



[Dated: 1/26/2023]

The purpose of this document is to list the **ECU** and **Engine** sealing specifications for the **SHARP Mini Late Model** class along with duties of the ECU/Engine owner and the company performing the sealing activities.

The seal program has two components. The first component is the **ECU**. The second component is the **Engine**. Each component is exclusive of the other, meaning that if your engine is already sealed and you just need the ECU sealed, you will only need to get the ECU sealed. If your ECU is already sealed and you just need the engine sealed, you will only need to get the engine sealed. However, both the ECU and the Engine have to be the same model year.

The list of SHARP approved companies to perform the sealing is provided in Appendix A at the end of this document.

For any questions, please contact Spencer Harp at [spencer@sharpenllc.com](mailto:spencer@sharpenllc.com) or 770-584-4301.

## **ECU SEALING INSTRUCTIONS**

### **Terms and Conditions:**

1. All ECU must be programmed with the SHARP specific tune for the specified year model of the engine.
2. The sealing process requires specific Woolich hardware to program.
3. SHARP will provide any shop with the Specific tune file.
4. Alterations of the tune are not permitted
5. In order for the shop to obtain our seals they must do the following
  - a. Have or be willing to purchase the required hardware (\$600)
  - b. Request Seals for the Customer (seals are not handed out in bulk they will ship per request)
  - c. Keep an accurate record and submit it to ([spencer@sharpenllc.com](mailto:spencer@sharpenllc.com))
    - i. Driver Name
    - ii. Engine Serial #

- iii. New Seal Information
- iv. Photo of installed seals
- 6. Note-Ecu Tunes will be tested at random
  - a. If alterations are found the drive will be DQ and the shop will lose their ability to perform the sealing.

#### **ECU Specific Rules:**

- 1. No aftermarket ECU's.
- 2. No manipulating the ECU or any sensory signal.
- 3. ECU must be a production ECU that was originally supplied by the same manufacturer
- 4. as the engine and Flashed with the SHARP Spec Tune.
- 5. No traction control device.
- 6. No more than one ECU box present in or on car. (Note, this can't be verified if only the ECU or only the Engine was sent to be sealed.)

#### **ENGINE SEALING INSTRUCTIONS**

##### **Terms and Conditions:**

- 1. The word "stock" means un-modified factory original parts or components.
- 2. No mixing of parts from different year engines.
- 3. The Suzuki factory service manual for the specific engine's year should serve as reference.
- 4. Service Limits and tolerances should be known and not exceeded for performance advantage. (Ex: excessive wear that gives a part additional clearance).
- 5. Repairs should be to the specifications defined in the Suzuki factory service manual for the specific engine's year.

##### **Engine Oil:**

- 1. No oil additives. Except those found in commercially available oils in the same concentrations as sold by the oil manufacturer.
  - a. If a sample is pulled, it will be tested against an off the shelf control sample of the same oil. A Rotella T6 sample will be tested against a Rotella T6 control sample. A Motul 7100 sample will be tested against a Motul 7100 control sample.

##### **Gaskets:**

- 1. Cylinder head gaskets may be replaced only with original equipment manufacturer's stock parts
  - a. All 3 layers of the head gasket must be used
- 2. All other gaskets may be replaced with duplicate aftermarket parts
- 3. Light cleaning of gasket surfaces with steel wool, Scotch-Brite, etc. is allowed.

**Head and Cams:**

1. NO decking or surfacing of the head or engine block.
  - a. Must be STOCK head height as provided by Suzuki.
2. Lash Pills can be OEM or Aftermarket.
3. Valve springs may be shimmed with standard or aftermarket shims.
4. No Adjustable Cam Gears.
5. No Repositioning of the stock cam gears.
6. NO PORTING or deporting of intake or exhaust runners.
7. Intake and exhaust ports may not be bead blasted.
8. Valve jobs, valve grinding, valve seating, valve seal modification and valve seat cutting are allowed.
9. Valve seat inserts may be reworked or replaced with any seat of original dimensions. Any dimensional thickness of the stock inserts may not be increased.
10. Valve seats can be ground with multiple angles. Blending of the valve seat into the head is permitted but cannot extend more than 1/8" into the aluminum head measured from where the seat meets the head.
11. OEM Head only.
12. Aftermarket cam chain tensioners allowed for safety of the motor.
13. Cam must be stock for the production year head as supplied from the manufacturer.
14. Valves can not be larger in diameter than factory stock valves.

