ENGINE SPECIFICATIONS

MOTEUR / *ENGINE*

TM K9-ES

Constructeur	*Manufacturer*	**TM RACING – ITALY**
Marque	*Make*	**TM RACING**
Modèle	*Model*	**K9-ES**
Type d'admission	*Inlet type*	**REED VALVE**
Nombre de pages	*Number of pages*	**9**

PHOTO DU MOTEUR CÔTÉ PIGNON

PHOTO OF DRIVE SIDE OF ENGINE

PHOTO DU MOTEUR CÔTÉ OPPOSÉ

PHOTO OF OPPOSITE SIDE OF ENGINE

INFORMATIONS TECHNIQUES		*TECHNICAL INFORMATION*	
A	CARACTÉRISTIQUES	*A*	*CHARACTERISTICS*

			Tolerances
Volume du cylindre	*Volume of cylinder*	**124.66 CM3**	**< 125cm³**
Alésage d'origine	*Original Bore*	**54.00 MM**	
Alésage théorique maximum	*Theoretical maximum bore*	**54.07 MM**	
Course	*Stroke*	**54.43 MM**	
Système de refroidissement	*Cooling system*	**WATER**	
Nombre de systèmes de carburation	*Number of carburation systems*: 1 Carburator	**Keihin PWM or Dell'orto PHBE30**	
Nombre de canaux de transfert, cylindre/carter	*Number of transfer ducts, cylinder/sump*	**5**	
Nombre de lumières / canaux d'échappement	*Number of exhaust ports / ducts*	**1**	
Forme de la chambre de combustion	*Shape of the combustion chamber*	**SPHERIC WITH VARIABLE RADIUS+SQUISH**	
Matériau de la paroi du cylindre	*Cylinder wall material*	**ALLUMINIUM+NICASIL**	
Longueur (entre-axe) de la bielle	*Length between the axes of the connecting rod*	**109.8**	±0.1mm
Volume de la chambre de combustion	*Volume of combustion chamber*	**12 CC** (As measured using CIK Insert)	Minimum

