# Gear Chart

## Gear Box

| Models | Cluster Part No. | Cluster No. Teeth | Speed | Gear Part No. | Gear No. Teeth | Primary Ratio | Drive Ratio | Ratio Jump |
|---|---|---|---|---|---|---|---|---|
| **Li 125 series I &II** | 19130013 | 9 | 1st | 19130014 | 51 | 46 / 15 | 17.38 | |
| **Early Li 125 series III** | | 12 | 2nd | 19130015 | 42 | | 10.73 | 62% |
| | | 16 | 3rd | 19130016 | 39 | | 7.48 | 43% |
| (Italian & Spanish) | | 19 | 4th | 19130017 | 35 | | **5.65** | 32% |
| | | | | | | | | |
| **Li 150 Special** | 19830001 | 11 | 1st | 19030003 | 50 | 46 / 15 | 13.94 | |
| **(Pacemaker)** | | 13 | 2nd | 19830009 | 41 | | 9.67 | 44% |
| Late Li 125 series III | | 17 | 3rd | 19830005 | 39 | | 7.04 | 37% |
| (Italian ) | | 19 | 4th | 19130017 | 35 | | **5.65** | 25% |
| | | | | | | | | |
| **SX 150** | 19530501 | 10 | 1st | 19430008 | 50 | 46 / 15 | 15.33 | |
| Li 150 Special | | 12 | 2nd | 19430009 | 42 | | 10.73 | 43% |
| (SX Engine) | | 15 | 3rd | 19430011 | 39 | | 7.97 | 35% |
| **150 Grand Prix** | | 19 | 4th | 19130017 | 35 | | **5.65** | 41% |
| | | | | | | | | |
| **GP 150** | | 10 | 1st | | 50 | 46 / 15 | 15.33 | |
| **(Indian Vijay Super)** | | 12 | 2nd | | 42 | | 10.73 | 43% |
| MKI | | 16 | 3rd | | 38 | | 7.28 | 47% |
| | | 19 | 4th | | 35 | | **5.65** | 29% |
| | | | | | | | | |
| **Li 150 series I, II & III** | 19030001 | 11 | 1st | 19030003 | 50 | 46 / 15 | 13.94 | |
| | | 14 | 2nd | 19030004 | 41 | | 8.98 | 55% |
| | | 17 | 3rd | 19030005 | 37 | | 6.67 | 35% |
| | | 20 | 4th | 19030006 | 34 | | **5.21** | 28% |
| | | | | | | | | |
| Li 150 series II | 19030001/R | 9 | 1st | 19130014 | 51 | 46 / 15 | 17.38 | |
| Rallymaster | | 12 | 2nd | 19130015 | 42 | | 10.73 | 62% |
| (Optional) | | 17 | 3rd | 19030005 | 37 | | 6.67 | 61% |
| | | 20 | 4th | 19030006 | 34 | | **5.21** | 28% |
| | | | | | | | | |
| Li 150 | | 11 | 1st | | 50 | 46 / 15 | 13.94 | |
| (Spanish) | | 13 | 2nd | | 41 | | 9.67 | 44% |
| | | 17 | 3rd | | 39 | | 7.04 | 37% |
| | | 20 | 4th | | 34 | | **5.21** | 35% |
| | | | | | | | | |
| **SX200** | 19230001 | 12 | 1st | 19230003 | 49 | 46 / 15 | 12.52 | |
| **TV 175 series I, II & III** | | 14 | 2nd | 19230004 | 40 | | 8.76 | 43% |
| | | 18 | 3rd | 19230005 | 37 | | 6.3 | 39% |
| | | 21 | 4th | 19230006 | 33 | | **4.82** | 31% |
| | | | | | | | | |
| GP 150 | | 10 | 1st | | 50 | 46 / 15 | 15.33 | |
| (Indian Vijay Super) | | 13 | 2nd | | 41 | | 9.67 | 59% |
| MKII | | 17 | 3rd | | 37 | | 6.67 | 45% |
| | | 21 | 4th | | 33 | | **4.82** | 39% |
| | | | | | | | | |
| **Li 125 Special** | 19430007 | 10 | 1st | 19430008 | 50 | 46 / 15 | 15.33 | |
| **125 DL** | | 12 | 2nd | 19430009 | 42 | | 10.73 | 43% |
| | | 15 | 3rd | 19430011 | 39 | | 7.97 | 35% |
| | | 18 | 4th | 19430012 | 36 | | **6.13** | 30% |
| | | | | | | | | |
| **200 Grand Prix** | 19430007 | 10 | 1st | 19430008 | 50 | 47 / 18 | 13.06 | |
| **Italian** | | 12 | 2nd | 19430009 | 42 | | 9.14 | 43% |
| | | 15 | 3rd | 19430011 | 39 | | 6.79 | 35% |
| | | 18 | 4th | 19430012 | 36 | | **5.22** | 30% |
| | | | | | | | | |
| **200 Grand Prix** | 22230501 | 10 | 1st | 19430008 | 50 | 47 / 18 | 13.06 | |
| **Indian** | | 12 | 2nd | 19430009 | 42 | | 9.14 | 43% |
| | | 16 | 3rd | 22030011 | 38 | | 6.2 | 47% |
| | | 18 | 4th | 19430012 | 36 | | **5.22** | 19% |
| | | | | | | | | |
| **Close Ratio** | | 11 | 1st | 19030003 | 50 | 47 / 18 | 11.87 | |
| | | 13 | 2nd | 19830009 | 41 | | 8.24 | 44% |
| | | 16 | 3rd | 19430011 | 38 | | 6.20 | 33% |
| | | 18 | 4th | 19430012 | 36 | | **5.22** | 19% |
| | | | | | | | | |
| GT 200 | 19630001 | 13 | 1st | 19630003 | 47 | 46 / 15 | 11.09 | |
| TV 200 | | 15 | 2nd | 19630004 | 39 | | 7.97 | 39% |
| | | 19 | 3rd | 19630005 | 36 | | 5.81 | 37% |
| | | 22 | 4th | 19630006 | 32 | | **4.46** | 30% |

