



# Mazda MX-5 Cup Car:

## User Manual



# Mazda MX-5 Cup ND.2 User Guide

Refer to the latest version of the Mazda MX-5 Technical Rules for up-to-date information regarding rules and regulations

**Do Not Operate Vehicle until you've done the Following:**

**Read this entire document, all associated manufacturer instructions, and FIA Safety Regulations.**

**Fully install a FIA seat, FIA safety belts and FIA Drivers Nets.**

**Connect the Fire Bottle Wiring in the Trunk and Activated the Fire System**

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# 0.0 Flis Performance Website & MX-5C Documentation



Please visit our Flis Performance website:

[Flis Performance](#)

The Flis Performance website offers comprehensive documentation for the Mazda MX-5 Cup Car. (Located at the bottom of the Home Page)

Click the SUBSCRIBE button and sign up your team members to get Technical Service Bulletins and Competitor information Bulletins when they are released



## MX-5C DOCUMENTATION

Understand and apply the important information for your ND.1 and ND.2 Mazda MX-5 Cup race car. What is included for your Mazda MX-5 Cup race car are Homologation Documents, Owner Information, AiM Dash Configurations and Technical Service Bulletins (TSB's). Click on the generation of Mazda MX-5 Cup car that you own as specified by the code (ND.#) and model range (year). Please contact Flis Performance for any TSB related questions.

## ND.2 (2019+)

Technical Service Bulletins

Competition Information Bulletins

Owner Information

ND.2 Homologation

MX-5C AiM Configurations & Information

Instructions and Installation

Bosch ECU

## ND.1 (2016-2018)

Technical Service Bulletins

Owner Information

Instructions and Installation

ND.1 Homologation

GMX-5 AiM Configurations ND.1



# Mazda MX-5 Cup Homologation Document:

This document will be updated periodically to reflect cumulative changes made to the vehicle specification. A list of all vehicle updates can be found on the Flis Performance web site.

The Mazda MX-5 Cup Car Homologation provides the approved specifications, modifications, and safety features required for competitive racing. It covers technical specs, safety equipment, and compliance. This document provides teams with essential information for participating in sanctioned Mazda MX-5 Cup Car events.

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**3. General Notes**

This document will be updated periodically to reflect cumulative changes made to the vehicle specification. A list of all vehicle updates can be found on the Flis Performance web site: [www.FlisPerformance.com](http://www.FlisPerformance.com)

All REQUIRED TSB items are listed throughout, as well as items that are OPTIONAL, but will be homologated. All parts on vehicles must be stock 2019 Mazda MX-5 (ND2) unless otherwise specified in this document. Below is a list of all stock Mazda parts that are authorized in this document:

- 1) Air Intake: 1000-03-0000
- 2) Brake Caliper: 1000-03-0000
- 3) Brake Pad: 1000-03-0000
- 4) Brake Pad: 1000-03-0000
- 5) Brake Pad: 1000-03-0000
- 6) Brake Pad: 1000-03-0000
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Please visit our Flis Performance website:  
[Flis Performance](http://www.FlisPerformance.com)

# 0.5 Competitor Information

## Whelen Mazda MX-5 Cup Series Competitor Information

Complete your User Registration and this will grant you access to the following:

### Event Information:

- Technical Inspection Reports
- MX-5 Cup Series Handbook
- Insurance Summary

### Series Forms:

- Fuel Order Forms
- ICARS Components Order Forms
- Helmet Eject System Order Form
- Competitor Information Form
- Mazda MX-5 Cup Engine Change Form-fillable

The screenshot shows the Whelen Mazda MX-5 Cup website. The header includes the logo and navigation links: MAZDA MOTORSPORTS, FLIS PERFORMANCE, MX-5 CUP LIVE STREAM, NEWS, ABOUT, SCHEDULE, RESULTS, TEAMS & DRIVERS, and MULTIMEDIA. The main content area is titled 'COMPETITOR INFO' and features a sidebar with 'ABOUT' (The Series, Competitor Info, Licensing, Partners, Marketing, MX-5 Cup Car Info, Contact) and 'RECENT NEWS' (Successful Sebring Boosts BSI Racing's Point Tally, Mazda Scholarship Racer Westin Workman Wins Whelen Mazda MX-5, Gonzalez Beats the Sebring Heat to Take Tight Whelen Mazda MX-5 Cup). The main content area is divided into three sections: 'USER LOGIN' with fields for Email / Username, Password, and a Remember me checkbox; 'USER REGISTRATION' with fields for First name, Last name, Email, Password, and Re-type password; and a 'COMPETITOR INFO' section with a message: 'Competitor Information is only available to registered users. If you are not registered, please use the form on this page to signup for an account. If you are already registered, please enter your username and password above.' A reCAPTCHA widget is visible at the bottom of the registration form.

### MICHELIN TIRE DOCUMENTS

- Michelin Tire Pressure Camber Settings - Sebring
- Michelin Tire Pressure Camber Settings - Daytona

### RULEBOOK AND BULLETINS

### VECTOR FILES

Licensing

Partners

Marketing

and more...

# MYLAPS Transponder

Create an account with MYLAPS, register your Transponder and activate your subscription before your first Mazda MX-5 Cup Car Event.

More information can be found in the MX-5 Cup Car Series Handbook (page #05)

Link: [Mazda MX-5 Cup Car Competitors](#)

MYLAPS

John Dains / Balton Aulls

678-816-4000

Balton.Aulls@mylaps.com

[www.mylaps.com](http://www.mylaps.com)



TR2 Transponder  
0000-08-5044-TR2

# MAZDA MOTORSPORTS

To ensure seamless access to exclusive benefits and resources, please follow the steps outlined below to set up or transition your Mazda Motorsports account to an Mazda MX-5 Cup account:

Contact Information for Mazda Motorsports:

Scott Kaluza coordinates with Andres Valdes from Flis Performance regarding stock availability, pending orders, and overall parts inventory.

## Mazda Motorsports Contact Details:

Scott Kaluza: SKaluza@mazdausa.com  
Mazda Motorsports Phone: 800-435-2508

To Access Mazda Motorsports New Member Registration:

- Visit the [Mazda Motorsports New Member Registration portal](#).

To Access the Mazda Motorsports Parts Store and Receive Team Discounts:

- Log in to your [Mazda Motorsports Parts Store Account](#).

## Please Note:

Your Mazda Motorsports account is essential for accessing the Mazda MX-5 Cup Team discount on parts and is the exclusive means for purchasing parts at the track from the Mazda Customer Experience trailer.

Having a Mazda Motorsports account is mandatory to receive contingency payouts from the Mazda MX-5 Cup Series.

For inquiries regarding contingency payout status or team membership approval, contact:

rconley3@mazdausa.com.



# Customer Experience Center

The Customer Experience Center (CEC) Trailer is for at track Mazda MX-5 Cup Car events. This serves as a dedicated parts trailer provided by Mazda Motorsports for MX-5 Cup Car competitors. While teams are expected to bring essential parts with them, the CEC trailer offers additional support by providing access to parts that teams may not have on hand, particularly one-off parts or specialized components. This resource ensures that teams have access to the necessary parts to maintain and repair their MX-5 Cup Cars during race events, helping to minimize downtime and keep competitors on the track.



# 1.0 Starting the Car and Operation of Cooling Pumps

Check Oil and Coolant levels before starting the vehicle

The Switch panel on the dash has the following 4 Switches and 2 Buttons:

## 1. 3-Way Master:

- a. Down “Off” = Power Off
- b. Middle “ACC” = Accessory Power On
- c. Up “IGN” = ACC + Ignition Power

## 2. Separate transmission & differential cooler pump and fan over ride switches:

The AiM dash is programmed to activate these automatically without needing the switches. You only need to turn the switches on if the dash loses power or if you want to override dash control.

- a. Down = Power Off
- b. Up = Power On

## 3. Fire Bottle Button: Press to Operate Fire Bottle

## 4. Fuel Reset: Press to Reset Fuel Counter to “0”, Fuel Counter counts fuel used in liters when the engine is running.

