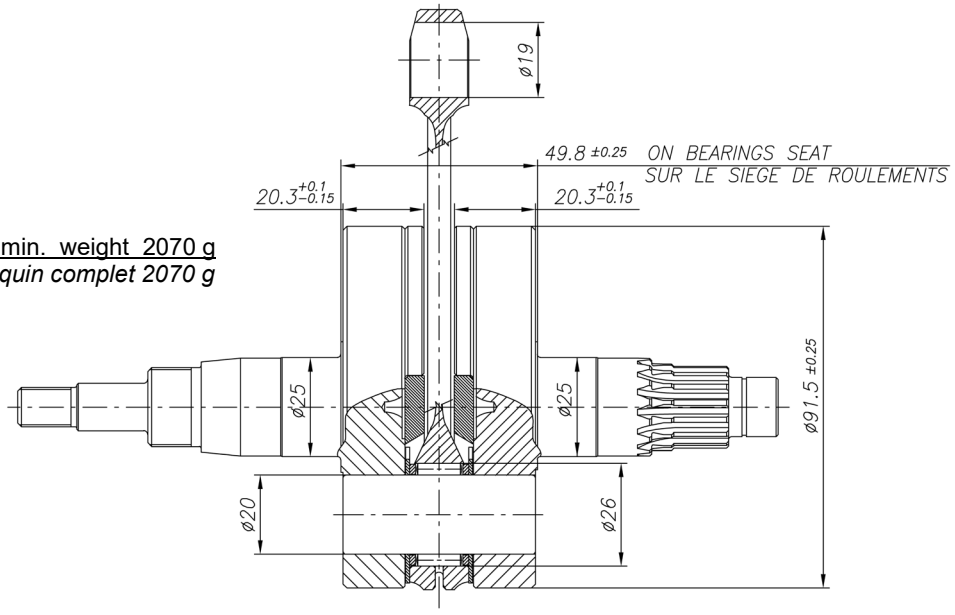
FEATURES - *CARACTERISTIQUES*	
Cylinder volume *Volume du cylindre*	174.46 cm³ **(Max 176.6 cm³)**
Bore *Alésage*	63.90 mm
Max. theoretical bore *Alésage théorique max.*	64.26 mm
Stroke *Course*	54.40 mm
Distance between conrod centers *Longueur (entre axe) de la bielle*	115 mm

Carburettor *Tillotson* *Carburateur Tillotson*	HB-15A (Ø34mm)	Cooling system *Système de refroidissement*	Water *Eau*
Number of piston rings *Nombre de segments*	1	Inlet system *Système d' admission*	Reed valve *À clapets*
Big end conr. bearing diam. *Diamètre palier tête de bielle*	20x26x15	Cylinder / crankcase transfers n° *N° de canaux cylindre / carter*	5 / 3
Crankshaft bearing diam. *Diamètre palier du vilebrequin*	25x52x15 (2Pc.) 15x35x11 (1Pc.)	Inlet / exhaust ports number *N° lumières admiss. / échapp.*	5 / 3
Small end conr. bearing diam. *Diamètre palier pied de bielle*	15x19x20	Combustion chamber shape *Forme chambre de combustion*	Spherical *Spherique*
Electric starter *Démarreur électrique*	*Yes* *Oui*	Ignition Selettra / PVL *Allumage Selettra / PVL*	Digital “K” Digital “S” Digital 690

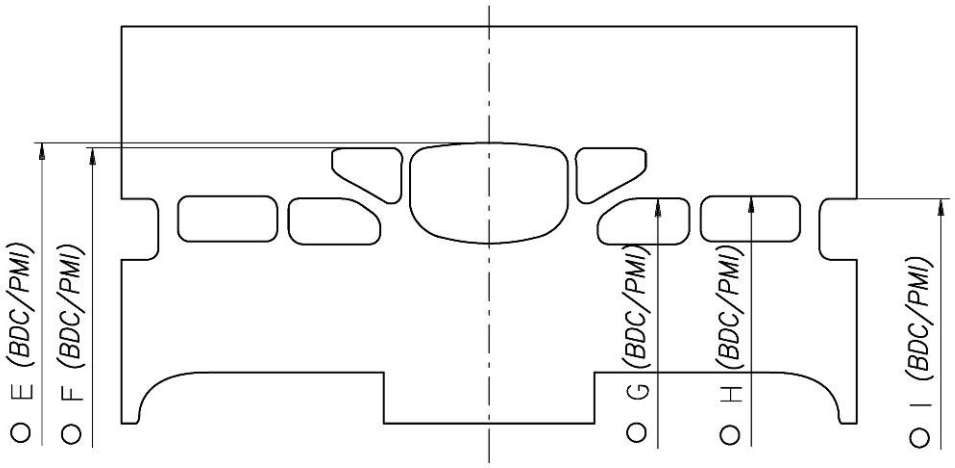
DESCRIPTION OF THE MATERIAL *DESCRIPTION DES MATERIAUX*		PISTON
Conrod material *Matériel de la bielle*	Steel *Acier*	 Piston min. weight (ring incl.) 155 g *Poids min. piston (avec segment) 155 g*
Crankshaft material *Matériel du vilebrequin*	Steel *Acier*	
Gearbox shafts material *Matériel de l'arbres de boîte de vitesses*	Steel *Acier*	
Gears material *Matériel des engrenages*	Steel *Acier*	
Starter ring material *Matériel de la couronne démarr.*	Steel / *Acier* *or / ou* Aluminium	
Head material *Matériel de la culasse*	Aluminium	DISTANCE BETWEEN CONROD CENTERS *ENTRE AXE DE LA BIELLE*
Cylinder material *Matériel du cylindre*	Aluminium	 Min. Weight 112 g Poids min. 112 g
Liner material *Matériel de la chemise*	Iron *Fonte*	
Crankcase material *Matériel du carter*	Aluminium	
Piston material *Matériel du piston*	Aluminium	
Piston rings material *Matériel des segments*	Iron *Fonte*	
Exhaust muffler material *Matériel du pot d'échappement*	Sheet-steel *Tôle acier*	

CRANKSHAFT – *VILEBREQUIN*

Complete crankshaft min. weight 2070 g
Poids min. du vilebrequin complet 2070 g



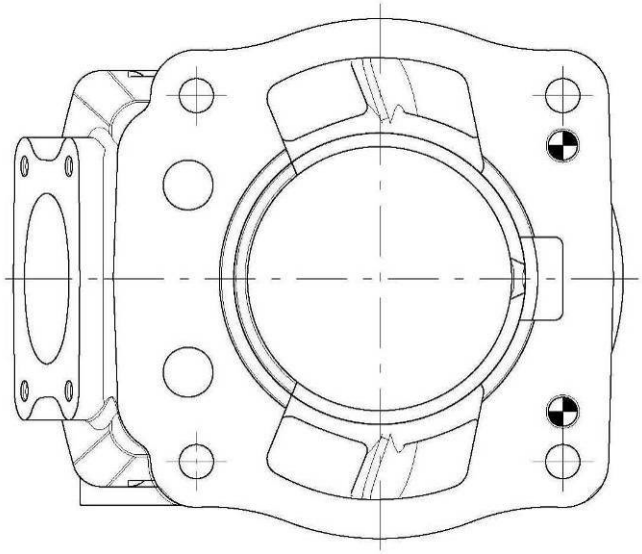
CYLINDER DEVELOPMENT - *DEVELOPPEMENT DU CYLINDRE*



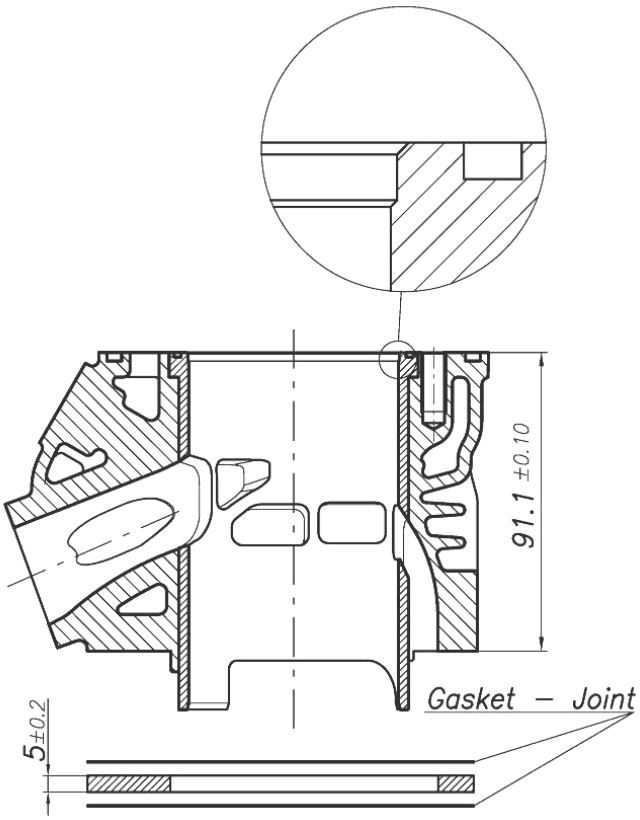
E	195° ± 2°
F	189° ± 2°
G	122.5° ± 2°
H	125.5° ± 2°
I	121° ± 3°

O ANGULAR READING BY INSERTING A 0.2x5mm GAUGE
LECTURE ANGULAIRE PAR INSERTION D'UNE CALE DE 0.2x5mm

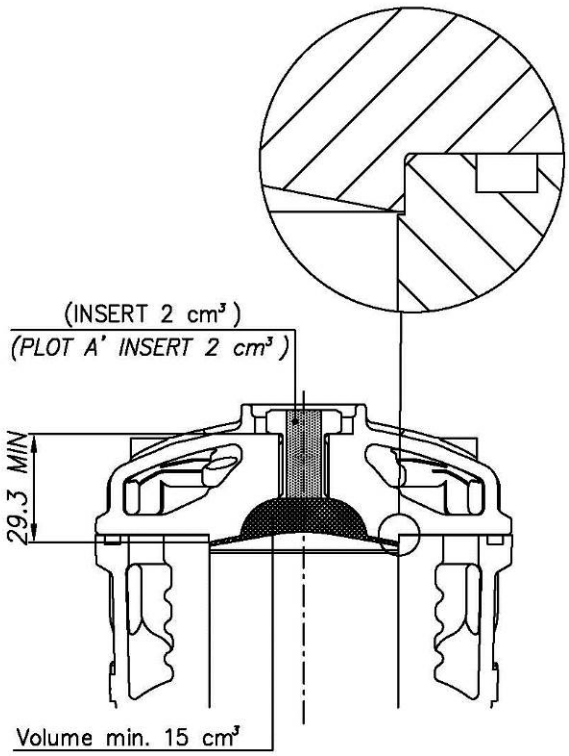
CYLINDER BASE VIEW
VUE DE LA BASE DU CYLINDRE



CYLINDER CROSS SECTION VIEW
VUE EN SECTION DU CYLINDRE



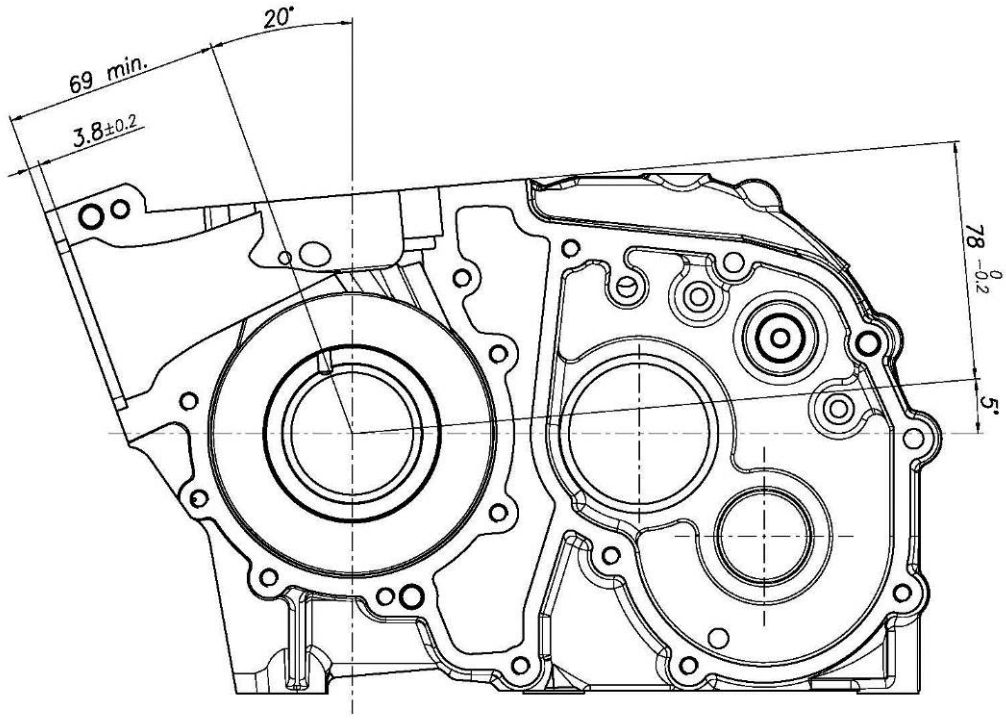
COMBUSTION CHAMBER VIEW
VUE DE LA CHAMBRE DE COMPRESSION



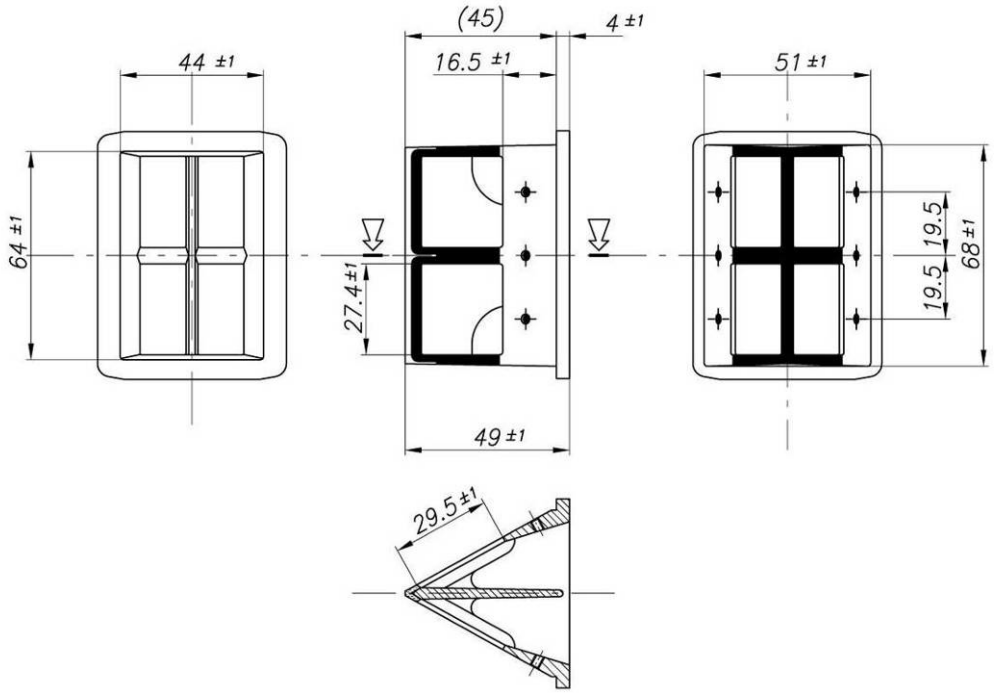
COMBUSTION CHAMBER VOLUME TOT. = 17 cm³ min.
VOLUME CHAMBRE COMBUSTION TOT. = 17 cm³ min.