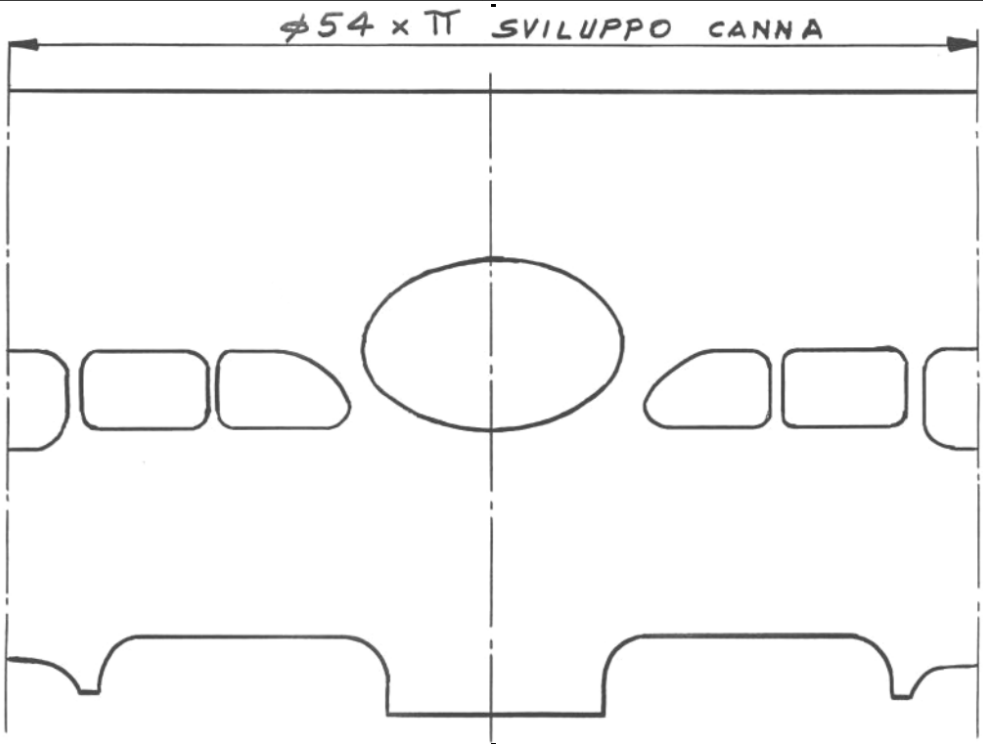
B	ANGLES D'OUVERTURE	*B*	*OPENING ANGLES*

De l'échappement	*Exhaust*	**193°**	± 2°

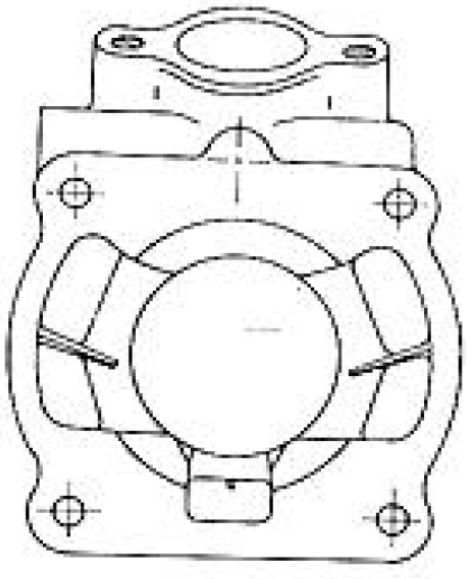
C	MATÉRIAU	*C*	*MATERIAL*

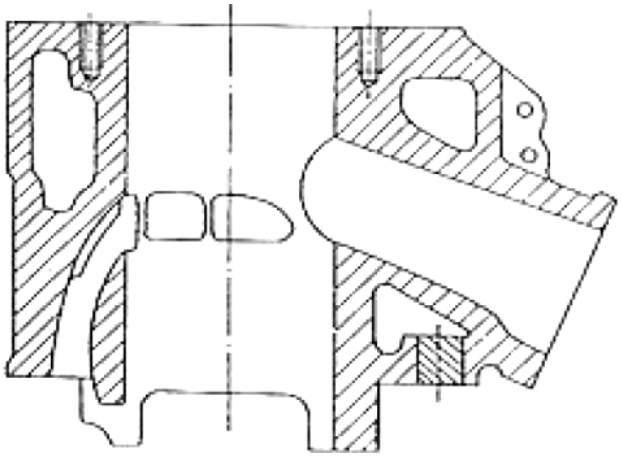
Cylindre	*Cylinder*	**ALLUMINIUM+NICASIL**
Culasse	*Cylinder head*	**ALLUMINIUM**
Carter	*Sump*	**ALLUMINIUM+STEEL'S BUSH**
Bielle	*Connecting rod*	**STEEL** (Must be Original TM Part)

