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# NISSAN

## 350Z

MODEL Z33 SERIES

### QUICK REFERENCE INDEX

| A GENERAL INFORMATION        | GI General Information                          |
|------------------------------|-------------------------------------------------|
| B ENGINE                     | EM Engine Mechanical                            |
|                              | LU Engine Lubrication System                    |
|                              | CO Engine Cooling System                        |
|                              | EC Engine Control System                        |
|                              | FL Fuel System                                  |
|                              | EX Exhaust System                               |
|                              | ACC Accelerator Control System                  |
| C TRANSMISSION/<br>TRANSAXLE | CL Clutch                                       |
|                              | MT Manual Transmission                          |
|                              | AT Automatic Transmission                       |
| D DRIVELINE/AXLE             | PR Propeller Shaft                              |
|                              | RFD Rear Final Drive                            |
|                              | FAX Front Axle                                  |
|                              | RAX Rear Axle                                   |
|                              |                                                 |
| E SUSPENSION                 | FSU Front Suspension                            |
|                              | RSU Rear Suspension                             |
|                              | WT Road Wheels & Tires                          |
| F BRAKES                     | BR Brake System                                 |
|                              | PB Parking Brake System                         |
|                              | BRC Brake Control System                        |
| G STEERING                   | PS Power Steering System                        |
| H RESTRAINTS                 | SB Seat Belts                                   |
|                              | SRS Supplemental Restraint System (SRS)         |
| I BODY                       | BL Body, Lock & Security System                 |
|                              | GW Glasses, Window System & Mirrors             |
|                              | RF Roof                                         |
|                              | EI Exterior & Interior                          |
|                              | IP Instrument Panel                             |
|                              | SE Seat                                         |
|                              |                                                 |
| J AIR CONDITIONER            | ATC Automatic Air Conditioner                   |
| K ELECTRICAL                 | SC Starting & Charging System                   |
|                              | LT Lighting System                              |
|                              | DI Driver Information System                    |
|                              | WW Wiper, Washer & Horn                         |
|                              | BCS Body Control System                         |
|                              | LAN LAN System                                  |
|                              | AV Audio, Visual, Navigation & Telephone System |
|                              | ACS Auto Cruise Control System                  |
|                              | PG Power Supply, Ground & Circuit Elements      |
|                              |                                                 |
| L MAINTENANCE                | MA Maintenance                                  |
| M INDEX                      | IDX Alphabetical Index                          |

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# FOREWORD

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This manual contains maintenance and repair procedure for the 2004 NISSAN 350Z.

In order to assure your safety and the efficient functioning of the vehicle, this manual should be read thoroughly. It is especially important that the PRECAUTIONS in the GI section be completely understood before starting any repair task.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

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## IMPORTANT SAFETY NOTICE

The proper performance of service is essential for both the safety of the technician and the efficient functioning of the vehicle.

The service methods in this Service Manual are described in such a manner that the service may be performed safely and accurately. Service varies with the procedures used, the skills of the technician and the tools and parts available. Accordingly, anyone using service procedures, tools or parts which are not specifically recommended by NISSAN must first be completely satisfied that neither personal safety nor the vehicle's safety will be jeopardized by the service method selected.

**NISSAN MOTOR CO., LTD.**

Overseas Service Department

Tokyo, Japan



## PLEASE HELP MAKE THIS SERVICE MANUAL BETTER!

Your comments are important to NISSAN and will help us to improve our Service Manuals.  
Use this form to report any issues or comments you may have regarding our Service Manuals.  
Please print this form and type or write your comments below. Mail or fax to:

Nissan North America, Inc.  
Technical Service Information  
39001 Sunrise Drive, P.O. Box 9200  
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FAX: (248) 488-3910

**SERVICE MANUAL:** Model: \_\_\_\_\_ Year: \_\_\_\_\_

**PUBLICATION NO. (Refer to Quick Reference Index):** \_\_\_\_\_

Please describe any Service Manual issues or problems in detail:

Page number(s) \_\_\_\_\_ *Note: Please include a copy of each page, marked with your comments.*

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**Are the trouble diagnosis procedures logical and easy to use? (circle your answer)** YES NO

If no, what page number(s)? \_\_\_\_\_ *Note: Please include a copy of each page, marked with your comments.*

Please describe the issue or problem in detail: \_\_\_\_\_

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**Is the organization of the manual clear and easy to follow? (circle your answer)** YES NO

