



A collection of motorcycle engine components, including a blue 'CASA Lambretta' box, a cylinder head, a piston, a crankshaft, and various gaskets and bolts.

The **Casa 80** cylinder is multi-port, made from high-grade aluminium in steel moulds, nicasil lined and has a self-centralising cylinder head. The exhaust and inlet stud fixing points are all in their original positions. The piston is manufactured specifically for this kit. No modifications whatsoever are necessary to the engine casing, cowlings or frame.

Power output depends on the carburettor and exhaust used, with a very usable, linear power delivery. The **Casa 80** kit is designed as a simple, economical, road-going kit for everyday use. It is NOT intended as a 'performance' or 'race' kit.

The complete **Casa 80** kit includes the following parts:

- 1 x cylinder
- 1 x cylinder head
- 1 x complete piston
- 1 x 0.5mm thick base gasket
- 1 x inlet gasket
- 1 x exhaust gasket
- 4 x cylinder studs
- 4 x inlet & exhaust studs/washer/nuts
- 1 x long cylinder head nut

What's needed?

What crankshaft do I need?

The standard (44mm stroke) crankshaft, as fitted to any 50cc or 75cc Lambretta model.

Can a standard crankshaft be used with a Casa 80 kit?

Yes, as long as the crankshaft is in excellent condition. The same applies to all the other engine components. The power output and torque of the kit are very linear, right across the rev range (i.e., power delivery is not 'on-off' as can be the case with some small-capacity reed-valved tuning kits), and this helps to reduce premature wear of the crankshaft. If you have any doubt about wear to your crankshaft, bearings or oilseals, **Casa Lambretta** manufactures all these (European-made) parts at economical prices.

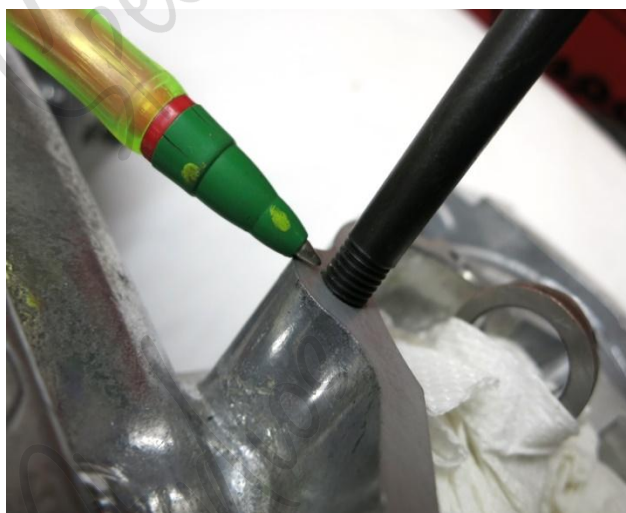
Can the original 'Lubematic' 2-stroke oil injection system found on the 'LUI75SL' and 'Cometa' models be maintained with a Casa 80 kit?

No.

'Casa 80' Kit Assembly

These instructions are mostly generic as they are relevant for all the J Range and Luna Line models listed above, with singular model or range references solely where needed. The photographs used depict a **Casa 80** kit being fitted to a 3-speed LUI50 engine, but all instructions are exactly the same for J range models. The **Casa 80** kit can be fitted with the engine still in the scooter's frame, but it is advisable to remove it, for ease of working access.

1. Remove your carburettor, exhaust, cylinder kit and for 50cc models, also the cylinder studs.
2. Thoroughly clean and degrease the entire working area with a non-aggressive product such as 'brake cleaner'.
3. Check the conrod, the crankshaft and the main bearings for wear or play. All parts must be in perfect condition. If in doubt, replace them. **Casa Lambretta** manufactures all the standard parts possibly needed, and **Casa Performance** manufactures a wide range of upgraded engine components.



4. Fit the supplied cylinder studs to the engine casing using a small drop of Loctite stud-lock (or similar), leaving approx. 5-6 threads exposed from the gasket face. Clean off any excess Loctite.



5. The **Casa 80** piston is designed to be used with a **WIDE-TYPE** small-end needle bearing. Some crankshafts/conrods utilise a narrow small-end bearing. If you have this type, replace it with a wider small-end needle bearing (of the same internal and external dimensions) to eliminate some of the lateral movement the bearing has inside the piston once installed. For example, if you have a new **Casa Lambretta** crankshaft, this comes supplied with a narrow-type small end bearing as standard, and subsequently it must be used with shims. Therefore, you have a choice: either fit piston shims (some late-production J Range and Luna Line scooters were fitted with a pair of either 0.8mm or 1.2mm thick shims as standard, either of which are fine), or utilise a wider small end bearing. Wider-type small end bearings tend to be 3mm wider than their narrower counterparts.