SQUISH MIN. = 1 mm
(measured with Ø1.5mm TIN - *mesurée avec de l'étain Ø1.5mm)*

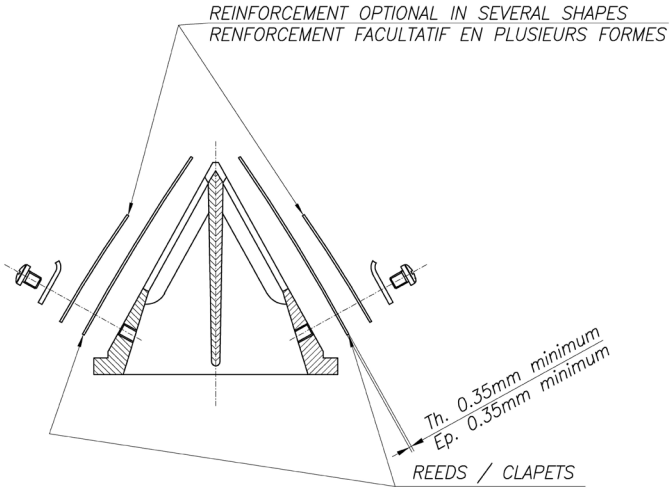
CRANKCASE INSIDE VIEW
VUE A' L' INTERIEUR DU CARTER



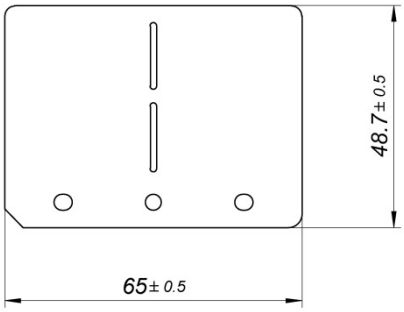
REED VALVE
BOÎTE À CLAPETS



ASSEMBLY OF REED VALVE
DESSIN D'ENSEMBLE DE LA BOÎTE À CLAPETS

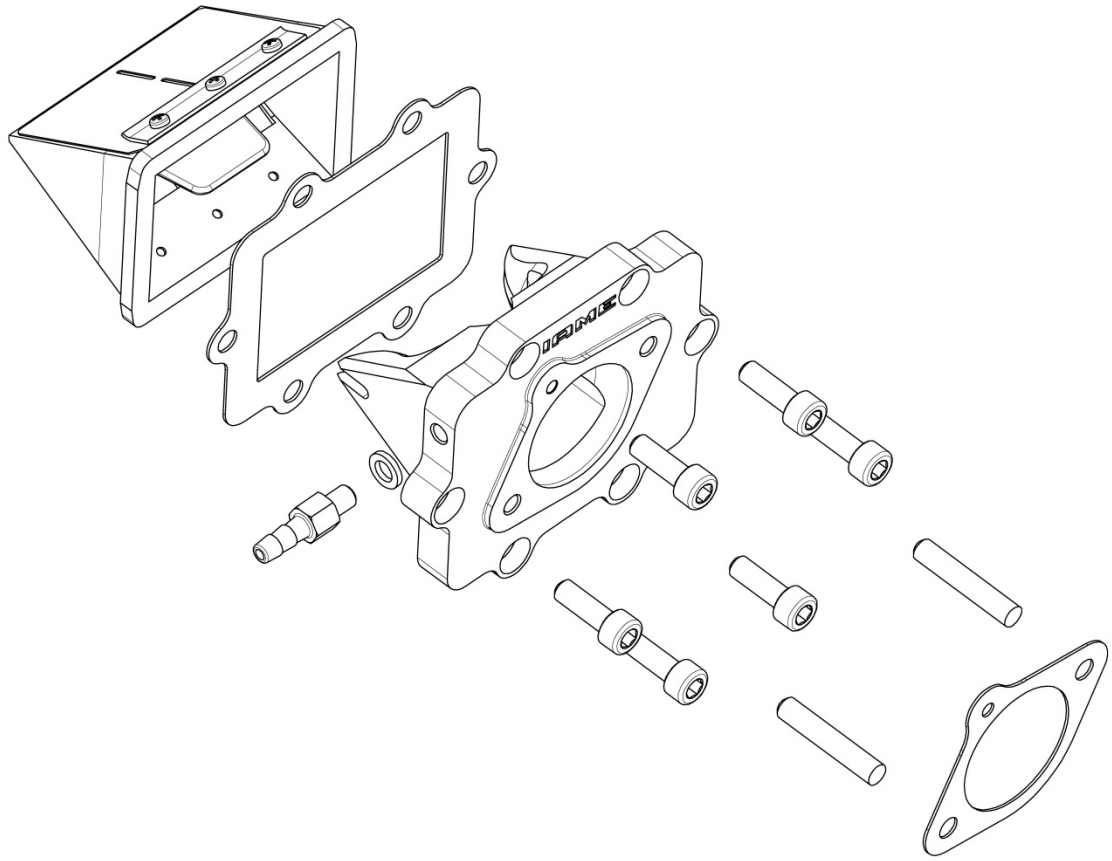


REEDS / *CLAPETS*

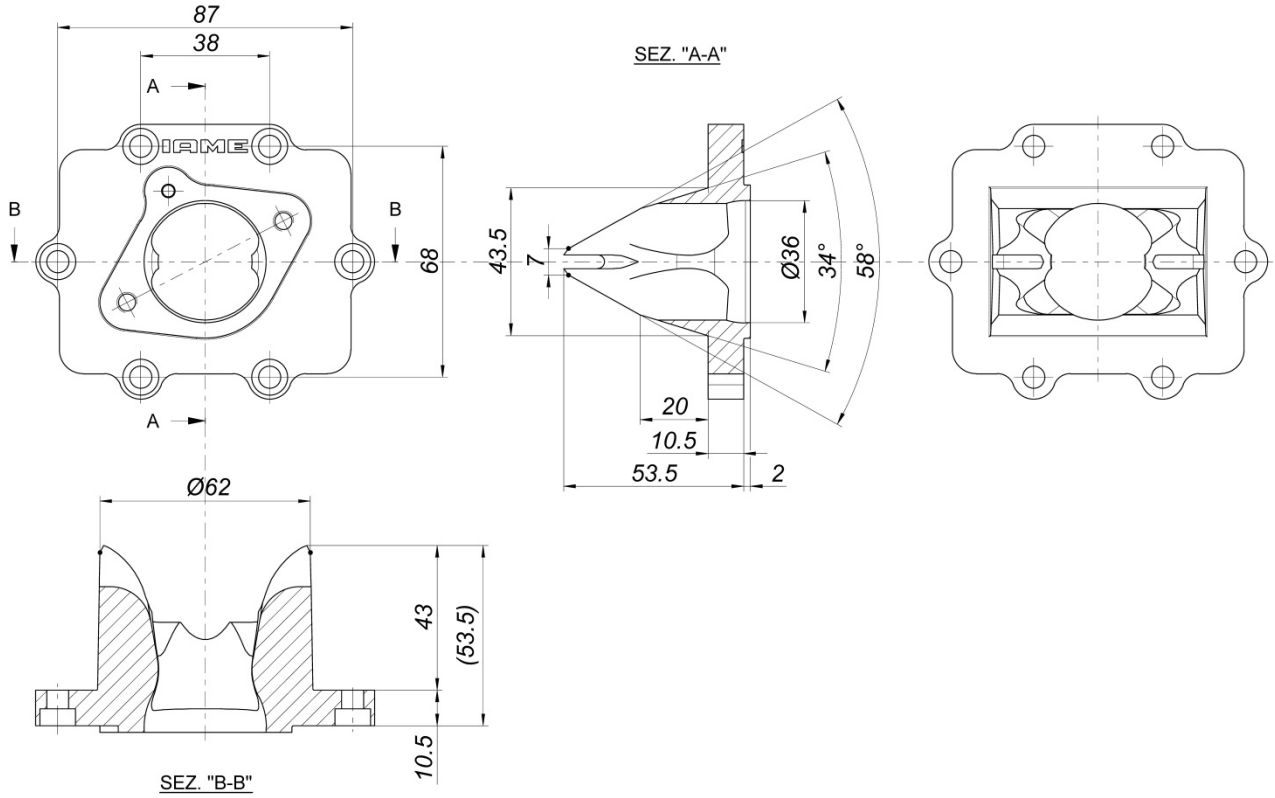


N.B.: ONLY REED "IAME" GENUINE CARBON FIBER ARE PERMITTED.
N.B. : SEULS LES CLAPETS D'ORIGINE "IAME" EN FIBRE DE CARBONE SONT AUTORISES.

EXPLODED DRAWING - INLET SYSTEM
VUE ESPLOSE – SYSTEME D'ADMISSION



REED VALVE COVER - INLET SYSTEM
COUVERCLE DE LA BOÎTE A CLAPETS

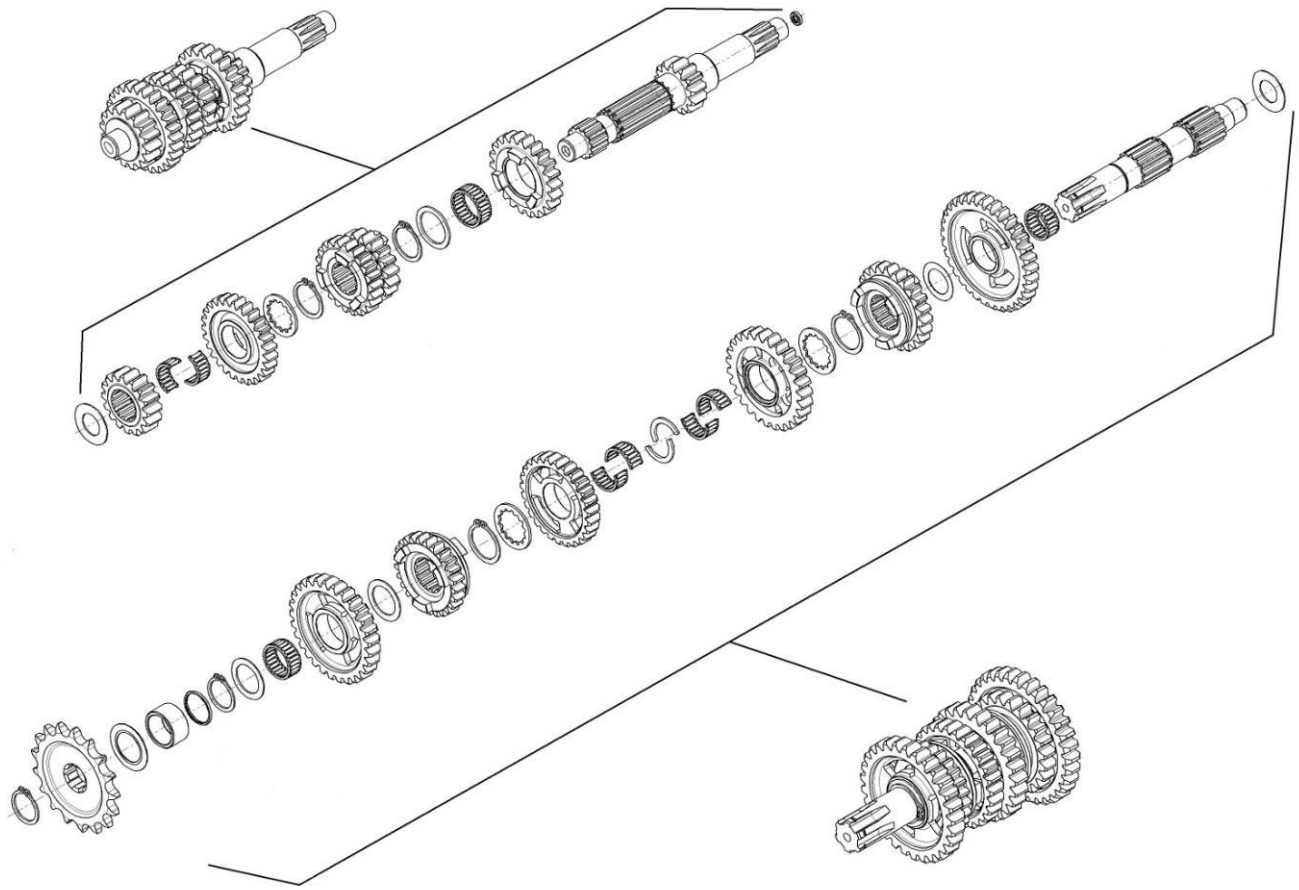


GEARBOX - *BOÎTE DE VITESSES*

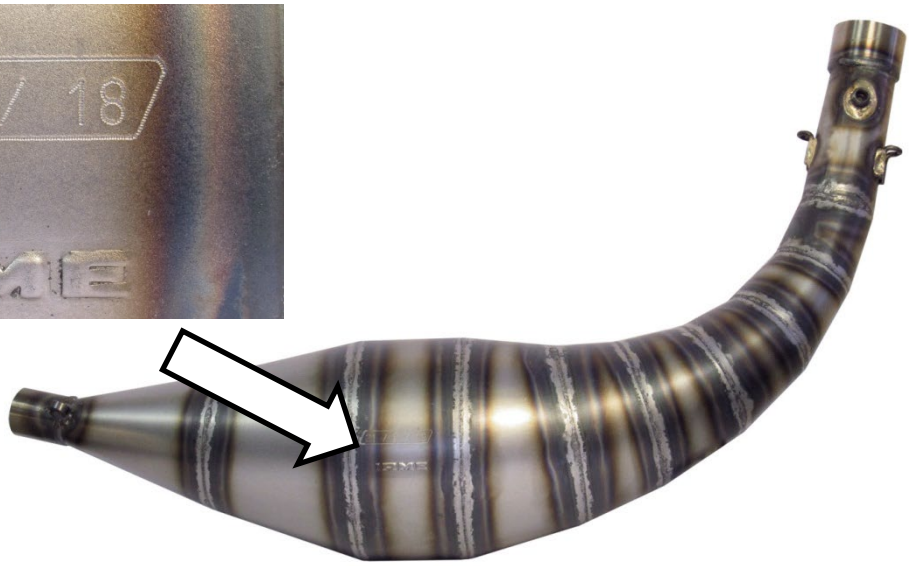
Primary coupling - *Couple primaire* **19 / 75**

