

FICHE D'HOMOLOGATION HOMOLOGATION FORM

Homologation N°

18/M/24



COMMISSION INTERNATIONALE DE KARTING - FIA



MOTEUR / ENGINE OK

Constructeur	Manufacturer	OTK KART GROUP S.R.L. (ITALY)
Marque	Make	VORTEX
Modèle	Model	DDS
Type d'admission	Inlet type	REED VALVE
Durée de l'homologation	Validity of the homologation	9 ans / 9 years
Nombre de pages	Number of pages	18

La présente Fiche d'Homologation reproduit descriptions, illustrations et dimensions du moteur au moment de l'homologation par la CIK-FIA. La hauteur du moteur complet sur les photos doit être de 7 cm minimum.

This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the time the CIK-FIA conducted the homologation. The height of the complete engine on all photographs must be as a minimum 7 cm.

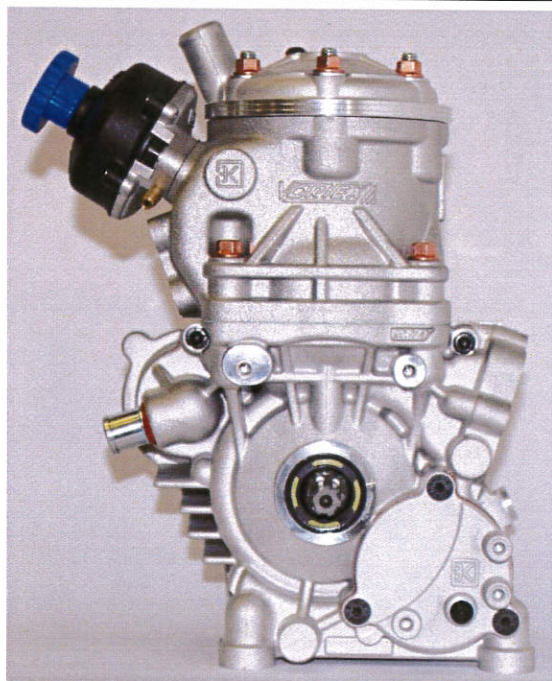


PHOTO DU MOTEUR CÔTÉ PIGNON
PHOTO OF DRIVE SIDE OF ENGINE

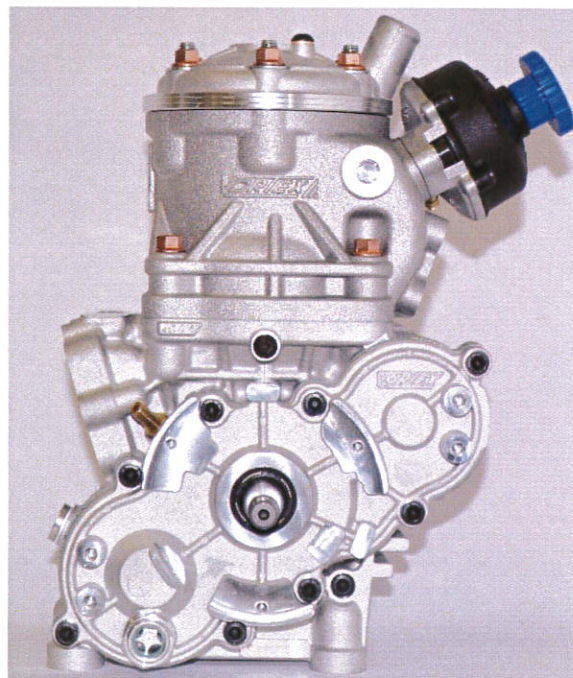


PHOTO DU MOTEUR CÔTÉ OPPOSÉ
PHOTO OF OPPOSITE SIDE OF ENGINE

Signature et tampon de l'ASN
Signature and stamp of the ASN

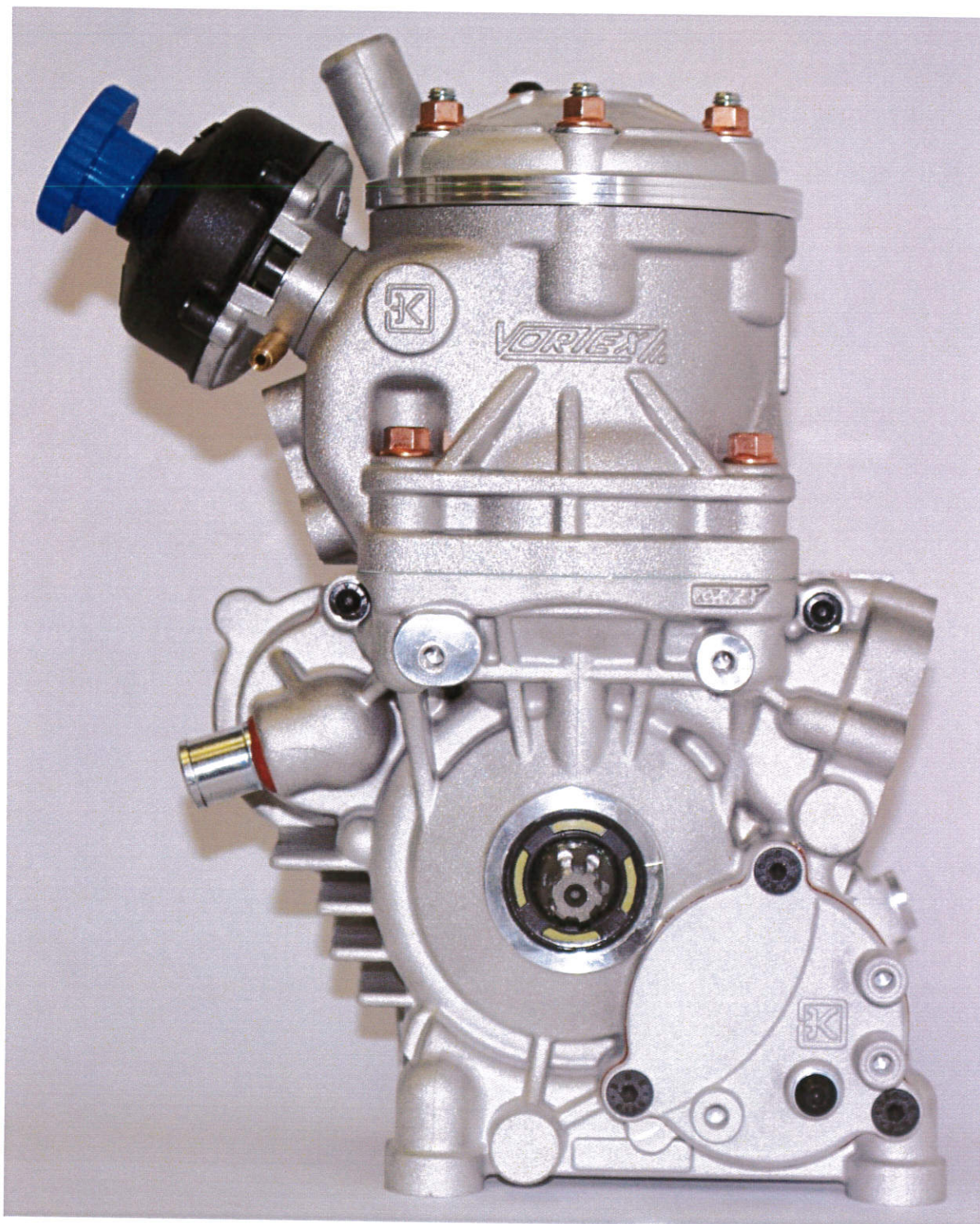
Signature et tampon de la CIK-FIA
Signature and stamp of the CIK-FIA

