TWO STROKE OUTBOARD PETROL ENGINE
HOMOLOGATION FILE

International Homologation File Number: 00501K		
Homologation Valid from	**2017**	**Expiry: 2026 Dec 31**
Valid for the following classes:	**CIRCUIT:** **OFFSHORE: Offshore 3C, D, X**	
Manufacturer:	**Mercury Racing**	
Engine Model:	**Optimax 200XS ROS**	
Number Manufactured:	**250+**	
At the date:	2017 May 06	
Certified by the National Authority of:		
At the date:		
UIM Homologation Group Inspector		
At the date:		
UIM Certification Approval:	**Mikael Lundblad**	
At the date:	2017 May 07	
Running Changes		
Change Detail	Hard rpm limit, Oil level sensor	Page No. 15
Date Approved for Use	2017 May 07	Approved by
Change Detail	Block and port height deleted	Page No.7
Date Approved for Use	2019 March 26	Approved by
Change Detail	Gear case for multiple engine	Page No.12
Date Approved for Use	2021 September 05	Approved by
Change Detail	Width transfer, boost port corrected	Page No.12
Date Approved for Use	2023 March 01	Approved by
Change Detail	Connecting Rod, Crankshaft, Cowling	Page No.16
Date Approved for Use	2026 Feb 24	Approved by

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U.I.M.
UNION INTERNATIONALE MOTONAUTIQUE

TWO STROKE OUTBOARD PETROL ENGINE HOMOLOGATION FILE

International Homologation File Number: 00501 B

Homologation Valid from: Expiry:

Valid for the following classes: **CIRCUIT:**
OFFSHORE: Classes 3

Manufacturer: Mercury Outboard

Engine Model: 200 XS SS

Number Manufactured: 250

At the date: On receipt of bona fide orders

Certified by the National Authority of: USA

At the date: 13 October 2009 Gloria J. Lukesin

UIM Homologation Group Inspector: Dee Berghauer

At the date: 28 October 2009 Dee Berghauer

UIM Certification Approval: Winfried R. Boettle

At the date: 10/31/09

Running Production Changes

Change Detail	Page Nos.	Date Approved for Use	Approved by
"B"	2B;3B;4B;5B;6B;7B;8B;9B;10B;11B;12B	January 2010	

TWO STROKE OUTBOARD
PETROL ENGINE

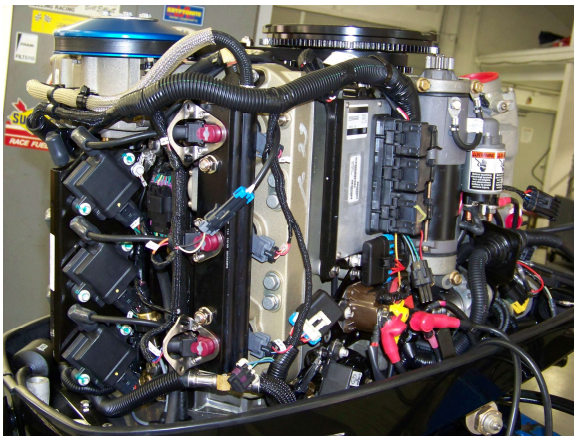
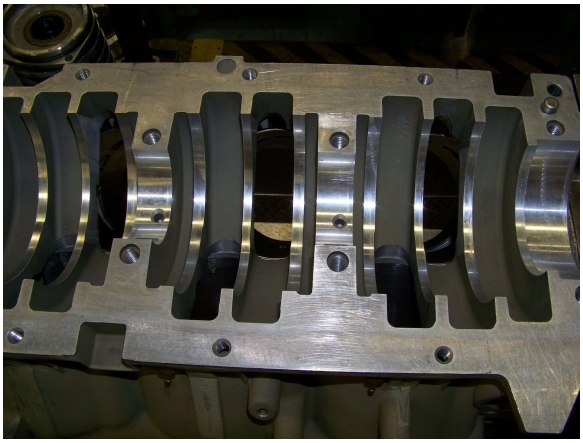
Photo of the complete engine, 45° from the front at the port side.	Photo of the complete engine, 45° from the front at the starboard side.
	

Photo without top cover, at the port side.	Photo without top cover, at the starboard side.
	