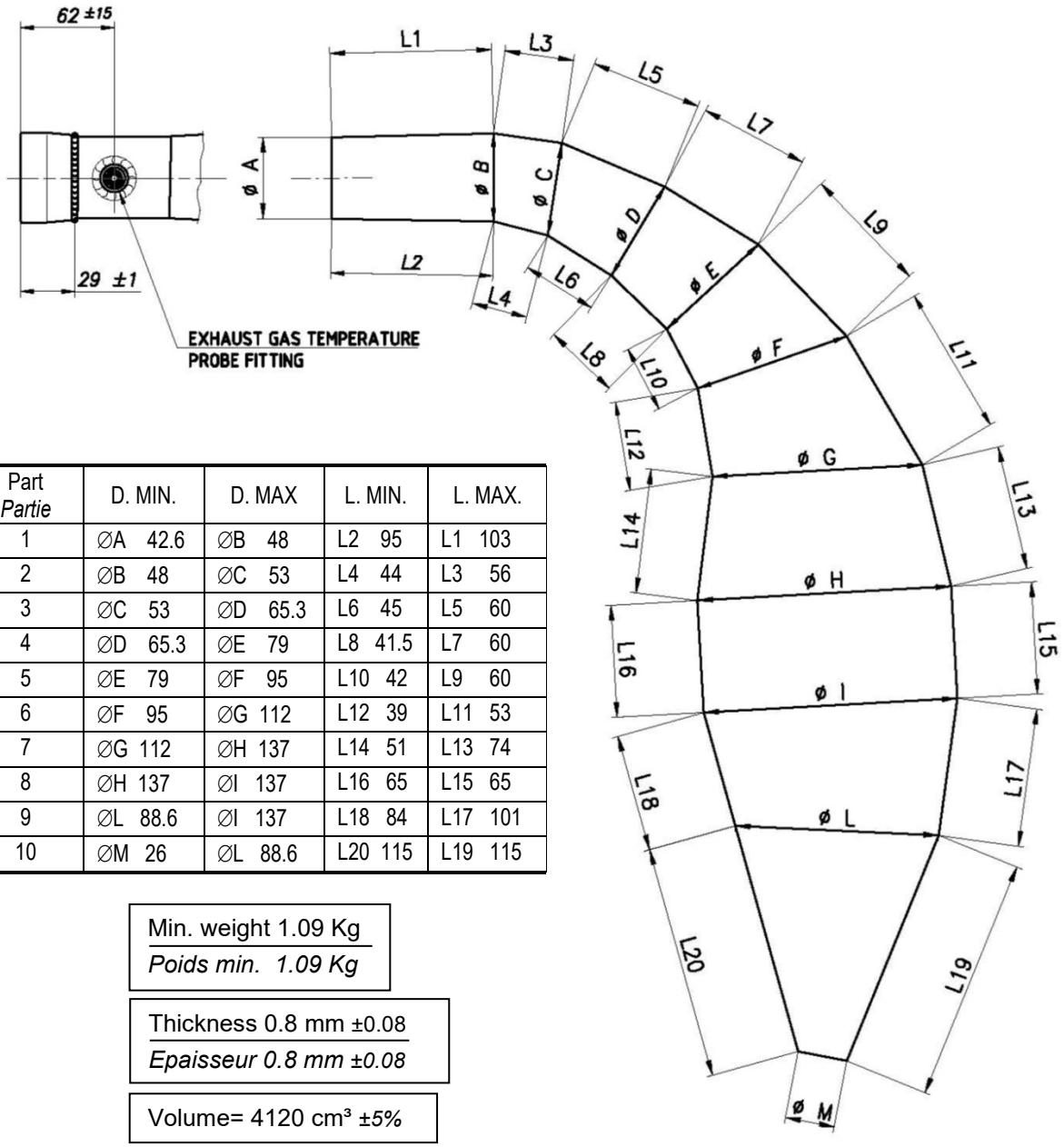
Gearbox ratios		*Rapports de boîte de vitesses*	
Gear - *Vitesse*	Primary shaft *Arbre primaire*	Secondary shaft *Arbre secondaire*	Reading of values obtained after three engine revs *Relevé des valeurs obtenues après trois tours moteur*
1st / 1ère	**13**	**33**	**107.78°**
2nd / 2e	**16**	**29**	**150.95°**
3rd / 3e	**18**	**27**	**182.40°**
4th / 4e	**22**	**27**	**222.93°**
5th / 5e	**22**	**23**	**261.70°**
6th / 6e	**27**	**25**	**295.49°**

EXPLODED DRAWING OF THE GEARS, MAINSHAFT AND SECONDARY SHAFT
DESSIN EXPLOSED DES ENGRANAGES, ARBRE PRIMARIE ET ARBRE SECONDARIE



EXHAUST VIEW, PHOTO AND DIMENSIONS
VUE, PHOTO ET DIMENSIONS DE L'ÉCHAPPEMENT





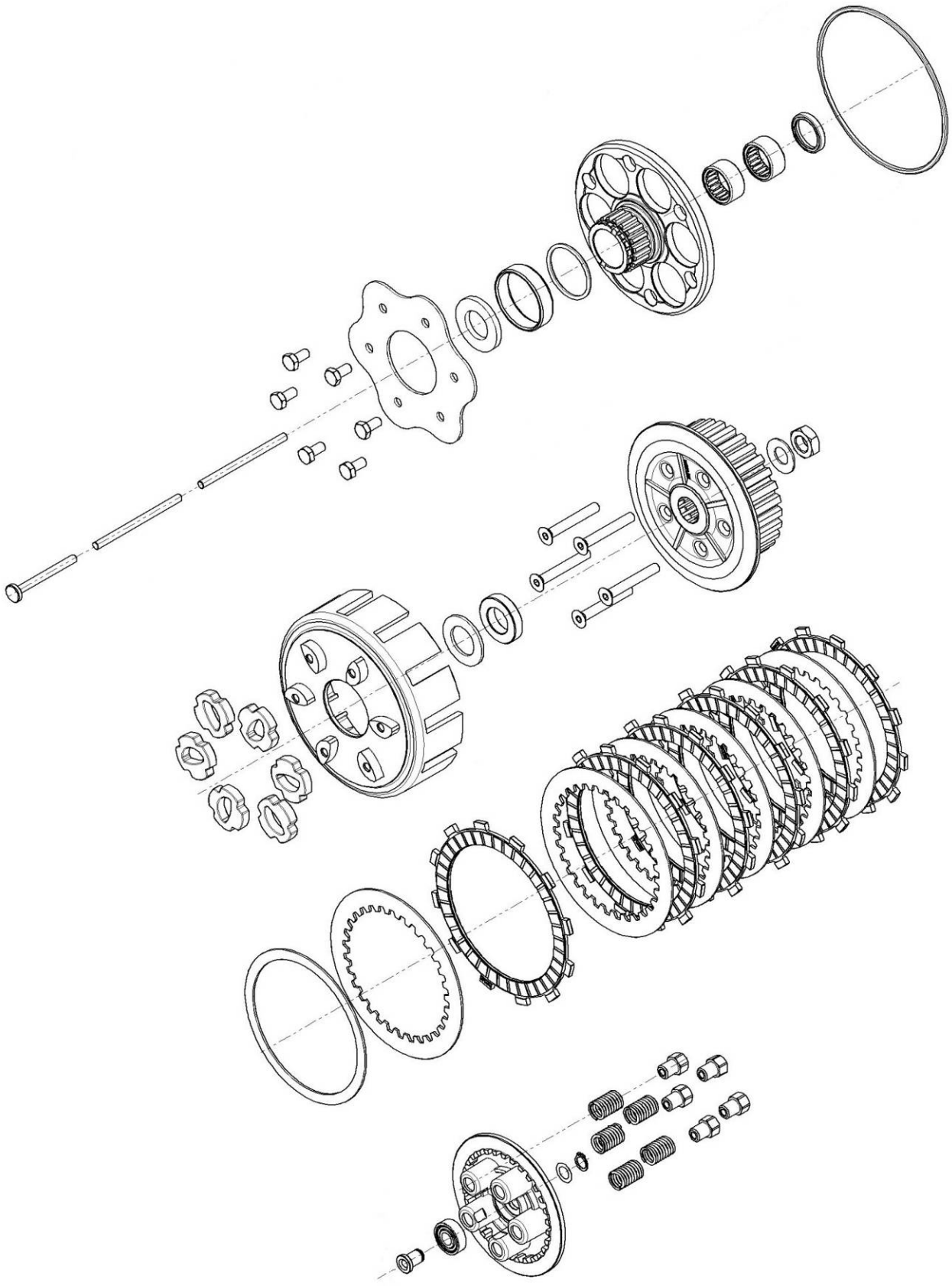
Part *Partie*	D. MIN.	D. MAX	L. MIN.	L. MAX.
1	ØA 42.6	ØB 48	L2 95	L1 103
2	ØB 48	ØC 53	L4 44	L3 56
3	ØC 53	ØD 65.3	L6 45	L5 60
4	ØD 65.3	ØE 79	L8 41.5	L7 60
5	ØE 79	ØF 95	L10 42	L9 60
6	ØF 95	ØG 112	L12 39	L11 53
7	ØG 112	ØH 137	L14 51	L13 74
8	ØH 137	ØI 137	L16 65	L15 65
9	ØL 88.6	ØI 137	L18 84	L17 101
10	ØM 26	ØL 88.6	L20 115	L19 115

Min. weight 1.09 Kg
Poids min. 1.09 Kg

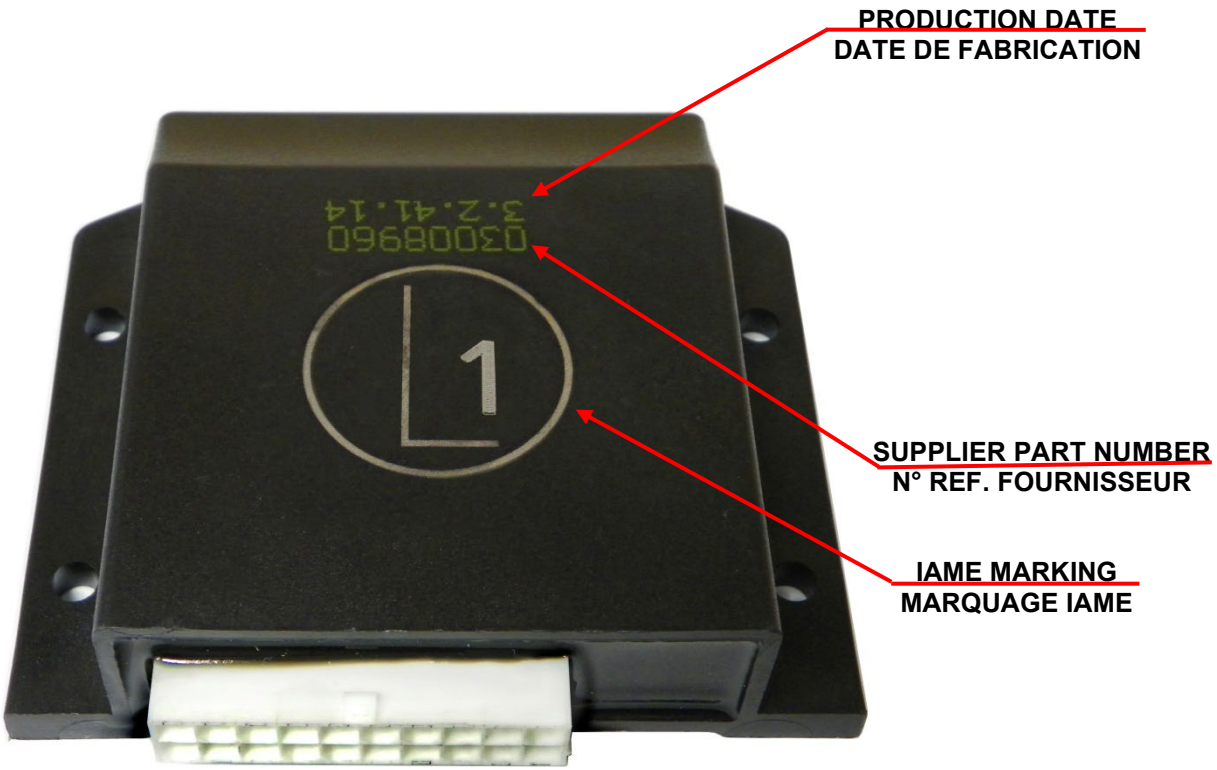
Thickness 0.8 mm ±0.08
Epaisseur 0.8 mm ±0.08