5. 93 Oct / 100 Oct: Selector for Fuel Map Options. Make sure switch position matches the octane rating of the fuel you are running.



Figure 1: Switch Panel



Figure 2: Start Button

# 2.0 To Start the Engine:

- Move the 3-Way Master Switch up to ACC and wait for the AiM Dash screen to come on, then move to IGN position (figure 1).  
NOTE: If the Switch is thrown up to IGN to quickly, it will not give the AiM and Bosch time to process the information and will sometimes not turn the car off when you move back to ACC.
- Depress Clutch Pedal (and brake as needed), Press and hold the Factory Start Stop Button. (figure 2)

# 3.0 To Turn the Engine Off:

- Move the 3-Way Master Switch to the OFF Position. Or, flip the external master kill switch on the cowl near the Windshield Wipers.

## 4.0 Fire System:

- Before vehicle use, the Fire Bottle Cable, see figure 3, must be reconnected to the bottle in the trunk. This line is disconnected during transport to eliminate any possibility of accidental discharge.



**Figure 3. Fire Bottle Cable, Trunk.**

- The control unit, see figure 4, on the center console has a switch that allows you to:
  - Test the battery
  - Test the system (when the system is in TEST, you can operate the trigger buttons without discharging the system to verify the wiring is working)
  - Engage or Arm the system.



**Figure 4: Fire System Control Unit, Right Side of Center Console.**

- Review the LifeLine instruction booklet included in the trunk kit, or online at <https://www.lifeline-fire.com/>
- [Installation Guide](#) - Red Bottle 2000
- [Installation Guide](#) - Blue Bottle 2020
- [System Care, Maintenance & Servicing](#)
- **!!! Always remember to TEST and ARM (or engage) the system prior to on track activity!!!**

## 5.0 Seat Installation:

- Before vehicle use, a FIA compliant Seat and seat mounting brackets must be installed meeting the requirements of FIA document, 2019 Appendix J – Article 253, Safety Equipment (Groups, N,A, R-GT), ART. 16, Seats, Anchorage Points and Supports. This document is available for download at <http://www.fia.com/Regulations>.
- An FIA compliant seat mounting baseplate, see figure 5, Mazda part # 0000-08-5111, is provided as a mounting surface.
- Additional Plates may be welded to the provided seat mount plate to extend the mounting surface forward if necessary. Plates must be between 1/8” and 3/16” thick, must be attached by at least 2.75” of 1/8” weld, and may not be added for the purpose of ballast.



Figure 5: Seat Mount Base Plate

## 6.0 Seat Belt Installation:

- Before vehicle use, FIA compliant Safety Belts must be installed meeting the requirements given in FIA document,
- 2016 Appendix J – Article 253, Safety Equipment (Groups, N,A, R-GT), ART. 6, Safety Belts. This document is available for download at <http://www.fia.com/Regulations>. FIA compliant safety belts, eyebolts and backing plates are supplied with the vehicle.
- A bar for shoulder belt attachment, see figure 6, is provided in the rear of the car. Flis Performance Shoulder Belt Extension Bracket Flis Performance Shoulder Belt Extension Bracket (Part #0000-08-5110-FPSH) is the only homologated option for shoulder belt extension bars.

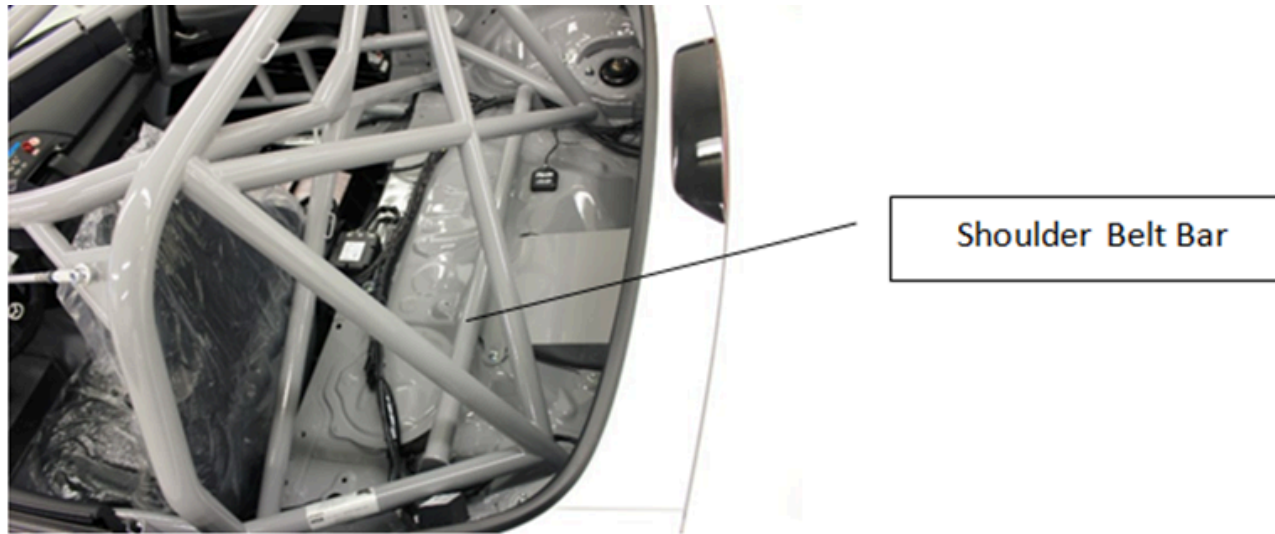


Figure 6: Shoulder Belt Bar



Flis Performance Shoulder Belt Extension Bracket (Part #0000-08-5110-FPSH) Optional

## 7.0 Battery Maintenance:

The Odyssey Extreme PC1200 or the Braille G30 Battery will be supplied with this vehicle. Both are very efficient. Review user manuals to ensure the battery is properly maintained and remains in good working condition:

### Manuals:

<https://braillebattery.com/batteries/g30-lithium-green-lite-motorsports-12-volt-battery/>

<https://www.odysseybattery.com/Support/Literature>



## 7.5 Braille Battery Orders & Part Numbers:



### Braille Battery - Optional Orders & Part Numbers:

The Braille Battery components **MUST** be ordered through Scott Kaluza with Mazda Motorsports.

"All orders will have to be processed as a drop ship and be emailed to Scott Kaluza ([SKaluza@mazdausa.com](mailto:SKaluza@mazdausa.com)) with the SUBJECT of the email being "Braille battery drop ship order/MX-5 Cup."

Email Drop Ship Order EXAMPLE:

To: [SKaluza@mazdausa.com](mailto:SKaluza@mazdausa.com)

Subject: "Braille battery drop ship order/MX-5 Cup"

Battery Only: 0000-10-9601 - G30 Battery individual

Charger Only: 0000-10-9602 - TM393 Charger individual

Battery & Charger Combo: 0000-10-9600 - G30C Combo

# 8.0 Fluids:

<u>Item</u>	<u>MX-5C Spec Fluid</u>
Engine Oil	Idemitsu Pro Racing Engine Oil Full Synthetic 5W-40
Rear Differential Oil	Idemitsu Pro Racing Gear Oil 75W-90
Transmission Oil	Idemitsu Pro Racing Gear Oil 75W-90
SADEV Transmission Oil	Idemitsu Pro Racing Gear Oil 75W-90
Brake Fluid	DOT 4 OR HIGHGER
Fuel	91 – 101 Octane Series dependent
Coolant	Cool-aide or Mo Cool

**Fuel pump out: MUST HAVE MANNED FIRE EXTINGUISHER**

- 1. \*Make sure engine is not running and power is turned off. It is recommended to connect the Battery Charger to the Battery during pump out to ensure the battery is not over discharged.
- 2.Connect pump out hose to dry break fuel line fitting, and place open end of hose into fuel storage container.