Please comment: \_\_\_\_\_

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**What information should be included in NISSAN Service Manuals to better support you in servicing or repairing customer vehicles?**

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DATE: \_\_\_\_\_ YOUR NAME: \_\_\_\_\_ POSITION: \_\_\_\_\_

DEALER: \_\_\_\_\_ DEALER NO.: \_\_\_\_\_ ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE/PROV./COUNTRY: \_\_\_\_\_ ZIP/POSTAL CODE: \_\_\_\_\_

## INCH TO METRIC CONVERSION TABLE

(Rounded-off for automotive use)

| inches | mm           | inches | mm            |
|--------|--------------|--------|---------------|
| .100   | <b>2.54</b>  | .610   | <b>15.49</b>  |
| .110   | <b>2.79</b>  | .620   | <b>15.75</b>  |
| .120   | <b>3.05</b>  | .630   | <b>16.00</b>  |
| .130   | <b>3.30</b>  | .640   | <b>16.26</b>  |
| .140   | <b>3.56</b>  | .650   | <b>16.51</b>  |
| .150   | <b>3.81</b>  | .660   | <b>16.76</b>  |
| .160   | <b>4.06</b>  | .670   | <b>17.02</b>  |
| .170   | <b>4.32</b>  | .680   | <b>17.27</b>  |
| .180   | <b>4.57</b>  | .690   | <b>17.53</b>  |
| .190   | <b>4.83</b>  | .700   | <b>17.78</b>  |
| .200   | <b>5.08</b>  | .710   | <b>18.03</b>  |
| .210   | <b>5.33</b>  | .720   | <b>18.29</b>  |
| .220   | <b>5.59</b>  | .730   | <b>18.54</b>  |
| .230   | <b>5.84</b>  | .740   | <b>18.80</b>  |
| .240   | <b>6.10</b>  | .750   | <b>19.05</b>  |
| .250   | <b>6.35</b>  | .760   | <b>19.30</b>  |
| .260   | <b>6.60</b>  | .770   | <b>19.56</b>  |
| .270   | <b>6.86</b>  | .780   | <b>19.81</b>  |
| .280   | <b>7.11</b>  | .790   | <b>20.07</b>  |
| .290   | <b>7.37</b>  | .800   | <b>20.32</b>  |
| .300   | <b>7.62</b>  | .810   | <b>20.57</b>  |
| .310   | <b>7.87</b>  | .820   | <b>20.83</b>  |
| .320   | <b>8.13</b>  | .830   | <b>21.08</b>  |
| .330   | <b>8.38</b>  | .840   | <b>21.34</b>  |
| .340   | <b>8.64</b>  | .850   | <b>21.59</b>  |
| .350   | <b>8.89</b>  | .860   | <b>21.84</b>  |
| .360   | <b>9.14</b>  | .870   | <b>22.10</b>  |
| .370   | <b>9.40</b>  | .880   | <b>22.35</b>  |
| .380   | <b>9.65</b>  | .890   | <b>22.61</b>  |
| .390   | <b>9.91</b>  | .900   | <b>22.86</b>  |
| .400   | <b>10.16</b> | .910   | <b>23.11</b>  |
| .410   | <b>10.41</b> | .920   | <b>23.37</b>  |
| .420   | <b>10.67</b> | .930   | <b>23.62</b>  |
| .430   | <b>10.92</b> | .940   | <b>23.88</b>  |
| .440   | <b>11.18</b> | .950   | <b>24.13</b>  |
| .450   | <b>11.43</b> | .960   | <b>24.38</b>  |
| .460   | <b>11.68</b> | .970   | <b>24.64</b>  |
| .470   | <b>11.94</b> | .980   | <b>24.89</b>  |
| .480   | <b>12.19</b> | .990   | <b>25.15</b>  |
| .490   | <b>12.45</b> | 1.000  | <b>25.40</b>  |
| .500   | <b>12.70</b> | 2.000  | <b>50.80</b>  |
| .510   | <b>12.95</b> | 3.000  | <b>76.20</b>  |
| .520   | <b>13.21</b> | 4.000  | <b>101.60</b> |
| .530   | <b>13.46</b> | 5.000  | <b>127.00</b> |
| .540   | <b>13.72</b> | 6.000  | <b>152.40</b> |
| .550   | <b>13.97</b> | 7.000  | <b>177.80</b> |
| .560   | <b>14.22</b> | 8.000  | <b>203.20</b> |
| .570   | <b>14.48</b> | 9.000  | <b>228.60</b> |
| .580   | <b>14.73</b> | 10.000 | <b>254.00</b> |
| .590   | <b>14.99</b> | 20.000 | <b>508.00</b> |
| .600   | <b>15.24</b> |        |               |

