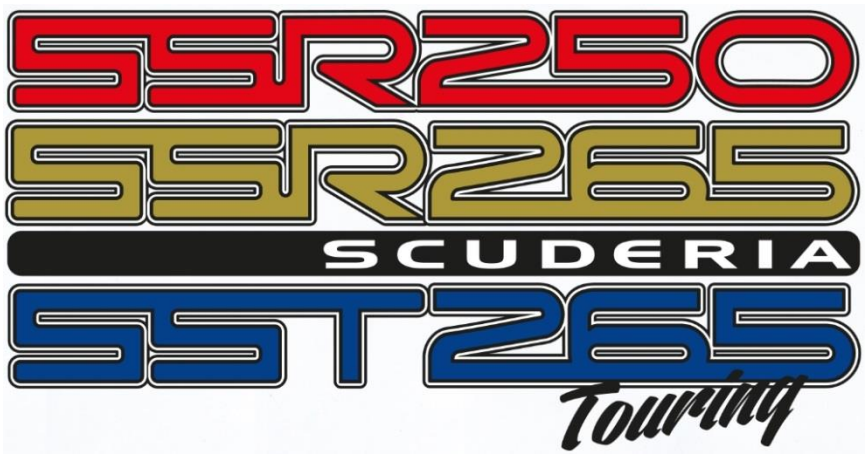

Jetting suggestions + Set up information + Maintenance intervals for Casa Performance external-stud SSR/SST engines & kits

These recommendations cover the following engine types:
- SSR250
- SSR265 Scuderia
- SST265 Touring

GENERAL

A lot of the **SSR engines** are UK destined and we have been listening to our dealers and customers comments regarding carburation and specifically that the settings we normally provide can be too rich, especially at bottom end.

Whilst climate differences can require major jetting changes, an important point we have noted is that we have seen major differences depending on **what ignition set-up is used**. Casa Performance only utilise variable ignitions, as fixed point ignitions systems simply do not make the power. Fixed point (non-variable) ignitions are fine for standard or mildly-tuned engines but if you want power, variable is the only way to go.

Another reason for difference in carb settings is that different ignition maps (curves) require different carburation settings. At RLC we currently have used several ignitions over the past years but we now only fit and use the **Casatronic Ducati** systems. These are available with 3 different pre-mapped CDI units: 'Standard', 'Sport' or 'Race'. These ignitions eliminate all the design faults and restrictions imposed by the old Casatronic and Varitronic set-ups when used on powerful engine configurations, both of which are produced by Italian manufacturers IDM.

Casa Performance manufactures the most powerful 'out-of-the-box' bolt-on performance kits and engines ever produced for the Lambretta scooter so ALL your other engine components MUST be in tip-top condition. The same applies to your suspension and frame fittings.

CARB SETTINGS

Obviously there will still be differences depending on weather, location, altitude etc. but these offer an excellent starting point. Where there is a choice of numbers (e.g. main jet size) always start with the larger size and then slowly work backwards reducing the size a little at a time, if necessary. **THESE SETTINGS WERE OBTAINED IN CONJUNCTION WITH CASATRONIC DUCATI IGNTIONS. OTHER IGNTIONS MAY REQUIRE DIFFERENT SETTINGS.**

Carb choice is very much a personal choice. The carbs we use are those listed hereunder.

Carbs set for other performance kits such as TS1, Imola, Monza, RT etc. will be set up too weak to use with the SSR & SST kits. These are the most powerful out-of-the-box kits on the market, bar none. Speed costs fuel. A 20bhp TS1225 will require considerably less fuel than a 40bhp SST265 so don't even consider using TS1 (or similar) settings for our kits and engines.

The carb settings listed here were achieved in Italy - which is somewhat hotter than Glasgow - and as such are only **RECOMMENDATIONS as a starting point**. Different levels above sea-level and climates will drastically affect carburation so please ensure your scooter is set up to suit your environment. If you take the above settings as gospel and do NOT tailor your jetting for your environment, there is a strong possibility that you will destroy your engine or kit. Remember, colder climates require richer carb settings than those listed.

Mikuni carbs have a noted problem when run at full bore. If the scooter is ridden hard on full bore (e.g. on hard acceleration) and then the throttle is closed off, to then be re-opened partially to maintain a constant (high) speed, the 'step' between certain throttle apertures can cause the temperature of the engine to drastically jump skywards (by as much as 200°!) and this can near instantly seize, or hole a piston. As such Casa Performance does **NOT** recommend the use of Mikuni carbs and we strongly suggest the use of a Dell'Orto as an alternative. **The use of a Mikuni carburettor is AT YOUR RISK.**

If you are unsure about carburation or have any doubts whatsoever, please contact your **supplying Casa Performance dealer**.