DESSIN DU DÉVELOPPEMENT DU CYLINDRE	*DRAWING OF THE CYLINDER DEVELOPMENT*

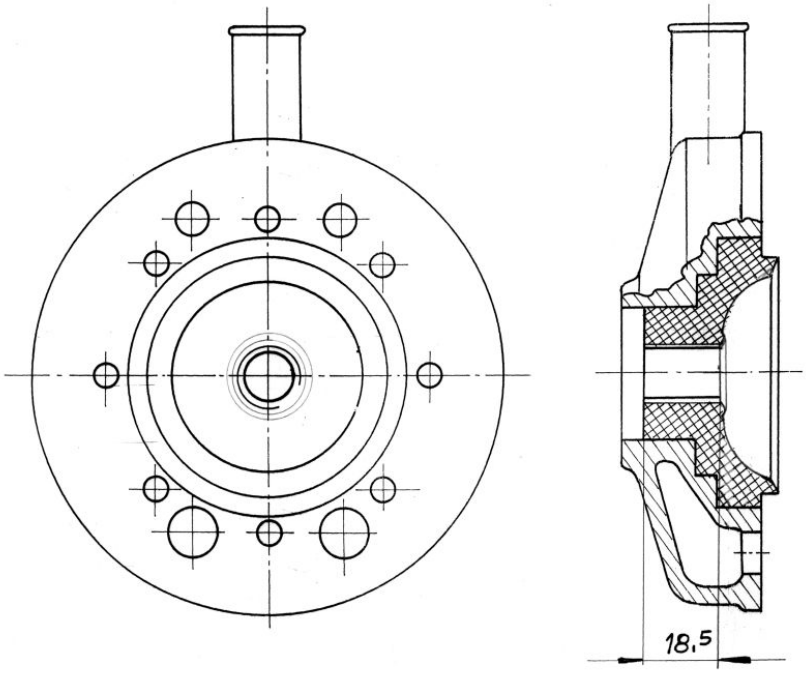


DESSIN DU PIED DU CYLINDRE	*DRAWING OF THE CYLINDER BASE*	VUE EN SECTION DU CYLINDRE	*SECTION VIEW OF CYLINDER*

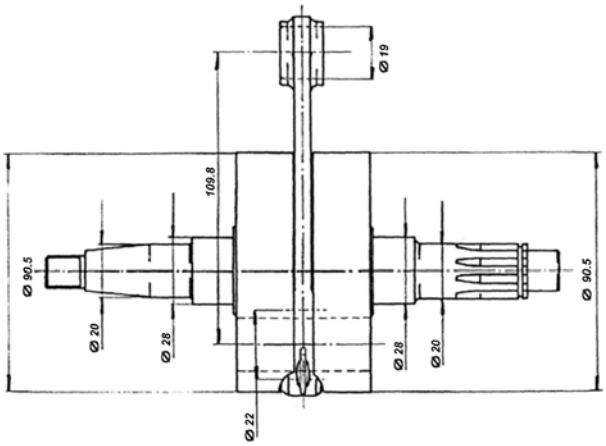




DESSIN DE LA CULASSE ET DE LA CHAMBRE DE COMBUSTION	*DRAWING OF THE CYLINDER HEAD AND OF THE COMBUSTION CHAMBER*



DESSIN DU VILEBREQUIN	*DRAWING OF THE CRANKSHAFT*	DESSIN INTÉRIEUR DU CARTER	*DRAWING OF THE INSIDE OF SUMP*



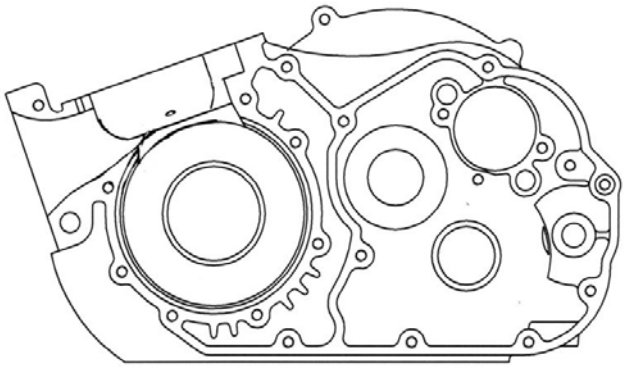


PHOTO DE L'ARRIÈRE DU MOTEUR	*PHOTO OF THE BACK OF THE ENGINE*	PHOTO DE L'AVANT DU MOTEUR	*PHOTO OF THE FRONT OF ENGINE*
			
PHOTO DU MOTEUR PARTIE SUPÉRIEURE	*PHOTO OF THE ENGINE TAKEN FROM ABOVE*	PHOTO DU MOTEUR PARTIE INFÉRIEURE	*PHOTO OF THE ENGINE TAKEN FROM BELOW*
			

