Edition: March 2012
Revision: March 2013
Publication No. SM3E-1H51U1

INFINITI®
M Hybrid
MODEL HY51 SERIES



## QUICK REFERENCE INDEX

# FOREWORD

**This manual contains maintenance and repair procedure for the 2013 INFINITI M Hybrid.**

**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.**

## 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.**

INFINITI®

INFINITI®

## PLEASE HELP MAKE THIS SERVICE MANUAL BETTER!

Your comments are important to INFINITI 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
Farmington Hills, MI USA 48331
FAX: (248) 488-3880


**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.*

_____

_____

_____

_____

_____

_____

_____

**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: _____

_____

_____

_____

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

Please comment: _____

_____

_____

_____

_____

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

_____

_____

_____

_____

DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

CITY:_____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

# QUICK REFERENCE CHART M HYBRID

PFP:00000

## ENGINE TUNE-UP DATA (VQ35HR)

ELS0003W

| | | | |
|---|---|---|---|
| Engine model | | | VQ35HR |
| Firing order | | | 1-2-3-4-5-6 |
| Idle speed<br>(In “P” position) (INSPECTION MODE1) | | rpm | 930 ± 50 |
| Ignition timing (BTDC at idle speed)<br>(In “P” position) (INSPECTION MODE1) | | | 25° ± 5° |
| Radiator cap relief pressure | | kPa (kg/cm$^2$, psi) | |
| | Standard | | 122.3 - 151.7 (1.2 - 1.5, 18 - 22) |
| | Limit | | 107 (1.1, 16) |
| Engine cooling system leakage testing pressure | | kPa (kg/cm$^2$, psi) | 157 (1.6, 23) |
| Sub radiator reservoir tank cap relief pressure | | kPa (kg/cm$^2$, psi) | |
| | Standard | | 19 - 34 (0.2 - 0.3, 2 - 5) |
| | Limit | | 16 (0.2, 2) |
| High voltage cooling system leakage testing pressure | | kPa (kg/cm$^2$, psi) | 32 (0.3, 5) |
| Compression pressure | | kPa (kg/cm$^2$, psi)/rpm | |
| | Standard | | 950 (9.69, 138)/300 |
| | Minimum | | 730 (7.45, 106)/300 |
| | Differential limit between cylinders | | 100 (1.0, 14.5)/300 |
| Spark plug<br>(Iridium-tipped type) | Make | | DENSO |
| | Standard type | | FXE22HR11 |
| | Gap (Standard) | mm (in) | 1.1 (0.043) |

## FRONT WHEEL ALIGNMENT

ELS0003X

| Item | | | Standard |
|---|---|---|---|
| Camber<br>Degree minute (Decimal degree) | | Minimum | –0° 55′ (–0.91°) |
| | | Nominal | –0° 10′ (–0.17°) |
| | | Maximum | 0° 35′ (0.58°) |
| | | Left and right difference | 0° 33′ (0.55°) or less |
| Caster<br>Degree minute (Decimal degree) | | Minimum | 3° 10′ (3.17°) |
| | | Nominal | 4° 30′ (4.50°) |
| | | Maximum | 5° 50′ (5.83°) |
| | | Left and right difference | 0° 39′ (0.65°) or less |
| Kingpin inclination<br>Degree minute (Decimal degree) | | Minimum | 6° 25′ (6.42°) |
| | | Nominal | 7° 10′ (7.17°) |
| | | Maximum | 7° 55′ (7.91°) |
| Toe-in | Total toe-in<br>Distance | Minimum | Out 1 mm (Out 0.03 in) |
| | | Nominal | In 1 mm (In 0.04 in) |
| | | Maximum | In 3 mm (In 0.11 in) |
| | Total toe-angle<br>Degree minute (Decimal degree) | Minimum | Out 0 ° 04′ 48″ (Out 0.08°) |
| | | Nominal | In 0° 04′ 48″ (In 0.08°) |
| | | Maximum | In 0° 14′ 24″ (In 0.24°) |

Measure value under unladen* conditions.
*: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

## REAR WHEEL ALIGNMENT

ELS0003Y

| Item | | | Standard |
|---|---|---|---|
| Camber<br>Degree minute (Decimal degree) | | Minimum | –1° 30′ (–1.50°) |
| | | Nominal | –1° 00′ (–1.00°) |
| | | Maximum | –0° 30′ (–0.50°) |
| Toe-in | Total toe-in<br>Distance | Minimum | 0 mm (0 in) |
| | | Nominal | In 2.9 mm (In 0.114 in) |
| | | Maximum | In 5.8 mm (In 0.228 in) |
| | Total toe-angle<br>Degree minute (Decimal degree) | Minimum | 0° 00′ (0.00°) |
| | | Nominal | In 0° 14′ 24″ (In 0.24°) |
| | | Maximum | In 0° 28′ 12″ (In 0.47°) |

Measure value under unladen* conditions.
*: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

## BRAKE PEDAL

Unit: mm (in)

| Item | Standard |
|---|---|
| Brake pedal height | 170.5 - 180.5 (6.71 - 7.11) |
| Depressed brake pedal height<br>[Depressing 196 N (20 kg, 44 lb) while turning the engine ON] | 124.0 (4.88) or more |

## FRONT DISC BRAKE

Unit: mm (in)

| Item | | Limit |
|---|---|---|
| Brake pad | Wear limit thickness | 2.0 (0.079) |
| Disc rotor | Wear limit thickness | 26.0 (1.024) |
| | Thickness variation (measured at 8 positions) | 0.015 (0.0006) |
| | Runout (with it attached to the vehicle) | 0.035 (0.0014) |

## REAR DISC BRAKE

Unit: mm (in)

| Item | | Limit |
|---|---|---|
| Brake pad | Wear limit thickness | 2.0 (0.079) |
| Disc rotor | Wear limit thickness | 14.0 (0.551) |
| | Thickness variation (measured at 8 positions) | 0.015 (0.0006) |
| | Runout (with it attached to the vehicle) | 0.055 (0.0022) |

## REFILL CAPACITIES

ELS00040

| UNIT | | Liter | US measure |
|---|---|---|---|
| Fuel tank | | 67.4 | 17-7/8 gal |
| Engine coolant capacity [With reservoir tank (“MAX” level)] | | 8.6 | 9-1/8 qt |
| Engine oil | Drain and refill | | |
| | With oil filter change | 4.9 | 5-1/8 qt |
| | Without oil filter change | 4.6 | 4-7/8 qt |
| | Dry engine (Overhaul) | 5.7 | 6 qt |
| Transmission | | 7.0 | 7-3/8 qt |
| Final drive | | 1.15 | 2-3/8 pt |
| Power steering system | | 1.0 | 1-1/8 qt |
| Air conditioning system | Compressor oil | 0.15 | 5.07 fl oz |
| | Refrigerant | 0.55 kg | 1.21 lb |