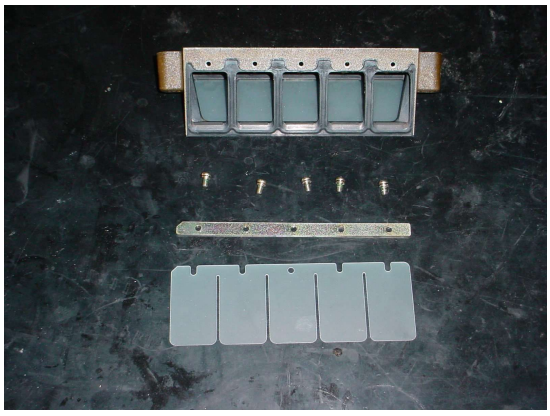
TWO STROKE OUTBOARD
PETROL ENGINE

Cylinder head from the combustion chamber side	Cylinder block from crankcase side
	

Crankcase half showing reed valve assembly	Cylinder block showing exhaust port gallery
	

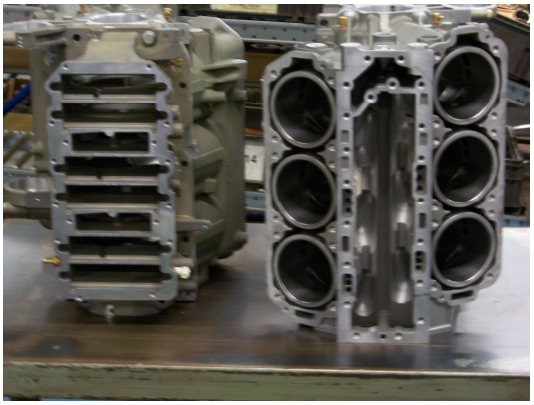
TWO STROKE OUTBOARD
PETROL ENGINE

Piston viewed from the top.	Piston viewed from the bottom
	

Piston, viewed 45° from the wrist pin.	Reed block and reeds.
	

TWO STROKE OUTBOARD
PETROL ENGINE

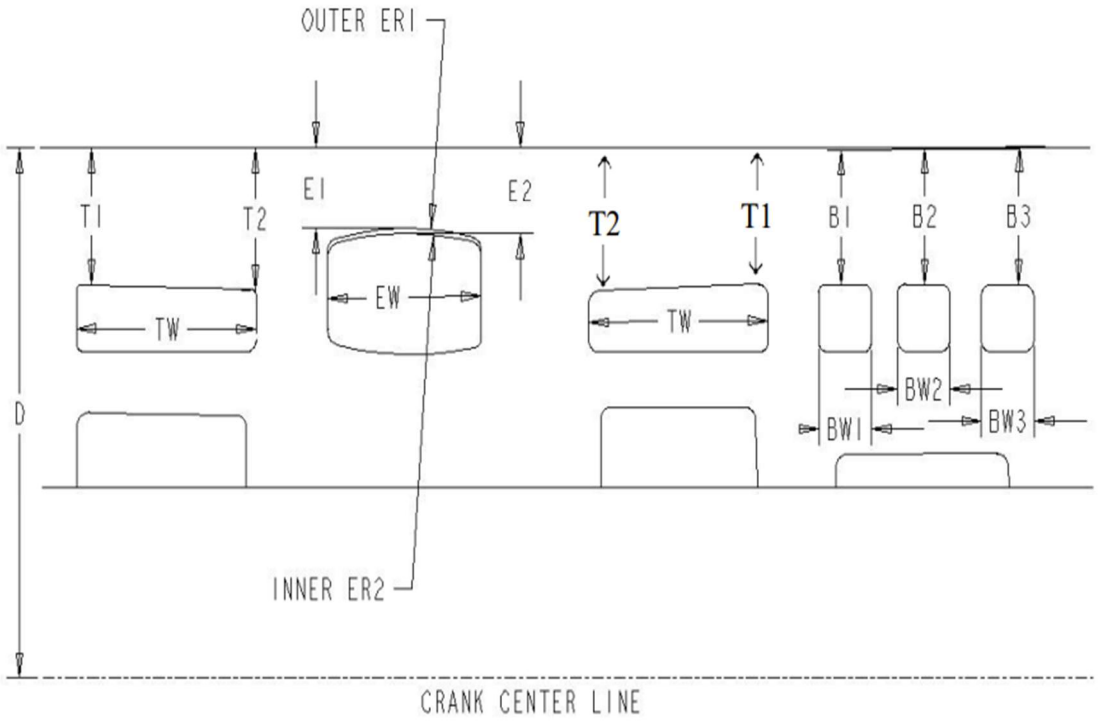
Intake silencer air intakes	Internal exhaust tuner

Cylinder block.	Cylinder block, viewed from rear.
	