## METRIC TO INCH CONVERSION TABLE

(Rounded-off for automotive use)

| mm        | inches | mm         | inches |
|-----------|--------|------------|--------|
| <b>1</b>  | .0394  | <b>51</b>  | 2.008  |
| <b>2</b>  | .079   | <b>52</b>  | 2.047  |
| <b>3</b>  | .118   | <b>53</b>  | 2.087  |
| <b>4</b>  | .157   | <b>54</b>  | 2.126  |
| <b>5</b>  | .197   | <b>55</b>  | 2.165  |
| <b>6</b>  | .236   | <b>56</b>  | 2.205  |
| <b>7</b>  | .276   | <b>57</b>  | 2.244  |
| <b>8</b>  | .315   | <b>58</b>  | 2.283  |
| <b>9</b>  | .354   | <b>59</b>  | 2.323  |
| <b>10</b> | .394   | <b>60</b>  | 2.362  |
| <b>11</b> | .433   | <b>61</b>  | 2.402  |
| <b>12</b> | .472   | <b>62</b>  | 2.441  |
| <b>13</b> | .512   | <b>63</b>  | 2.480  |
| <b>14</b> | .551   | <b>64</b>  | 2.520  |
| <b>15</b> | .591   | <b>65</b>  | 2.559  |
| <b>16</b> | .630   | <b>66</b>  | 2.598  |
| <b>17</b> | .669   | <b>67</b>  | 2.638  |
| <b>18</b> | .709   | <b>68</b>  | 2.677  |
| <b>19</b> | .748   | <b>69</b>  | 2.717  |
| <b>20</b> | .787   | <b>70</b>  | 2.756  |
| <b>21</b> | .827   | <b>71</b>  | 2.795  |
| <b>22</b> | .866   | <b>72</b>  | 2.835  |
| <b>23</b> | .906   | <b>73</b>  | 2.874  |
| <b>24</b> | .945   | <b>74</b>  | 2.913  |
| <b>25</b> | .984   | <b>75</b>  | 2.953  |
| <b>26</b> | 1.024  | <b>76</b>  | 2.992  |
| <b>27</b> | 1.063  | <b>77</b>  | 3.031  |
| <b>28</b> | 1.102  | <b>78</b>  | 3.071  |
| <b>29</b> | 1.142  | <b>79</b>  | 3.110  |
| <b>30</b> | 1.181  | <b>80</b>  | 3.150  |
| <b>31</b> | 1.220  | <b>81</b>  | 3.189  |
| <b>32</b> | 1.260  | <b>82</b>  | 3.228  |
| <b>33</b> | 1.299  | <b>83</b>  | 3.268  |
| <b>34</b> | 1.339  | <b>84</b>  | 3.307  |
| <b>35</b> | 1.378  | <b>85</b>  | 3.346  |
| <b>36</b> | 1.417  | <b>86</b>  | 3.386  |
| <b>37</b> | 1.457  | <b>87</b>  | 3.425  |
| <b>38</b> | 1.496  | <b>88</b>  | 3.465  |
| <b>39</b> | 1.535  | <b>89</b>  | 3.504  |
| <b>40</b> | 1.575  | <b>90</b>  | 3.543  |
| <b>41</b> | 1.614  | <b>91</b>  | 3.583  |
| <b>42</b> | 1.654  | <b>92</b>  | 3.622  |
| <b>43</b> | 1.693  | <b>93</b>  | 3.661  |
| <b>44</b> | 1.732  | <b>94</b>  | 3.701  |
| <b>45</b> | 1.772  | <b>95</b>  | 3.740  |
| <b>46</b> | 1.811  | <b>96</b>  | 3.780  |
| <b>47</b> | 1.850  | <b>97</b>  | 3.819  |
| <b>48</b> | 1.890  | <b>98</b>  | 3.858  |
| <b>49</b> | 1.929  | <b>99</b>  | 3.898  |
| <b>50</b> | 1.969  | <b>100</b> | 3.937  |