Auto Sport Schweiz GmbH
Auto Sport Suisse Sàrl
Könizstrasse 161
CH-3097 Liebefeld

20.01.2016
R. Sp

PHOTO DU MOTEUR COMPLET COTÉ
PIGNON

PHOTO OF DRIVE SIDE OF THE COMPLETE
ENGINE



**PHOTO DU MOTEUR COMPLET COTÉ
OPPOSÉ AU PIGNON**

**PHOTO OF OPPOSITE DRIVE SIDE OF THE
COMPLETE ENGINE**

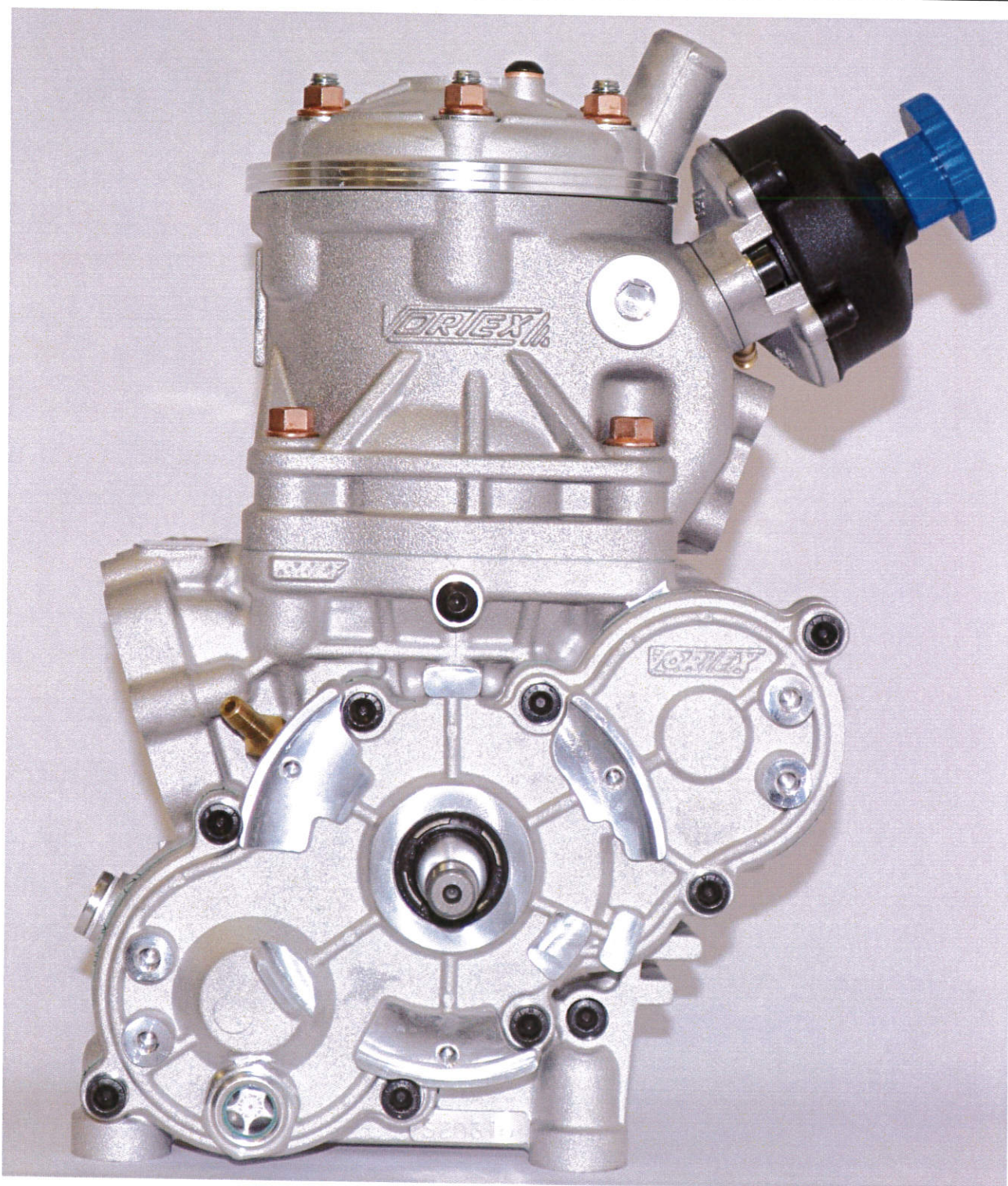


PHOTO DE L'ARRIÈRE DU MOTEUR
COMPLET

PHOTO OF THE REAR OF THE COMPLETE
ENGINE

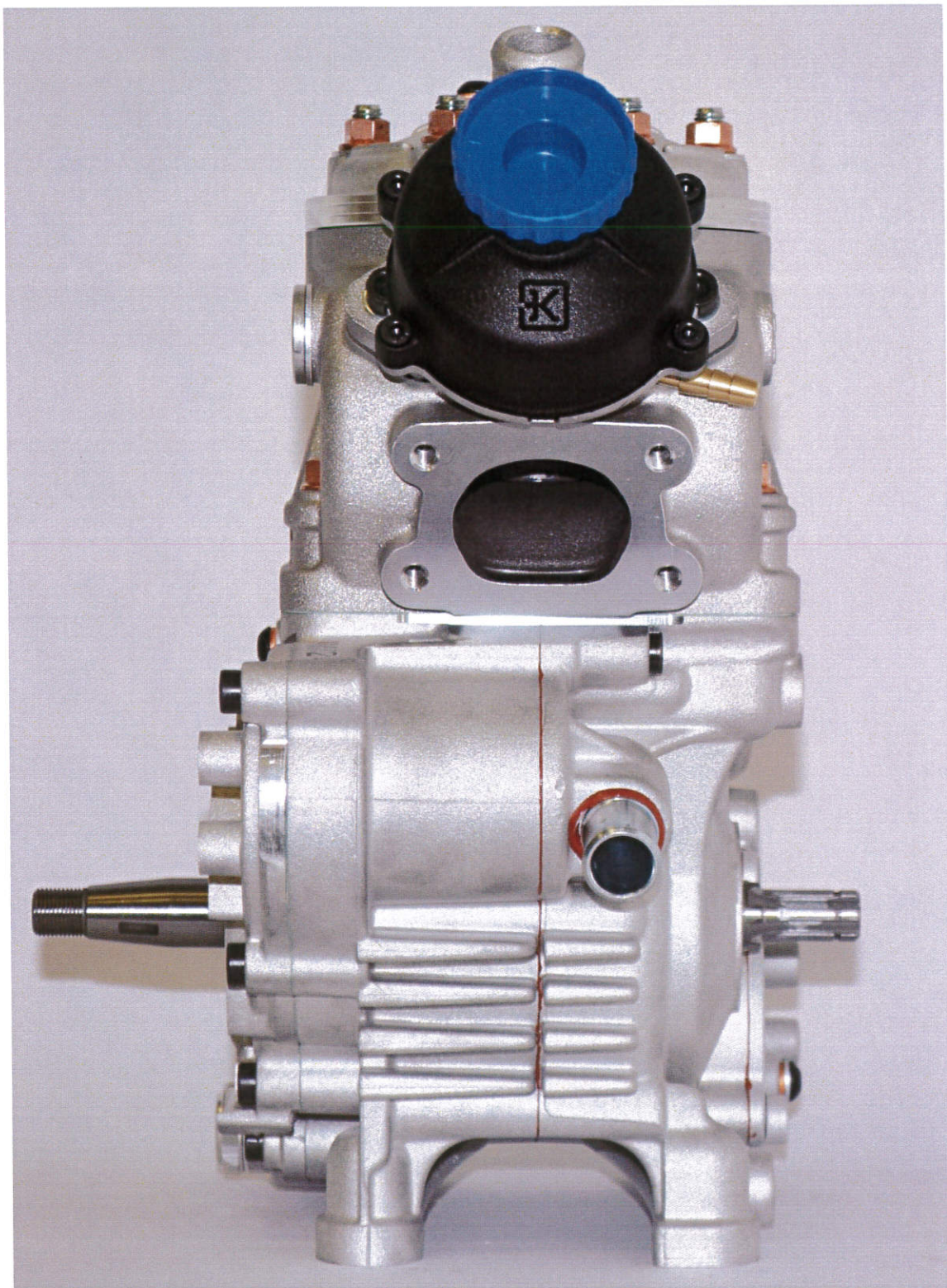


PHOTO DE L'AVANT DU MOTEUR COMPLET

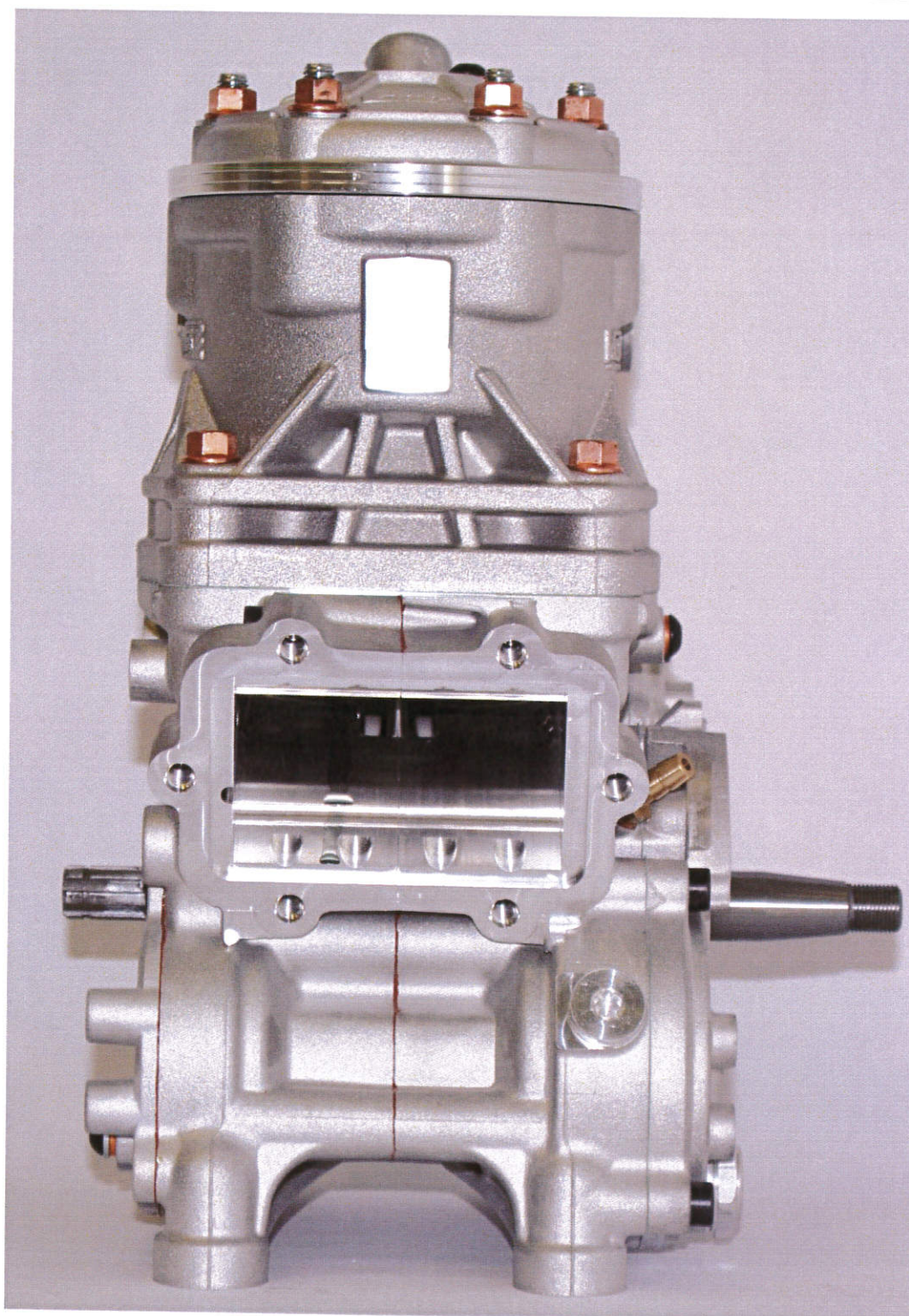
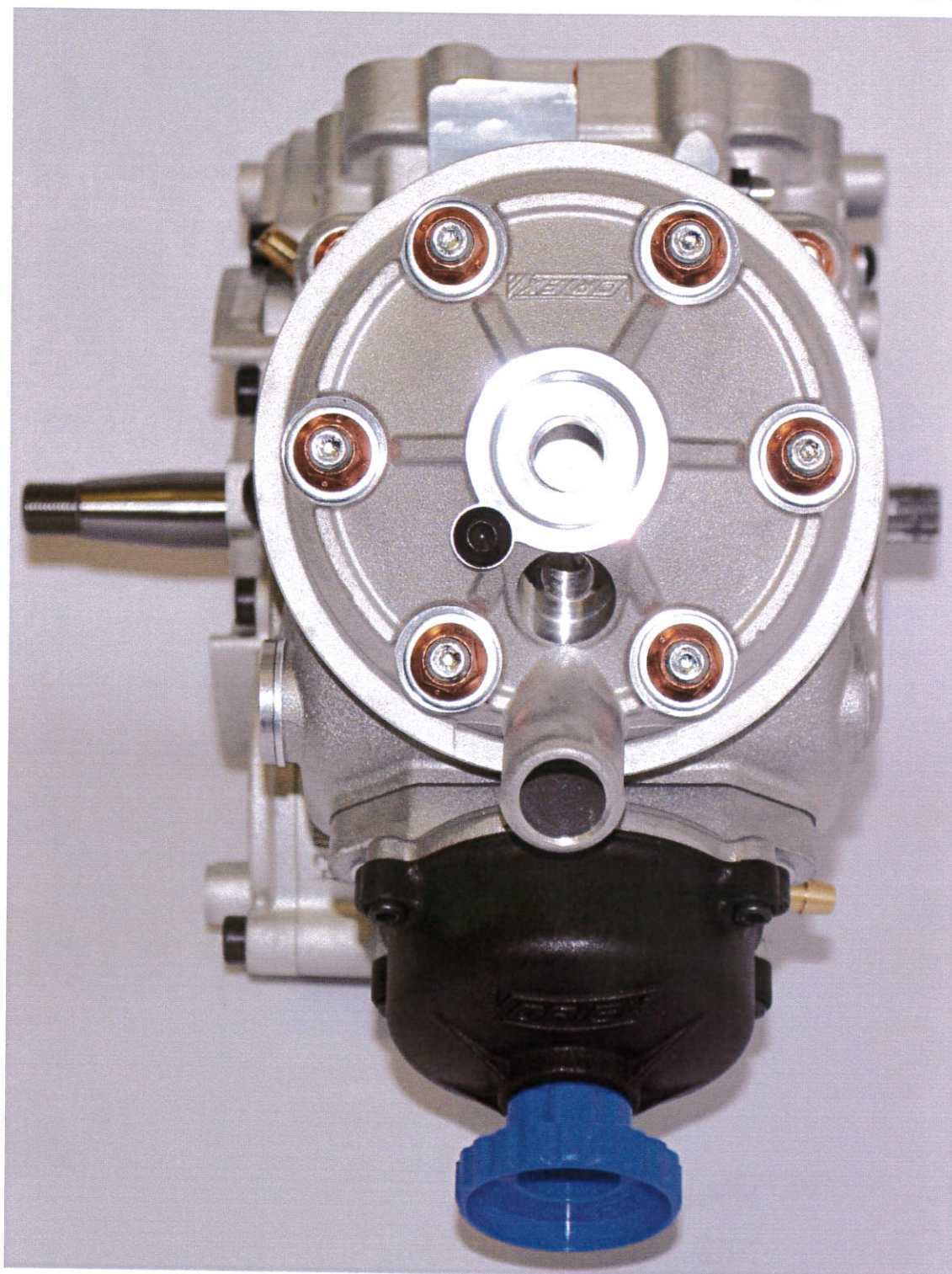
*PHOTO OF THE FRONT OF THE COMPLETE
ENGINE*