TWO STROKE OUTBOARD
PETROL ENGINE

ENGINE FUEL			
Type:		**Petrol**	
Minimum octane required:		**98**	RON
ENGINE TYPE			
Number of cylinders		**6**	
Cylinder arrangement and angle:		**60° V**	
ENGINE BLOCK	Tolerance	Measurement	
Bore	+/- 0.15	**88.9**	mm
Stroke	+/- 0.3	**67.3**	mm
Capacity per cylinder	max	**421**	cc
Total Capacity	max	**2526**	cc
Cylinder block material		**Aluminum**	
Cylinder liner material		**Steel**	
(E) ~~*Distance from crankshaft centreline to cylinder block deck face*~~	~~*min*~~	~~***212.2***~~	~~*mm*~~
(E) ~~*Distance from crankshaft centreline to top edge of of transfer ports*~~	~~*+/-0.5*~~	~~***156.2***~~	~~*mm (B)*~~
(E) ~~*Distance from crankshaft centreline to top edge of exhaust ports*~~	~~*+/-0.5*~~	~~***170.4***~~	~~*mm (B)*~~
(Block and Cylinder port dimesion and layout illustrated on page 8G)			
REED VALVE	Tolerance	Measurement	
Reed Thickness	+/-0.05	**0.50**	mm (B)
Reed Lift (stop height)		**NA**	(B)
Reed Material		**Plastic Composite**	
Number and Size of Reed Ports	max	**5 ports: 31.5 x 20.3**	mm

TWO STROKE OUTBOARD
PETROL ENGINE



Spread out sketch of the cylinder wall with location and dimension measurements of the scavenging ports noted.

Features:	Engine Model: 200 XS / SST 200
Boost Ports	**3**
B1	**56.0 +/- 0.5**
B2	**56.0 +/- 0.5**
B3	**56.0 +/- 0.5**
BW1 *(H)*	***14.8 +/- 1.0***
BW2	**22.9 +/- 1.0**
BW3 *(H)*	***14.8 +/- 1.0***
Deck Height	
D	**212.2 +/- 0.2**

Exhaust	**1**
E1	**38.7 +/- 0.5**
E2	**41.1 +/- 0.5**
ER1	**89.0 +/- 2.0**
ER2	**51.0 +/- 2.0**
EW	**59.4 +/- 1.0**

Transfer Ports	**2**
T1	**56.1 +/- 0.5**
T2	**57.1 +/- 0.5**
TW *(H)*	***42.7 +/- 1.0***

All measures are to be taken 1.0 mm into the ports measured perpendicular from the cylinder wall. All port width dimension are cordial measures.

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CYLINDER HEAD		
Cylinder head material		**Aluminum**
Volume of combustion chamber (flat plate volume w/ plug and inj. installed)	…min…	**51** cc (B)
Compression ratio	…max …	_____
PISTONS		
Material of piston		**Aluminum**
Number and thickness of rings		**2 x 1.5** mm
Type of rings		**half keystone**
CONNECTING ROD		
Length of rod from big end to small end (centre to centre)	+/- 0.2	**139.7** mm
CRANKSHAFT		
Number of main bearing journals		_____
Diameter of main bearing journals	+/-	mm
Diameter of connecting rod journals	+/-	mm
Surface finish of crankshaft		**Ground**
TYPE OF BEARINGS		
Piston Pin		**Loose Needle**
Connecting Rod journal		**Caged Roller**
Main journal		**Caged Roller**
CARBURETORS		
Number fitted		**None**
Make		_____
Type		_____
Total number of venturis		_____
Diameter of venturis		_____

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PETROL ENGINE

FUEL INJECTION

Make (ECU)		**Mercury Electric fuel**
Type of pump, model no.		**Belt-drive Air**
Total number of injectors		**6 air; 6 fuel**
Number of throttle bodies & diameter at butterfly	…max …	**1 x 69.9** mm (B)