Volume= 4120 cm³ ±5%

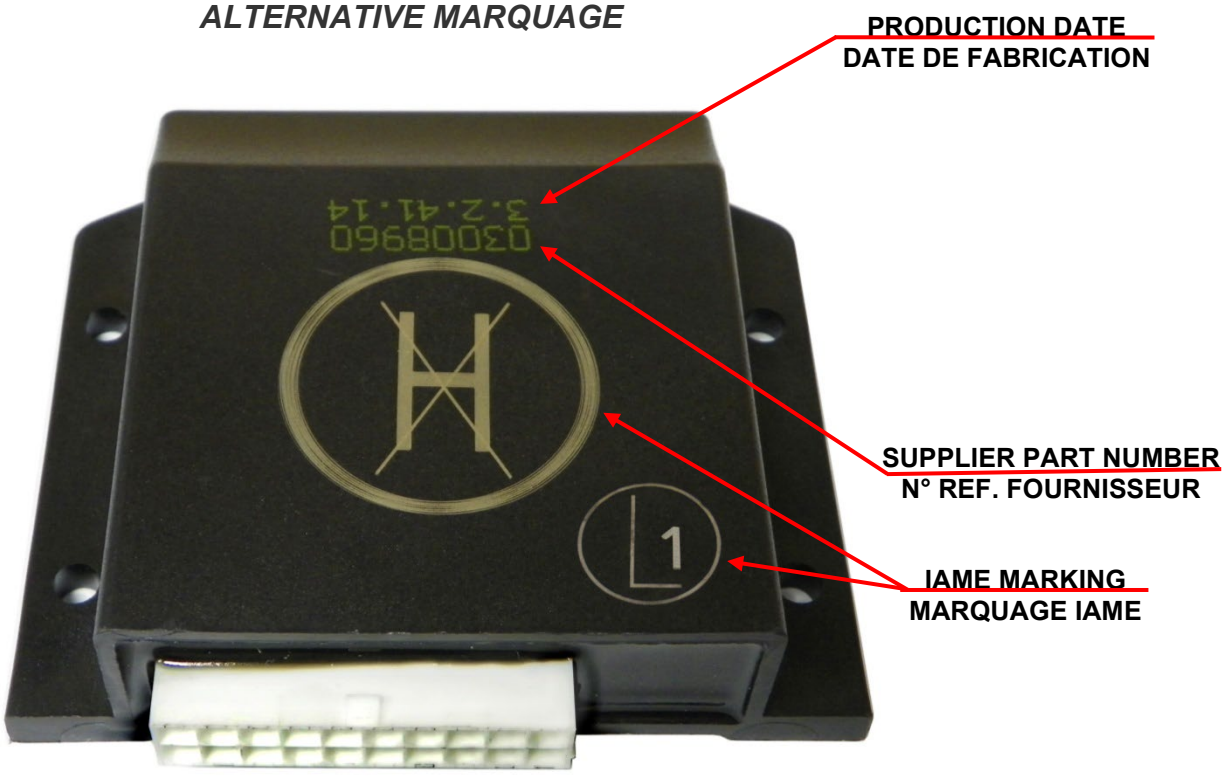
EXPLODED DRAWING OF THE CLUTCH ASSEMBLY
DESSIN EXPLOSED DE L'EMBRAYAGECOMPLETE



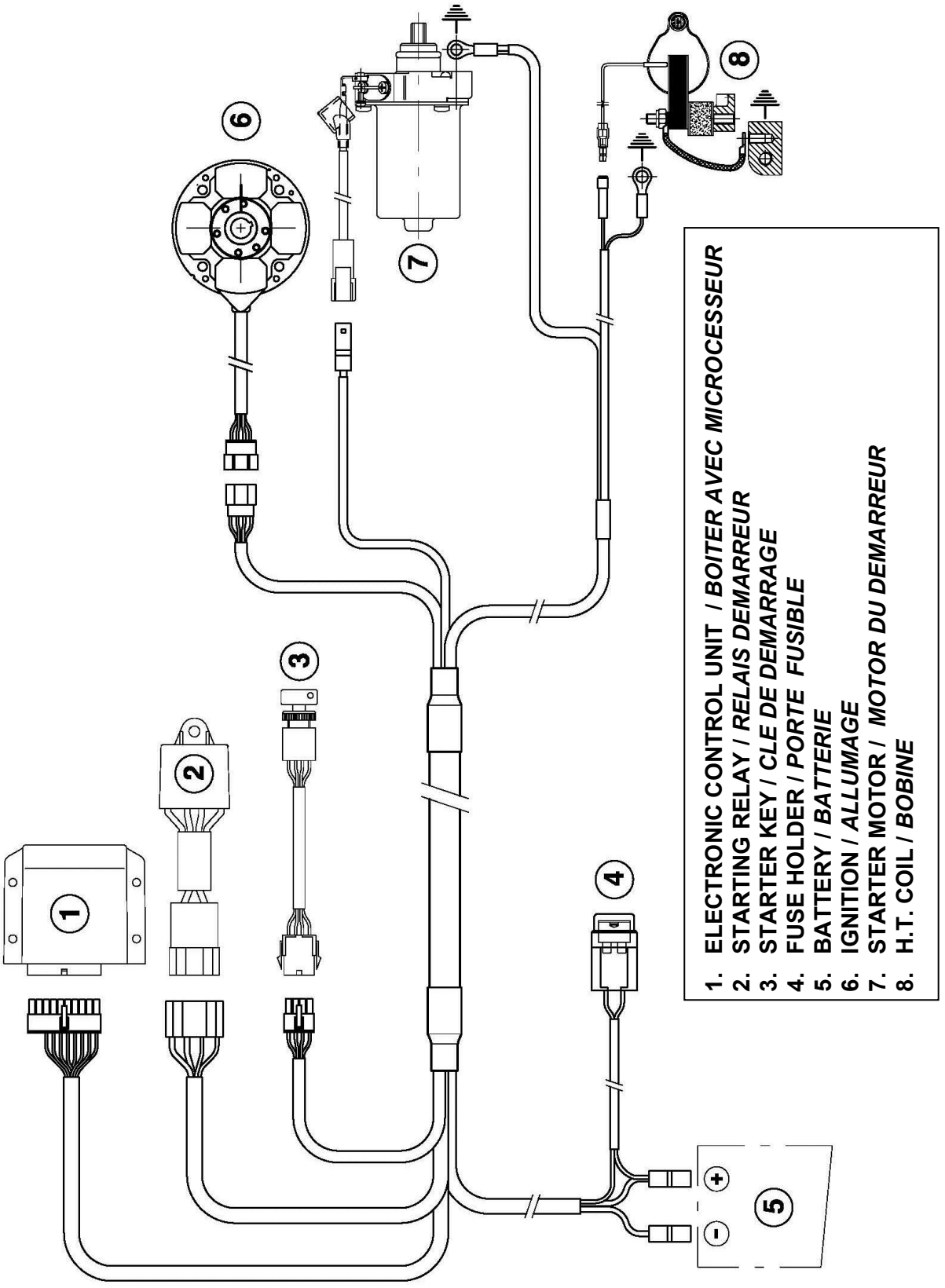
SELETTRA - ELECTRONIC BOX MARKING
SELETTRA - MARQUAGE DU BOITIER ELECTRONIQUE



ALTERNATIVE MARKING
ALTERNATIVE MARQUAGE



WIRING DIAGRAM (SELETTRA DIGITAL ‘’K’’ IGNITION)
SCHEMA CIRCUIT ELECTRIQUE (ALLUMAGE SELETTRA DIGITAL ’’K")

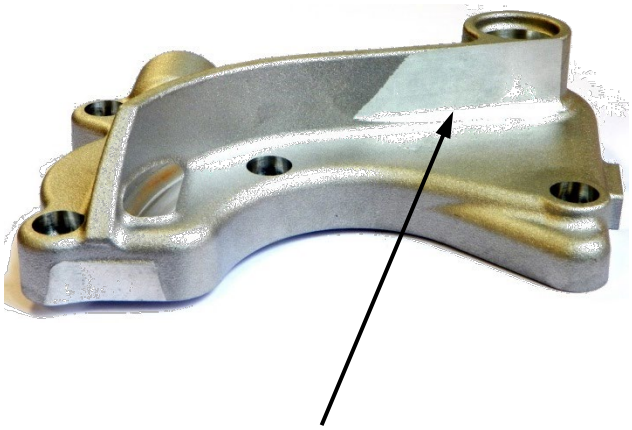


SELECTOR COVER IDENTIFICATION
INDENTIFICATION DU COUVERCLE SELECTEUR

TYPE 1

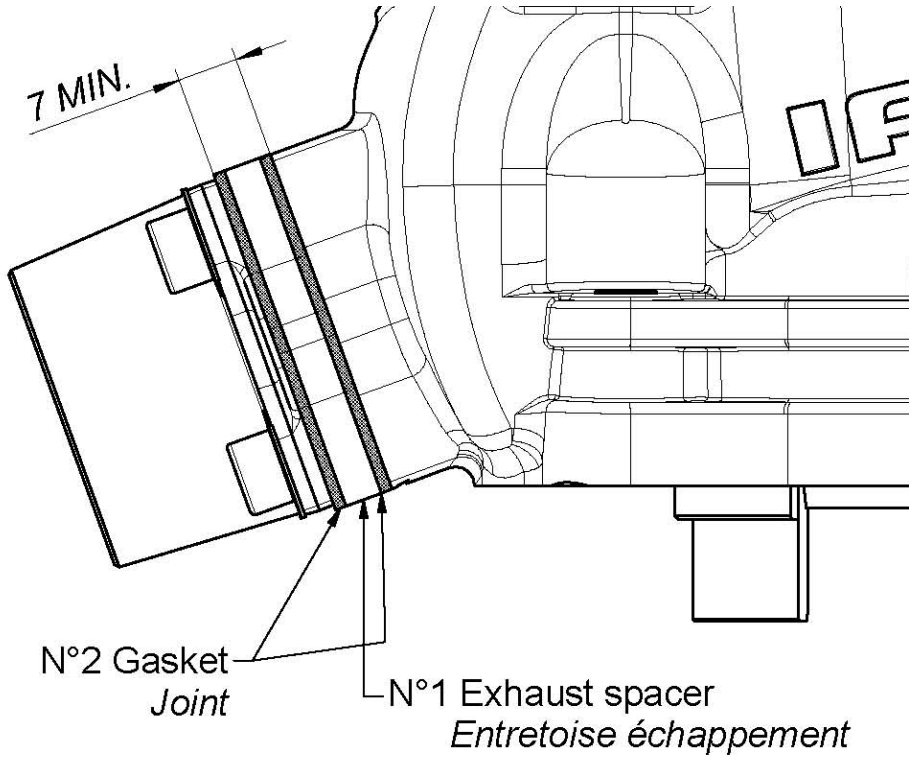
TYPE 2

ADDITIONAL CNC Machined
SUPPLÉMENTAIRES Usiné CNC

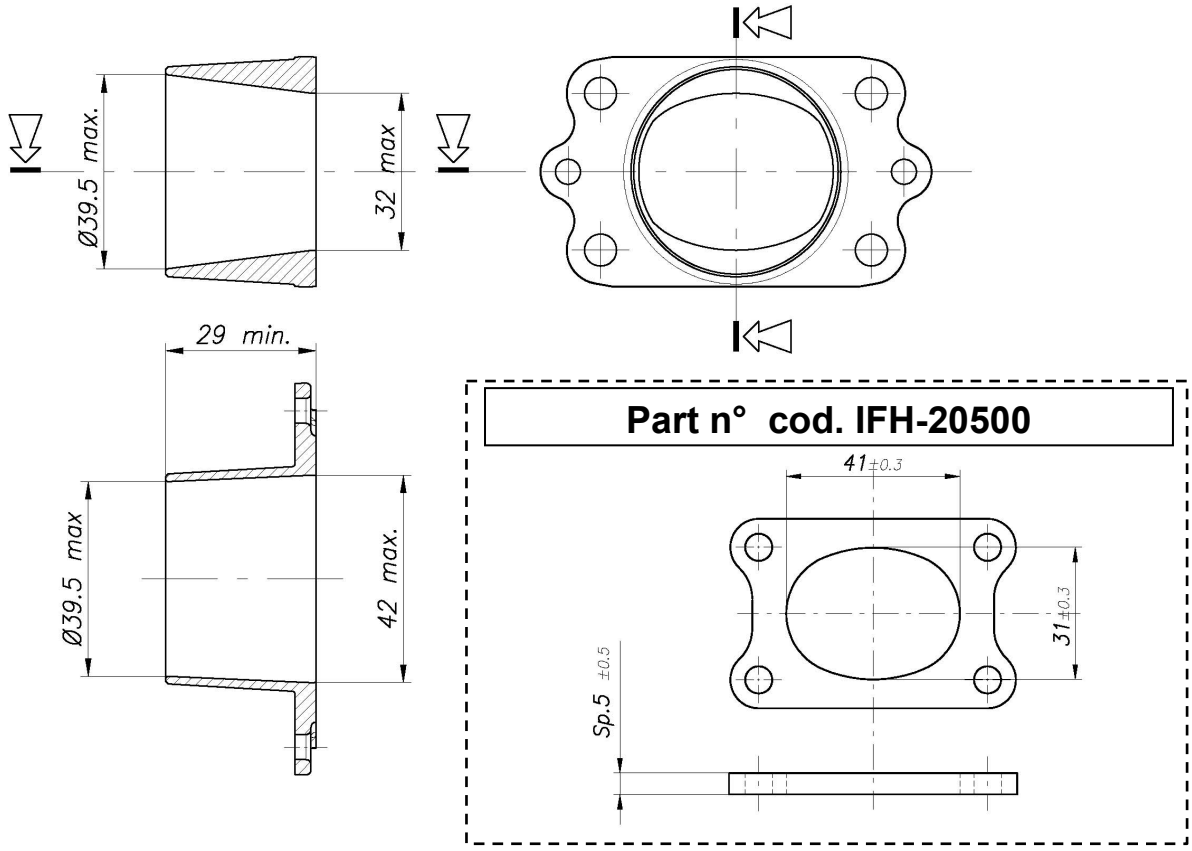


ADDITIONAL CNC Machined
SUPPLÉMENTAIRES Usiné CNC

MINIMUM DISTANCE BETWEEN EXHAUST MANIFOLD AND CYLINDER
DISTANCE MINIMALE ENTRE RACCORD D'ECHAPPEMENT ET CYLINDRE



EXHAUST MANIFOLD AND SPACER VIEW AND DIMENSIONS
VUE ET DIMENSIONS DU RACCORD D' ECHAPPEMENT ET ESPACEUR



NEW 5th PORT – ADMISSION IDENTIFICATION
INDENTIFICATION DU NOUVEAU 5e LUMIERE

VIEW FROM "A"
VUE DE "A"

VIEW FROM "B"
VUE DE "B"