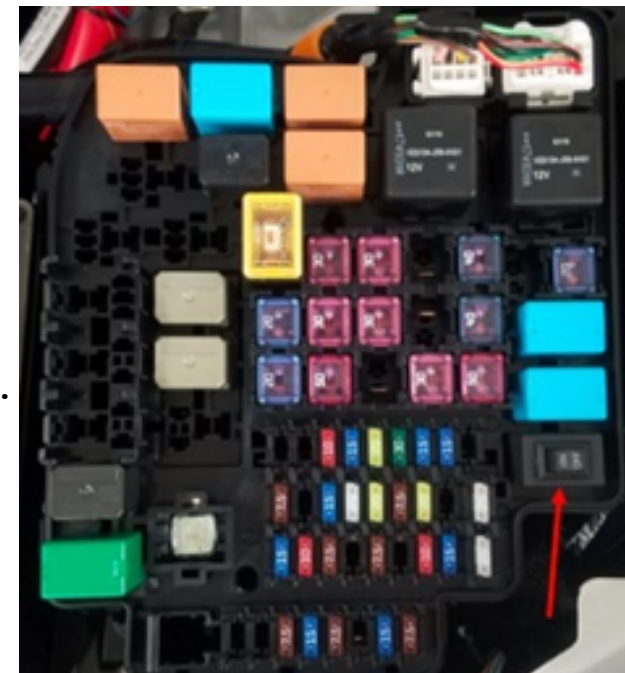




3. Remove Fuel Pump Relay from Fuse Box.



4. Replace Fuel Pump Relay with On/Off Relay Switch, make sure switch is in the off position.



5. Turn Vehicle Power On (up 1 click) to “ACC”. Going up to “IGN” will drain the battery unnecessarily.
6. Turn the On/Off Relay Switch to “On” and fuel should start pumping.
7. When fuel flow has slowed to a very slow trickle, pump out is complete. Turn the On/Off Relay Switch to “Off” and turn the vehicle’s power off as well.
8. While holding the Pump out Hose end in the Fuel Storage Container, Disconnect the dry break and lift up to drain remaining fuel left  
in the hose into the Fuel Storage Container.
9. Safely store fuel.
10. Replace On/Off Relay Switch with Blue OEM Fuel Pump Relay and replace fuse box cover.
  - a) If you start the car with the On/Off Relay Switch installed in the “Off” Position it may run for longer than you expect, but will eventually run out of fuel in the lines and behave like a car with no fuel.

## 9.0 Engine, Transmission and Differential Seals:

- The Engine, SADEV Transmission and Differential have been sealed with tamper proof/evident devices to prevent modification to these parts. Evidence of removal or tampering with these seals will be cause for disqualification and or fines in Mazda MX-5 Cup Competition.
- Open testing can be done with unsealed components, however for official Mazda MX-5 Cup Practice, Qualifying and Races, only sealed components may be used. Components that have become unsealed without the supervision of a Mazda MX-5 Cup Official, or Flis Performance cannot be recertified and resealed.

## 10.0 Auxiliary Power:

- The main power panel is mounted in the trunk of the car. There is a 6-way fuse block available for powering Accessories such as helmet blowers, cool suits, etc. The fuse block is rated at 30 amp for an individual connection, with a 65-amp max for all 6 branches combined. All connections made to this block will need to be insulated. See figure 7.



Figure 7: Power Distribution Panel (Trunk)

- There is also a standard 12volt Accessory Socket located under the dash just to the right of the center console that may be used. See figure 8.

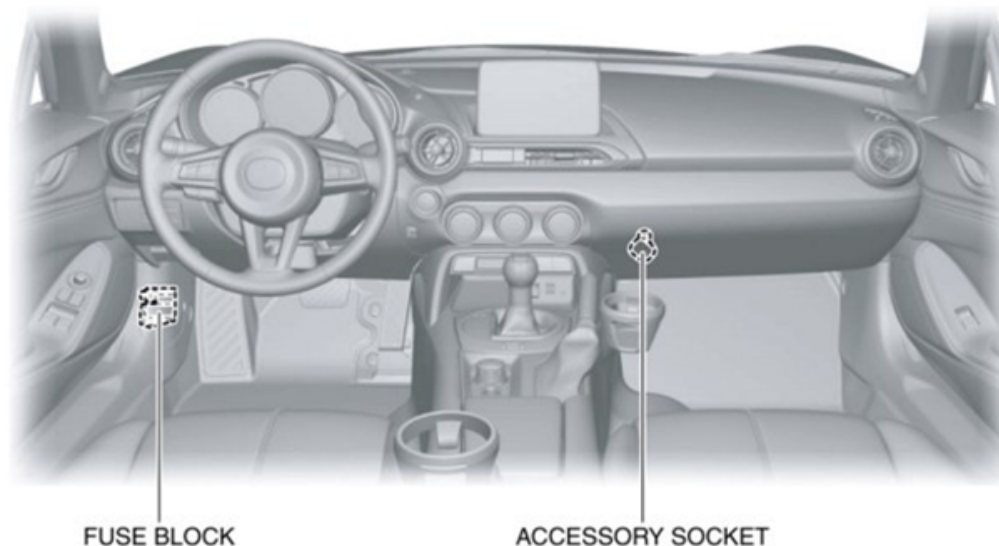


Figure 8: 12-volt Accessory Socket Location

## 11.0. AiM MXL2 Dash:

- The vehicle is equipped with an AiM MXL2 or MXS 1.3 Dash. The AiM Dash connects directly to the ECU Adaptor Harness through a 4 pin DTM06-4S Connector. Pin 1:CAN +, Pin 2: Ground, Pin 3: 12-volt, Pin 4: CAN -.
- Before your vehicle shipped, the AiM Dash was updated with the latest firmware and a standard configuration template. The Standard Configuration can always be downloaded [here](#).
- Tracks can be uploaded to the AiM Dash using AiM's RaceStudio 3 Software, having the track uploaded will ensure you are receiving lap time.
- The AiM Dash instruction booklet is included in the trunk kit. User instructions and links for Downloads of the Race Studio 3 software can also be found here: [AiM Software/Firmware](#)
- Always keep your RaceStudio 3 Software and the AiM Dash firmware up to date.
- Instructions to Update your RS3, Import Configurations, Download Data and Format Memory can be found here: [Link](#)



AiM MXL2

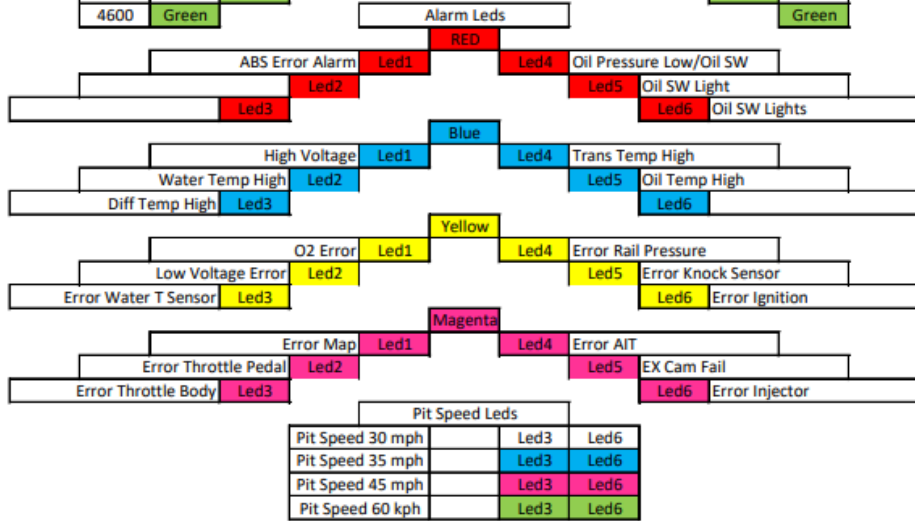


AiM MXS 1.3

## Flis Performance AiM Dash Display MXL2



RPM	Led1	Led2	Led3	Shift Lights			Led7	Led8	Led9	Led10
7300				Led4	Led5	Led6				
6800				Yellow			Yellow			
6100			Yellow				Yellow			
5400		Green						Green		
4600	Green								Green	