**Bottom End:**

1. NO decking or Surfacing of the Block.
  - a. Must be STOCK Block height as provided by Suzuki.
2. No casting flash removal.
3. No altering of the stock piston.
4. No machining to remove weight from the crank.
5. No after-market cranks.
6. No lightweight cranks.
7. No Polishing of Rods.
8. No Lightweight Wrist Pins.
9. No polishing or coatings of any kind.
10. No aluminum connecting rods.
11. No dry sump systems are allowed unless it comes from the motorcycle manufacturer as original equipment..
12. Modification of oil pan & pick up allowed or aftermarket ok. Modification to thermostat cover allowed or aftermarket ok. Modification to water pump Cover allowed or aftermarket ok.

**Clutch/Transmission:**

1. No removal of clutch.
2. Clutch must remain operational.
3. No modification to the stock transmission gears.
4. No close ratio gears or nonstandard gear ratios.

5. Transmission ratios must year model of engine.
  6. All gears must remain in transmission.
  7. No removing any gears.
  8. No polishing or coatings of any kind.
  9. Can remove slipper bolts in 2006+.
  10. OEM equivalent clutch.
  11. No lightweight clutch baskets, or modification of clutch basket and or flywheel.
- Ignition/Fuel.

### **Injection:**

1. Injection must be OEM, stock OEM throttle bodies no mixing manufacturers
  2. 04/05 must use 04/05 Injection
  3. 06+ can use 08/09 Injection \* No mix matching.
  4. Oem Injector Flow Rates (Can not use 750 injectors on 600 etc)
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5. Can remove secondary plates in throttle body
  6. You can unplug or delete the STVA
  7. No throttle body spacers

### **Charging System:**

1. No removing the charging system, it must remain in complete working order
2. No factory racing charging system

### **Sealing Company Documentation Requirements:**

-Approved seals must be installed on the engine once the engine has been certified as meeting the above specs.

-Must provide SHARP with a service record or receipt for the repairs

Sealing Receipt must include the following information:

- Engine VIN#
- Original Seal numbers if applicable
- New Seal Numbers
- Description of work performed
- List of parts replaced
- Date and Signature

Records can be emailed to: [spencer@sharpengllc.com](mailto:spencer@sharpengllc.com)

Or Mailed to:

Spencer Harp  
704 Foxboro Lane  
Portal GA, 30450

## **Appendix A - ECU and Engine Sealing Companies**

The following companies have been identified as SHARP approved for the sealing program. Note that you can use any of these companies. You will be responsible for costs sending your ECU and or Engine to the company. You will be responsible for the service fee the company charges for inspecting and sealing your ECU and/or Engine. You can select any company on the list no matter what state you or your car is located.

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### **Georgia**

#### **Spencer Harp**

SHARP Engineering LLC  
26875 Hwy 80  
Portal, GA 30450

### **North Carolina**

#### **Justin Lineman**

Lineman Motorsports, LLC  
Linwood, NC, United States, North Carolina  
704-239-1692

### **Iowa**

#### **Lenny Mumm**

Mumms The Word Racing  
1862 Covington Rd  
Palo, Iowa 52324  
319-390-0281

### **Wisconsin**

#### **Tyler Johnson**

Johnson Recreational Toys  
Darlington, WI, United States, Wisconsin  
(608) 482-4873

### **Pennsylvania**

#### **Mark Ludwig**

Ephrata, Pennsylvania

### **California**

#### **K.C. Gager**

BRG Racing  
110 2nd Ave South Unit D12  
Pacheco Ca 94553  
925-680-2560

### **Arizona**

#### **Dale Eliason**

Fueled Unlimited  
38220 N 23rd Drive  
Phoenix, AZ 85086  
602-370-1815

### **Tennessee**

#### **Ed Crutchfield**

#### **Cade Crutchfield**

12183 SR-193  
Chickamauga, Georgia 30707  
423-661-9061