**QUICK REFERENCE CHART 350Z**  
**ENGINE TUNE-UP DATA (VQ35DE)**

PFP:00000

ELS0003W

|                                                                                                        |                       |                         |                                      |                                     |                                       |                                       |
|--------------------------------------------------------------------------------------------------------|-----------------------|-------------------------|--------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|
| Engine model                                                                                           |                       |                         | VQ35DE                               |                                     |                                       |                                       |
| Firing order                                                                                           |                       |                         | 1-2-3-4-5-6                          |                                     |                                       |                                       |
| Idle speed<br>A/T (In “P” or “N” position)<br>M/T (In “Neutral” position)                              |                       |                         | rpm                                  | 650±50                              |                                       |                                       |
| Ignition timing<br>(BTDC at idle speed)<br>A/T (In “P” or “N” position)<br>M/T (In “Neutral” position) |                       |                         | 15°± 5°                              |                                     |                                       |                                       |
| CO% at idle                                                                                            |                       |                         | 0.7 - 9.9 % and engine runs smoothly |                                     |                                       |                                       |
| Drive belt                                                                                             | Deflection adjustment |                         | Unit: mm (in)                        | Tension adjustment Unit: N (kg, lb) |                                       |                                       |
|                                                                                                        | Used belt             |                         | New belt                             | Used belt                           |                                       | New belt                              |
|                                                                                                        | Limit                 | After adjustment        |                                      | Limit                               | After adjustment                      |                                       |
| Alternator and power steering oil pump belt                                                            | 7 (0.28)              | 4 - 5<br>(0.16 - 0.20)  | 3.5 - 4.5<br>(0.138 - 0.177)         | 294 (30, 66)                        | 730 - 818<br>(74.5 - 83.5, 164 - 184) | 838 - 926<br>(85.5 - 94.5, 188 - 208) |
| A/C compressor belt                                                                                    | 12 (0.47)             | 9 - 10<br>(0.35 - 0.39) | 8 - 9<br>(0.31- 0.35)                | 196 (20, 44)                        | 348 - 436<br>(35.5 - 44.5, 78 - 98)   | 470 - 559<br>(48 - 57, 106 - 126)     |
| Applied pushing force                                                                                  | 98 N (10kg, 22lb)     |                         |                                      | —                                   |                                       |                                       |
| Radiator cap relief pressure kPa (kg/cm <sup>2</sup> , psi)                                            |                       |                         | 78 - 98 (0.8 - 1.0, 11 - 14)         |                                     |                                       |                                       |
| Standard                                                                                               |                       |                         |                                      |                                     |                                       |                                       |
| Limit                                                                                                  |                       |                         | 59 (0.6, 9)                          |                                     |                                       |                                       |
| Cooling system leakage testing pres- sure kPa (kg/cm <sup>2</sup> , psi)                               |                       |                         | 157 (1.6, 23)                        |                                     |                                       |                                       |
| Compression pressure kPa (kg/cm <sup>2</sup> , psi)/rpm                                                |                       |                         | 1,275 (13.0, 185) / 300              |                                     |                                       |                                       |
| Standard                                                                                               |                       |                         |                                      |                                     |                                       |                                       |
| Minimum                                                                                                |                       |                         | 981 (10.0, 142) / 300                |                                     |                                       |                                       |
| Differential limit between cylinders                                                                   |                       |                         | 98 (1.0, 14) / 300                   |                                     |                                       |                                       |
| Spark plug                                                                                             | Standard type         |                         | PLFR5A - 11                          |                                     |                                       |                                       |
|                                                                                                        | Hot type              |                         | PLFR4A - 11                          |                                     |                                       |                                       |
|                                                                                                        | Cold type             |                         | PLFR6A - 11                          |                                     |                                       |                                       |
|                                                                                                        | Gap (Nominal) mm (in) |                         | 1.1 ( 0.043 )                        |                                     |                                       |                                       |