Disclaimer: ALL the carburation settings are PURELY AN INDICATION ONLY. Rimini Lambretta Centre, Casa Performance, or any of our supplying Dealers, or employees cannot be held responsible for any damage or injury sustained following the application of this information.

Carburettor : Dell'Orto VHSB 34LD (34mm)
Atomiser : DP268
Main Jet : 180
Idle Jet : 53
Idle jet diffusor (this is found under the idle jet) : B42
Slide : 40
Needle : K24 (1st position from the top)
Float needle valve : 300 (with fuel pump)
Mixture screw : 2 turns from inwards position

Other info of machine used for obtaining set-up :
- Casa Performance **Protti X55 exhaust**
- Squish : 1.30 – 1.50mm
- Casatronic Ducati ignition with a 'Race' CDI and a 1.4kg flywheel
- Carburettor without filter/sidepanel with hole cut out
- **Cyclone 5 Pro** gearbox with 18/47 or 19/48 primaries

Carburettor : Dell'Orto VHSB 39LD (39mm)
Atomiser : DQ269
Main Jet : 210
Idle Jet : 56
Idle jet diffusor (this is found under the idle jet) : B51
Slide : 50
Needle : K24 (3rd position from the top)
Float needle valve : 300 (with fuel pump)
Mixture screw : 1.5 turns from inwards position
Other info of machine used for obtaining set-up :
- Casa Performance **Protti X55 exhaust**
- Squish : 1.30 – 1.50mm
- Casatronic Ducati ignition with a 'Race' CDI and a 1.4kg flywheel
- Carburettor without filter/sidepanel with hole cut out
- **Cyclone 5 Pro** gearbox with 18/46 or 19/48 primaries

'SST265 TOURING' WITH 'SUPER TOURER' EXPANSION CHAMBER EXHAUST
Carburettor : Dell'Orto VHSB 34LD (34mm)
Atomiser : DP268
Main Jet : 175
Idle Jet : 53
Idle jet diffusor (this is found under the idle jet) : B42
Slide : 40
Needle : K24 (1st position from the top)
Float needle valve : 350 (without fuel pump)
Mixture screw : 1.5 turns from inwards position
Other info of machine used for obtaining set-up :
- Casa Performance X53k Ultra Tourer
- Squish : 1.50 – 1.80mm
- Casatronic Ducati ignition with a 'Sport' CDI and a 2.2kg flywheel
- Carburettor with CP filter
- **Cyclone 5 Pro** gearbox with 18/47 or 19/48 primaries

'SST265 TOURING' WITH 'CLUBMAN PLUS' BOX EXHAUST AND 28mm CARB
Carburettor : Dell'Orto VHST 28 (28mm)
Atomiser : AQ266
Main Jet : 132
Idle Jet : S43
Slide : 45
Needle : D40 (2nd ½ position from the top)*
Float needle valve : 300 (without fuel pump)
Mixture screw : 2 turns from inwards position
Other info of machine used for obtaining set-up :
- Casa Performance X55a **Clubman Plus**
- Squish : 1.50 – 1.80mm
- Casatronic Ducati ignition with a 'Standard' CDI and a 2.2Kg flywheel
- Carburettor with CP filter
- **Cyclone 5 Pro** gearbox with 22/47 primaries

**the half position is obtained using a thin washer as a spacer under the needle clip*

'SST265 TOURING' WITH 'CLUBMAN PLUS' BOX EXHAUST AND 34mm CARB
Carburettor : Dell'Orto VHSB 34 LD (34mm)
Atomiser : DP266
Main Jet : 202
Idle Jet : 56
Idle jet diffusor (this is found under the idle jet) : B52
Slide : 40
Needle : K57 (1st position from the top)
Float needle valve : 350 (without fuel pump)
Mixture screw : 2 turns from inwards position
Other info of machine used for obtaining set-up :
- Casa Performance X55a **Clubman Plus**
- Squish : 1.50 – 1.80mm
- Casatronic Ducati ignition with a 'Standard' CDI and a 2.2Kg flywheel
- Carburettor with CP Filter
- **Cyclone 5 Pro** gearbox with 22/46 primaries

OIL AND LUBRICANTS
Complete engines supplied by RLC/Casa Performance are supplied 'dry' for (legal) shipping purposes i.e. WITHOUT any fuel or oil inside. **Before starting your engine, gearbox oil must be added.** With the engine fitted to the scooters frame and the scooter on a level surface, fill with approx. **550ml** of good quality **10W-40 grade oil*** from the top (B). See the pic below. Once the oil has reached the necessary level internally, it will start trickling out of the level screw hole (A). Refit the Allen screw and the top filler/breather plug. *IMPORTANT!* As you fill the engine with oil, it may almost immediately start coming out of the level hole

'A', even though you may have only added a small quantity. The reason for this is that the membranes cast into the inside of the CasaCover sidecasing are different to those found on std. Lambretta sidecasings, and the gearbox oil will flow directly towards the level hole 'A' whilst you are filling the engine.