PHOTO DU MOTEUR COMPLET VU DU HAUT

PHOTO OF THE COMPLETE ENGINE TAKEN
FROM ABOVE

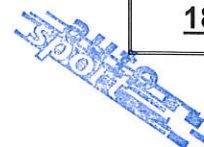
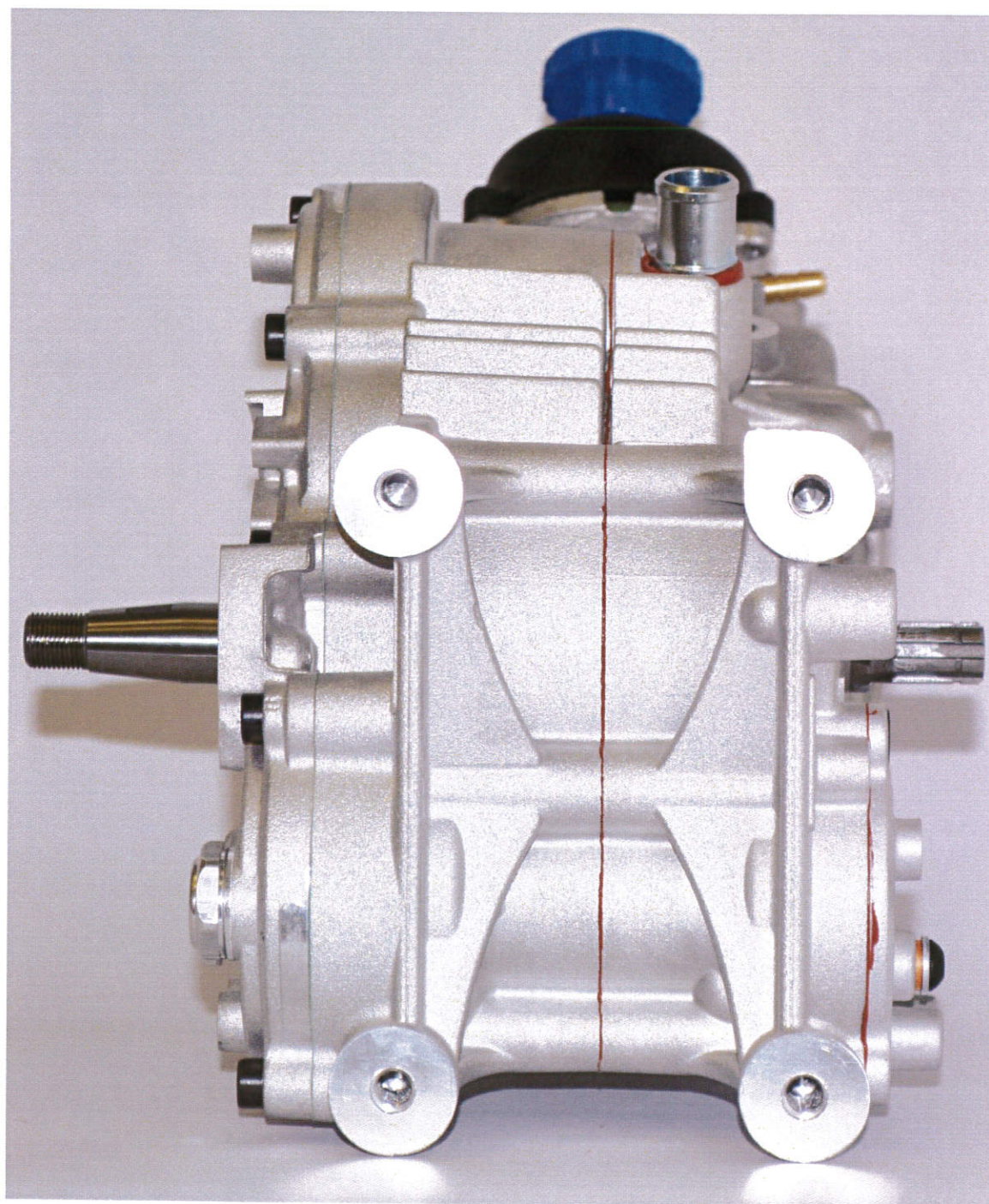


PHOTO DU MOTEUR COMPLET VU DU
DESSOUS

PHOTO OF THE COMPLETE ENGINE TAKEN
FROM BELOW



INFORMATIONS TECHNIQUES

TECHNICAL INFORMATION

A	CARACTÉRISTIQUES	A	CHARACTERISTICS
Le nombre de décimales doit être de 2 ou en accord avec la tolérance appliquée.		The number of decimal places must be 2 or comply with the relevant tolerance.	
		Tolérances / remarques Tolerances & remarks	
Cylindre		Cylinder	
Volume du cylindre	Volume of cylinder	<u>124.96 cm³</u>	<125cm ³
Alésage d'origine	Original bore	<u>54.05 mm</u>	--
Alésage théorique maximum	Theoretical maximum bore	<u>54.289 mm</u>	--
Course	Stroke	<u>54 mm</u>	--
Nombre de canaux de transfert, cylindre/carter		<u>5 / 5</u>	--
Nombre de lumières / canaux d'échappement		<u>3</u>	--
Forme de la chambre de combustion		<u>SPHERICAL WITH VARIABLE RADIUS+ SQUISH</u>	
Vilebrequin		Crankshaft	
Nombre de paliers	Number of bearings	<u>2</u>	--
Diamètre des paliers	Diameter of bearings	<u>25</u>	□0.1mm
Poids minimum du vilebrequin	Minimum weight of crankshaft	<u>1763 g</u>	minimum
Arbre d'équilibrage		Balance shaft	
Poids minimum de l'arbre d'équilibrage	Minimum weight of balance shaft	<u>196g</u>	minimum
Pourcentage d'Equilibrage	Percentage of balancing	<u>25%</u>	minimum
Bielle		Connecting rod	
Longueur (entre-axe) de la bielle	Connecting rod centreline	<u>104mm</u>	□0.2mm
Diamètre de la tête de bielle	Diameter of big end	<u>26mm - 28mm</u>	□0.05mm
Diamètre du pied de bielle	Diameter of small end	<u>19mm</u>	□0.05mm
Poids minimum de la bielle	Min. weight of the connecting rod	<u>105g</u>	minimum

