# Honda GL1200 Poor Boy Alternator Parts List

Youtube Video: https://tinyurl.com/poorboy-alt

Blog Post: https://www.tylerwatt12.com/poorboy-alt/

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# Pulley & Belt

- KRC Power Steering Pulley B005JVGX4M KRC 40140300
  - Pulley for crank
  - o \$43.62
  - o <u>Amazon</u>
- Bushing 5448T427 12mm ID 17mm OD 9.5mm shaft
  - o (goes inside the pulley to fit the M12 bolt), Requires minor sanding of OD to fit inside the pulley
  - o \$10.25
  - o <u>McMaster-Carr</u>
- Lock washer 91477A200 M12 screw, 29mm OD
  - Provides clamping force on KRC Pulley from M12 bolt
  - \$6.43 (\$0.64 used)
  - o <u>McMaster-Carr</u>
- M12 Bolt 91180A905 M12x1.25x60 Class 8.8 Bolt
  - o Longer bolt to accomidate pulley and spacers, Class 8.8 meets the torque requirement of the bolt
  - o \$13.87 (\$1.39 used)
  - o <u>McMaster-Carr</u>
- Brass Flange Bushing 7634N19 1/2" ID, 3/4" OD, 3/4" len
  - Required sanding non flanged side to get the pulley closer to the timing cover
  - o \$4.94
  - o <u>McMaster-Carr</u>
- Gates or Equiv belt 295K3 or K030295 Belt 3 Rib, Micro-V, 29.5"
  - Your belt may be different, use a string to measure proper belt length
  - o **\$14.29**
  - o Purchase Guide

### Alternator

- Nippon Denso Reman Alternator 321-1250 for 91 Geo Metro, 3 rib pulley
  - o 55 Amp, 3 wire alternator with T shape round plug, price incl core, rear mounting tab needs cut off
  - o **\$157.79**
  - o <u>RockAuto</u>
- 2x Alternator mounting bolts M8x1.25 bolt
  - Top mount is threaded
- Alternator mounting nut
  M8 1.25 nut
  - Lower mounting lock nut
- 8x Upper alt bracket spacer washers ZHUYU009 M5 washers

- Spacer washers for top bracket, used to space bracket from fairing mount, 8 needed, 4 on each side of the bracket
- o \$10.99 (\$0.05 used)
- o <u>Amazon</u>

### Radiator

- 2x Round coupling nut 90202A441 10mm, 25mm len, M6x1 thread
  - Screw onto radiator mounting posts
  - o **\$3.68**
  - o <u>McMaster-Carr</u>
- Threaded rod 90024A227 M6x1 threaded rod
  - Extends bottom radiator mount threads, Cut to size
  - o \$4.61
  - o <u>McMaster-Carr</u>
- Longer coolant hose NBH7733 1" heater hose
  - Probably not required, compatible models: gates 21008, napa NBH7733, AutoZone Duralast B70834, AdvAuto CarQuest – 21029
  - o \$14.00
  - o <u>AutoZone</u>
- Longer radiator fan bolts 95911A311 M5x0.8x16mm
  - 3 longer bolts, philips head, allow the fan to be pushed closer to the radiator so the blades do not touch the alternator belt
  - \$6.00 (\$1.80 used)
  - o <u>McMaster-Carr</u>
- Spacer nuts for radiator 94150A340 M5x0.8
  - o These nuts are used as a spacer to push the fan closer to the radiator by a set amount
  - \$6.07 (\$0.36 used)
  - o <u>McMaster-Carr</u>

### Steel

- Flat Steel stock 2279541 1" x 1/8" x 3' flat steel, low carbon
  - o Bracket Building, Home-Depot will have it, but more expensive. Try Menards, McMaster, Lowes instead
  - o \$4.79 (\$3.19 used)
  - o <u>Menards</u>

#### Steel angle stock 2279703 1" x 1/8" x 3' steel angle

- o Bracket Building, Home-Depot will have it, but more expensive. Try Menards, McMaster, Lowes instead
- o \$7.71 (\$2.14 used)
- o <u>Menards</u>

### Welding

- Arc Welder B08CBBHFX5YESWELDER FLUX-135PRO
  - o Any arc welder will work, starts at \$60 on Amazon
  - o \$116.00
  - o <u>Amazon</u>

- Welding Rod FleetWeld 37-RSP 1/8" E6013 welding rod
  - o 3/32 may be a better option for this, used 2 rods for this project
  - o \$21.98 (\$0.88 used)
  - o Home Depot
- Auto tinting welding helmet B07QJ1Y527
  - o \$31.99
  - o <u>Amazon</u>
- Chipping Hammer B002ACOXNG Hobart 770066 Chipping Hammer
  - o \$8.99
  - o <u>Amazon</u>
- Wire Brush B07CD9QR25Lincoln K3185-1 Wire Brush
  - o \$6.11
  - o <u>Amazon</u>
- Welding Gloves B01N1VJDIQ RAPICCA Welding Gloves
  - o \$17.84
  - o <u>Amazon</u>