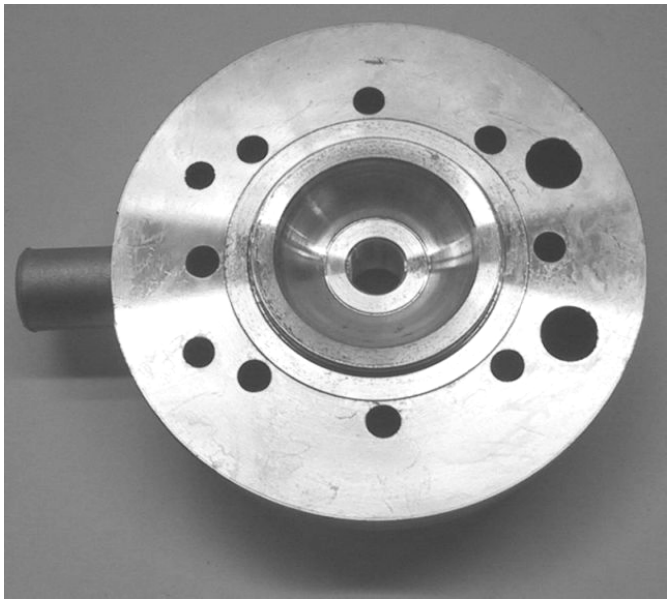
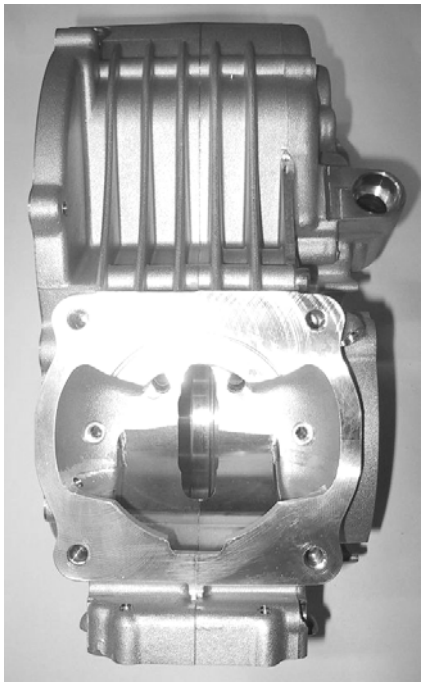
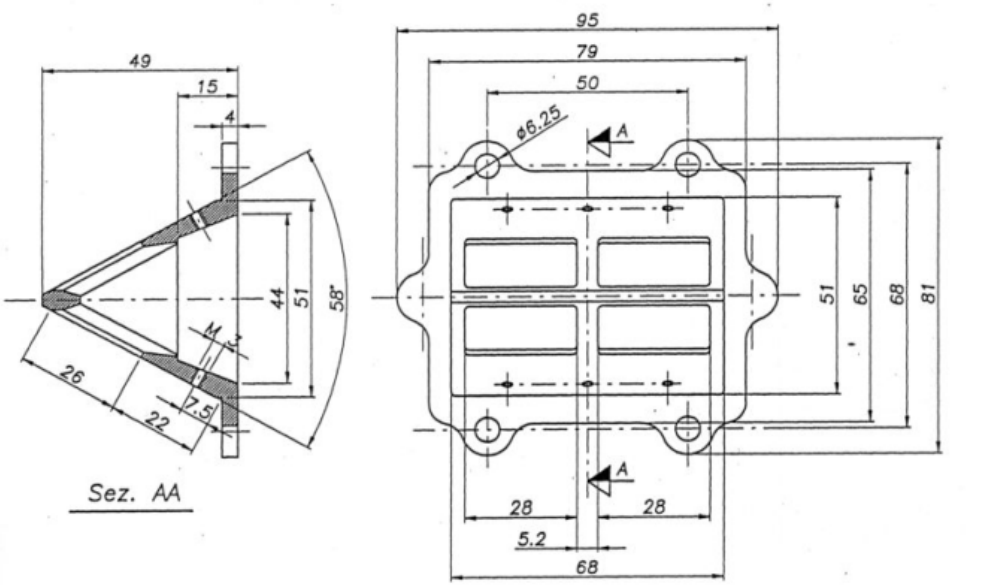
PHOTO DU PIED DU CYLINDRE	*PHOTO OF THE BASE OF THE CYLINDER*	PHOTO DE LA CHAMBRE DE COMBUSTION	*PHOTO OF COMBUSTION CHAMBER*
			
PHOTO DU CARTER (CÔTÉ JOINT)	*PHOTO OF THE SUMP (GASKET FACE)*	PHOTO D'UNE PARTIE INTÉRIEURE DU CARTER	*PHOTO OF AN INTERNAL PART OF THE SUMP*
			