Piston	Piston		
Nombre de segments du piston	Number of piston rings	1	
Poids minimum du piston avec segment	Minimum weight of the bare piston including piston rings	OPTION 1	109g minimum
Poids minimum du piston avec segment	Minimum weight of the bare piston including piston rings	OPTION 2	
		OPTION 3	105g minimum
		OPTION 4	
Axe du piston	Gudgeon pin		
Poids minimum	Minimum weight	27.9 g	Minimum

B	ANGLES D'OUVERTURE	B	OPENING ANGLES
De l'échappement	Of the exhaust	<u>COMMENT RÈGLEMENT</u>	<u>AS FOR REGULATION</u>

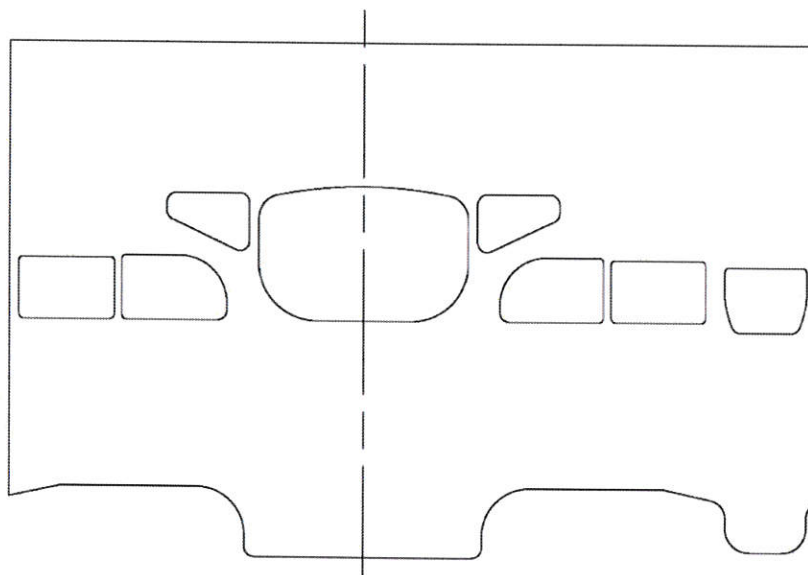
C	MATÉRIAU	C	MATERIAL
Culasse	Cylinder head		AL – SI – ALLOY
Cylindre	Cylinder		AL – SI – ALLOY - IRON CAST
Carter	Sump		AL – SI – ALLOY
Vilebrequin	Crankshaft		NI – CR – MO – STEEL
Bielle	Connecting rod		NI – CR – MO – STEEL
Piston	Piston		AL – SI – ALLOY

D	PHOTOS, DESSINS & GRAPHIQUES	D	PHOTOS, DRAWINGS & GRAPHS
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D.1 CYLINDRE / CYLINDER UNIT

DESSIN DU DÉVELOPPEMENT DU CYLINDRE
sans dimensions

*DRAWING OF THE CYLINDER DEVELOPMENT
without dimensions*

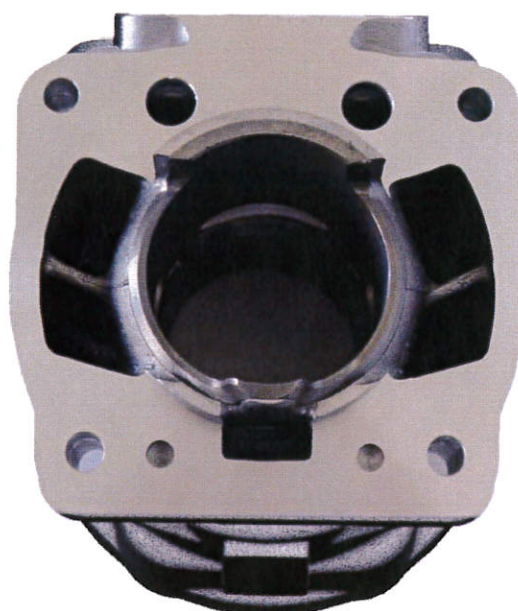
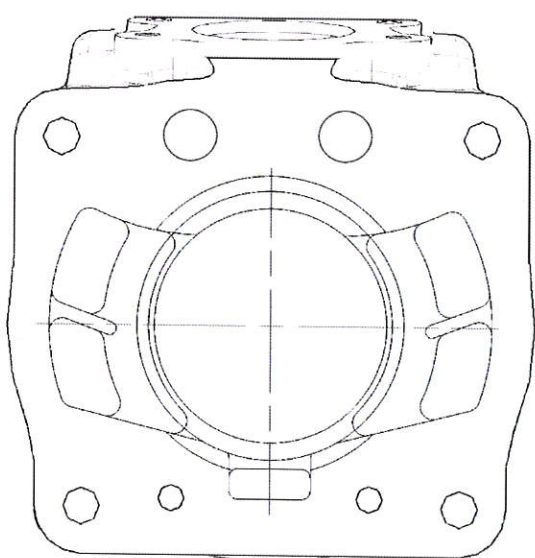


DESSIN DU PIED DU
CYLINDRE sans
dimensions

*DRAWING OF THE
CYLINDER BASE
without dimensions*

PHOTO DU PIED DU
CYLINDRE

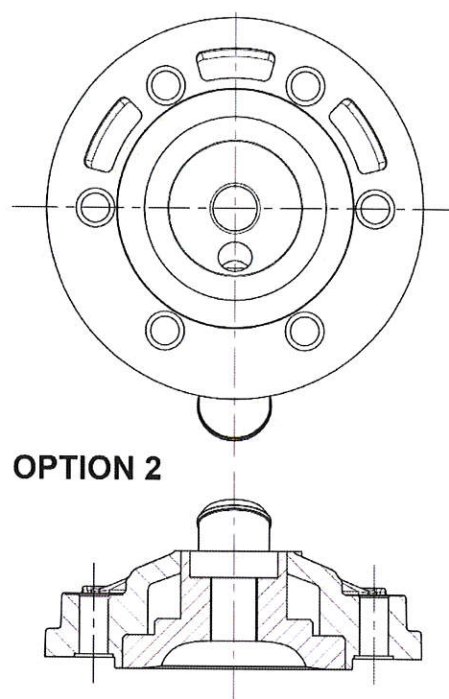
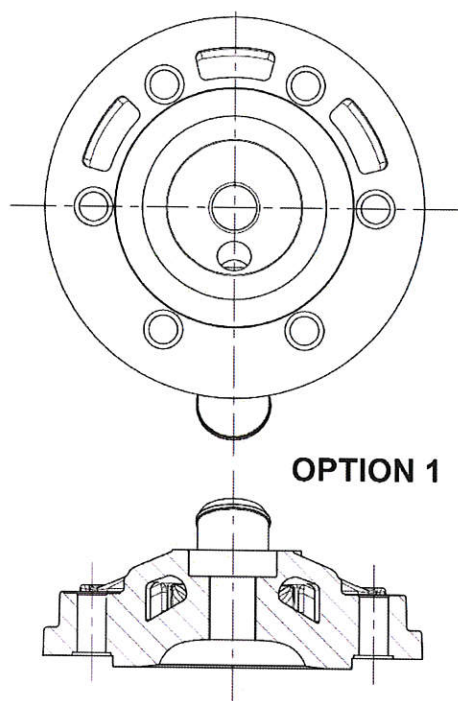
*PHOTO OF THE
CYLINDER BASE*