## Recommended Final Drive Ratio

| Set Up | Final Drive Ratio |
|---|---|
| Rapido 250 Fresco | 4.7 |
| Rapido 250 Taffspeed / JL Road | 4.4 - 4.5 |
| Rapido Classic 200 NK | 5.2 - 5.3 |
| Rapido Classic 200 Fresco | 4.8 - 4.9 |
| GP200 NK | 5.2 - 5.3 |
| GP200 Fresco | 4.8 - 4.9 |
| 175 Clubman | 5.3 |
| 175 NK | 5.3 |
| 175 Fresco | 5 |
| Imola 185 NK | 5.3 |
| Imola 185 Fresco | 5 |

| TS1 / Race Rapido | Final Drive Ratio |
|---|---|
| NK | 5.2 |
| Fresco | 4.8 |
| Taffspeed | 4.5 - 4.7 |
| PM Tuning | 5.1 - 5.3 |
| DevTour (MB) | 4.9 - 5.1 |
| Kegra | 5.2 |
| JL KRP3 | 4.6 |
| JL KRP4 | 4.7 |
| Scorpion | 4.9 - 5.2 |
| ScootRS | 5.2 |

| Set Up | Final Drive |
|---|---|
| RB25 NK Hi Rev | 4.6 - 4.8 |
| RB25 NK Mid Rev | 4.6 - 4.8 |
| RB25 NK Low Rev | 4.6 - 4.8 |
| RB22 NK Hi Rev | 4.7 - 4.9 |
| RB22 NK Mid Rev | 4.7 - 4.9 |
| RB22 NK Low Rev | 4.7 - 4.9 |
| RB20 NK Hi Rev | 4.8 - 5.0 |
| RB20 NK Mid Rev | 4.8 - 5.0 |
| RB20 NK Low Rev | 4.8 - 5.0 |

| Set Up | Final Drive |
|---|---|
| RB25 Franspeed JL3 | 4.6 - 4.8 |
| RB25 Franspeed JL4 | 4.8 |
| RB25 PM Fat Mamba | 4.9 |
| RB22 Franspeed JL3 | 4.6 - 4.8 |
| RB22 Franspeed JL4 | 4.8 - 4.9 |
| RB22 PM Fat Mamba | 4.9 |
| RB20 Franspeed JL3 | 4.8 |
| RB20 Franspeed JL4 | 4.9 - 5.0 |
| RB20 PM Fat Mamba | 4.9 - 5.1 |

| Gear Box Choice | Cluster | Gears | Crown W | F. Sprocket | Overall Ratio | Rpm Range | Speed Mph | Speed Mph |
|---|---|---|---|---|---|---|---|---|
| **Close Ratio** | 11 | 50 | 48 | 19 | 11.48 | 6000 | 25.71 | 36.42 |
| | 13 | 41 | | | 7.97 | 8500 | 37.05 | 52.49 |
| | 16 | 38 | | | 6.00 | | 49.20 | 69.70 |
| | 18 | 36 | | | **5.05** | | 58.43 | 82.77 |

Enter your own Values

Enter your own Values

The information in this document is intended as a guide only. As Such Rayspeed hope that you find it useful and informative, but take no reponsibility for damage or costs you may incur as a result.