### Electrical

- Alternator plug B0DFMBBZ48Alternator 3 wire nippon denso style plug
  - o \$7.99
  - o <u>Amazon</u>
- Inline Fuse/Circuit Breaker B0BZHL4LVB 40A
  - o Install as close as possible to battery
  - o \$14.85
  - o <u>Amazon</u>
- Copper Wire B08K2MMYCT 8ga, 25', OFC Copper
  - o From alternator to battery, only need 5' max
  - o \$19.99 (\$4 used)
  - o <u>Amazon</u>
- Copper Wire B07588953X 14ga, X', OFC Copper
  - From alternator plug to accessory wire (15A Fused), only need 5' max
  - o \$7.99 (\$4 used)
  - o <u>Amazon</u>
- Wire Terminal Ring B08R6WHRPQ 8ga
  - o SOLDER the terminal rings, for thick wire between alternator and battery, need 2 pcs for this
  - o \$6.67 (\$1.33 used)
  - o <u>Amazon</u>
- Wire Terminal Ring B0CYM3J44Q 14ga
  - Can Crimp. Connect this between Alternator plug and positive post on fuse box above airbox, need 1 pc for this
  - o \$7.58 (\$0.08 used)
  - o <u>Amazon</u>
- Butt splice B0D5GNJ1MR 14ga
  - Need 14ga for splicing alternator plug to 14ga wire to accessory fuse, need 1pc for this
  - **\$9.99 (**\$0.05 used)

o <u>Amazon</u>

### Misc (things you may already have)

- Paint B000PIEWLA Enamel spray paint
  - o \$9.00
  - o <u>Amazon</u>
- Drill Press B08ZVT5JKC Drill can be used, used for bracket making
  - o \$98.01
  - o <u>Amazon</u>
- Drill Bits B079VJMH6T used for bracket making
  - o \$19.97
  - o <u>Amazon</u>
- Angle Grinder B07P5D6M4Vincl Cut off disc, Grinding Disc
  - o \$33.99
  - o <u>Amazon</u>
- Safety Glasses B01A12J3GI
  - o \$12.24
  - o <u>Amazon</u>
- Soldering Iron Kit B08R3515SF
  - o \$9.99
  - o <u>Amazon</u>
- Wire Crimp Tool B0BGXDD5Z8
  - o \$15.99
  - o <u>Amazon</u>

### **Alternator Sourcing**

- OEM / Interchange Numbers: 10463837, 13415, 19134990, 30002523, 30012950, 30016321, 3140060AC1, 3140063BD0, 3140063BD2, 3140063BD3, A5T07092, A5TA0792
- Compatible With: Chevrolet Sprint L3 1.0L 89-91, Geo Metro 89-95 & Pontiac Firefly L3 1.0L, Suzuki Swift L3 1.0L 92-94
- Belt: Gates Micro-V 3 rib
- Unit Series: PMA
- Voltage: 12V
- Amperage: 55A
- Rotation: CW (Clockwise)
- Regulator/Fan: IR/IF
- Plug Code: 282 circular 3 pin connector
- Pulley Class: S3
- Pulley OD: 55mm

#### ALTERNATOR SHAPE AND STYLE SHOULD MATCH THESE PHOTOS



RockAuto.com



RockAuto.com



RockAuto.com



Bottom leg needs cut off with angle grinder

Protect the alternator from getting metal shavings internally

### Pulley Assembly

Remove your timing cover and use an angle grinder to drill out the center circle on the left and right timing cover housing. Use this diagram for reference to where on where to cut the timing belt cover. (ignore washers)





Sand down the non flanged side of 7634N19 to meet the tolerance shown below



### **Bracket Fabrication**

The Poor Boy mod is somewhat destructive. You will need to cut and grind the left under side fairing support. See photo



#### Building the upper bracket

Cut a section of flat bar about 7 inches long and drill two holes

Test fit the bracket, then weld in the steel angle



After trimming, take note of the notch, I can't recall exactly why, but I needed this for fitment



Spacers will help keep the bracket flat.

I did this to try not to grind down the curved edge of the fairing support.

This is because removing that area of metal would weaken the fairing support significantly



#### Lower Bracket

Cut a section of steel angle and drill a hole for the engine mount bolt.

This bracket is meant to rest on the rubber timing cover gasket

This bracket will be trimmed down later



I don't have a ton of photos of this bracket, but a section of flat steel will need to be welded parallel

Then another section of flat steel welded perpendicular to make the alternator mount. See picture below. Areas in red are pieces of steel. Areas In blue are weld points.

If you look at other poorboy guides, there are other ways to do this.



I drilled a hole in the bottom bracket for the left engine mount bolt. This is the only point of attachment for the bottom of the alternator. The bracket will rest on the timing cover gasket



#### **Pulley Alignment**

First: Line up alternator with the pulley. Both pulleys should be perfectly parallel, otherwise the belt will prematurely wear down. Add and remove washers from the mounting bolts until both pulleys are parallel.