... Section D.1

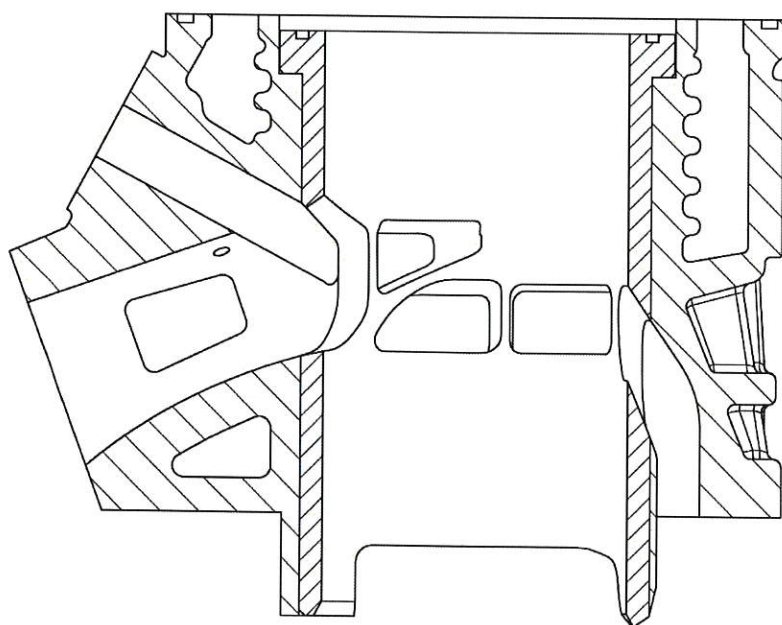
DESSIN DE LA CULASSE ET DE LA CHAMBRE
DE COMBUSTION sans dimensions

DRAWING OF THE CYLINDER HEAD AND OF
THE COMBUSTION CHAMBER *without*
dimensions



VUE EN COUPE VERTICALE DU CYLINDRE
AVEC LA CHEMISE, sans dimensions

VERTICAL CROSS SECTION VIEW OF
CYLINDER WITH LINER, *without dimensions*



D.2 BIELLE, CARTERS, VILEBREQUIN & PISTON / CONROD, CRANKCASE, CRANKSHAFT & PISTON

PHOTO DE L'EMBIELLAGE
PHOTO OF THE CRANKSHAFT & CONROD

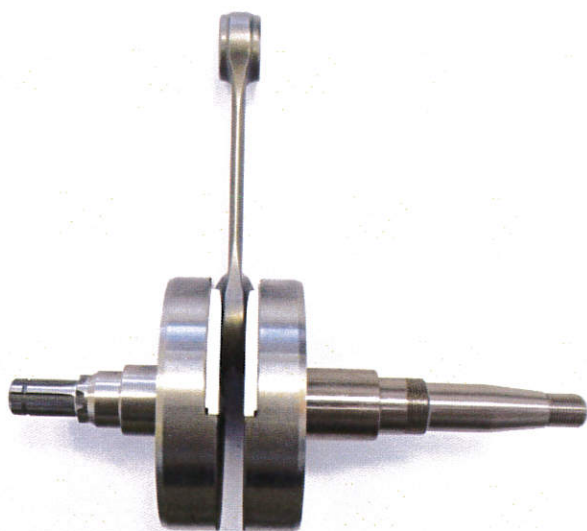
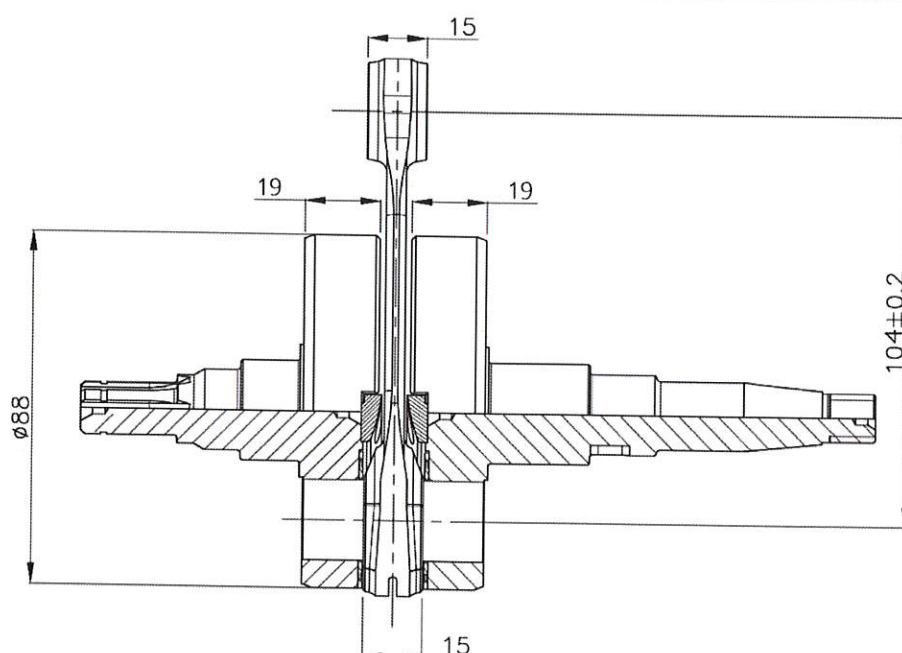


PHOTO DE LA BIELLE
PHOTO OF THE CONROD



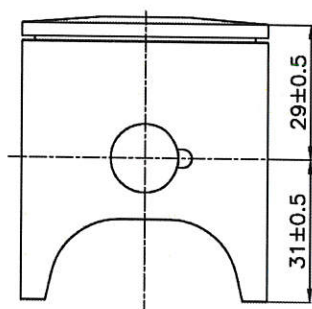
DESSIN DE L'ENSEMBLE VILEBREQUIN -
BIELLE (DIMENSIONS avec tolérances, largeurs
pied & tête de bielle, largeur & diamètre des
contrepoids)

DRAWING OF THE CRANKSHAFT - CON ROD
UNIT (DIMENSIONS incl. tolerances, big & small
ends thickness, crank mass thickness &
diameter)

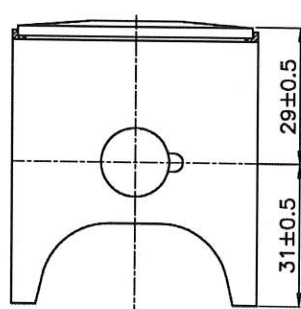


DESSIN DU PISTON (DIMENSIONS
PRINCIPALES avec tolérances)

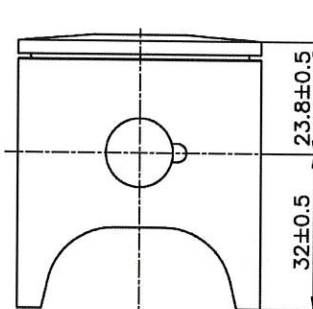
DRAWING OF THE PISTON (MAIN
DIMENSIONS incl. tolerances)