## Chain Selection

| Crown Wheel | F. Sprocket | Chain | GP200 | GP150 | Li150 | SX200 | GT200 |
|---|---|---|---|---|---|---|---|
| 45 | 14 | 79 | 6.43 | 5.92 | 5.46 | 5.05 | 4.68 |
| | 15 | Stretched 79 | 6 | 5.53 | 5.1 | 4.71 | 4.36 |
| | 16 | 80 | 5.63 | 5.18 | 4.78 | 4.42 | 4.09 |
| | 17 | Stretched 80 | 5.29 | 4.88 | 4.5 | 4.16 | 3.85 |
| | 18 | 81 | 5 | 4.61 | 4.25 | 3.93 | 3.64 |
| | 19 | Stretched 81 | 4.74 | 4.36 | 4.03 | 3.72 | 3.44 |
| | 20 | 82 | 4.5 | 4.14 | 3.83 | 3.54 | 3.27 |
| | 21 | Stretched 82 | 4.29 | 3.95 | 3.64 | 3.37 | 3.12 |
| 46 | 14 | No Chain Available | 6.57 | 6.05 | 5.59 | 5.16 | 4.78 |
| | 15 | 80 | 6.13 | 5.65 | 5.21 | 4.82 | 4.46 |
| | 16 | Stretched 80 | 5.75 | 5.3 | 4.89 | 4.52 | 4.18 |
| | 17 | 81 | 5.41 | 4.98 | 4.6 | 4.25 | 3.94 |
| | 18 | Stretched 81 | 5.11 | 4.71 | 4.34 | 4.02 | 3.72 |
| | 19 | 82 | 4.84 | 4.46 | 4.12 | 3.8 | 3.52 |
| | 20 | Stretched 82 | 4.6 | 4.24 | 3.91 | 3.61 | 3.35 |
| | 21 | 83 | 4.38 | 4.04 | 3.72 | 3.44 | 3.19 |
| 47 | 14 | 80 | 6.71 | 6.18 | 5.71 | 5.28 | 4.88 |
| | 15 | Stretched 80 | 6.27 | 5.77 | 5.33 | 4.92 | 4.56 |
| | 16 | 81 | 5.88 | 5.41 | 4.99 | 4.62 | 4.27 |
| | 17 | Stretched 81 | 5.53 | 5.09 | 4.7 | 4.34 | 4.02 |
| | 18 | 82 | 5.22 | 4.81 | 4.44 | 4.1 | 3.8 |
| | 19 | Stretched 82 | 4.95 | 4.56 | 4.21 | 3.89 | 3.6 |
| | 20 | 83 | 4.7 | 4.33 | 4 | 3.69 | 3.42 |
| | 21 | Stretched 83 | 4.48 | 4.12 | 3.8 | 3.52 | 3.26 |
| 48 | 14 | Stretched 80 | 6.86 | 6.32 | 5.83 | 5.39 | 4.99 |
| | 15 | 81 | 6.4 | 5.89 | 5.44 | 5.03 | 4.65 |
| | 16 | Stretched 81 | 6 | 5.53 | 5.1 | 4.71 | 4.36 |
| | 17 | 82 | 5.65 | 5.2 | 4.8 | 4.44 | 4.11 |
| | 18 | Stretched 82 | 5.33 | 4.91 | 4.53 | 4.19 | 3.88 |
| | 19 | 83 | 5.05 | 4.65 | 4.29 | 3.97 | 3.67 |
| | 20 | Stretched 83 | 4.8 | 4.42 | 4.08 | 3.77 | 3.49 |
| | 21 | 84 | 4.57 | 4.21 | 3.89 | 3.59 | 3.32 |
| 49 | 14 | 81 | 7 | 6.45 | 5.95 | 5.5 | 5.09 |
| | 15 | Stretched 81 | 6.53 | 6.02 | 5.55 | 5.13 | 4.75 |
| | 16 | 82 | 6.13 | 5.64 | 5.21 | 4.81 | 4.45 |
| | 17 | Stretched 82 | 5.76 | 5.31 | 4.9 | 4.53 | 4.19 |
| | 18 | 83 | 5.44 | 5.01 | 4.63 | 4.28 | 3.96 |
| | 19 | Stretched 83 | 5.16 | 4.75 | 4.38 | 4.05 | 3.75 |
| | 20 | 84 | 4.9 | 4.51 | 4.17 | 3.85 | 3.56 |
| | 21 | Stretched 84 | 4.67 | 4.3 | 3.97 | 3.67 | 3.39 |

