



Chairman 1:10 IC Track:

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EUROPEAN FEDERATION OF RADIO OPERATED MODEL AUTOMOBILES

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MUFFLER AND INS-Box HOMOLOGATION PROCEDURE FOR 1/10th Scale

Dear Manufacturer,

EFRA is an organization that tries to keep up with environmental regulations. Noise is an important factor in our model car sport, so noise regulations need to be watched carefully.

Mufflers and INS-Boxes for 1/10th IC car racing need to be homologated and only homologated 3-chamber mufflers and INS-Boxes will be allowed for EFRA races from 1 January 2009 on. The majority of countries affiliated with EFRA follow this rule.

In the 1/10th IC Track class a homologated INS- box is also mandatory.

The noise limitations and specifications for the mufflers will change every 4 or 5 years. Sometimes this is due to environmental regulations and sometimes because of the evolution in motor designs. For 2009 there is a new specification for the 1/10th IC Track mufflers. This changes have been communicated with the majority of the European manufactures.

Procedure for muffler homologation.

For each homologation the following procedure is valid:

- Contact the homologation officer (feight.track@efra.ws) from EFRA to send him a drawing from the muffler.
- After a brief examination on the design you will get a message to send in 2 samples.
- Testing and verifying will take between 4 and 6 weeks, a little bit depending on the weather.
- In the meantime the EFRA treasurer will be notified and you will receive an invoice for the homologation fee.
- After payment and after the tests have been carried out you will receive the homologation number.
- In case the tests are failing you will have the opportunity to send in an adapted muffler for further testing.
- Mufflers and INS boxes will be tested only once a year in the winter period. (For this year we make a exception)

To prevent problems and issues as we had when the 1/8 mufflers were introduced, no mufflers available on time, and so on, EFRA is willing to start homologation during the summer season, making it possible to introduce your products on the market at the end of the year 2008.

- You can send in the mufflers and INS boxes till December 31st.
- On March 1st the list with all the homologated mufflers and INS boxes for the new season will be available on the EFRA website. During this year (2008) we will update the 1/10th muffler and INS-Box homologation list each time a new muffler gets approved, so drivers will know what to they can buy.

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- No new mufflers and INS boxes will be added to the list after March 1st. Only OEM mufflers can be added to the list till 1st May

Procedure for INS - box homologation.

For each homologation the following procedure is valid:

- Contact the homologation officer (eight.track@efra.ws) from EFRA to send him a drawing from the INS box.
- After a brief examination on the design you will get a message to send in 3 samples.
- Testing and verifying will take between 4 and 6 weeks, a little bit depending on the weather.
- In the meantime the EFRA treasurer will be notified and you will receive an invoice for the homologation fee.
- After payment and after the tests have been carried out you will receive the homologation number.
- In case the tests are failing you will have the opportunity to send in an adapted box for further testing.
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Homologation number.

As long as the specifications do not change the homologation is valid, unless it is detected that the mufflers made do not confirm with the sample that was send in for the test procedure. EFRA has the right to withdrawn a homologation if it finds prove that the muffler sold does not comply with the muffler tested.

Each homologation number given out by EFRA is only valid for that specific muffler and one specific brand.

The same number can never be used for 2 or more brands even if the design is 100% the same.

The same applies for an INS box.

OEM products: mufflers and INS – Boxes

Each manufacturer can decide to sell his homologated muffler/INS-Box to another company under a different brand-name. This is possible with the following rules;

The design must be completely the same; the muffler/INS-Box must be manufactured the same way, using the same material. The original manufacturer must apply for this muffler/INS-Box on behalf of the other party. The muffler/INS-Box will get a different EFRA number followed by the letters OEM.... (... Is original number) and the fee (paid by the original manufacturer) will be the same as for a normal muffler. In case of a malfunction of the design, or if during a test it is concluded that the muffler/INS-Box is not according to the original muffler the original manufacturer will be addressed. Since an OEM muffler/INS-Box is an existing muffler/INS-Box every manufacturer has 2 months after the original closing date to find a second party that wish to sell the same muffler under his own brand name. Please note that for some races (like IFMAR WC's) a deadline of 4 months is required to have a muffler/INS-Box on a homologation list.