AIM Control	
1	Trans Pump and Fan - Output 1 & 2 Closed to Ground (Over 80f, Over 5mph, RPM Over 500)
2	Trans Fan Fault - Output 1 & 2 Closed to Ground (-400)
3	Diff Pump and Fan - Output 2 & 1 Closed to Ground (Over 80f, Over 5mph, RPM Over 500)
4	Diff Fan Fault - Output 2 & 1 Closed to Ground (-200f)

Gear Box Voltage	
Rev.	0.54
Neutral	0.855

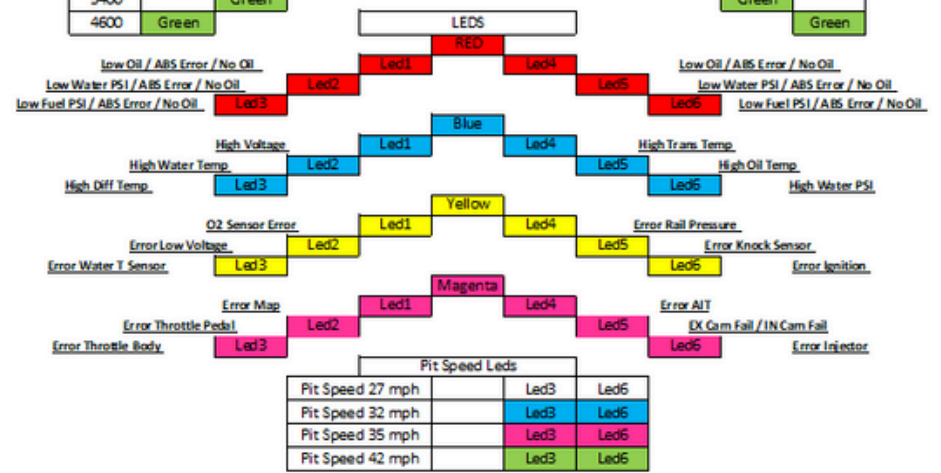
Shift	Voltage
1st	1.178
2nd	1.818
3rd	2.449
4th	3.092
5th	3.729
6th	4.364

Shift Force Voltage	
2.5 +/- 0.1 volts	

## Flis Performance AiM Dash Display MXS 1.3



RPM	Led1	Led2	Led3	Shift Lights			Led7	Led8	Led9	Led10
7300				Led4	Led5	Led6				
6800				Yellow			Yellow			
6100			Yellow					Yellow		
5400		Green							Green	
4600	Green									Green



AIM Control	
1	Trans Pump and Fan - Output 1 & 2 Closed to Ground (Over 80f, Over 5mph, RPM Over 500)
2	Trans Fan Fault - Output 1 & 2 Closed to Ground (-400)
3	Diff Pump and Fan - Output 2 & 1 Closed to Ground (Over 80f, Over 5mph, RPM Over 500)
4	Diff Fan Fault - Output 2 & 1 Closed to Ground (-400)

Gear Box Voltage	
Rev.	0.54
Neutral	0.855
1st	1.178
2nd	1.818
3rd	2.449
4th	3.092
5th	3.729
6th	4.364

Shift Force Voltage	
2.5 +/- 0.1 volts	

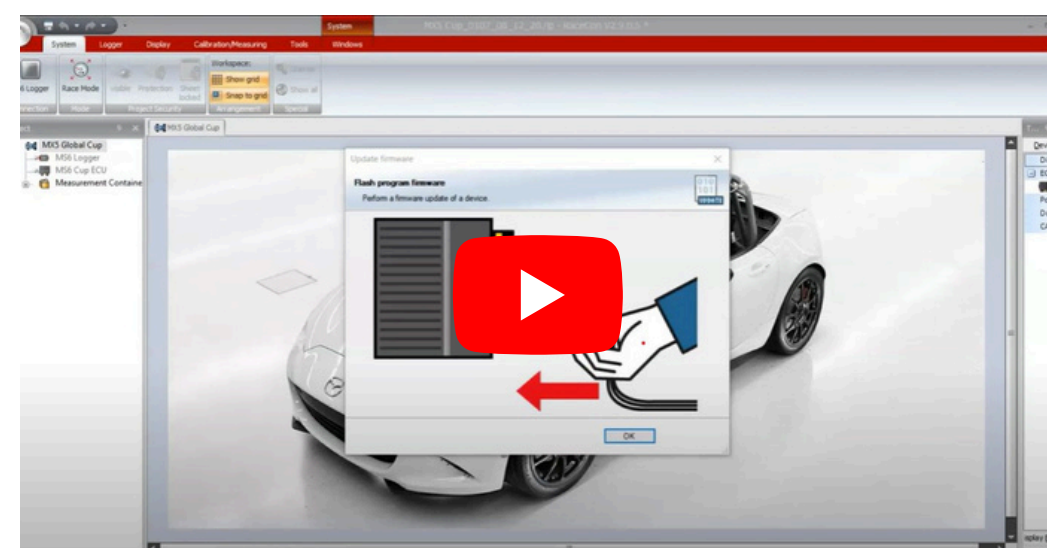
## 12.0 ECU

The ND2 Mazda MX-5 Cup car is shipped with a Bosch MS6 Cup ECU. The ECU is encrypted specifically for the ND2.

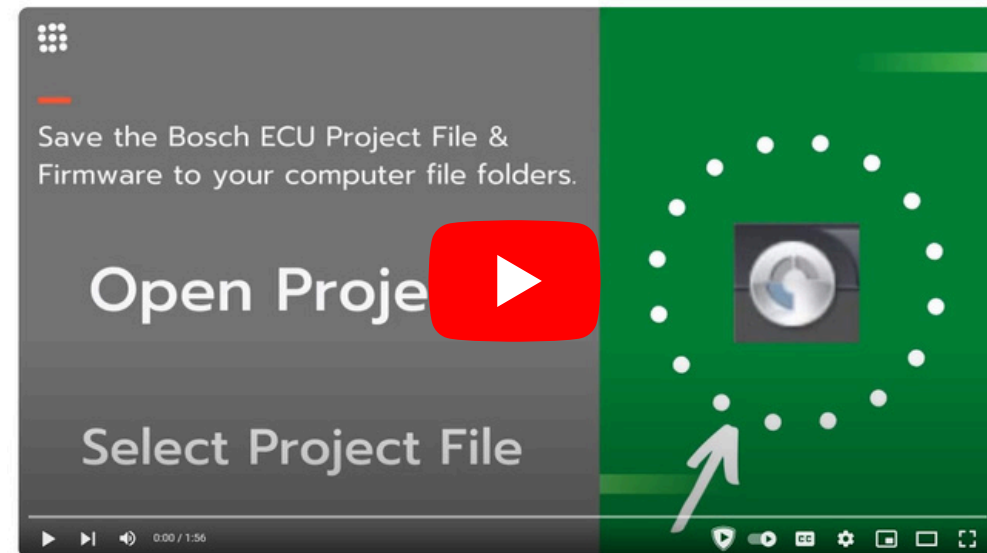
### Features:

- Fully encrypted to prevent tampering.
- Updatable by the end user only with officially released encrypted files produced by Flis Performance and Bosch Motorsports.
- Mounted inside the cockpit under the right-side dash panel for protection from engine bay conditions.
- Two Fuel Maps selectable by switch on the Dash, one for 93 octane pump gas, and another for 100 octane race fuel.
- Built in Fuel Counter that counts fuel burned by the liter, can be displayed to the AiM Dash. Fuel Reset Button included on Dash Switch Panel

## WATCH STEP BY STEP VIDEOS: BOSCH RACECON ECU FLASH UPDATE INSTRUCTIONS



**Beginner Video** - Includes how to download RaceCon along with the project file, team license and firmware

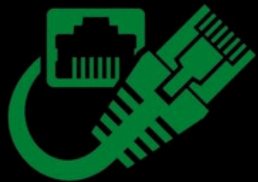
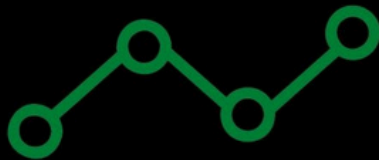


How to update your Mazda MX-5 Cup ND.2 race car with the latest Bosch ECU Flash - RaceCon

**Refresher Video** - RaceCon already downloaded

**WATCH STEP BY STEP VIDEO:  
HOW TO DOWNLOAD YOUR BOSCH ECU  
DATA WITH WINDARAB.**

**HOW TO DOWNLOAD  
YOUR BOSCH ECU  
DATA!**



## 13.0 Ballast Box:

A standard Ballast Box, Mazda part # 0000-08-5053 that mounts in place of the passenger seat is included. Ballast may be added to the vehicle using an empty Ballast Box with no lid, an empty Ballast Box with the lid, or a Ballast box with 5 and 10-pound plates as needed. Series rules and requirements may vary; Mazda MX-5 Cup Currently considers driver weight to be 220 lbs. So, a driver weighing 200 lbs. would be required to add 10 lbs. of ballast to the ballast box, and a driver weighing 220 would add 0 lbs.