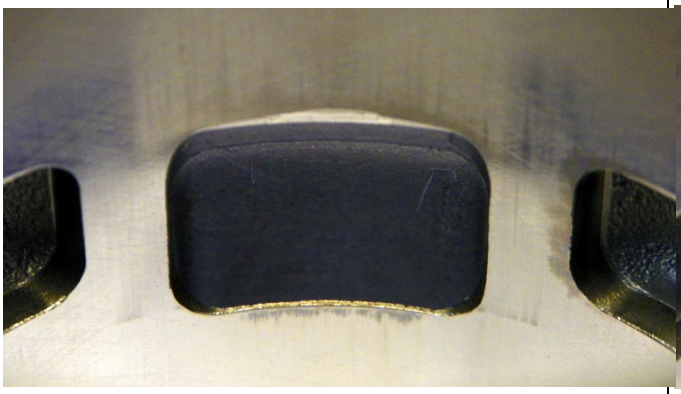
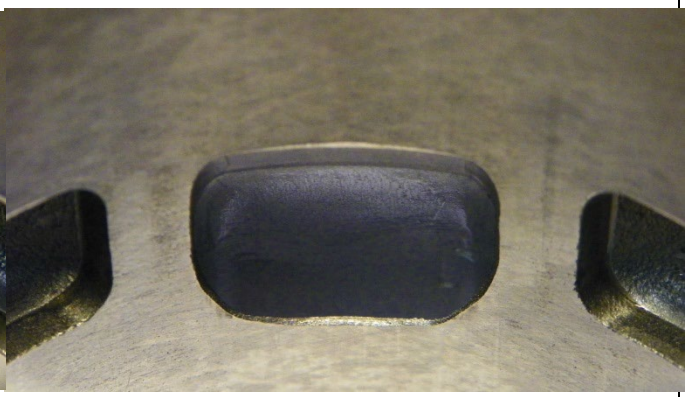
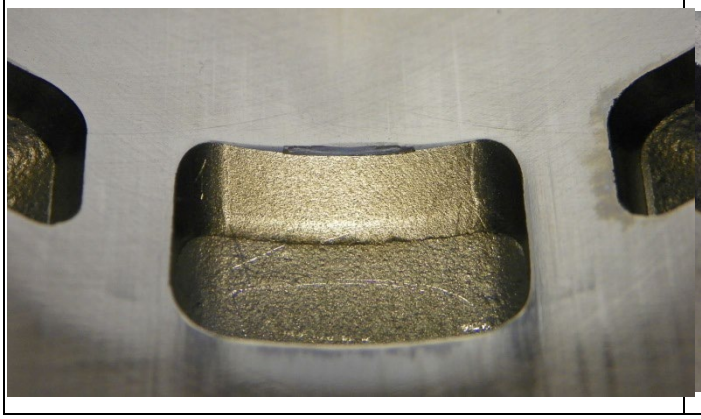
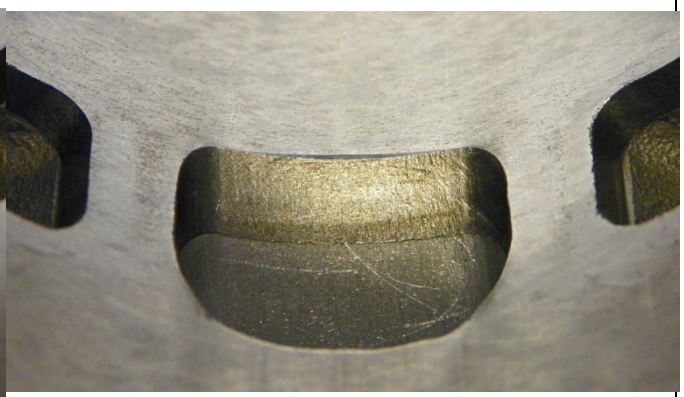
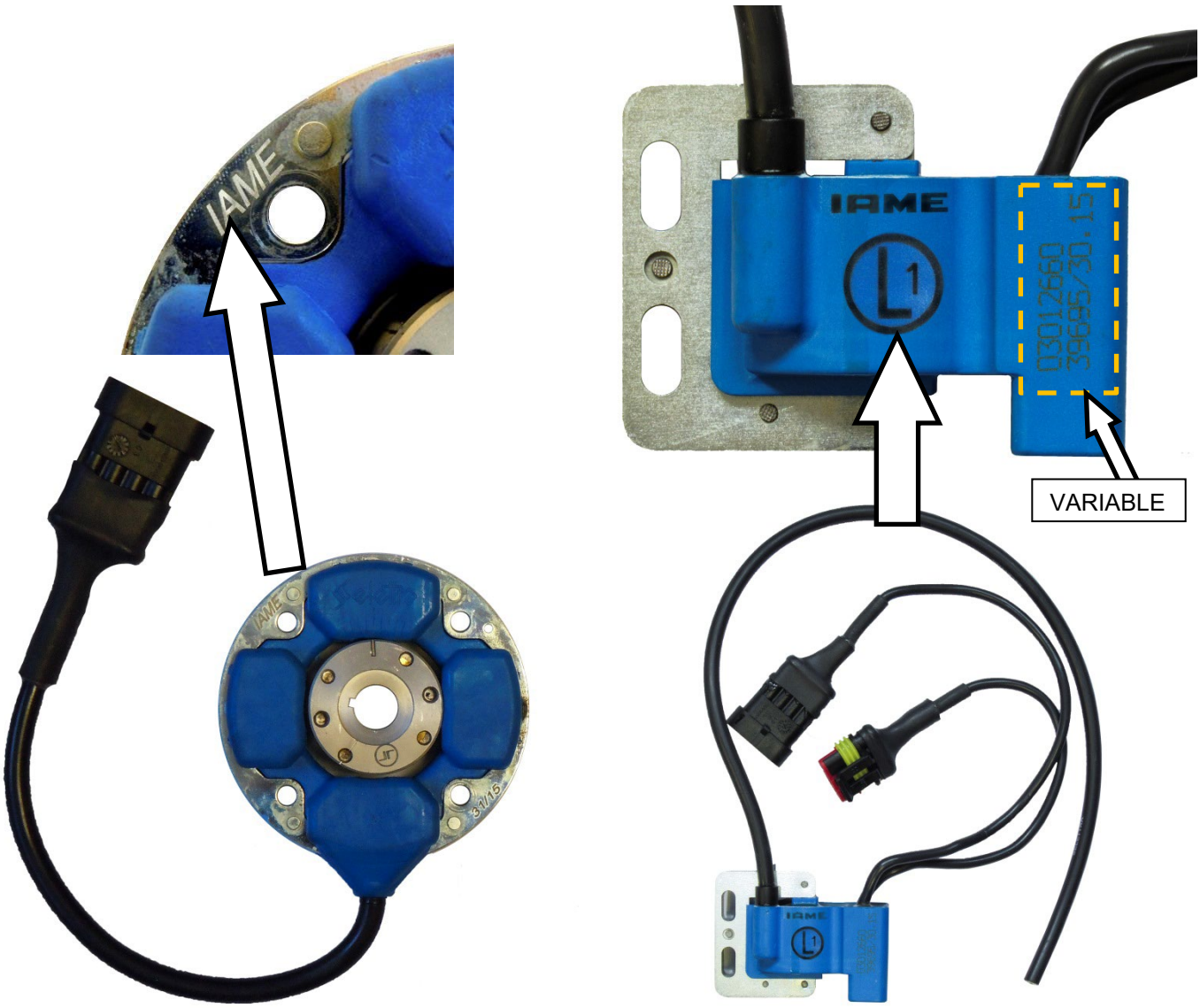
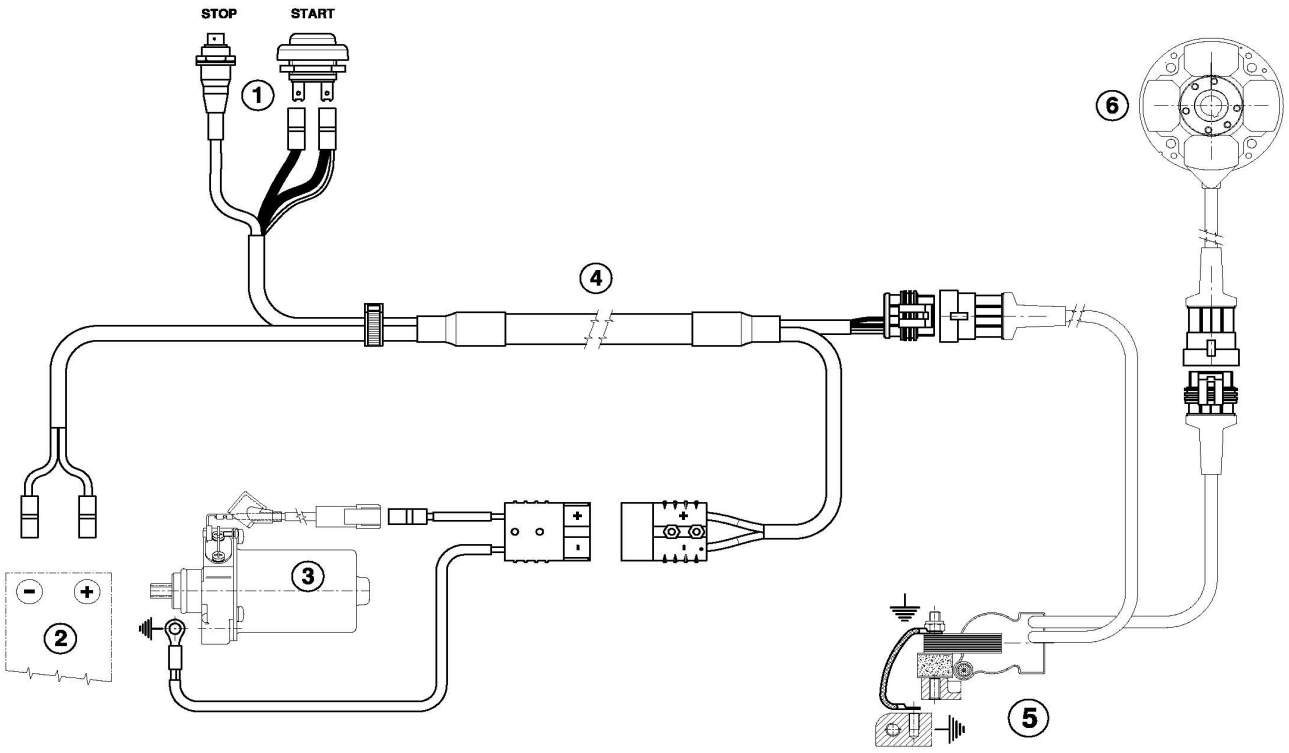
TYPE 1	**TYPE 2**
VIEW FROM "**A**" - *VUE DE "**A**"*	VIEW FROM "**A**" - *VUE DE "**A**"*
	
VIEW FROM "**B**" - *VUE DE "**B**"*	VIEW FROM "**B**" - *VUE DE "**B**"*
	

PHOTO COMPLETE ALTERNATIVE WIRING LOOM
PHOTO DU CABLAGE ELECTRONIQUE COMPLET

PHOTO OF SELETTRA ALTERNATIVE DIGITAL “S” IGNITION, WITH IAME MARKING
PHOTO DU SELETTRA DIGITAL “S” ALLUMAGE, AVEC MARQUAGE IAME

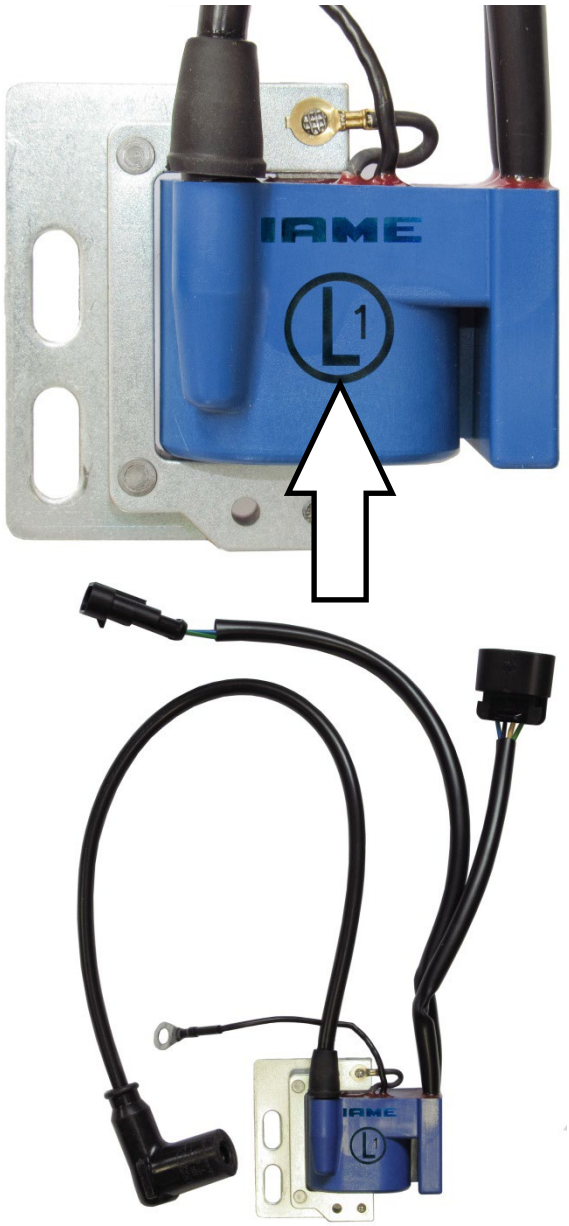


WIRING DIAGRAM (SELETTRA DIGITAL ‘’S’’ IGNITION)
SCHEMA CIRCUIT ELECTRIQUE (ALLUMAGE SELETTRA DIGITAL ’’S")



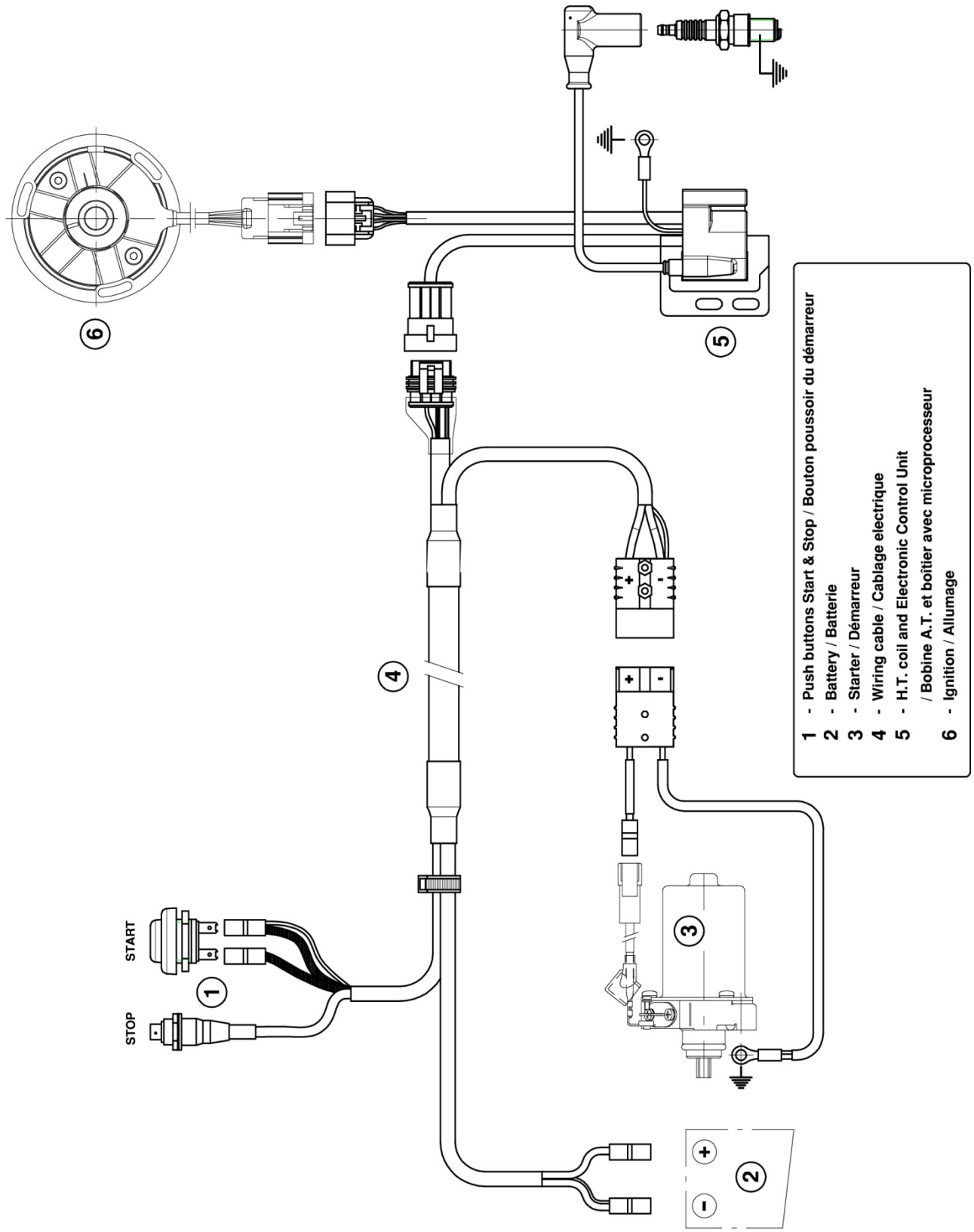
1 - Push buttons Start & Stop / Bouton poussoir du démarreur
2 - Battery / Batterie
3 - Starter / Démarreur
4 - Wiring cable / Cablage electrique
5 - H.T. coil and Electronic Control Unit
/ Bobine A.T. et boîtier avec microprocesseur
6 - Ignition / Allumage

PHOTO OF ALTERNATIVE DIGITAL IGNITION PVL 690, WITH IAME MARKING
PHOTO DU ALTERNATIVE ALLUMAGE PVL 690 DIGITALE AVEC MARQUAGE "IAME"