Homologation fees.

€500,- for each muffler homologation. EFRA associated members receive a 50% discount on this price.

€800,- for each INS box. EFRA associated members receive a 50% discount on this price.

Specifications for the new mufflers.

As already communicated earlier this year EFRA has made a few changes to the muffler rules for 2008. You are all probably aware of the difficulties a lot of clubs have with noise regulations. When talking about IC model car racing we all know that we make noise. Some clubs are lucky, because they are situated far away of the community, but a lot of clubs are not so lucky. Also new clubs that have to deal with local governments most of the time have to spend a lot of money and time in convincing the community that the noise level is within limits and to get a permit.

EFRA has started to review the noise level last year with the European Manufacturers in Sweden during the European Championships. The development in engines the last couple of years has resulted in RPM levels that are approx 8000 till 10000 RPM higher as approx 6-7 years ago. Due to this increase the noise level from the cars has gone up more or less in the same level.

In our sport unfortunately more RPM always means more noise. This is the case for 1:10th engines.

To bring back the noise level it was necessary to change the technical specifications of the existing mufflers. With the specifications now accepted at the EFRA AGM the designs of the mufflers will be more or less the same within certain parameters.

Until now manufacturers have always been trying to design a muffler that will give the best performance, however best performance also means more noise.

Apart from the design, also the materials which are used for the muffler can influence the noise level. Harder material is more noisy than softer material. A tailpipe of 8x12 is more quit than a tailpipe of 8x10mm. Using some kind of isolation around the muffler will make it more quit, however this will be a solution probably not economical feasible.

The wording for the new mufflers as accepted at the EFRA AGM is as follows:

Each motor must be equipped with an exhaust system and inlet silencer, to reduce the amount of noise generated by the car.

The muffler must be of a 3-chamber type. No holes are allowed in the first chamber. All gasses must pas all 3 chambers. See enclosed design in appendix 8

The shape of the exhaust pipe has to be of a straight revolved (rotated) type. Any other shape like oval, or bend, or in any other form that is not reproducible by a lathe, is not allowed (this is to avoid manifolds welded to the muffler)

The design of the separator between the 2nd and 3rd chamber is a simple disc with only one flat part. The gap of this flat part is for 1/10th mufflers max. 4mm, and should be positioned opposite the tailpipe. (Other dimensions see drawing)

No conical manifolds are allowed, inlet and outlet of the manifold max 12mm, measured on the insid. The maximum noise level for a muffler with INS box is 83 dB's, measured at ten (10) metres distance and one (1) metre high for a single car.

EFRA's definition of a noise level is always final.

Only EFRA homologated 3-chamber mufflers are allowed on EFRA sanctioned events as from December 31st 2008.

The EFRA name and homologation number must be engraved on the sidewall of the muffler.