Therefore, we suggest that you initially leave the level Allen screw 'A' in place, add 550ml of oil and then allow it to settle inside the engine for a couple of minutes. Then remove the level screw 'A'. The oil should just about start weeping out of the hole, thus indicating you have added the correct amount.

If not, refit the Allen screw 'A', add a small amount of oil and repeat the process, until oil finally weeps out of the hole. Once achieved, refit and tighten the Allen screw 'A'.

the gearbox oil must be **JASO MA or **JASO MA2***

For the petroil mix, only use good quality, fully **synthetic 2 stroke oil** at 4%. **RLC use Bardahl KTS oil**. Some manufacturers recommend lower percentages which *could* be ok but saving money on oil will only result on you spending money on replacement engine parts sooner or later.

CABLE ROUTING & SUSPENSION MOVEMENT

One of the biggest problems with scooters having a right-hand (kickstart side) exiting carburettor is that it can easily come into contact with the scooters control cables. If these same cables come into contact – even minimally – with the carburettor (especially under suspension movement), then the chances are that this will cause the failure of the carb rubber manifold in a short space of time. If you are unsure the outer

cables come into contact with the carb or its rubber, completely remove your rear suspension unit and slowly drop the back end of the scooter down.

For this reason alone we recommend that the cables are routed **OVER THE TOP** of the kickstart side engine mount, rather than underneath it (see the photo above). The same applies for the rear brake cable. That way there is absolutely no possibility of the cables coming into contact with the carb, or its rubber.

Again, with the rear suspension unit removed, also check the bottom of the carb does not touch the rear kickstart side footboard. If it does, remove a small section of the footboard, as necessary.

If you use a filter, with or without an airhose, ensure that it does not come into contact any way whatsoever with the actual sidepanel. Even a flimsy foam filter, when rubbing on a aperture made in a sidepanel for the carb, can cause the carb rubber to split in a very short time-span.

IGNITION

"WHAT CASATRONIC DUCATI IGNTION DO I NEED TO USE?"

The Casatronic Ducati ignitions have various weight flywheels i.e. 1.4kg, 2.2kg and 2.8kg. RLC recommends the following set ups for our SSR/SST engines and kits:

SSR250 = use a Casatronic Ducati ignition + 'Race' CDI + 1.4kg flywheel
SSR265 Scuderia = use a Casatronic Ducati ignition + 'Race' CDI + 1.4kg flywheel
SST265 Touring with X55a Clubman Plus exhaust = use a Casatronic Ducati ignition + 'Standard' CDI + 2.2Kg flywheel
SST265 Touring with X53k Ultra Tourer exhaust = use a Casatronic Ducati ignition + 'Sport' CDI + 2.2Kg flywheel

RLC now only fits **Casatronic Ducati** ignitions. If you choose to use a different ignition system, such as Varitronic, VAPE or the older Casatronic, ensure that they are set so that when under load, they retard to 16-17 degrees BTDC. We strongly recommend that you do NOT fit a non-retarding, fixed ignition type ignition when using an SSR/SST kit or engine.

CLUTCH

Freeing the clutch up BEFORE starting the engine each time is an excellent way of prolonging gearbox longevity and reducing the risk of damage. Clutch plates can stick together even after a short space of time and the initial 'knock' of selecting 1st gear will free them up BUT this is done at the detriment of the gearbox which takes the full brunt of the shock. To avoid this, before starting your scooter, leave the ignition turned 'off' and pull in the clutch lever at the handlebar. GENTLY press the kickstart lever down until it suddenly 'releases' and no resistance is felt. At his point your clutch has freed up and you can start the engine up. And that's a top tip from the late, great Terry Frankland no less.

RUNNING IN

The SSR/SST kits and engines need to be run-in properly so avoid long, straight roads where the throttle position and/or speed is constant. It is much more advisable to initially use your scooter around town or on roads where the speed is variable. A sensible running in period is a minimum of 600 miles/1000km. Avoid motorways or freeways during the running–in period.

SPARK PLUG TYPE
These engines are designed to work and perform at quite high revs so use a suitable 'cold' long-reach sparkplug such as **NGK BR8ES/BR9ES,** or similar, to avoid pre-detonation. If you have a Casatronic Ducati ignition and/or electronic equipment such as a digital speedo or a rev counter, always use **'R'** type spark plugs, as these have with an incorporated resistor. SSR250/265 motors with their centrally located sparkplug should use a short-body sparkplug such as a **NGK BR9ECM**.

SQUISH CLEARANCE
Although the kits come supplied with head gaskets, these are generally not used during assembly. This will vary on the type of crank used but always be sure to check your settings and squish clearance. At RLC we normally set SSR engines to a 1.3-1.5mm squish clearance. RLC recommends the use of a good quality gasket sealant for the head such as **ThreeBond**.