SUPERCHARGER/TURBOCHARGER(if fitted)

Method of supercharging/turbocharging	_____
Make of supercharger/turbocharger	_____
Type/model no.	_____
Number fitted	_____

COOLING SYSTEM

Type	**Water**
Method	**Thermostat control**
Pump	**Impeller**
Number of Impeller blades	**6**

SPARK PLUG

Brand	**NGK**
Type	**IZFR7M**

WEIGHTS

Piston (bare)	min	**530**	g
Piston Pin	min	**101**	g
Connecting Rod (with bearings & thrust washers)	min	**353**	g
Crankshaft (inc main bearings & housings & seal rings)	min	**11 793**	g
Flywheel (with all rotating attachments)	min	**6 350**	g

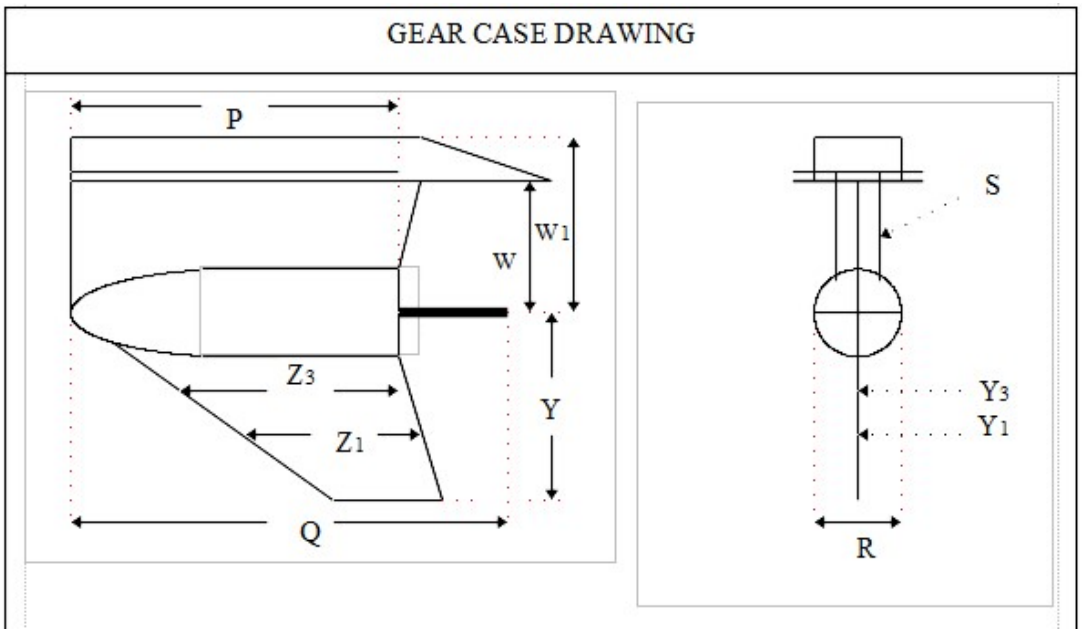
TWO STROKE OUTBOARD
PETROL ENGINE

UNDERWATER UNIT (singel engine)

Gear Ratio **13:21; 12:21; 15:28; 14:28**

P Longtitudinal length of gearcase torpedo	+/-5.0	**455** mm
Q Longtitudinal dimension of gearcase including propeller shaft	+/-max	**616** mm
R Transverse dimension of gearcase	+/-min	**122** mm (B)
S Thickness of strut	+/-min	**50** mm
Z1 Skeg chord length, 25mm above bottom	+/-5.0	**165** mm (B)
Z3 Skeg chord length, 75mm abobe bottom	+/-5.0	**193** mm (B)
W1 Distance from propeller shaft to upper flange	+/-5.0	**261** mm (B)
W Distance from propeller shaft to anti-ventilation plate	+/-5.0	**207** mm (B)
Y1 Thickness of skeg, 25mm above bottom	+/-min	**6.0** mm (B)
Y3 Thickness of skeg, 75mm above bottom	+/-min	**9.0** mm
Y Skeg depth from propeller shaft	+/-5.0	**236** mm (B)

Gearcase must have torque tab when used as single engine.
Gearcase has an anti-blow-out ring at rear of torpedo.