## FRONT WHEEL ALIGNMENT (Unladen\*)

ELS0003X

|                                  |                                           |                           |                      |
|----------------------------------|-------------------------------------------|---------------------------|----------------------|
| Camber                           | Degree minute (Decimal degree)            | Minimum                   | - 1° 20' ( - 1.33° ) |
|                                  |                                           | Nominal                   | - 0° 35' ( - 0.58° ) |
|                                  |                                           | Maximum                   | 0° 10' ( 0.17° )     |
|                                  |                                           | Left and right difference | 45' ( 0.75° )        |
| Caster                           | Degree minute (Decimal degree)            | Minimum                   | 7° 25' ( 7.42° )     |
|                                  |                                           | Nominal                   | 8° 10' ( 8.17° )     |
|                                  |                                           | Maximum                   | 8° 55' ( 8.92° )     |
|                                  |                                           | Left and right difference | 45' ( 0.75° )        |
| Kingpin inclination              | Degree minute (Decimal degree)            | Minimum                   | 4° 20' ( 4.33° )     |
|                                  |                                           | Nominal                   | 5° 05' ( 5.08° )     |
|                                  |                                           | Maximum                   | 5° 50' ( 5.83° )     |
| Total toe-in<br>Distance (A - B) | mm (in)                                   | Minimum                   | 0 ( 0 )              |
|                                  |                                           | Nominal                   | 1 ( 0.04 )           |
|                                  |                                           | Maximum                   | 2 ( 0.08 )           |
| Wheel turning angle (Full turn)  | Inside<br>Degree minute (Decimal degree)  | Minimum                   | 35° 55' ( 35.9° )    |
|                                  |                                           | Nominal                   | 38° 55' ( 38.9° )    |
|                                  |                                           | Maximum                   | 39° 55' ( 39.9° )    |
|                                  | Outside<br>Degree minute (Decimal degree) | Nominal                   | 30° 40' ( 30.7° )    |

\* : Fuel, engine coolant and engine oil are full. Spare tire, jack, hand tools and mats are located in designated positions.

## REAR WHEEL ALIGNMENT (Unladen\*)

ELS0003Y

|                                |                                |         |                                                                              |
|--------------------------------|--------------------------------|---------|------------------------------------------------------------------------------|
| Camber                         | Degree minute (Decimal degree) | Minimum | - 2° 05' ( - 2.08° )                                                         |
|                                |                                | Nominal | - 1° 35' ( - 1.58° )                                                         |
|                                |                                | Maximum | - 1° 05' ( - 1.08° )                                                         |
| Total-in<br>Distance ( A - B ) | mm (in)                        | Minimum | 0.2 mm ( 0.008 in ) [ 17 inch tire ]<br>1.1 mm ( 0.043 in ) [ 18 inch tire ] |
|                                |                                | Nominal | 1.0 mm ( 0.039 in ) [ 17 inch tire ]<br>1.9 mm ( 0.075 in ) [ 18 inch tire ] |
|                                |                                | Maximum | 1.8 mm ( 0.071 in ) [ 17 inch tire ]<br>2.7 mm ( 0.106 in ) [ 18 inch tire ] |

\* : Fuel, engine coolant and oil full. Spare tire, jack, hand tools and mats in designated positions.

## BRAKE

ELS0003Z

Unit : mm ( in )

|                         |                    |                                                                    |
|-------------------------|--------------------|--------------------------------------------------------------------|
| Front brake             | Pad wear limit     | 2.0 ( 0.079 )                                                      |
|                         | Rotor repair limit | CLZ25VD : 22.0 ( 0.866 )<br>OPB27VA : 28.4 ( 1.118 )               |
| Rear brake              | Pad wear limit     | 2.0 ( 0.079 )                                                      |
|                         | Rotor repair limit | AD14VE : 14.0 ( 0.551 )<br>OPB13VB : 20.2 ( 0.795 )                |
| Pedal free height       |                    | M/T : 154 - 164 ( 6.06 - 6.46 )<br>A/T : 162 - 172 ( 6.38 - 6.77 ) |
| Pedal depressed height* |                    | M/T : More than 90 ( 3.54 )<br>A/T : More than 95 ( 3.74 )         |

\* : Under force of 490 N( 50 kg, 110 lb ) with engine running.

## REFILL CAPACITIES

ELS00040

| UNIT                                   |                           | Liter   | US measure   |
|----------------------------------------|---------------------------|---------|--------------|
| Fuel tank                              |                           | 76      | 20 - 1/8 gal |
| Engine coolant ( With reservoir tank ) |                           | 8.7     | 9 - 1/4 qt   |
| Engine                                 | Drain and refill          |         |              |
|                                        | With oil filter change    | 4.7     | 5 qt         |
|                                        | Without oil filter change | 4.4     | 4 - 5/8 qt   |
|                                        | Dry engine (Overhaul)     | 5.4     | 5 - 3/4 qt   |
| Transmission                           | A/T                       | 10.3    | 10 - 7/8 qt  |
|                                        | M/T                       | 2.9     | 3 - 1/8 qt   |
| Differential carrier                   |                           | 1.4     | 3 pt         |
| Power steering system                  |                           | 1.0     | 1 - 1/8 qt   |
| Air conditioning system                | Compressor oil            | 0.18    | 6.0 fl oz    |
|                                        | Refrigerant               | 0.55 kg | 1.21 lb      |