Add a drop of 2-stroke oil to the small-end bearing and then slide it into the conrod.



6. Fit both piston rings to the piston, with the (lighter) silver-coloured ring at the TOP. Fit one circlip and then slide the piston down over the conrod, with the arrow and 'EX' (= 'Exhaust') markings inscribed on the piston crown facing towards the exhaust port, until the holes of the piston are visibly aligned with the centre of the small end bearing (and both piston shims, if fitted). Now gently push the gudgeon ('wrist') pin into the piston until it passes through to the other side, nearly up against the previously-fitted circlip. The gudgeon pin should be easy to insert into the piston by hand, and adding a smear of 2-stroke oil will aid its entry into position.

If the gudgeon pin blocks partway, **DO NOT HIT OR FORCE IT** in any way. Simply move the gudgeon pin around slightly to aid alignment until it can be pushed through with ease. Now fit the second circlip into its hole, ensuring it is firmly seated within its recess once in place. Once installed, check that each circlip spins uniformly within its recess using a pair of circlip pliers or a small screwdriver, or similar.



7. Fit the four exhaust and inlet studs to the cylinder, applying a small drop of Loctite stud-lock (or similar) to the SHORTER threaded sections that will be inserted into the cylinder. The longer inlet stud must be fitted towards the kickstart side of the inlet port. Using a dedicated stud insertion/removal tool, or the 'double nut' method, is the best way to ensure all the studs are fully seated home.



IMPORTANT! Check that the exhaust studs do NOT protrude into the holes for the actual cylinder studs once fitted (see above). If you're unsure, try passing a cylinder stud through the holes to ensure the passage is free of obstruction. If it does not pass, shorten the offending exhaust stud until there is no obstruction.

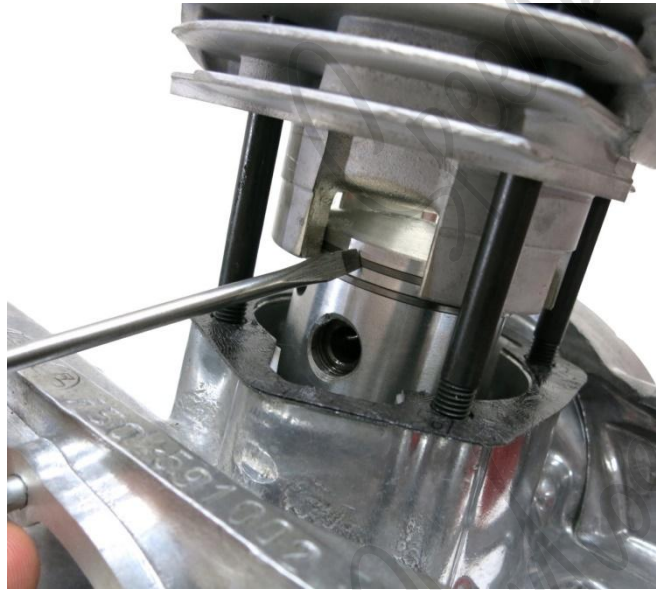
Most original type LUI/Vega/Cometa 75cc model exhausts use a short, cast-iron manifold that requires a unique, very long exhaust stud on the flywheel side. If you intend to use that type of exhaust, this special stud must be removed from your old cylinder and refitted to the **Casa 80** cylinder. If you require a new stud, the **Casa Lambretta** code for this part is: **B342**.



8. The base gasket supplied with the **Casa 80** kit is the type that also has an additional section destined for 75cc Lubematic/LUI SL models. If you wish, the extra section of the gasket can be removed with a pair of scissors (see before/after pics above).



9. Coat the base gasket with heavy-duty grease or, alternatively, a good quality sealant such as 'Three Bond' if the gasket face of the engine casing is scored or marked in any way. Slide the base gasket down over the cylinder studs onto the gasket face. Apply a smear of good quality 2-stroke oil over the entire bore inside the cylinder.



10. Slide the cylinder down over the studs, until it comes into contact with the top of the piston. This is best done with the piston at its lowest point ('BDC') by turning the crankshaft. Ensure that the piston rings are in the correct position to be able to close up around their relative ring pegs. Gentle squeeze or push each piston ring to close it, thus allowing the cylinder to drop down over the rings. Once both piston rings are inside the cylinder, gently slide it downwards until it is fully seated onto the engine casing. Now turn the crankshaft by hand to ensure the piston can travel freely up and down within the cylinder.



11. Note that the **Casa 80** kit does NOT utilise a cylinder head gasket. Although not obligatory, a smear of suitable sealant, or heavy-duty grease, can be applied to the machined gasket face of the cylinder head is advisable. Now fit the cylinder head onto the cylinder, ensuring that it is fully seated home.