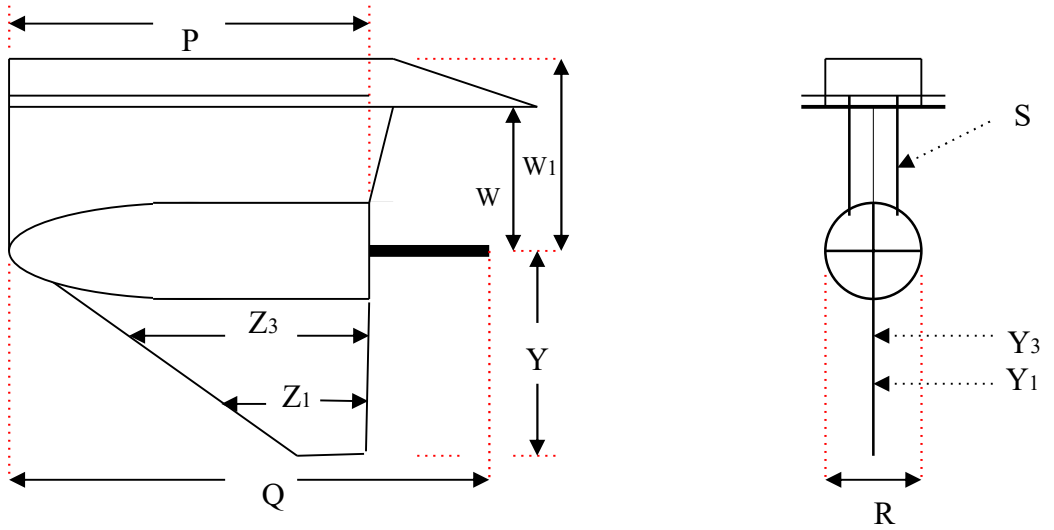
TWO STROKE OUTBOARD

(G) UNDERWATER UNIT (multiple engine)

Gear Ratio		**13:21; 12:21; 15:28; 14:28**
P Longitudinal length of gearcase torpedo	+/-5.0	**455** mm
Q Longitudinal dimension of gearcase including propeller shaft	+/-max	**616** mm
R Transverse dimension of gearcase	+/-min	**122** mm (B)
S Thickness of strut	+/-min	**50** mm
Z1 Skeg chord length, 25mm above bottom	+/-5.0	**120** mm (G)
Z3 Skeg chord length, 75mm above bottom	+/-5.0	**165** mm (G)
W1 Distance from propeller shaft to upper flange	+/-5.0	**261** mm (B)
W Distance from propeller shaft to anti-ventilation plate	+/-5.0	**207** mm (B)
Y1 Thickness of skeg, 25mm above bottom	+/-min	**6.0** mm (B)
Y3 Thickness of skeg, 75mm above bottom	+/-min	**9.0** mm
Y Skeg depth from propeller shaft	+/-5.0	**236** mm (B)

Gearcase has an anti-blow-out ring at rear of torpedo.