- Ballast Box, empty with the Lid and all fasteners, 27.5 lbs. / 12.5 kg
- The Ballast Box will hold up to an additional 130 lbs. / 59kg of ballast. Twelve 10 lbs. plates and two 5 lbs plates.
- 10 Pound / 4.53kg (Part Number 0000-08-5128-10) and 5 Pound / 2.27kg (Part Number 0000-08-5128-05) weights designed to fit in the box are available for purchase.
- Secure all ballast plates inside the box with two ½” nuts, and secure the lid with the four ½” bolts provided.
- Ballast may not be installed anywhere on the vehicle except inside the ballast box.
- The Ballast Box has tabs on each of the four sides to allow for items such as cool suit units to be strapped in place.



Ballast box



0000-08-5128-05

5 lbs Ballast Plate (1/4" Steel)



0000-08-5128-10

10 lbs Ballast Plate (1/2" Steel)



## 14.0 Baseline Setup:

This vehicle has been shipped with a standard ride height and sway bar end link lengths that will need to be adjusted after your seat and ballast is installed. The minimum weights and ride heights given below are for reference only. Refer to series regulations for current weight and height requirements.

To set initial balance:

- Disconnect front and rear sway bars and place vehicle on scales with ballast and driver weight in place.
- The minimum weight of the vehicle with no fuel and with driver is 2450 lbs. or 1095 kg. Use the ballast box and ballast plates described above to add ballast as needed to achieve the minimum weight with driver. The ballast box must remain in the car, extra weight(s) are optional. (Refer to Race Series Regulations for current Requirements)
- Minimum ride height is 4" excluding the 2 plastic angles in front of the front tires, see figure 9, which attach to the front bumper cover and inner fender liners (see picture below). The recommended ride height would be 4-3/8" at the lowest part of the vehicle. (Refer to Race Series Regulations for current Requirements)



Plastic Angle Excluded from Ride Height Measurement

Figure 9: Plastic Angles Excluded from Ride Height Measurement

- 50.5 % Right Cross Percentage ( $(RF \text{ Weight} + LR \text{ Weight}) / \text{Total Weight}$ ) is a recommended starting point, though this will vary by track and driver preference.
- Once desired ride height and cross weight % is achieved, set the sway bars to neutral by adjusting the end link lengths such that the sway bar can be reconnected without loading it.
- After the desired weight distribution is achieved, align your vehicle. Recommended Toe Settings are 1.5mm out on both front tires (3mm out total) and 1mm in on each rear tire (2mm in total). A very good starting point for camber is -2.8 degrees in the front and -3.0 degrees in the rear.



## 15.0 Dampers:

- The vehicle is equipped with 2-way adjustable Dynamic Suspension Spool Valve (DSSV) dampers by Multimatic.
- Front Damper is Mazda Part Number 0000-04-5616
- Rear Damper is Mazda Part Number 0000-04-5617
- The Dampers adjust 0 through 11 for Compression (Bump, Blue) and (Rebound, Red) using a square ended 4mm Allen key.
- It is important that you do not use a ball end Allen key to make these adjustments, this could cause the
- Allen key receiver to strip out. A correct 4mm Allen key is provided in the Trunk kit.
- An increase in the valve setting causes an increase in compression or an increase in rebound.
- We recommend starting in the center, 5 Compression / 5 Rebound and adjusting from there as needed.
- Note that there is a stop pin that prevents the valve from continuously rotating See figure 10.



Figure 10: Damper Valve with Seal. 5 Compression, 6 Rebound Shown

- The spring perches are manufactured with a 68mm hex design for adjustment and locking. A pair of 68mm
- Damper Perch Wrenches are needed to lock and unlock the perches to make ride height adjustments.
- The 68mm Damper Perch Wrenches are available for purchase from Mazda Motorsports, Part # 0000-04-5620
- To service the Torrington bearing, the bottom clevis must be removed. A 36mm Damper Body wrench is needed to hold the clevis while loosening and tightening the nut.
- The 36mm Damper Body Wrench is available for purchase from Mazda Motorsports, Part # 0000-04-5621
- The Damper valve block is sealed with a tamper proof label. Evidence of removal or tampering with these seals will be cause for disqualification and or fines in Mazda MX-5 Cup Competition. Service/Rebuild work may only be done through Carl Haas. Please see Flis Performance website for contact information.