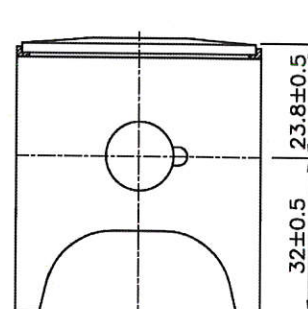
OPTION 1



OPTION 2



OPTION 3



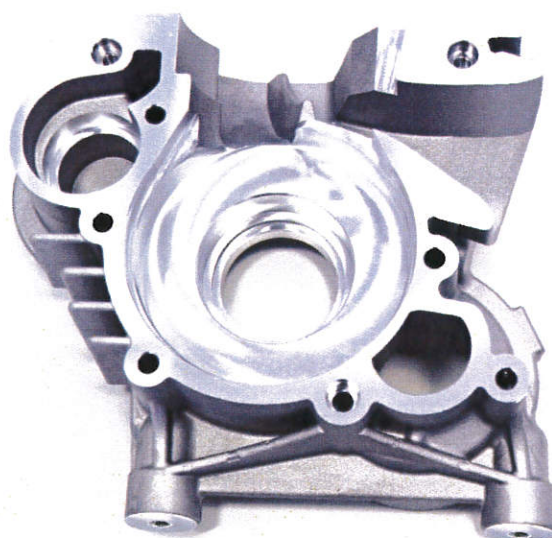
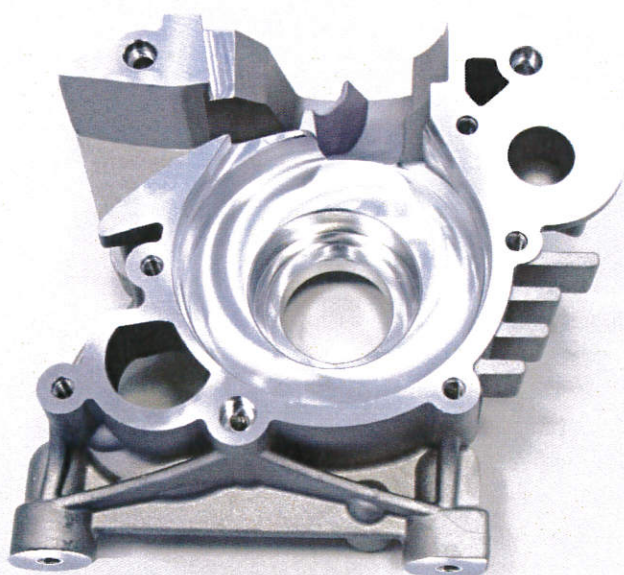
OPTION 4

PHOTO INTÉRIEURE
DU CARTER DROIT

PHOTO OF THE
INSIDE OF THE RH
CRANKCASE

PHOTO INTÉRIEURE
DU CARTER GAUCHE

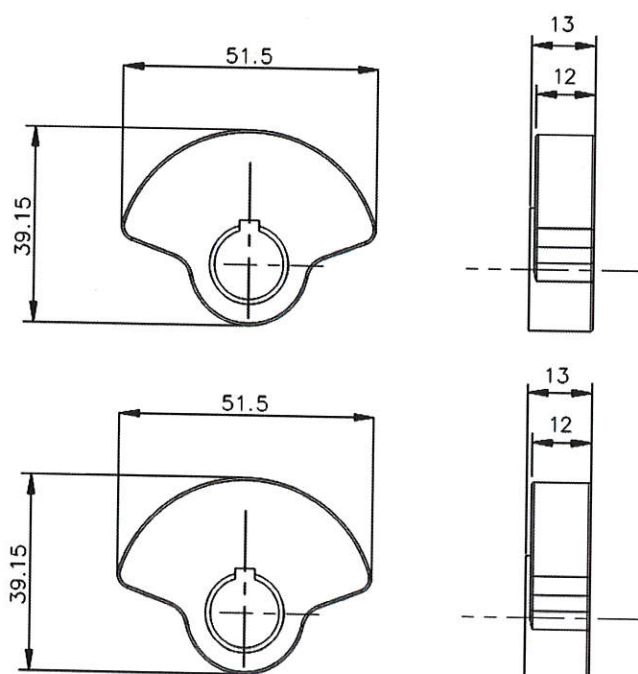
PHOTO OF THE
INSIDE OF THE LH
CRANKCASE



D.3 ARBRE D'ÉQUILIBRAGE / BALANCE SHAFT

PHOTO DE L'ARBRE D'ÉQUILIBRAGE

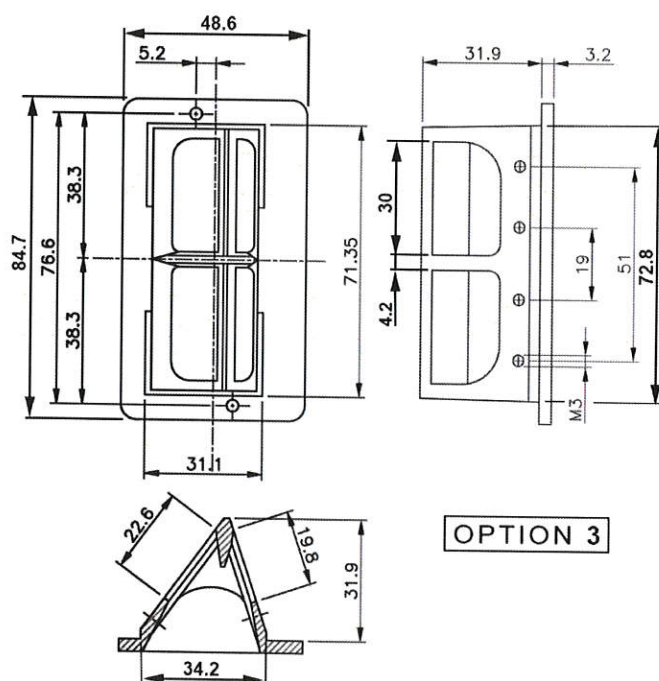
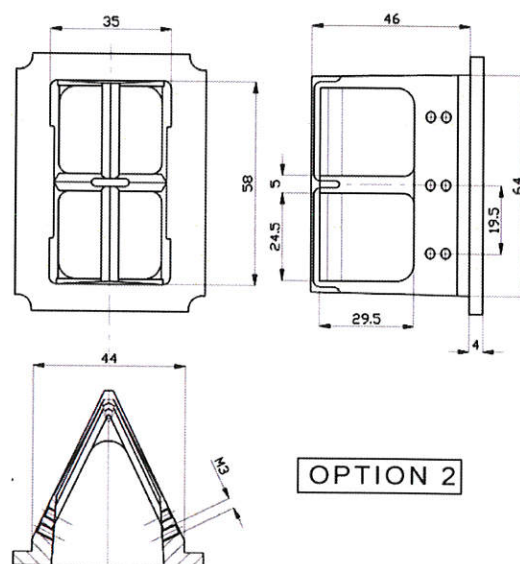
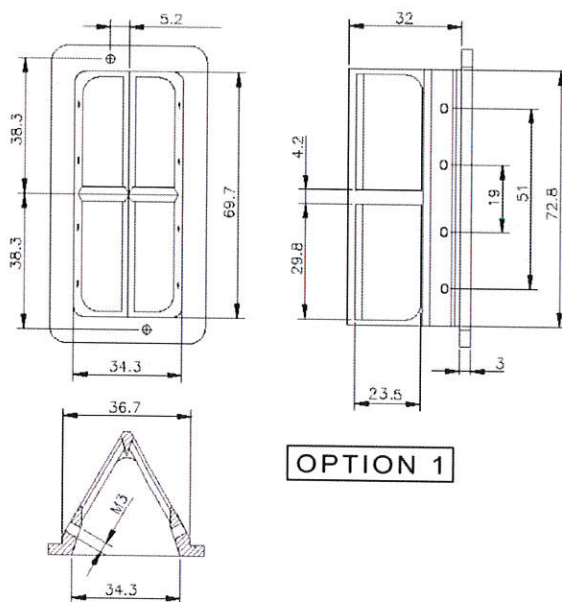
PHOTO OF THE BALANCE SHAFT