## How to obtain the desired Final Drive Ratio

| Final Drive Ratio | Gear Box | Primary Ratio |
|---|---|---|
| **4.3** | Li 150 With | 19 / 48 (83 Pitch) |
| | GP 150 With | 20 / 47 (83 Pitch) |
| | SX 200 With | 18 / 49 (83 Pitch) |
| | GT 200 With | 16 / 47 (81 Pitch) |
| **4.4** | Li 150 With | 18 / 47 (82 Pitch) |
| | GP 200 With | 21 / 46 (83 Pitch) |
| | GP 150 With | 19 / 46 (82 Pitch) |
| | SX 200 With | 17 / 48 (82 Pitch) |
| | GT 200 With | 16 / 49 (82 Pitch) |
| **4.5** | Li 150 With | 18 / 48 (Stretched 82 Pitch) |
| | GP 200 With | 21 / 47 (Stretched 83 Pitch) |
| | GP 150 With | 20 / 49 (84 Pitch) |
| | SX 200 With | 16 / 46 (Stretched 80 Pitch) |
| | GT 200 With | 15 / 46 (80 Pitch) |
| **4.6** | Li 150 With | 17 / 46 (81 Pitch) |
| | GP 200 With | 20 / 46 (Stretched 82 Pitch) |
| | GP 150 With | 19 / 48 (83 Pitch) |
| | SX 200 With | 16 / 47 (81 Pitch) |
| | GT 200 With | 15 / 47 (Stretched 80 Pitch) |
| **4.7** | Li 150 With | 17 / 47 (Stretched 81 Pitch) |
| | GP 200 With | 20 / 47 (83 Pitch) |
| | GP 150 With | 18 / 46 (Stretched 81 Pitch) |
| | SX 200 With | 16 / 48 (Stretched 81 Pitch) |
| | GT 200 With | 15 / 48 (81 Pitch) |
| **4.8** | Li 150 With | 17 / 48 (82 Pitch) |
| | GP 200 With | 19 / 46 (82 Pitch) |
| | GP 150 With | 18 / 47 (82 Pitch) |
| | SX 200 With | Standard 15 / 46 (80 Pitch) |
| | GT 200 With | 15 / 49 (Stretched 81 Pitch) |
| **4.9** | Li 150 With | 16 / 46 (Stretched 80 Pitch) |
| | GP 200 With | 20 / 49 (84 Pitch) |
| | GP 150 With | 18 / 48 (Stretched 80 Pitch) |
| | SX 200 With | 15 / 47 (Stretched 80 Pitch) |
| | GT 200 With | 14 / 47 (80 Pitch) |
| **5** | Li 150 With | 16 / 47 (81 Pitch) |
| | GP 200 With | 19 / 48 (83 Pitch) |
| | GP 150 With | 17 / 46 (81 Pitch) |
| | SX 200 With | 15 / 48 (81 Pitch) |
| | GT 200 With | 14 / 48 (Stretched 80 Pitch) |
| **5.1** | Li 150 With | 16 / 48 (Stretched 81 Pitch) |
| | GP 200 With | 18 / 46 (Stretched 81 Pitch) |
| | GP 150 With | 17 / 47 (Stretched 81 Pitch) |
| | SX 200 With | 15 / 49 (Stretched 81 Pitch) |
| | GT 200 With | 14 / 49 (81 Pitch) |
| **5.2** | Li 150 With | Standard 15/46 (80 Pitch) |
| | GP 200 With | Standard 18 / 47 (82 Pitch) |
| | GP 150 With | 17 / 48 (82 Pitch) |
| **5.3** | Li 150 With | 15 / 47 (Stretched 80 Pitch) |
| | GP 200 With | 18 / 48 (Stretched 82 Pitch) |
| | GP 150 With | 16 / 46 (Stretched 80 Pitch) |
| | SX 200 With | 14 / 47 (80 Pitch) |
| **5.4** | Li 150 With | 15 / 48 (81 Pitch) |
| | GP 200 With | 17 / 46 (81 Pitch) |
| | GP 150 With | 16 / 47 (81 Pitch) |
| | SX 200 With | 14 / 48 (Stretched 80 Pitch) |
| **5.5** | Li 150 With | 15 / 49 (Stretched 81 Pitch) |
| | GP 200 With | 17 / 47 (Stretched 81 Pitch) |
| | GP 150 With | 16 / 48 (Stretched 81 Pitch) |
| | SX 200 With | 14 / 49 (81 Pitch) |
| **5.6** | Li 150 With | 15 / 49 (Stretched 81 Pitch) |
| | GP 200 With | 17 / 48 (82 Pitch) |
| | GP 150 With | 16 / 49 (82 Pitch) |
| **5.7** | Li 150 With | 14 / 47 (80 Pitch) |
| | GP 200 With | 16 / 46 (Stretched 80 Pitch) |
| | GP 150 With | 15 / 46 (80 Pitch) |