TORQUE SETTINGS
The torque setting for the 4 nuts of the main cylinder retaining studs is **25Nm**. The torque setting for the additional Allen screws and the 2 cowling fixing studs on the cylinder head is **22Nm**.

GEARBOX
If using the SSR/SST kit in conjunction with a 5-speed gearbox, use the uprated current **Cyclone 5 Pro** version only.

PRESSURE TEST
If you are assembling an engine, carry out a pressure test to ensure all parts are completely airtight. **THIS IS OF UTTER IMPORTANCE.** Want to see how it's done? Then check out **this video**.

FUEL TAP
Fit only a Fast Flow type petrol tap and ensure the passage of the fuel line is not obstructed. Check the fuel flow. We strongly recommend the use of a simple **membrane type fuel pump** (this does not require battery power to work) for all SSR motors.

WARRANTY
As with all performance kits, SSR and SST kits/engines do NOT come with any form of warranty or guarantee. If you do have a claim, RLC will only consider this from an authorized Casa Performance dealer. A fiscal receipt for any work undertaken MUST be provided with the claim. Any claim arising from a privately fitted kit, or by a dealer who is NOT an authorized Casa Performance dealer, will NOT be considered.

However, if there is a genuine problem, we will cover it, within a reasonable post-sale time-scale, at our discretion.

There are thousands of different variations to set up an engine and everyone has their 'favourite' exhaust, carb and ignition. We can't list every combination but we STRONGLY advise that if you do decide to fit the kit yourself, once done, take it to an official Casa Performance dealer to get everything checked over. If you wish to use an alternative non-approved dealer, call us and we'll say yes/no whether we will consider that dealers work should a problem arise.

‘So and so’ down the pub who is an absolute genius - but strangely doesn’t have a shop - is NOT a reputable dealer.

MAINTENANCE & SERVICING

Highly tuned engines require maintenance. After fitting a new engine, we suggest that you check all fasteners after 100 mile/ 160km. Particular attention must be paid to the rear wheel nuts.

Change the gearbox oil after the first 300miles/480km. After the first oil change, replace the gearbox oil every 3000 miles/4800km, or yearly, whichever is first.

All SSR and SST pistons have their Grade (i.e. measurement) stamped on the piston crown. The size of the pistons when new are as follows:
‘A’ Grade = 69.95mm
‘B’ Grade = 69.96mm
‘C’ Grade = 69.97mm
‘D’ Grade = 69.98mm

The wear limits for SSR and SST cylinder components are as follows:
- the piston ring gap upon assembly is 0.4-0.5mm and the wear limit is 0.9-1.0mm
- the piston clearance upon assembly is 0.08mm and the wear limit is 0.13mm

Once again, these measurements are an indication only. We have serviced SSR265 Scuderia motors where the wear of the piston has been 0.15mm, yet the scooter was still running fine.

When measuring your piston, a Micrometre MUST be used (a digital vernier is NOT acceptable) and the measurement taken exclusively at the point as seen in the photo above.

For SSR250/SSR265 Scuderia engines, the single piston ring should be checked and replaced if necessary every 2000 miles/3200km. The piston should be checked and replaced if necessary every 4000 miles/6400km. For SST265 Touring engines, the piston rings should be checked and replaced if necessary every 3000 miles/4800km. The piston should be checked and replaced if necessary every 6000 miles/9600km.

For all types of Casa Performance engines, these maintenance (mileage) intervals are purely an indication as a lot depends on how you ride i.e. if you ride everywhere flat out it may be necessary to carry out maintenance more frequently, and vice versa.

Check the carb rubber for splits or cracks every 500 miles/800km. if you suddenly notice a more erratic tick-over then there is a good chance the carb rubber is damaged or split.

IMPORTANT!

SSR250 and SSR265 Scuderia cylinders have a 'bridged' exhaust port. This bridge is used to optimise the maximum possible width of the port, without allowing the piston ring pegs to actually enter into the port. This bridge is basically a thin piece of aluminium that crosses the centre of the exhaust port, from top to bottom. As can be imagined, this bridge is subjected to immense heat build-up and therefore expansion. On the inside of the barrel, within the bore itself, when it is nicasil plated by the manufacturers, the bridge is ever so slightly recessed to compensate for eventual heat expansion. However, this bridge needs to be heated up gradually, so after starting your scooter, give it time to warm up in a way that the cylinder does so uniformly. Thrashing it from cold, or without leaving it to warm up correctly, could possibly over-heat the bridge and cause it to enter into the bore, subsequently scoring the piston - or in a worst-case scenario, the piston ring could possibly be damaged, or end in stuck in the actual piston.

If you have any doubts or questions whatsoever, please contact your supplying **Casa Performance dealer** or **Rimini Lambretta Centre**