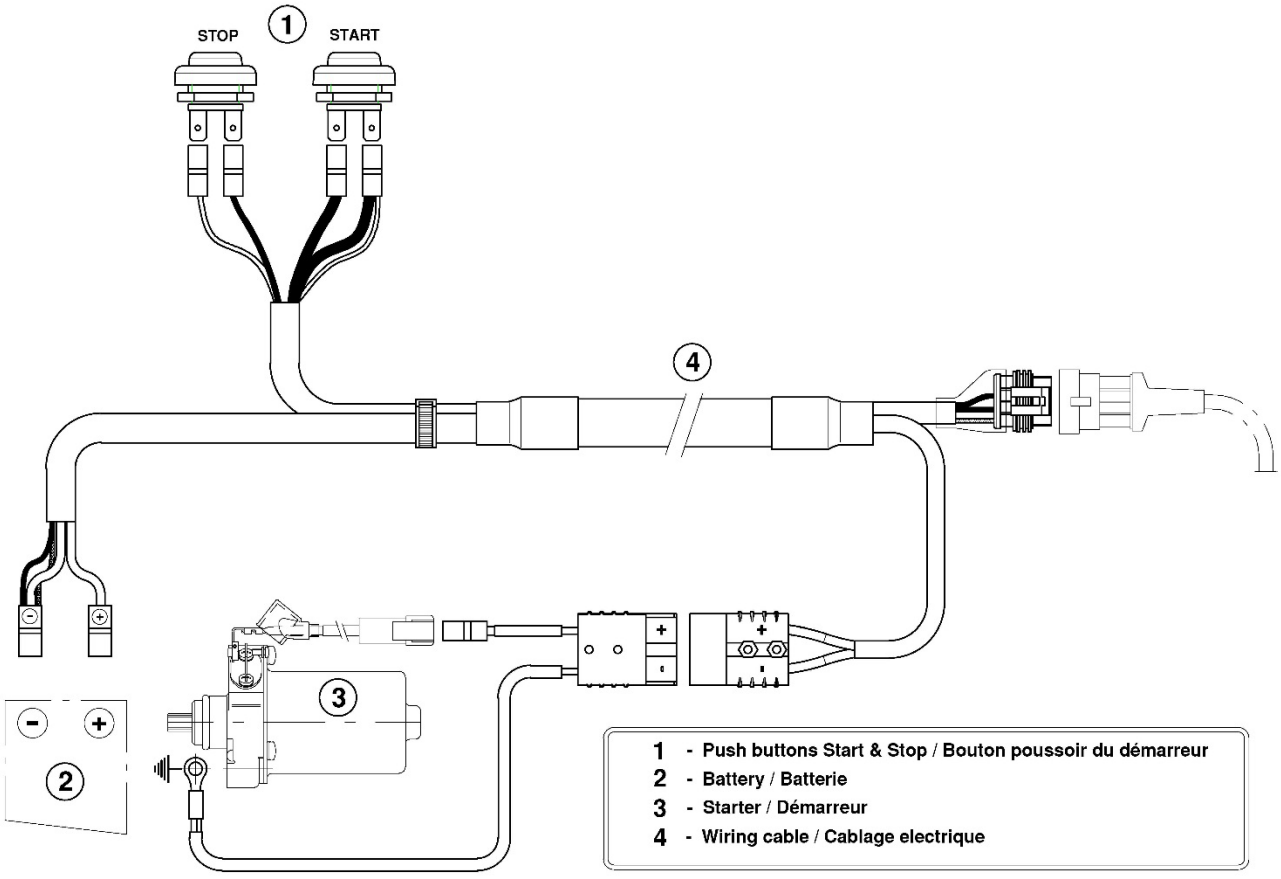
ALTERNATIVE WIRING DIAGRAM – PVL 690 DIGITAL IGNITION

SCHEMA CIRCUIT ELECTRIQUE ALTERNATIVE - ALLUMAGE PVL 690 DIGITAL

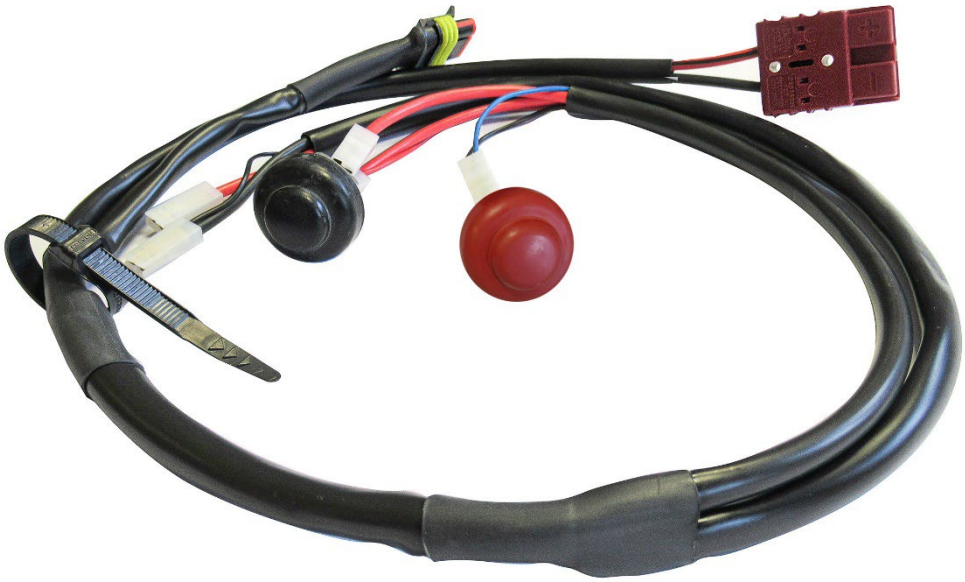


ALTERNATIVE WIRING LOOM
PHOTO DU CABLAGE ELECTRIQUE ALTERNATIVE

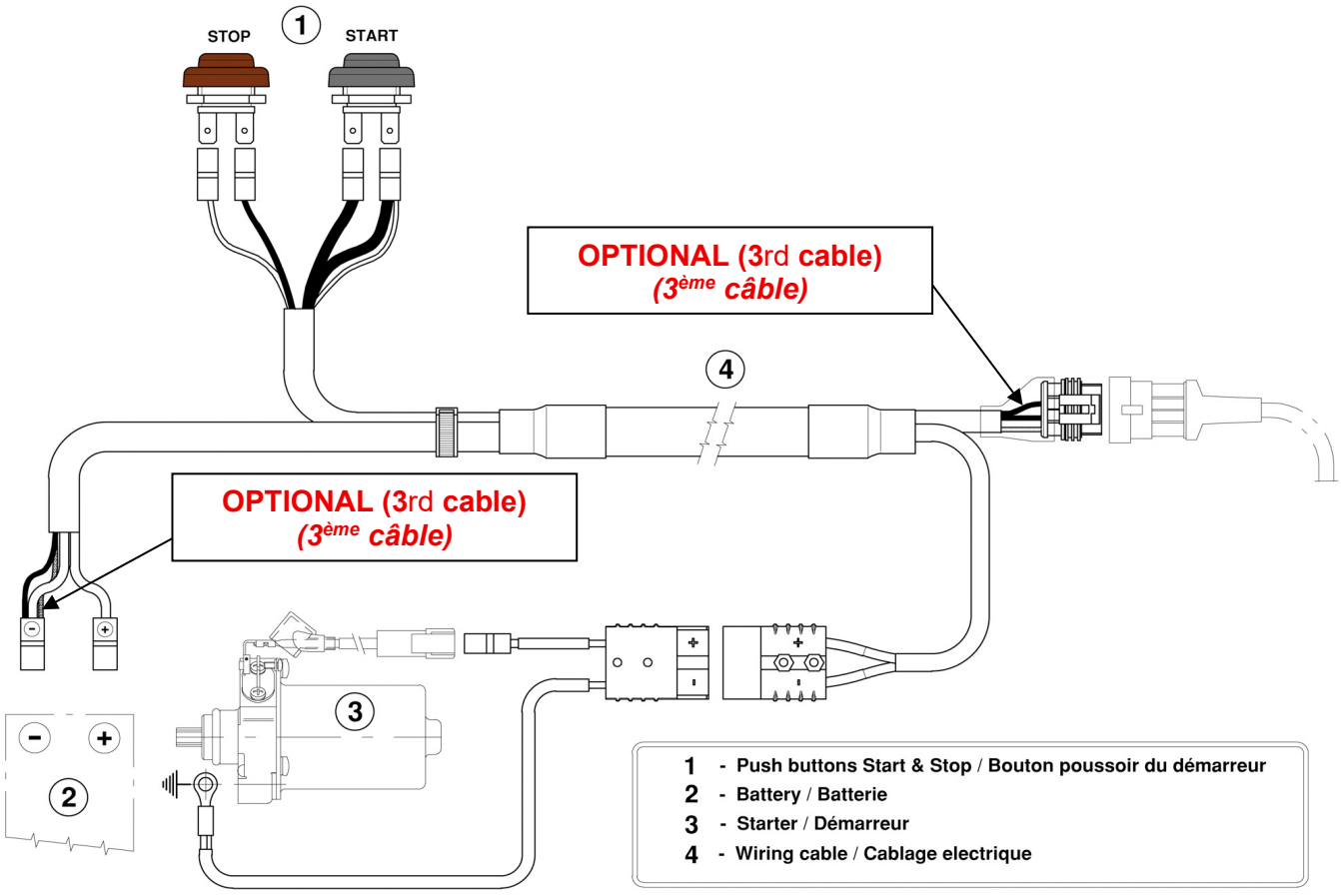
ALTERNATIVE WIRING LOOM DIAGRAM
SCHEMA DU CABLAGE ALTERNATIVE



ALTERNATIVE WIRING LOOM
CABLAGE ELECTRONIQUE COMPLET ALTERNATIVE

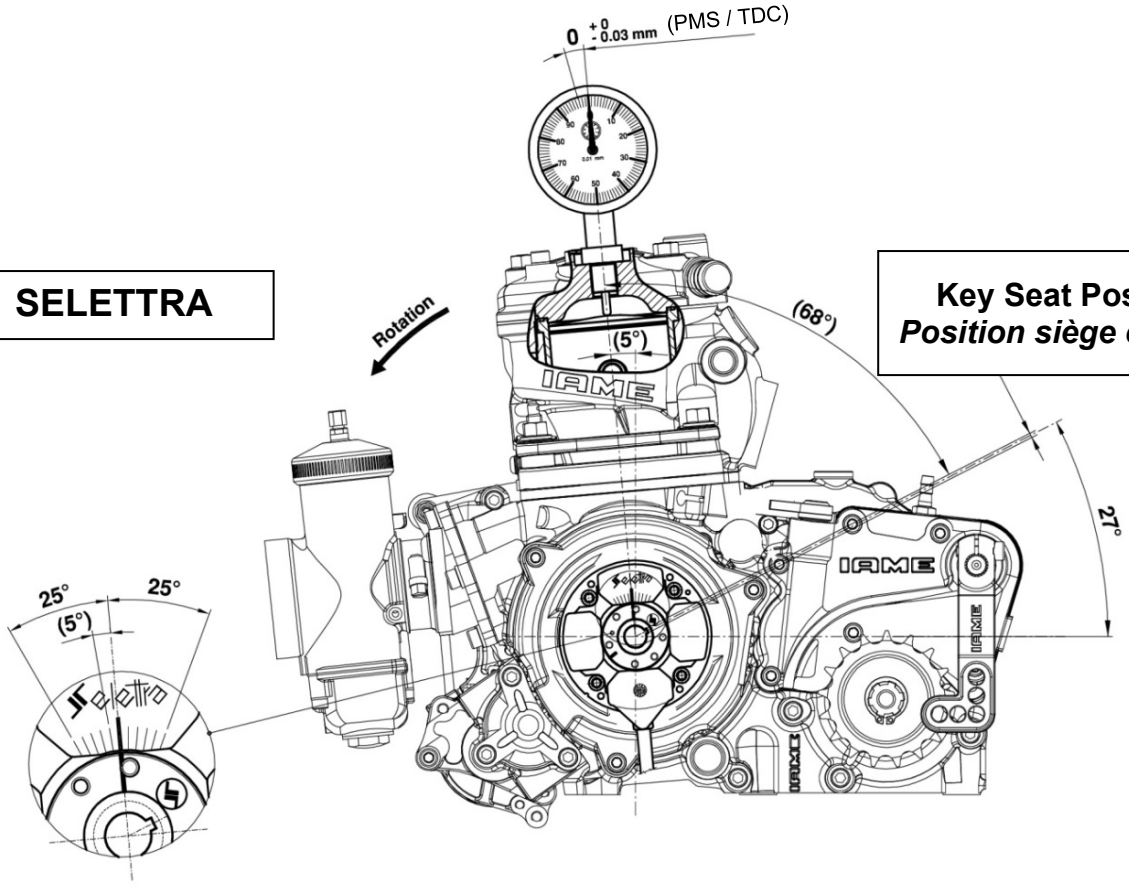


ALTERNATIVE WIRING LOOM DIAGRAM
SCHEMA CIRCUIT ELECTRIQUE ALTERNATIVE



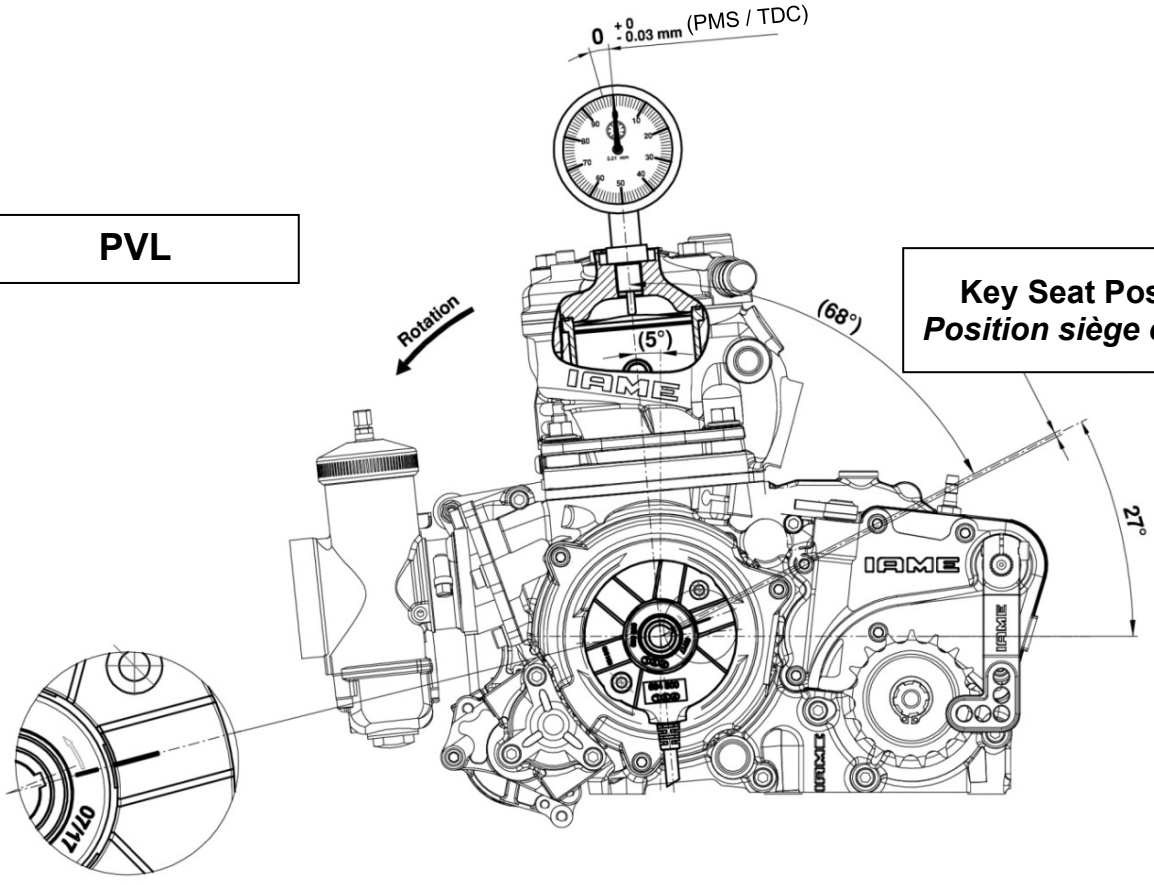
SCHEME FOR ADVANCE CONTROL
SCHEMA DE CONTROLE POUR L'AVANCE

SELETTRA



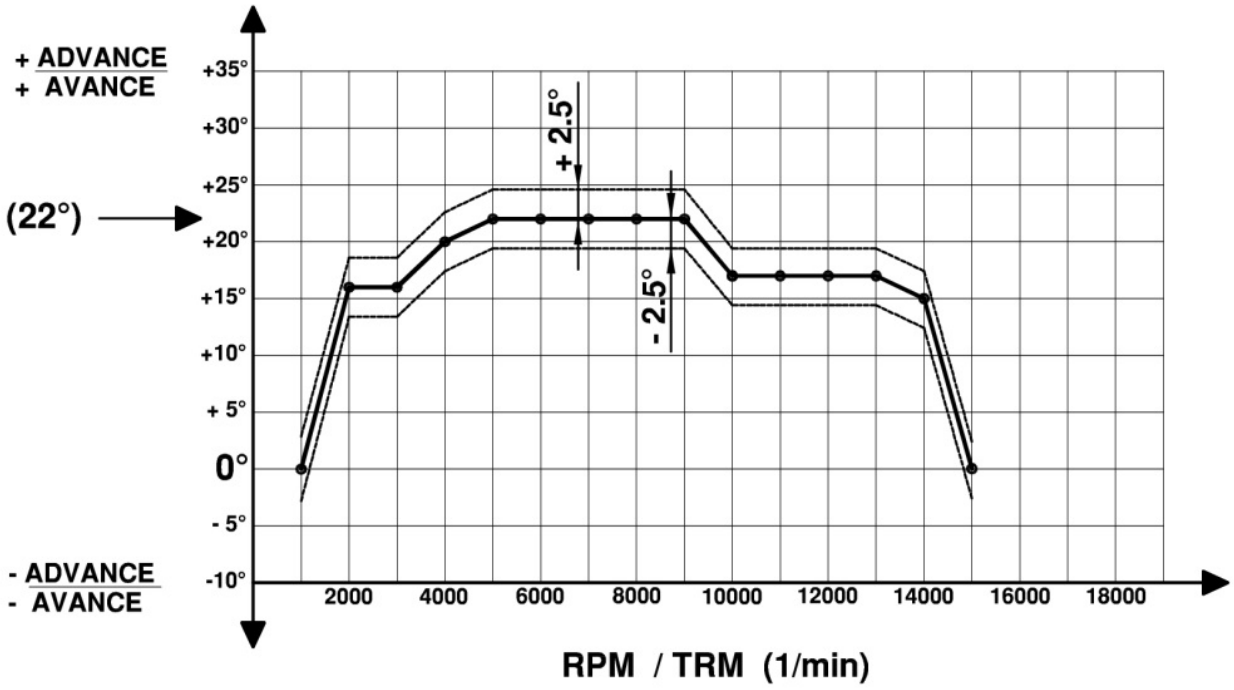
Key Seat Position
Position siège clavette