IMPORTANT! The cylinder head is a precise fit INTO the top of the cylinder, so take extra care when fitting, to ensure the cylinder head does not sit lop-sided on the cylinder (see the **red** arrow indicated in the pic above), or you could damage both the head and cylinder when you tighten up the nuts!



12. Fit 7mm washers to the four cylinder studs. Apply a small drop of Loctite threadlock (or similar) to the protruding threads of the cylinder studs. Fit and tighten each of the cylinder head nuts a little at a time, in a criss-cross, diagonal fashion until all four are tightened up to **15Nm**. The tall 7mm nut supplied with the kit needs to be fitted towards the front of the cylinder on the kickstart side (i.e. '**A**' in the photo). For the other nuts, reuse three of the original 7mm nuts.



ADVANCED ASSEMBLY CHECK: Although not strictly necessary, it is advisable to check the squish clearance between the top of the piston and the outer 'ring' edge of the combustion chamber inside the cylinder head. First, ensure the piston is NOT at top dead centre (TDC), but slightly further down the bore of the cylinder. To check the squish, you will need a length of 1.5mm thick solder. Place a 48mm length piece (i.e. the same width as the piston) directly across the top of the piston crown, aligned with the gudgeon pin. Now, tighten down the cylinder head to **15Nm**, as stated previously, but WITHOUT having applied any sealant. Turn the crankshaft over once, or twice at most. As you do so, you will physically feel the solder being compressed between the piston crown and the underside of the cylinder head. Now, remove the nuts and cylinder head from the cylinder. Carefully remove the strip of solder and, with a digital vernier gauge, GENTLY measure where the solder has been compressed (i.e. at the outer edges). Ideally, the solder should measure 1.2mm at the thinnest points, indicating a perfectly assembled kit. The solder in the photo measures 1.19mm, which is fine.

If this is not the case, then different base gaskets can be added or changed to achieve this thickness. In any case, a squish measurement of 1.0mm or less, could result in the premature failure of the kit. A measurement of more than 1.2mm will result in an engine with low compression, and performance may be affected as a result.

If you add or change the base gaskets to achieve the desired squish, after each reassembly of the kit, repeat the process with a fresh piece of solder. Although the cylinder shown above is not a Casa 80, the photos are for indication purposes only.

13. Apply a smear of heavy-duty grease or 'Three Bond' sealant to the (supplied) inlet gasket and slide it down onto the inlet studs. Then fit and tighten the inlet manifold* in place using the (supplied) 7mm washers and nyloc nuts.

*There really is an incredible choice of possible carburettors and relative manifolds that can be used with the **Casa 80** kit, therefore listing all the different options would be nearly impossible. Obviously, if you choose to use a 12mm carburettor fitted as standard to J50 or LUI50 machines, the performance will be severely hampered by such a small carburettor. Yes, they can be used, but **Casa Lambretta** recommends the following carburettor and manifold setups to obtain the best results from your new **Casa 80** kit:

Lambretta 50cc LUIC/CL models: a **Dell'Orto SHA 15mm** carburettor (part code: X15). Alternatively, a **Dell'Orto SH/1 20mm** carburettor, **Casa Lambretta** manifold (part code: B286) and airfilter setup (part code: B54), as used on all Lambretta 75cc models, although you may need to re-jet the carburettor.

Lambretta 75cc Vega/Cometa/LUI: the standard factory fitted parts (i.e **Dell'Orto SH/1 20mm** carburettor, standard inlet manifold and airfilter setup) are all perfect, although you may need to re-jet the carburettor.

Lambretta J50cc (all versions): a **Dell'Orto SHB 19mm carburettor** (**Casa Lambretta** supply a complete, dedicated kit that includes the required inlet manifold, part code: X14). This setup can be used with the standard airfilter setup.

14. Fit the exhaust gasket to the cylinder and then fit the exhaust*. Again, we recommend applying a smear of 'Three Bond' sealant, or similar, to both sides of the gasket.

*As with the choice of carburettor, the same applies for the choice of exhaust. There are various exhausts that can be used with the **Casa 80** kit, and in the case of 50cc machines, a 'sports' exhaust will work much better than a standard item. Original J50 and LUI50 exhausts are both VERY restrictive, even on completely standard engines, so there is little point fitting any aftermarket kit to a scooter and then maintaining a restrictive exhaust which will not allow you to benefit from the new increased power output. For LUI 50C/CL and J50 models, **Casa Lambretta** manufactures a dedicated sports exhaust, maintaining a near-standard look, aesthetically speaking. For Vega/Cometa/LUI 75cc models, the standard Innocenti exhaust will be perfect. **Casa Performance** also offer dedicated sports exhausts ('Maxibox') in several variations, all of which will notably increase the power output of a **Casa 80** kit.