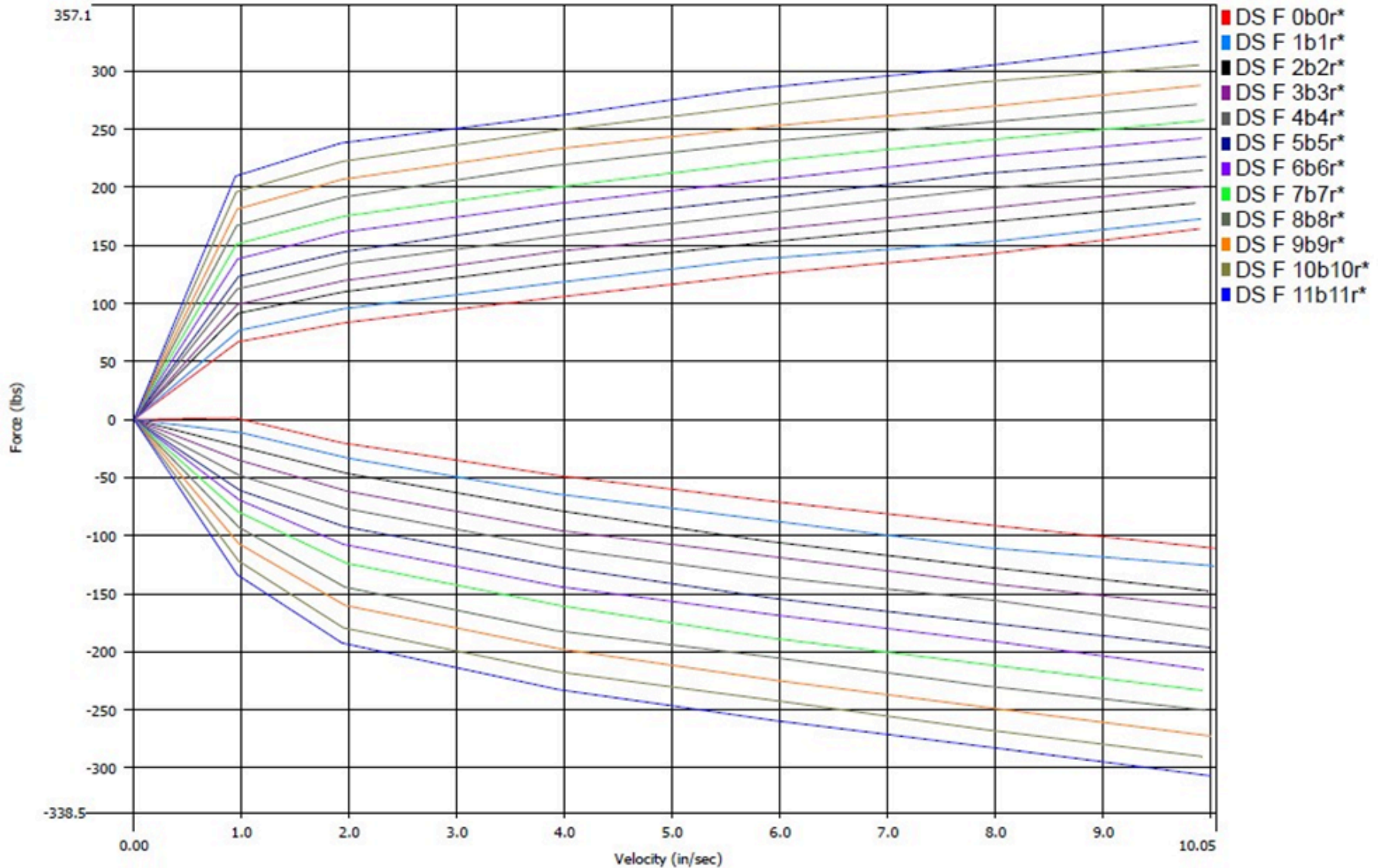


Figure 11: Typical Force Vs. Velocity Front Damper

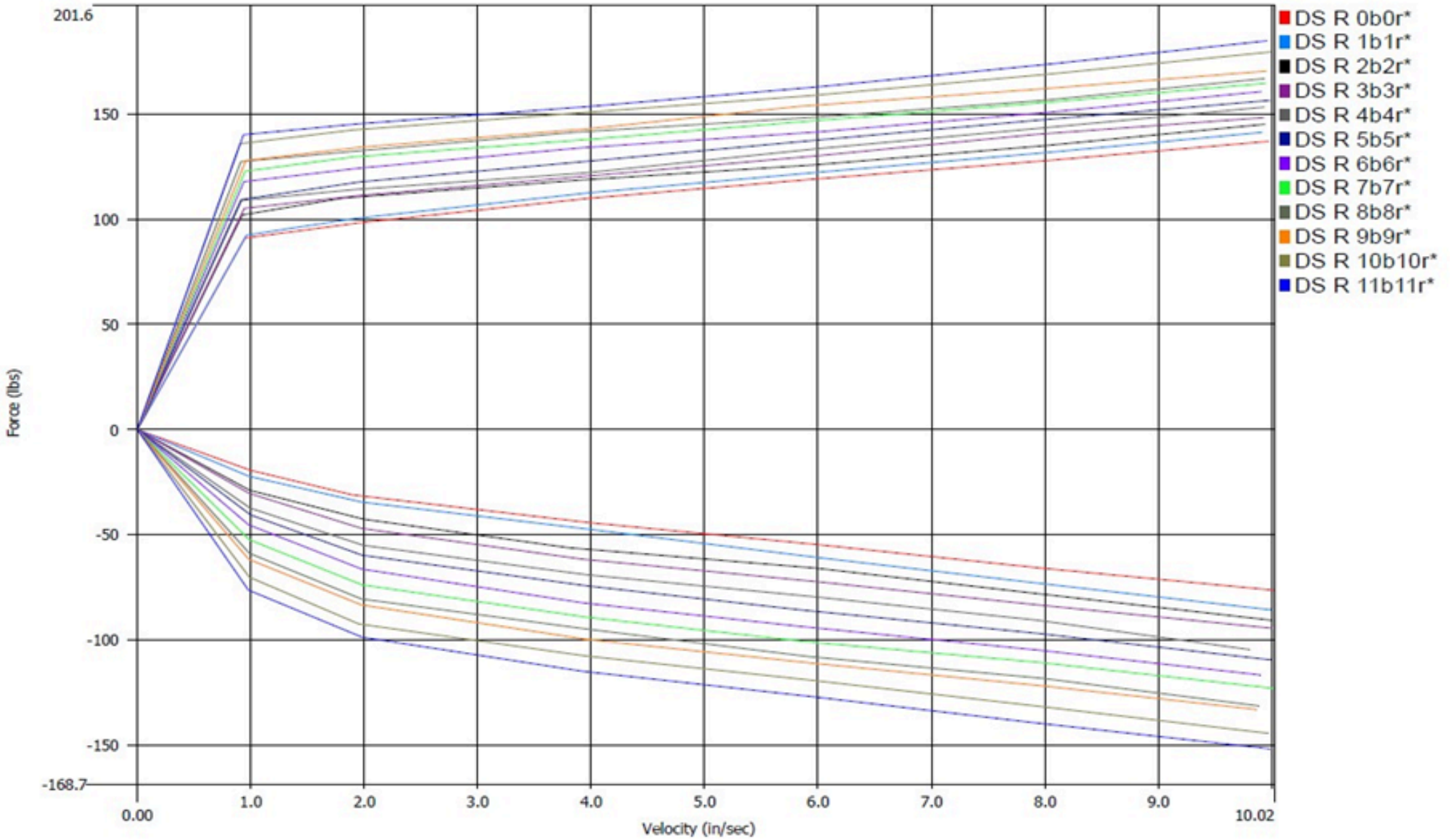


Figure 12: Typical Force Vs. Velocity Rear Damper

# MAZDA MOTORSPORTS

By **PENSKE**  
RACING SHOCKS

## MX-5 CUP ADJUSTABLE COILOVER SHOCKS

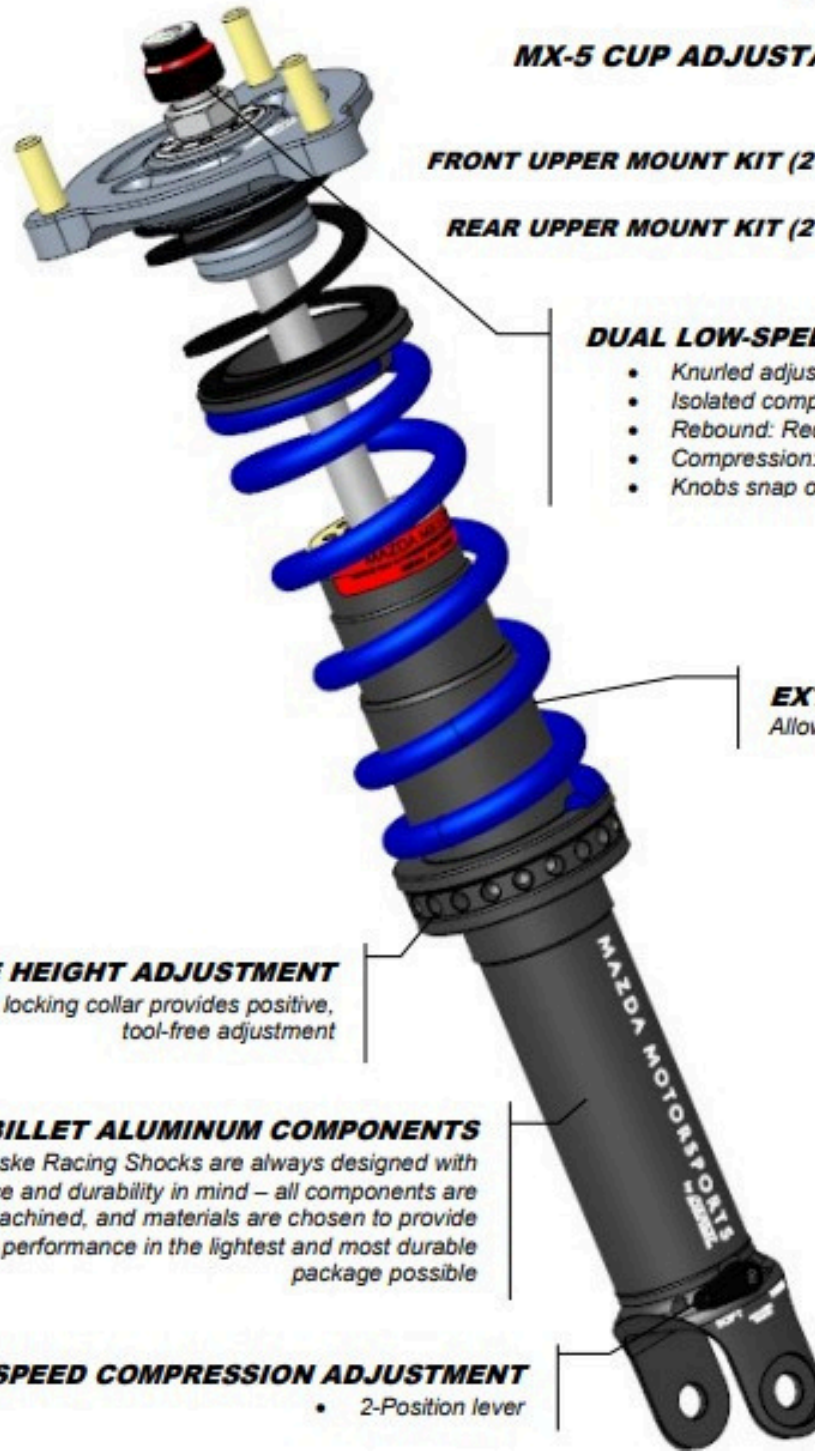
MAZDA PART NUMBERS:

FRONT SHOCK: 0000-04-5630

FRONT UPPER MOUNT KIT (2 mounts per kit): 0000-04-5636

REAR SHOCK: 0000-04-5640

REAR UPPER MOUNT KIT (2 mounts per kit): 0000-04-5646



### DUAL LOW-SPEED DAMPING ADJUSTMENT

- Knurled adjuster knobs
- Isolated compression and rebound adjustment
- Rebound: Red, 12 total clicks of adjustment
- Compression: Black, 12 total clicks of adjustment
- Knobs snap on and off to allow for ease of assembly

### EXTENDED SPRING GUIDE

Allows for smooth spring operation

### RIDE HEIGHT ADJUSTMENT

Knurled locking collar provides positive, tool-free adjustment

### BILLET ALUMINUM COMPONENTS

Penske Racing Shocks are always designed with performance and durability in mind – all components are CNC machined, and materials are chosen to provide maximum performance in the lightest and most durable package possible

### HIGH-SPEED COMPRESSION ADJUSTMENT

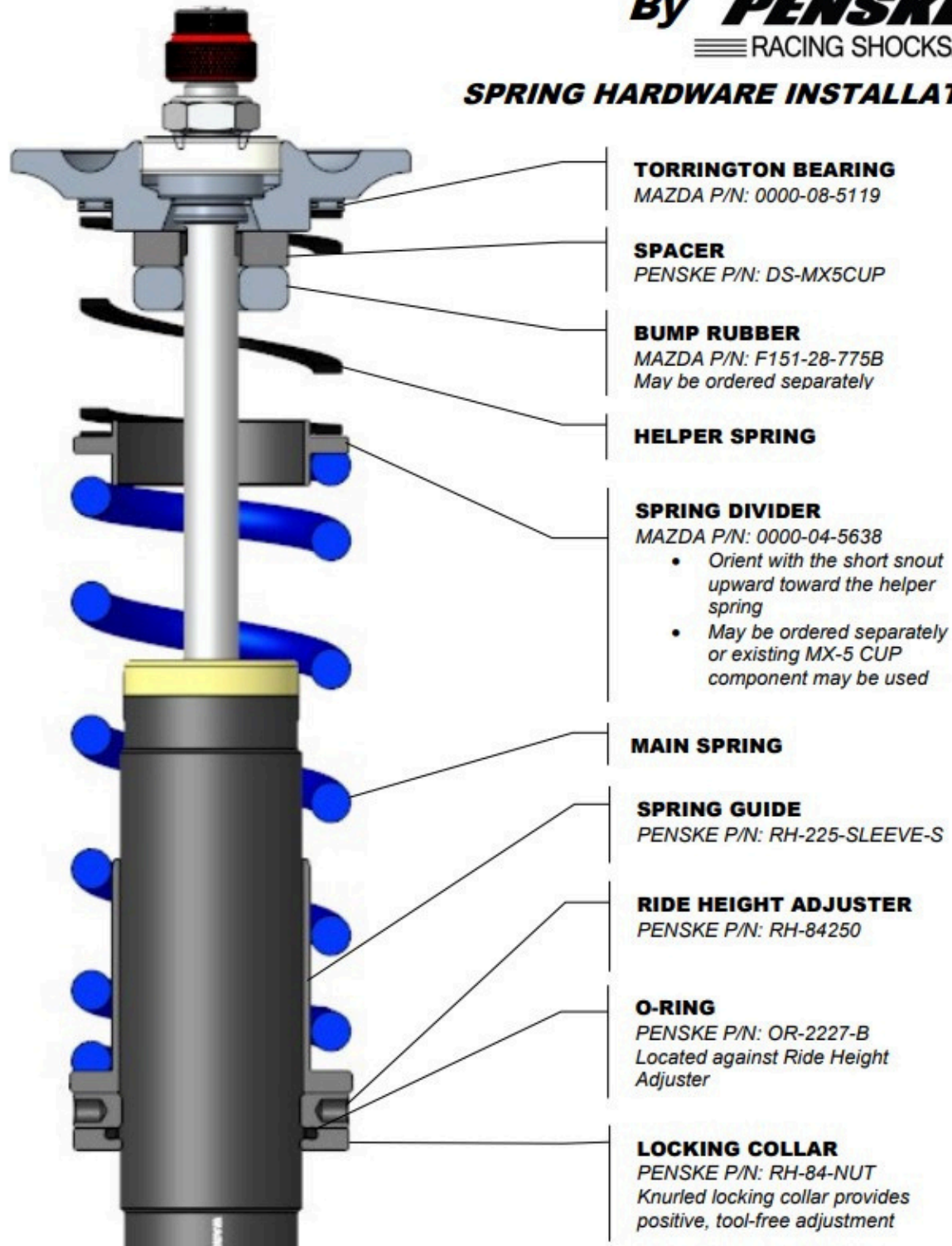
- 2-Position lever

# MAZDA MOTORSPORTS

**By PENSKE**

RACING SHOCKS