PVL



Key Seat Position
Position siège clavette

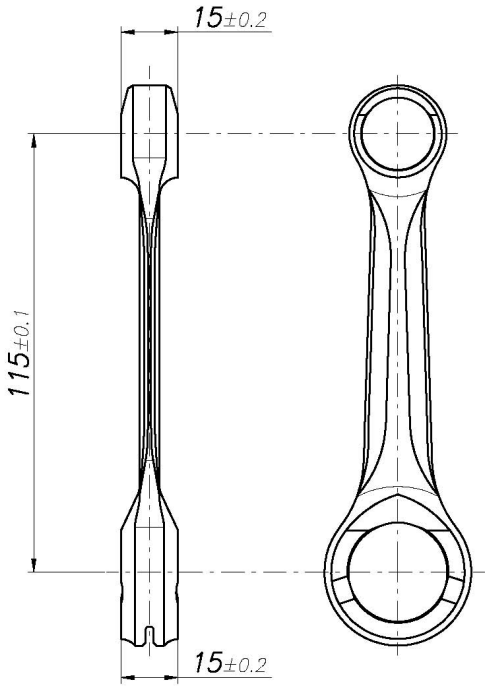
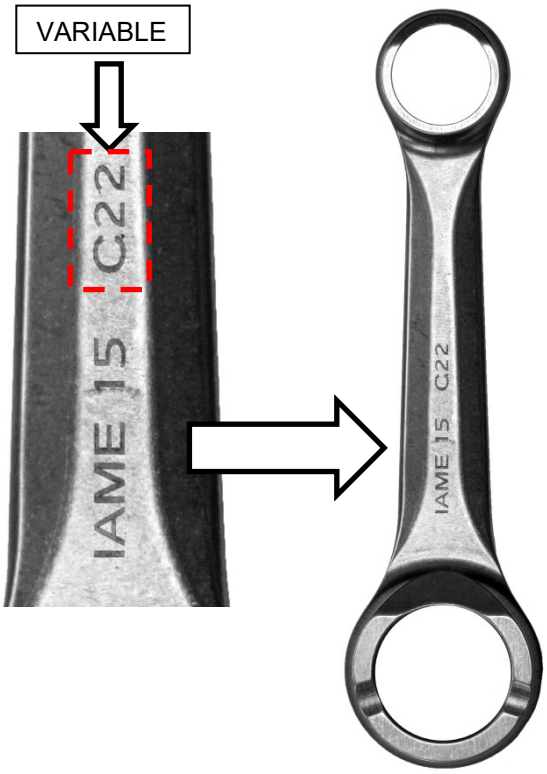
ADVANCE CURVE GRAPHS
GRAPHIQUES DE LA COURBE D'AVANCE



"L1" MAPPING / *MAPPAGE*

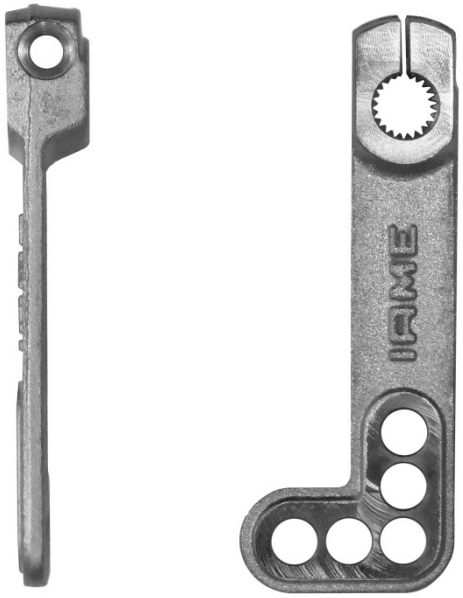
Tr/ mln	*1000*	*2000*	*3000*	*4000*	*5000*	*6000*	*7000*	*8000*	*9000*	*10000*	*11000*	*12000*	*13000*	*14000*	*15000*
° adv	*0°*	*16°*	*16°*	*20°*	*22°*	*22°*	*22°*	*22°*	*22°*	*17°*	*17°*	*17°*	*17°*	*15°*	*0°*

ALTERNATIVE CONROD IDENTIFICATION
INDENTIFICATION DU BIELLE ALTERNATIVE

DISTANCE BETWEEN CONROD CENTERS *ENTRE AXE DE LA BIELLE*	PHOTO IDENTIFICATION *IDENTIFICATION PHOTO*
 Min. weight 119 g *Poids min. 119 g*	
PRESELECTOR CONTROL SHAFT – TYPE 1 *ARBRE COMMANDE PRESELECTEUR – TYPE 1*	PRESELECTOR CONTROL SHAFT – TYPE 2 *ARBRE COMMANDE PRESELECTEUR – TYPE 2*
	

ALTERNATIVE SELECTOR COVER IDENTIFICATION
INDENTIFICATION DU COUVERCLE SELECTEUR ALTERNATIVE

SHIFT CONTROL LEVER – TYPE 1
LEVIER DE VITESSE – TYPE 1



SHIFT CONTROL LEVER – TYPE 2
LEVIER DE VITESSE – TYPE 2

ALTERNATIVE CYLINDER CROSS SECTION VIEW
VUE EN SECTION DU CYLINDRE ALTERNATIVE

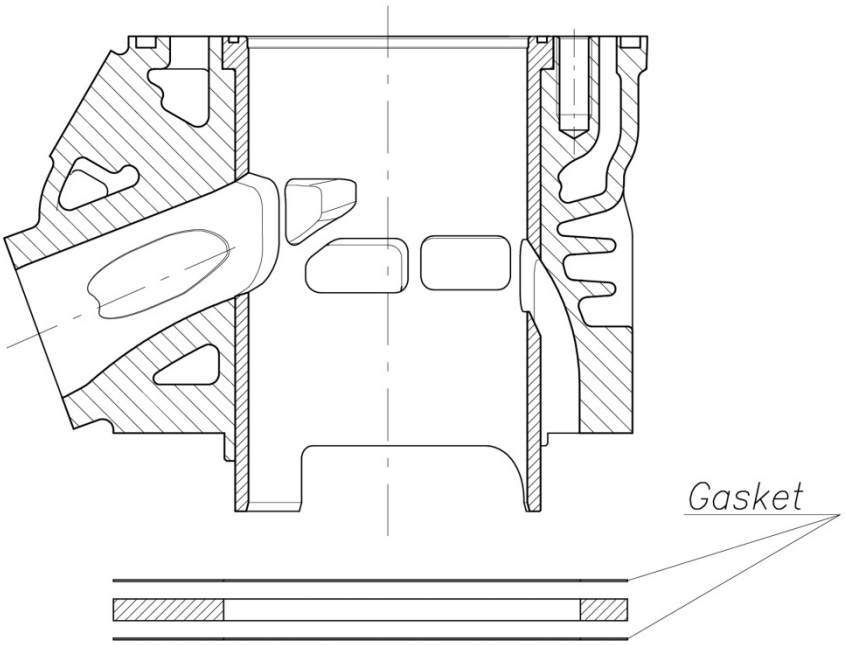
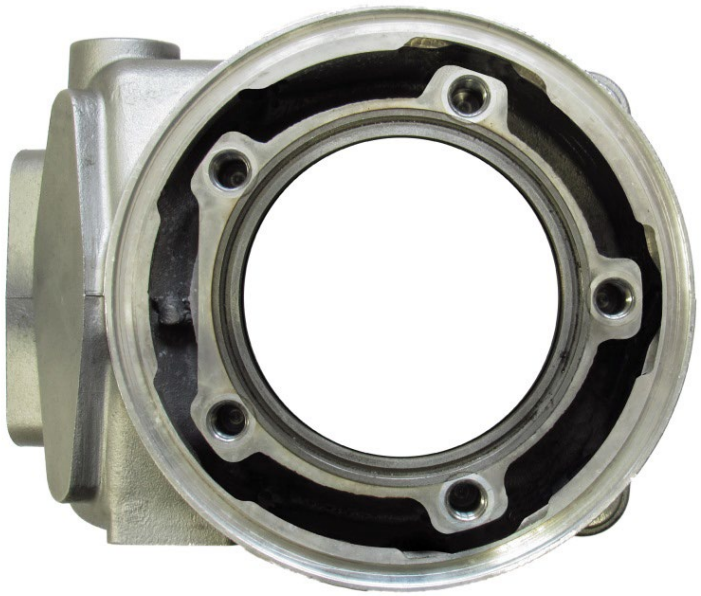
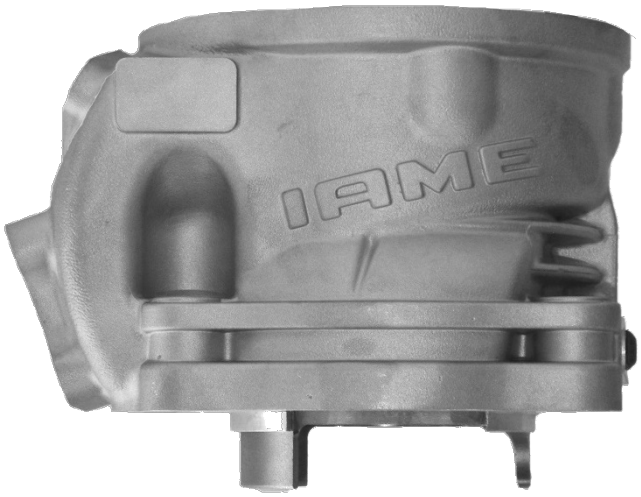
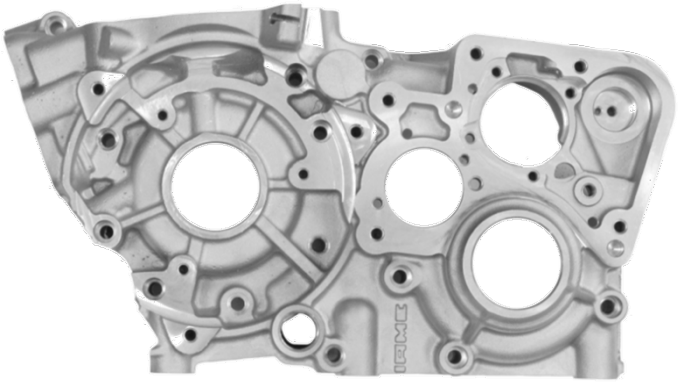


PHOTO OF THE ALTERNATIVE CYLINDER FROM ABOVE
VUE DU HAUT DU CYLINDRE ANTERNATIVE

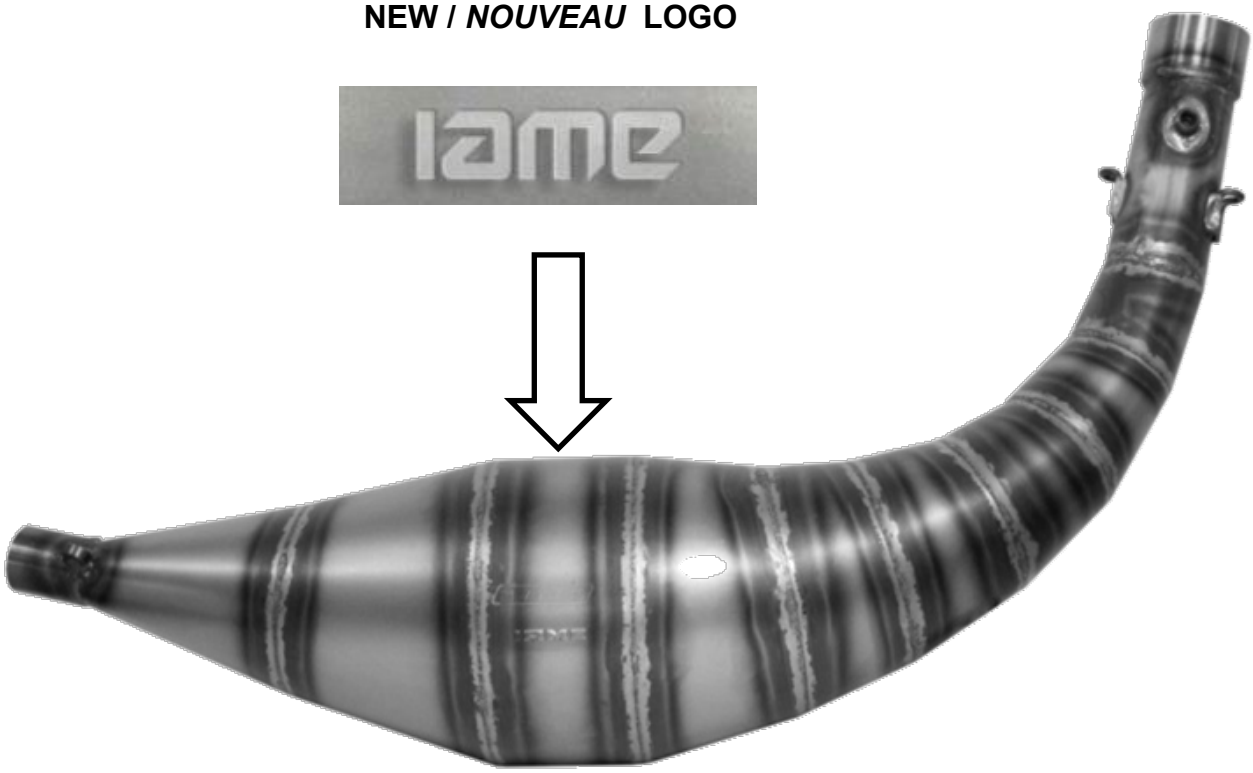


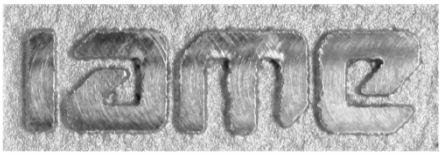
COMPONENTS WITH ALTERNATIVE NEW LOGO "IAME" *COMPOSANTS AVEC NOUVEAU LOGO ALTERNATIF "IAME"*	
CYLINDER HEAD *CULASSE*	CYLINDER *CILINDRE*
 **NEW / *NOUVEAU* LOGO** 	 **NEW / *NOUVEAU* LOGO** 
SEMICARTER TRANSMISSION SIDE *SEMICARTER CÔTÉ PIGNON*	SEMICARTER IGNITION SIDE *SEMICARTER CÔTÉ ALLUMAGE*
 **NEW / *NOUVEAU* LOGO** 	 