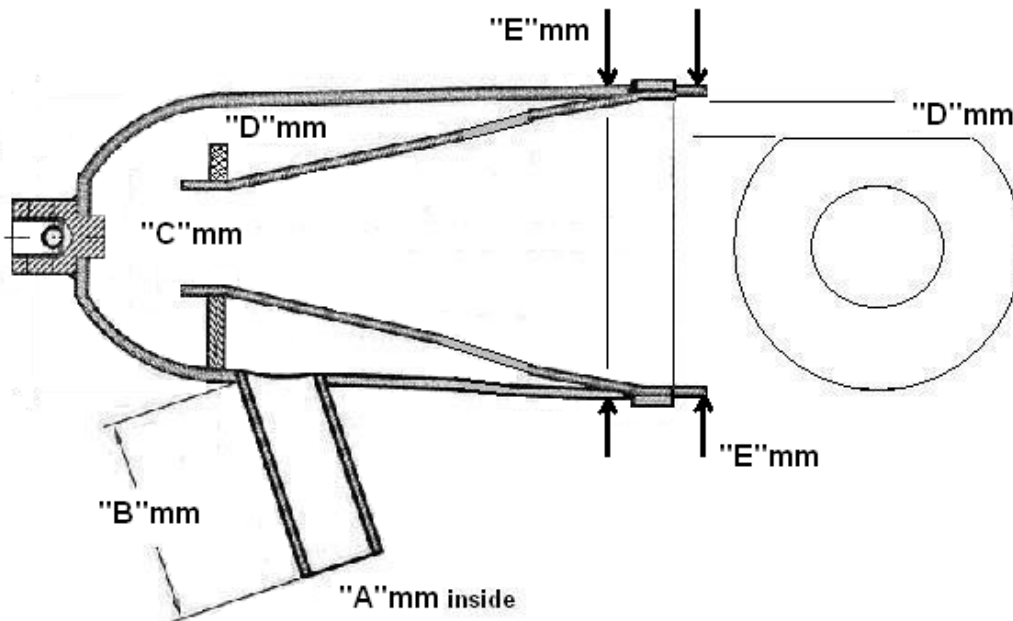
All 1/10th IC Track cars will have to use an INS-Box and a new muffler as from 2008 December 31

All existing muffler lists will be invalid from 2008 December 31, and old mufflers cannot be used for official EFRA races.

New 1/10th IC track scale mufflers will be numbered with EFRA 36!!!,for instance EFRA 3601 and so on

The measurements in the drawings are slightly changed due to tolerances which are now put into the actual drawing. Also measurement "E" needed more clarification since in the drawing accepted at the AGM it looked like this measurement was on the end of the pipe.

If some-one of you is not sure if his design will be valid, please do send me the drawing before starting to produce, this will avoid time spending on a sample which will be refused due to its design.



The measurements specified here under do not guarantee a specific noise level. It all is a combination of measurements, design and used materials. The measurements are simply minimum or maximum values that need to be implemented in your design.

	1/10th	
A	5.10 mm max	no tolerance
B	20 mm min	1mm tolerance
C	8.0 mm max	0.2mm tolerance
D	4.00 mm max	no tolerance
E	35.0 mm max	0.5mm tolerance

During the 2009 season we will have a close look at the noise levels at the various international races. If necessary we will even open mufflers to see if they comply to the rules. Getting the noise down is important for the whole Model Car Racing Scene and a "must" if we still want to race in 10 years time.

It has happened occasionally that a muffler that was send in for homologation and approved showed up at an event in a different version. This will not be tolerated and the manufacturer may risk a ban for his muffler for a whole season. In case you make an "in-line" version for a fixed header or a normal version with a silicon tube connection, just send in both version, so that we can adapt the diagrams (both with one homologation number). A modification like a bridge to support the stinger pipe to the muffler side is a modification that will be allowed without a change in the drawings.

Specifications for the INS-Box.

- Inner and outer dimensions are free to determine by the manufacturer



- The INS-Box connection has to be joined directly with the carburettor and has to be airtight. The design must be made in such a way that the complete box is more or less airtight. Stopping the engine must be possible by closing the designated inlet hole(s)
- An engine equipped with an INS-Box has to be minimum two (2) DB more quiet, than an engine equipped with a paper or foam airfilter, measured at ten (10) metres distance and one (1) metre high for a single car.
- The name EFRA, and the homologation number has to be moulded on a visible spot on the INS-Box
- The INS-Box has to be fit completely underneath a homologated 1/10th IC Track Touring Body

Please feel free to contact me if there are any questions regarding this issue.

Best Regards,

Franky Noens

EFRA Chairman 1:10th scale IC track.