15. Refit both cowlings.

16. Fit and tighten the sparkplug, and then refit the HT cap. The **Casa 80** kit uses a long-reach type spark plug. We recommend an **NGK B8ES**, or the equivalent corresponding grade sparkplug from your chosen manufacturer.

17. Connect the fuel line, choke cable (for J Range models) and throttle cable to the carburettor. Fit the carburettor to the manifold and firmly tighten the clamp.

Open the petrol tap, activate the choke and start the scooter. **Enjoy!**

OTHER GENERAL INFORMATION

PETROL FUEL TAP

For 50cc LUI models we recommend the use of a larger bore, 8mm attachment-type petrol tap, as fitted to 75cc models. These are available in both 'front exit' and 'rear exit' versions. Either type is fine.

For J Range models, the original type tap should be fine. Alternatively, fit a rear-exit 'fast flow' type fuel tap, as used on largeframe models, and shorten the original petrol tap lever to suit.

IGNITION SETTINGS AND SPARK PLUG TYPE

Can I use the original ignition?

Yes, any original 6V points ignition system can be maintained, or for better lighting, starting and engine response, we recommend the fitting of a **Ducati Firefly** 12V electronic ignition system, available from **Casa Performance**.

Whatever type of ignition you choose to fit, it must be set to **19° BTDC**.

GEARBOX

If you are fitting a **Casa 80** kit to a 50cc Lambretta model, obviously you will need to alter (lengthen) the gearing. Therefore, we recommend increasing the front sprocket by two teeth (i.e. if you currently have an 11T front sprocket, fit a 13T front sprocket). A new, longer chain will also be needed (see below).

If you are fitting a **Casa 80** kit to a 75cc Lambretta model, the 4-speed gearbox and primaries should be perfect.

This is the complete list of all possible front drive sprocket & clutch crownwheel sprocket combinations for all J Range and LUI/Vega/Cometa models, complete with the required length chain:

45T Clutch Crownwheel Sprocket

45T clutch sprocket + 11T front sprocket = 73 link chain

45T clutch sprocket + 12T front sprocket = **NO!**

45T clutch sprocket + 13T front sprocket = 74 link chain

45T clutch sprocket + 14T front sprocket = 74 link chain

45T clutch sprocket + 15T front sprocket = 75 link chain

45T clutch sprocket + 16T front sprocket = 75 link chain

46T Clutch Crownwheel sprocket

46T clutch sprocket + 11T front sprocket = **NO!**

46T clutch sprocket + 12T front sprocket = 74 link chain

46T clutch sprocket + 13T front sprocket = 74 link chain

46T clutch sprocket + 14T front sprocket = 75 link chain

46T clutch sprocket + 15T front sprocket = 75 link chain

46T clutch sprocket + 16T front sprocket = 76 link chain

47T Clutch Crownwheel sprocket

47T clutch sprocket + 11T front sprocket = 74 link chain

47T clutch sprocket + 12T front sprocket = stretched 74 link chain

47T clutch sprocket + 13T front sprocket = 75 link chain

47T clutch sprocket + 14T front sprocket = **NO!**
47T clutch sprocket + 15T front sprocket = **NO!**
47T clutch sprocket + 16T front sprocket = 76 link chain

TRANSMISSION

Clutch

If you are fitting a **Casa 80** kit to a 50cc Lambretta model, with the sole exception of very early J50 models that have a 3-plate clutch, all other models have a simple 2-plate clutch. If you choose to maintain this clutch, we recommend that you fit stronger clutch springs. These are available from **Casa Lambretta**.



If you wish to upgrade your 2-plate clutch to a 3-plate clutch (recommended), you will need to change the central clutch spider for a deeper 3-plate type. These are available from **Casa Lambretta**. They are very high-quality, modern CNC-manufactured parts that are visibly angular on the underside. Note that J Range and LUI/Vega/Cometa clutch sprockets and central clutch spiders are different and not to be mixed.

The **Casa Lambretta** part codes for the 3-plate clutch spiders are as follows:

For J50 models = **M342**

For LUI models = **M255**

The standard 3-plate clutch used on 4-speed LUI/Vega/Cometa 75cc models should be perfect and require no modifications.

RUNNING IN PERIOD

The recommended running-in period for the **Casa 80** kit is a minimum of 350 miles/500km. During that period, it's advisable to initially use the scooter for short journeys rather than sitting at a constant speed. Use good quality, **fully synthetic 2-stroke oil** at 3% initially, and 2% once the scooter has been run-in.

CONTACT

For any queries or further information, please contact your supplying **Casa Lambretta** dealer.

LIABILITY

Casa Lambretta accepts no responsibility for any issues arising from the fitment of the kit, in any countries where vehicle tuning, modifications or alterations are not permitted.

Dean Orton

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