Now is a good time to size and buy your belt by wrapping a string around both pulleys, while the bottom alternator mount is attached, and the upper mount can freely pivot left and right.



#### Upper mount tension slot

Next we can drill the upper holes for the belt tensioner mechanism I am using a trick i've seen before to trace out the upper alternator mount's travel on the bracket. Insert an M8 1.25 bolt into the upper mount, so the threads just peek out Slide the alternator back and forth to trace out its expected travel



Drill holes to begin making a slot, and cut the rest with a dremel to finish the slot



### Painting

Once everything has been test fitted, with a belt, proceed to paint the bracket and fairing mount to prevent rust.

You may want to sand away some paint after it dries where the alternator mounts. The electrical ground passes through the bracket.





# **Belt Sizing Guide**

Measure belts after all brackets have been made, and pulleys are perfectly parallel. Tension alternator as far as it can go inwards, then measure.



Part #	Product #	Len	Outside Circ
		(in)	(in)
<u>K030195</u>	<u>85523295</u>	19.49	20
<u>K030220</u>	<u>85522126</u>	22.11	22.68
<u>K030231</u>	<u>85523462</u>	23.18	23.75
<u>K030236</u>	<u>85522539</u>	23.66	24.225
<u>K030240</u>	<u>85522414</u>	24.18	24.75
<u>K030243</u>	<u>85523341</u>	24.33	24.875
<u>K030245</u>	<u>85528645</u>	24.65	25.215
<u>K030250</u>	<u>85528617</u>	25.17	25.75
<u>K030265</u>	<u>85523208</u>	26.55	27.12
<u>K030267</u>	<u>85522481</u>	26.8	27.38
<u>K030273</u>	<u>85523602</u>	27.36	27.88
<u>K030280</u>	<u>85522068</u>	28.16	28.75
<u>K030290</u>	<u>85528612</u>	29.15	29.75
<u>K030295</u>	85522754	29.55	30.125
<u>K030299</u>	85522753	29.94	30.508
<u>K030300</u>	85528604	30.19	30.75

<u>K030310</u>	<u>85522076</u>	31.12	31.625
<u>K030323</u>	<u>85522079</u>	32.35	32.92
<u>K030334</u>	<u>85522832</u>	33.46	34.03
<u>K030338</u>	<u>85523348</u>	33.86	34.375
<u>K030340</u>	<u>85522029</u>	34.12	34.625
<u>K030342</u>	<u>85523589</u>	34.29	34.88
<u>K030365</u>	<u>85522129</u>	36.56	37.125
<u>K030380</u>	<u>85524726</u>	38.03	38.66
<u>K030384</u>	<u>85528489</u>	38.52	39.125
<u>K030390</u>	<u>85528620</u>	39.13	39.625
<u>K030395</u>	85522067	39.64	40.125
<u>K030415</u>	<u>85528605</u>	41.5	42
<u>K030425</u>	<u>85522069</u>	42.54	43.125
<u>K030431</u>	<u>85523641</u>	43.11	43.77
<u>K030441</u>	<u>85523063</u>	44.13	44.625
<u>K030455</u>	85522088	45.49	46
<u>K030471</u>	85523388	47.17	47.76

# **Electrical Diagram**

Electrical can be done at the end with the bike fully assembled, however you may want to test your wiring to ensure the battery charges before putting the fairings on.





<- SOLDER the 8 gauge wire

# Radiator Hose & Spacing

Thread the radiator mount spacers as far as they can go. Use Locktite



Cut threaded rod to extend the lower radiator mount, use locktite

The lower left fan mount leg will interfere with the belt. Cut it here



The fan blades interfere with the belt.

Remove the 3 Philips bolts, and install longer ones with nuts between

This will push the fan blades closer to the radiator.

#### Make sure the fan blades can still spin freely

I used a larger spacer for the bottom mount, and a thinner one for the top.



### Radiator hose alignment

There will be a small kink in the hose.

Some have used water pump spacers to get them to come into alignment again, but I couldn't find the part number. I just used a longer section of radiator hose.



### **Plastic Fitment and modification**

Do this once you have:

- Confirmed your alternator is charging your battery
- Waited for the radiator fans to come on
- Ride the bike for several minutes
- Ensure no parts are rubbing

Get a heat gun and heat up the section inside the white outline.

Wear a mask! Fumes from the plastic are toxic

Once you see the paint start to bubble, get a mallet and press down on this whole area



#### Result



Next remove plastic from the front air duct so it does not come into contact with the alternator pulley

Trim the area shown in red



You may have to bend the lower fairing brackets to get them to fit after the radiator has been relocated

#### The center fairing piece will no longer fit (see in red)



# Conclusion

With this setup the alternator will begin to charge at 1300rpm@14.2v









Result Video