GEAR CASE DRAWING

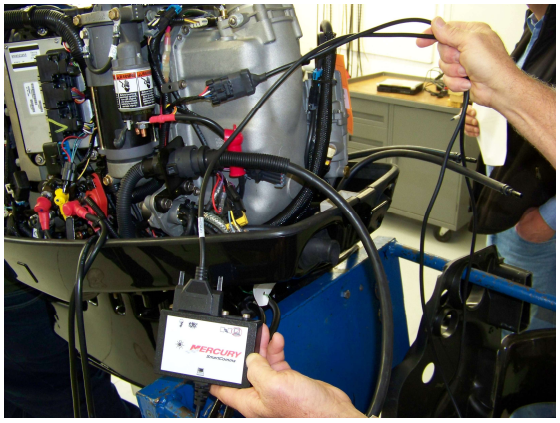


TWO STROKE OUTBOARD
PETROL ENGINE

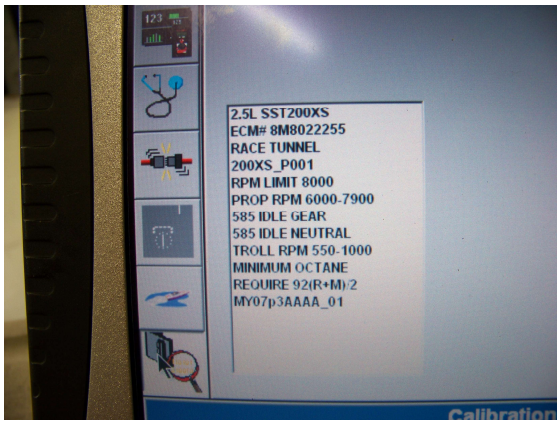
NOTES

1) Photo of Electronic Unit – PCM 0801 – Mercury Part Number 8M8024675 – Limited to 7000 RPM:

2) Photos of Mercury CDS (Computer Diagnostic System) Tool in use to check correctness of PCM unit:



3) Photo of sample CDS screen display:



4) Photo of mandatory exhaust outlet plate (must be installed):

5) Photo of exhaust port showing unique machining which must be present:

6) Photo of flywheel cover with added air inlet hole, maximum diameter of 120 mm.

7) Engine must use spark plug brand and model NGK IZFR7M

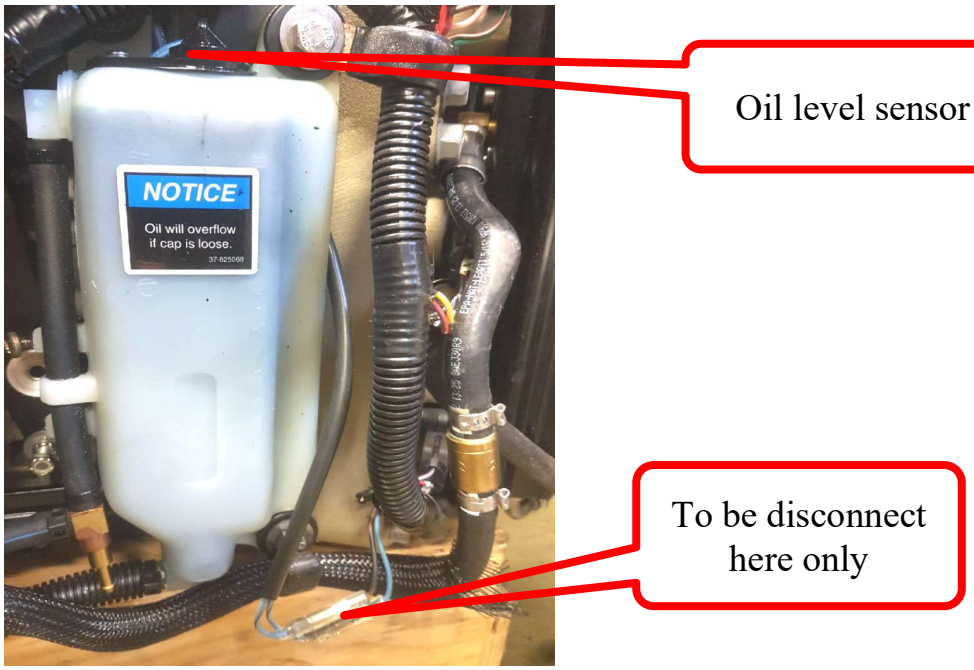
ENGINE MAXIMAL ROTATIONAL SPEED (max rpm)

Maximal rotational speed (hard limits where the spark ignition is shut off) for the two versions of Mercury Optimax 200XS are:

Model	ECU part number	Hard rpm limit
200XS ROS	8M8024675	7050 rpm
200XS SST	8M8022255	8050 rpm

OIL LEVEL SENSOR

Due to problem with engine going into safety mode from oil level sensor alarm it is allowed to disconnect the sensor at the bullit terminals and connect the two bullit terminals leading to the ECU. Removal of any part is not allowed



Connecting Rod (K)

F1 connecting rod from Auto Verdi is allowed as replacement for OEM

Crankshaft (K)

The crankshaft from the standard 2.5L Mercury Optimax outboard with two less sealing rings are allowed

Cowling (K)

Cowlings may be either Mercury OEM as shipped or may be a lightweight facsimile of the production cowling. External latches may be added or replacing original latches. Mercury decals must appear with contrasting color on any substituted cowling in a manner similar to Mercury OEM cowlings