PHOTO OF THE TOP OF THE PISTON	PHOTO OF THE SIDE OF THE PISTON
	
PHOTO OF THE BASE OF THE PISTON	PHOTO OF THE SIDE OF THE PISTON
	

DESSIN ET PHOTO DE LA BOÎTE À CLAPETS	*DRAWING AND PHOTO OF REED*



****Reeds are open but must be made of fiberglass or carbon fiber material*

BOÎTE DE VITESSES	*GEARBOX*

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

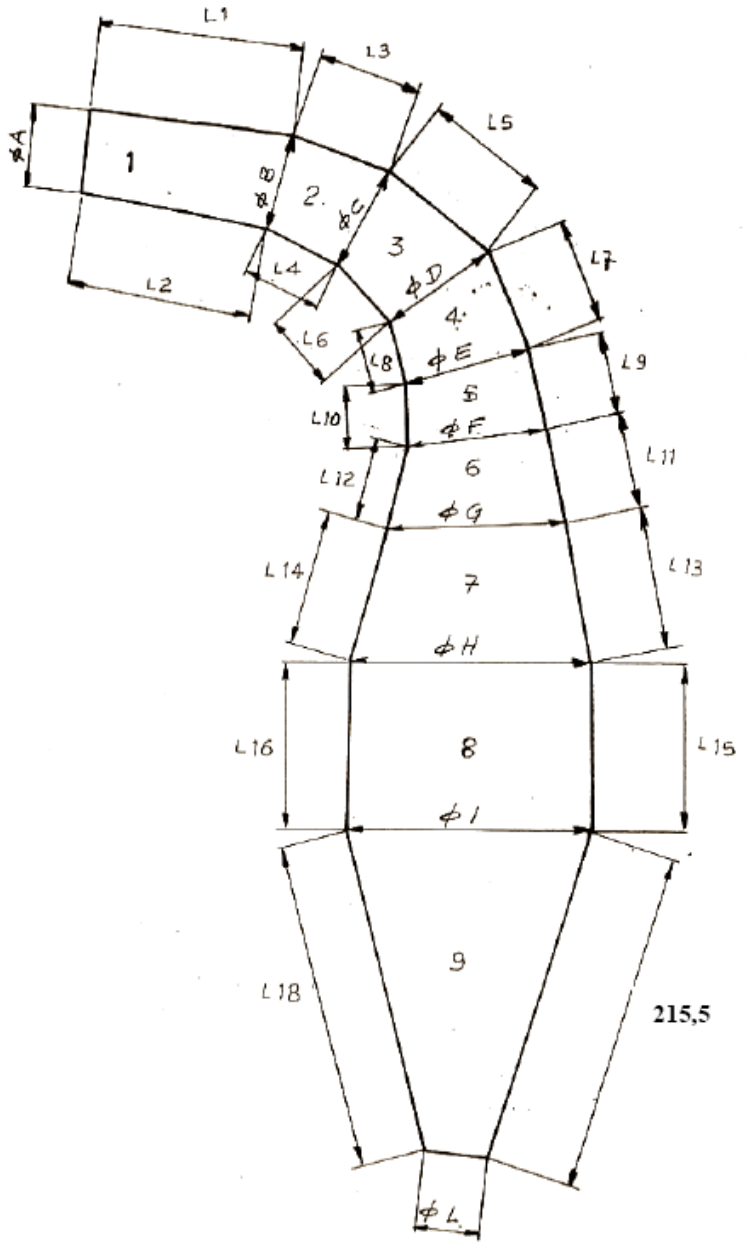
Rapports de boîte de vitesses	*Gearbox ratios*

Vitesse *Gear*	Arbre primaire *Primary shaft*	Arbre secondaire *Secondary shaft*	Relevé des valeurs obtenues après trois tours moteur *Reading of values obtained after three engine revs*
1ère/1st	**13**	**33**	**107.8°**
2e/2nd	**16**	**29**	**151.0°**
3e/3rd	**18**	**27**	**182.4°**
4e/4th	**22**	**27**	**222.9°**
5e/5th	**22**	**23**	**261.7°**
6e/6th	**27**	**25**	**295.5°**

PHOTOS OF THE EXHAUST	PHOTO OF SILENCERS
 339/M/09	

DESCRIPTIONS TECHNIQUES		TECHNICAL DESCRIPTIONS	
Poids en gr	Weight in gr	1092,6	Minimum
Volume in cm3	Volume in cc	3922	+/-5 %

DESSINS TECHNIQUES	TECHNICAL DRAWINGS
Contenant toutes les informations permettant de construire cet échappement.	Including all the information necessary to build this exhaust.