DESSIN DE L'ARBRE D'ÉQUILIBRAGE
(DIMENSIONS avec tolérances)DRAWING OF THE BALANCE SHAFT
(DIMENSIONS incl. tolerances)

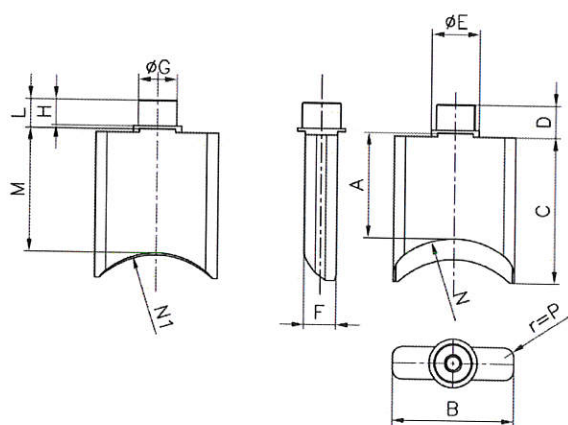
D.4 CLAPETS & POWER VALVE / REED VALVE & POWER VALVE

DESSIN DE LA BOÎTE À CLAPETS
(DIMENSIONS avec tolérances)

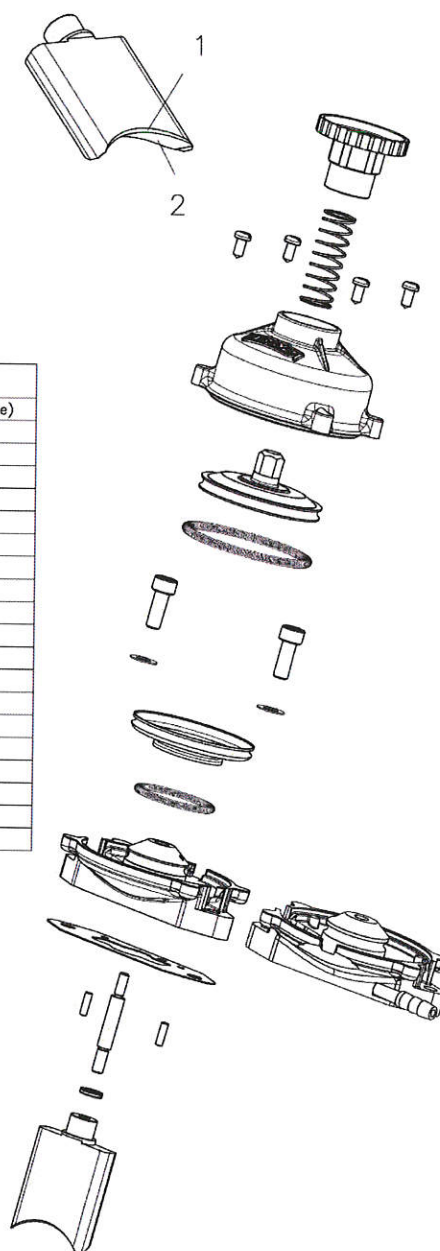
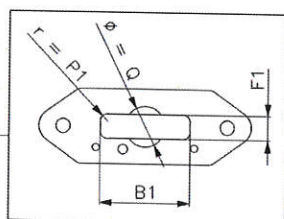
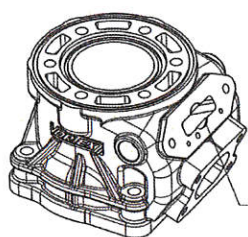
DRAWING OF THE REED VALVE
(DIMENSIONS incl. **tolerances**)



... Section D.4

DESSIN EXPLODÉ ET DÉNOMINATION DES
ÉLÉMENTS DE LA POWER VALVEEXPLODED DRAWING AND DESIGNATION OF
THE POWER VALVE COMPONENTS

PARAMETER	DIMENSIONS	TOLERANCE
	in mm (or ° if angle)	in mm (or ° if angle)
A	33.2	± 0.5
B	38	± 0.1
C	45	± 0.5
D	10	± 0.1
E	15	± 0.1
F	10	± 0.1
G	12	± 0.1
H	8	± 0.1
L	9	± 0.1
M	39.4	± 0.5
N (3D surface n° 2)	27.4	± 0.5
N1 (3D surface n° 1)	24.3	± 0.5
P	3	± 0.1
Q	16	± 0.1
Ø	62	± 2
B1	38.2	± 0.2
F1	10.15	± 0.2
P1	3.1	± 0.2
Z	4	Maximum



Le dessin explosé de la power valve devra comprendre le tableau indiquant toutes les dimensions indiquées sur le dessin technique n° 22, y compris celles marquées « free ».

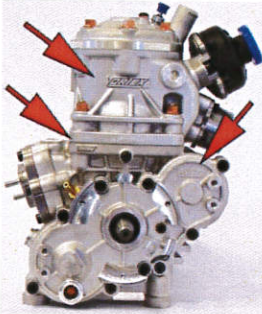
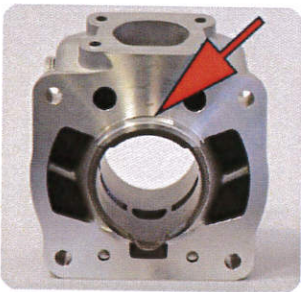
The exploded view of the power valve shall include the table indicating all the measurements shown on the technical drawing No. 22, including those marked "free".

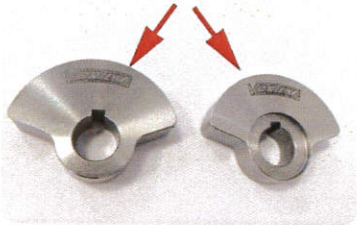
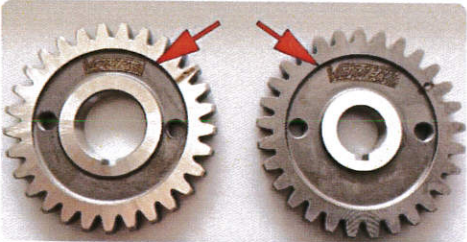
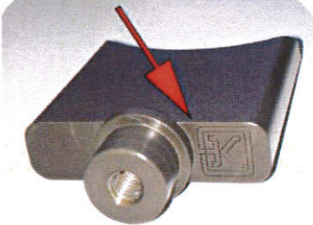
D.5 MARQUAGE PIECES PRINCIPALES / MAIN PARTS MARKING

Pour chaque pièce, photo globale avec le marquage et photo avec zoom sur le marquage
 For each part, global picture with marking and zoom picture on marking

1. Fonderies de carter, couvercle d'engrenages, cylindre, culasse
2. Chemise en fonte
3. Demi-vilebrequins
4. Bielle
5. Arbre d'équilibrage
6. Engrenages
7. Couvercle (plastique) de la power valve
8. Guillotine de la power valve
9. Piston

1. Castings of crankcase, gears cover, cylinder, cylinder head
2. Cast iron liner
3. Half-crankshafts
4. Conrod
5. Balancer shaft
6. Gears
7. Power valve (plastic) cover
8. Power valve slide
9. Piston

Pièces N° / Parts no.	Photo globale / global picture	Zoom
1		
2		
3		
4		

5		
6		
7		
8		
9	