COMPONENTS WITH ALTERNATIVE NEW LOGO "IAME"
COMPOSANTS AVEC NOUVEAU LOGO ALTERNATIF "IAME"

EXHAUST
ECHAPPEMENT

NEW / *NOUVEAU* LOGO



COMPONENTS WITH ALTERNATIVE NEW LOGO "IAME" *COMPOSANTS AVEC NOUVEAU LOGO ALTERNATIF "IAME"*	
SELECTOR COVER *COUVERCLE DE SELECTEUR*	SHIFT CONTROL LEVER *LEVIER DE VITESSE*
 **NEW / *NOUVEAU* LOGO** 	 **NEW / *NOUVEAU* LOGO** 
CLUTCH SIDE COVER *COUVERCLE D'EMBRAYAGE*	STARTER SUPPORT *SUPPORT DE DEMARREUR*
 **NEW / *NOUVEAU* LOGO** 	 **NEW / *NOUVEAU* LOGO** 

COMPONENTS WITH ALTERNATIVE NEW LOGO "IAME"
COMPOSANTS AVEC NOUVEAU LOGO ALTERNATIF “IAME”

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 NOUVEAU LOGO “IAME”

or

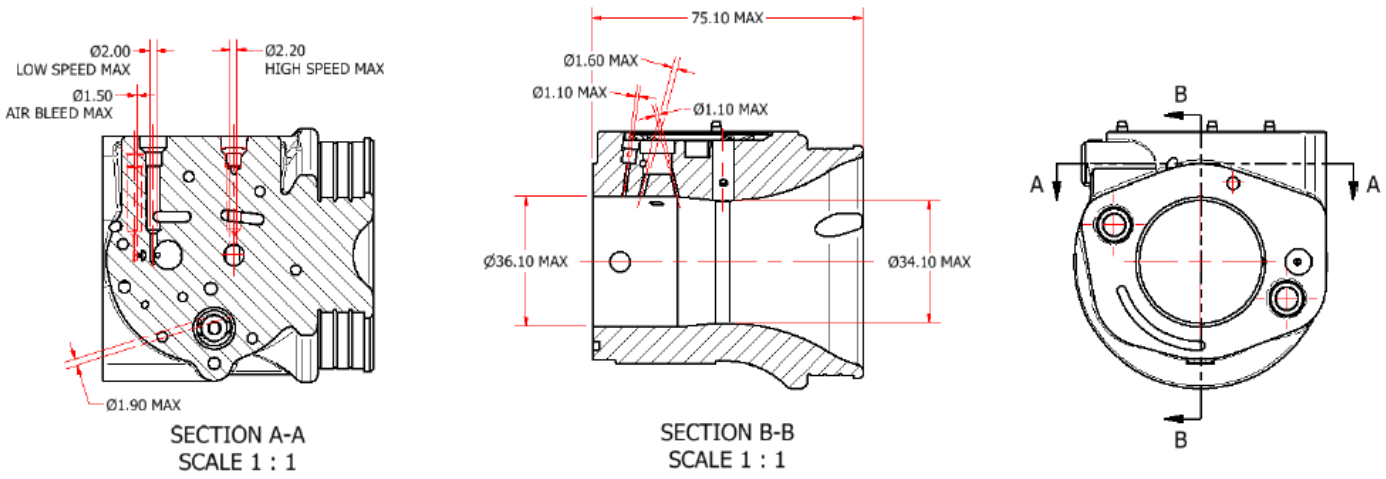
or

CARBURETTOR
TILLOTSON HB-15A

	
PHOTO OF ADJUSTING SIDE	PHOTO OF INLET SIDE

Manufacturer	**TILLOTSON LTD.**
Make	**TILLOTSON**
Model	**HB-15A**

SECTION VIEW

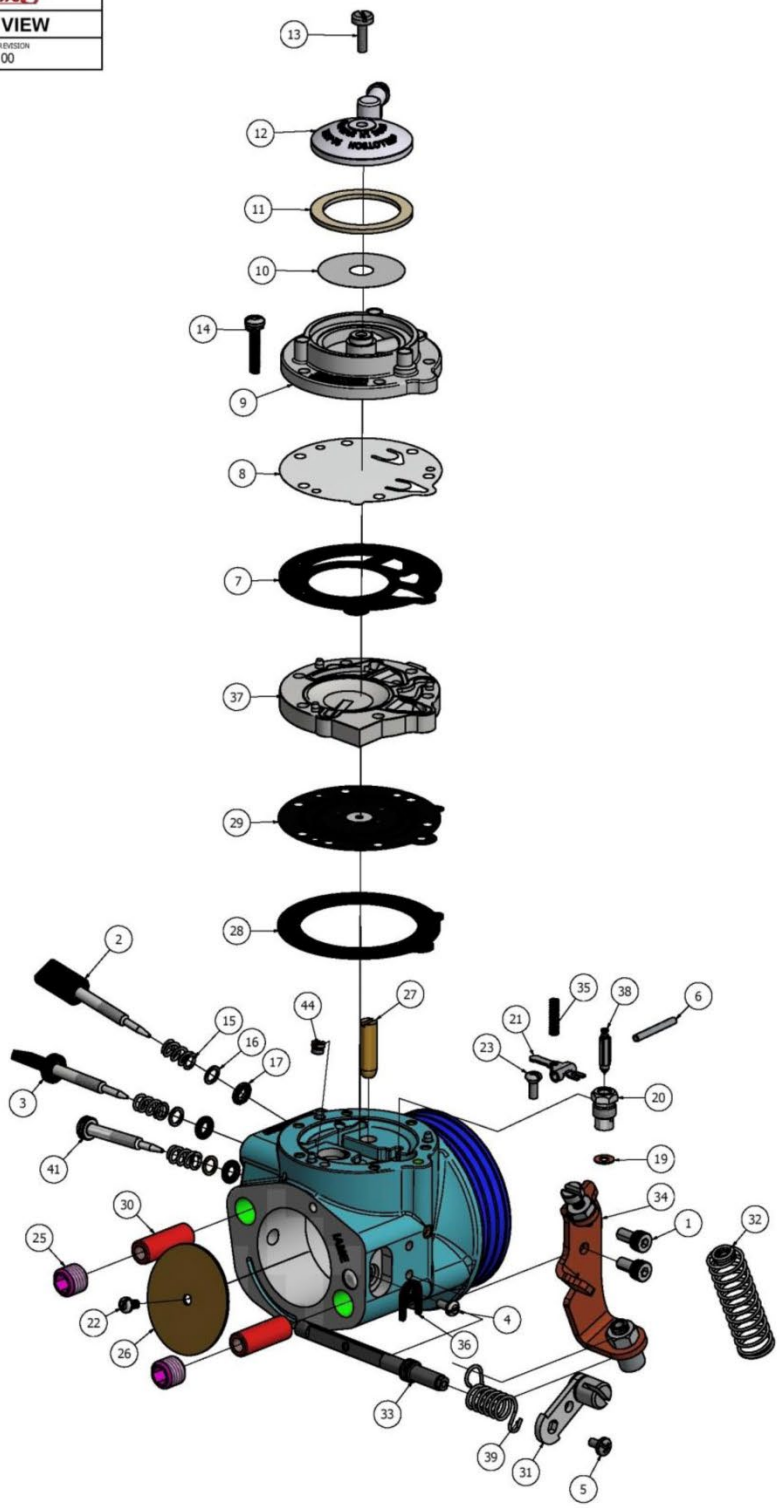


FLANGE SIDE “IAME” MARKING

Tillotson RACING

HB-15A EXPLODED VIEW

DATE	DRAWN BY	REVISION
27/03/2018	P.B	00



ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	15-C67	M4 X 0.7 SOCKET CAP SCREW	17	3	44-361	ADJUSTMENT SCREW O-RING	35	1	24-C296	INLET TENSION SPRING
2	1	43-1029	8-32 UNC ADJUSTMNET SCREW	19	1	16-B199	+* INLET SEAT GASKET	36	1	29-253	THROTTLE SHAFT CLIP
3	1	43-1030	8-32 UNC ADJUSTMNET SCREW	20	1	36-A42	+ INLET SEAT	37	1	91-A275	FUEL PUMP BODY
4	1	15-C19	4-40 UNC SCREW	21	1	155-A27	+ INLET CONTROL LEVER	38	1	34-229	+ INLET NEEDLE
5	1	15-C52	4-40 UNC SCREW	22	1	15-C20	4-40 UNC SCREW	39	1	24-C353	THROTTLE RETURN SPRING
6	1	32-79	FULCRUM LEVER PIN	23	1	15-B329	FULCRUM LEVER SCREW	41	1	43-A254	ADJUSTMENT SCREW
7	1	16-B392	+* PUMP GASKET	25	2	81-382	RETAINING NUT	44	1	49-B58	FIXED JET
8	1	237-223	FUEL PUMP DIAPHRAGM	26	1	14-A127	THROTTLE SHUTTER				
9	1	141-89	FUEL PUMP BODY	27	1	363-332	MAIN NOZZLE			*	REPAIR KIT CONTENTS
10	1	95 - 170	FUEL STRAINER SCREEN	28	1	16-B408	METERING GASKET			+	DIAPHRAGM & GASKET KIT CONTENTS
11	1	16-B205	+* FUEL STRAINER COVER GASKET	29	1	237-698	+* DIAPHRAGM ASSEMBLY				
12	1	91-A251	FUEL STRAINER COVER	30	2	81-381	CARBURETTOR MOUNTING NUT			RK-1HB	REPAIR KIT
13	1	15-B313	5-40 UNC SCREW	31	1	12-1220	THROTTLE LEVER ASSEMBLY			DG-1HB	DIAPHRAGM & GASKET KIT
14	6	15-C51	6 - 32 UNC SCREW WITH L/W	32	1	24-C334	CABLE RETURN SPRING			233-717P	INLET NEEDLE & SEAT SET
15	3	24-B449	ADJUSTMENT SCREW SPRING	33	1	13-B237	THROTTLE SHAFT				
16	3	78A-256	ADJUSTMENT SCREW WASHER	34	1	136-568	CABLE BRACKET ASSEMBLY				

PARTS OF CARBURETTOR

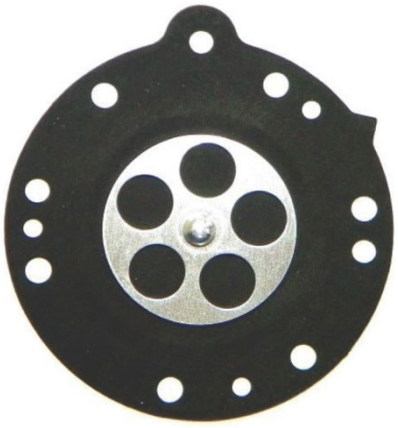
REF.28 - P. N°16-B408
DIAPHRAGM GASKET

Thickness = 1.0 ±0.1 mm

REF.7 - P. N° 16-B392
PUMP DIAPHRAGM GASKET

Thickness = 0.8 ±0.1 mm

REF.29 - P. N°237-698
DIAPHRAGM



Thickness = 0.13 ±0.07 mm

REF.8 - P. N°237-223
PUMP DIAPHRAGM

Thickness = 0.075 ±0.07 mm

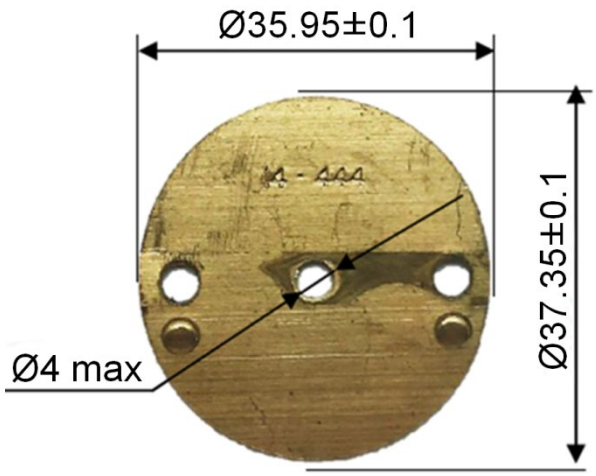
REF.37 - P. N° 91-A275
DIAPHRAGM COVER

Thickness = 6.75 ±0.15 mm

REF.9 - P. N° 141-89
PUMP COVER

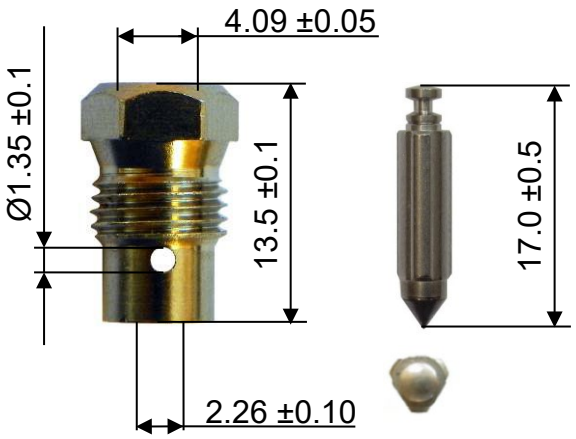
Thickness = 12.5 ±0.15 mm

REF.26 - P. N° 14-A127
THROTTLE SHUTTER



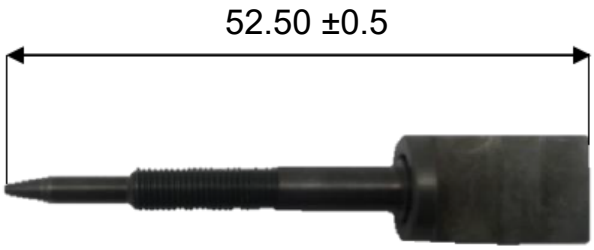
Thickness = 0.81 ±0.1 mm

REF.20 / 38 - P. N° 233-717P
SEAT + NEEDLE



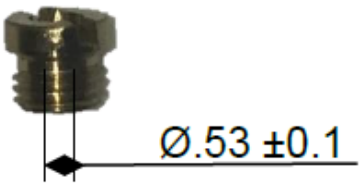
REF.2 - P. N° 43-1029
NEEDLE LOW SPEED

REF.3 - P. N° 43-1030
NEEDLE HIGH SPEED



REF.41 - P. N° 43-A254
NEEDLE AIR BLEED

REF.44 - P. N° 49-B58
FIXED JET



The carburettor can have this hole for sealing.