## Gear Chart – Why bother

Whether you are running a full race replica Lambretta with every tuning option or a standard 150cc, having the correct gearing makes the most of the machines available power.

Many aspects of the engine, the rider and the road or track will determine the optimum gearing for a given bike. Talking to any successful race rider you will find they have a number of gearboxes and sprockets, ready to be swapped over to give them the best for the day.

For road use we have to choose the correct gearing or close approximation for all intended use of that machine, as it is unlikely to be changed on a regular basis.

The factors that play the biggest role in selecting the correct gearing are: **the type of exhaust fitted, the type of cylinder being run and the rider.**

**Exhaust:** Standard exhausts and the clubman offer a wide distribution of power making the scooter very easy to ride and allowing a large variation in gearing without problem. Expansion systems on the other hand have a much narrower power band making the choice of gearing much smaller. Also different expansion systems power bands cover different areas of the rev range so gearing has to be chosen to reflect this.

**Cylinder:** The capacity of the top end you are running and the state of tune will also determine the amount of power available on a give n set up. To this end two bikes running the same exhaust and carb one with a 175cc kit and the other running a TS1 will want different gearing.

**Rider:** The weight of the rider will play a part, as a Jockey living in the Salt Flats will be able to 'pull' higher gearing than a S umo in Switzerland. The use of the bike 'Around Town' 'Rallies' 'Motorway' 'Fast A Road' is also important. Finally the type of rider: be honest with your self about what you want from your bike then be honest with your local dealer. A knowledgeable dealer will be able to recommend a good set up after discussing with you what you hope to gain.

## Gear Chart – How to use

The chart should be straightforward to use as a quick reference once you are familiar with the layout.

From the top down on the left hand side (the gearbox column) all the most common gearboxes are listed and colour coded. If you are in doubt as to which gearbox is fitted in your bike you will have to count the number of teeth on the gear cluster to identify which one is yours from the list.

At the top on the right hand side the Chain selection boxes allow you to identify which size of chain will fit with a chosen primary drive (F. sprocket and Crown Wheel). It also lists the final drive ratio with each given pair of sprockets with each gearbox. Remember you will not beable to buy a stretched chain.

At the bottom on the left hand side is a guide (Recommended Final Drive Ratio). Based on the average rider, the preferred Final Drive Ratio on each of the most popular set ups is listed. If you do not find yours there or are in doubt, speak with your local dealer or the dealer who supplied the parts on your bike and find out what they recommend.

Once armed with the desired Final Drive Ratio refer to the 'How to obtain the desired final drive ratio' box on the bottom right. Locate the Correct Final Drive Ratio and find the listing colour coded with your gearbox.

Now you know the recommended primary drive ratio that will allow your gearbox to provide the correct final drive ratio.

### Gear Chart – What is 'Final Drive Ratio'

The Final Drive Ratio is a ratio of the number of revolutions of the crankshaft to one revolution of the rear wheel when the bike is in fourth gear.

I.e. On a standard GP200 in fourth gear the crankshaft will make 5.22 revolutions for each single revolution of the rear wheel.

As such at 9000 rpm a GP200 rear wheel will rotate 1724 times in a minute. If this final drive were set to 4.8 the rear wheel would rotate 1875 times in a minute and will have travelled further in that minute. The lower the final drive ratio the taller the gearing of the bike.