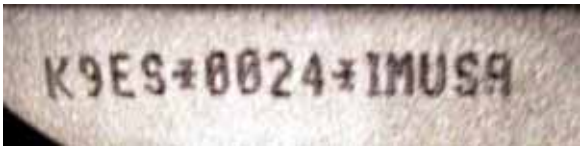
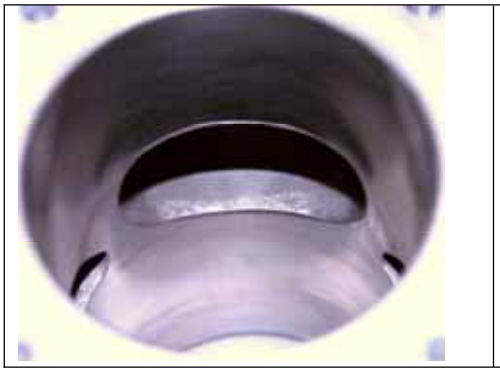


215,5

TRATTO	D. MIN.	D. MAX	L. MIN	L. MAX
1	ΦA 42,5	ΦB 49	L2 91,5	L1 99
2	ΦB 49	Φc 54	L4 43	L3 55,2
3	Φc 54	ΦD 66	L6 44	L5 59
4	ΦD 66	ΦE 80	L8 42,5	L7 60,5
5	ΦE 80	ΦF 94,8	L10 41,3	L9 60
6	ΦF 94,8	ΦG 111,8	L12 38,5	L11 52,6
7	ΦG 111,8	ΦH 135	L14 52	L13 74
8	ΦH 135	Φ I 135	L16 63	L15 63
9	Φ I 135	ΦL 25,8	L18 198	215,5
10	ΦL —	ΦM —	L20 —	L19 —

215,

Stock ICC TaG

1.	**Displacement**	As per Specifications Document
2.	**Cylinder**	Cylinder is of aluminium with nicasil. All ports must be of intended design, conforming to drawings supplied by manufacturer (i.e. no boost ports). Only engines designated for North America are allowed and can be identified by **"USA"** cast on the cylinder and have a serial number consisting of **K9ES*####*IMUSA** (see photo) stamped on the case. No modification or grinding permitted.   
3.	**Cylinder head**	Cylinder head is aluminium and shall conform to drawing supplied by manufacturer. No modification allowed. Cylinder head volume is measured using the standard procedure except for the following notes. 1. The CIK cc tool is to be used(CIK Technical Drawing 6) 2. If using the LAD tool 12.4cc Min
4.	**Crankcase**	Crankcase is aluminium and shall conform to drawing supplied by manufacturer. All gearbox components must remain stock including the clutch. No modification allowed.
5.	**Crankshaft and Conrod**	Crankshaft and conrod are of steel and shall be of original as supplied by TM. Parts must conform to drawings supplied by manufacturer. No modification allowed.
6.	**Piston**	Piston is aluminium, as supplied by TM, no modification allowed.
7.	**Piston Ring**	Must be magnetic material.
8.	**Clutch**	All items must be stock and as supplied by TM.
9.	**Carburetor**	Dell'orto model PHBE30. As supplied by TM

10.	**Reeds**	Reeds are open but must be made of fiberglass or carbon fiber material. Additional Stiffener (part number 20002) is also allowed. (as Shown in Specs)
11.	**Inlet Silencer**	The induction silencer must be CIK and the maximum inlet tube diameter is 29mm for non-filtered inlet silencers and 30mm for filtered ones.
12.	**Spark Plug**	Spark plug make is free. The spark plug must retain the original washer and the body of the plug (electrodes not included), when tightened on the cylinder head, must not extend beyond the upper part of the dome of the combustion chamber.
13.	**Ignition**	Stock digital ignition with rev limiter must be used.
14.	**Battery**	Must have the same dimensions as the originally supplied battery and must also have the same Ah rating.
15.	**Muffler/Header**	Must be stock as supplied by the manufacturer.
16.	**Remaining Parts**	All parts to be original as supplied by TM (see Note 1). No grinding, polishing or modification of **any part** allowed. With the following Exception. 1. Radiator and Mounting Hardware is are NON-TECH 2. Water pump, Pulley and Belts are NON-TECH 3. Water Hoses and Clamps and NON-TECH 4. Data Acquisition systems and Installation of sensors is NON-TECH
	NON-TECH	Shall mean that the item has no technical specifications. Items that are deemed "NON-TECH" can not be used to disqualify a competitor. These items however must comply with any rules from the governing federation that are applicable.
	Note 1	If you are unsure as to whether or not a "non stock" or modified part can be used ask the technical representative at the event. If you are unable to get an answer then assume that you can **not** and the part must remain stock as supplied.

TaG USA Approved.

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