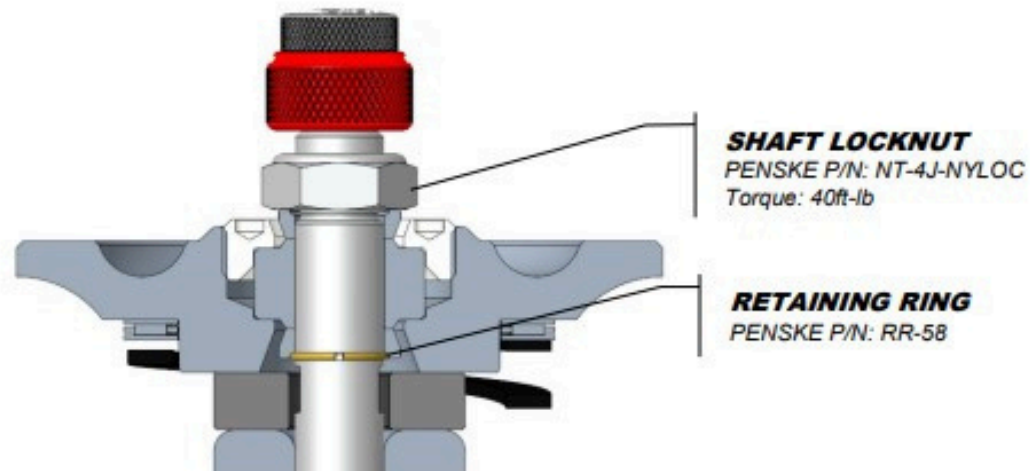
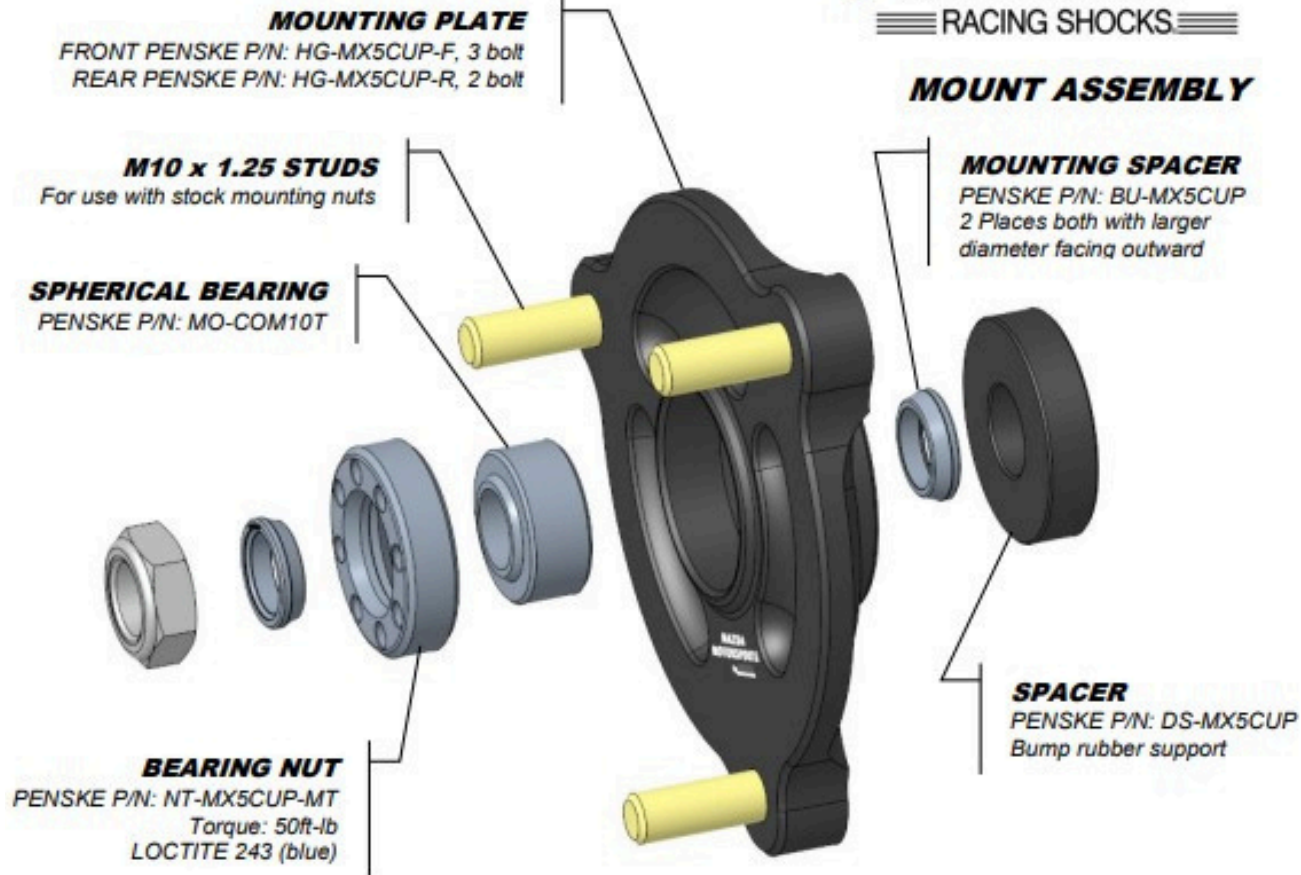
## SPRING HARDWARE INSTALLATION



# MAZDA MOTORSPORTS

By **PENSKE**

≡ RACING SHOCKS ≡





# MAZDA MOTORSPORTS

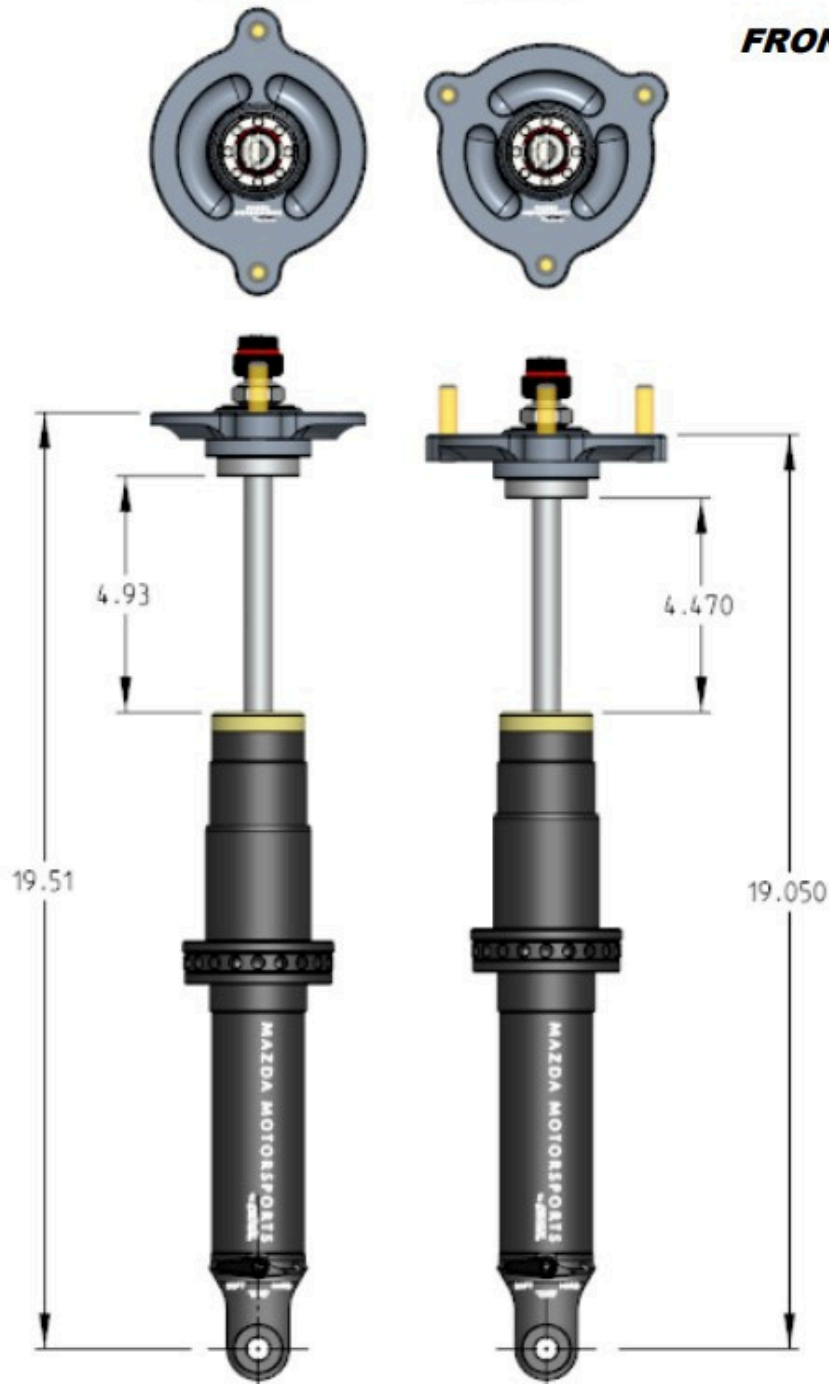
**By PENSKE**

≡ RACING SHOCKS ≡

**REAR**

**FRONT**

**FRONT/REAR COMPARISON**



## 16.0 Front Sway Bar Settings

- The Front Sway Bar has three available stiffness settings: Stiff, Medium and Soft. The vehicle is delivered with the bar set at the recommended Medium setting.
- To soften the sway bar, disconnect the end links, adjust the lengths and spacer configurations as needed to reconnect the link to the outermost hole on the sway bar arm.
- To stiffen, disconnect the end links, adjust the length and spacer configuration as needed to reconnect the link to the inner-most hole on the sway bar arm.
- Changes must be made to both the left and right connections to achieve the stiffening or softening affect. See figure 13

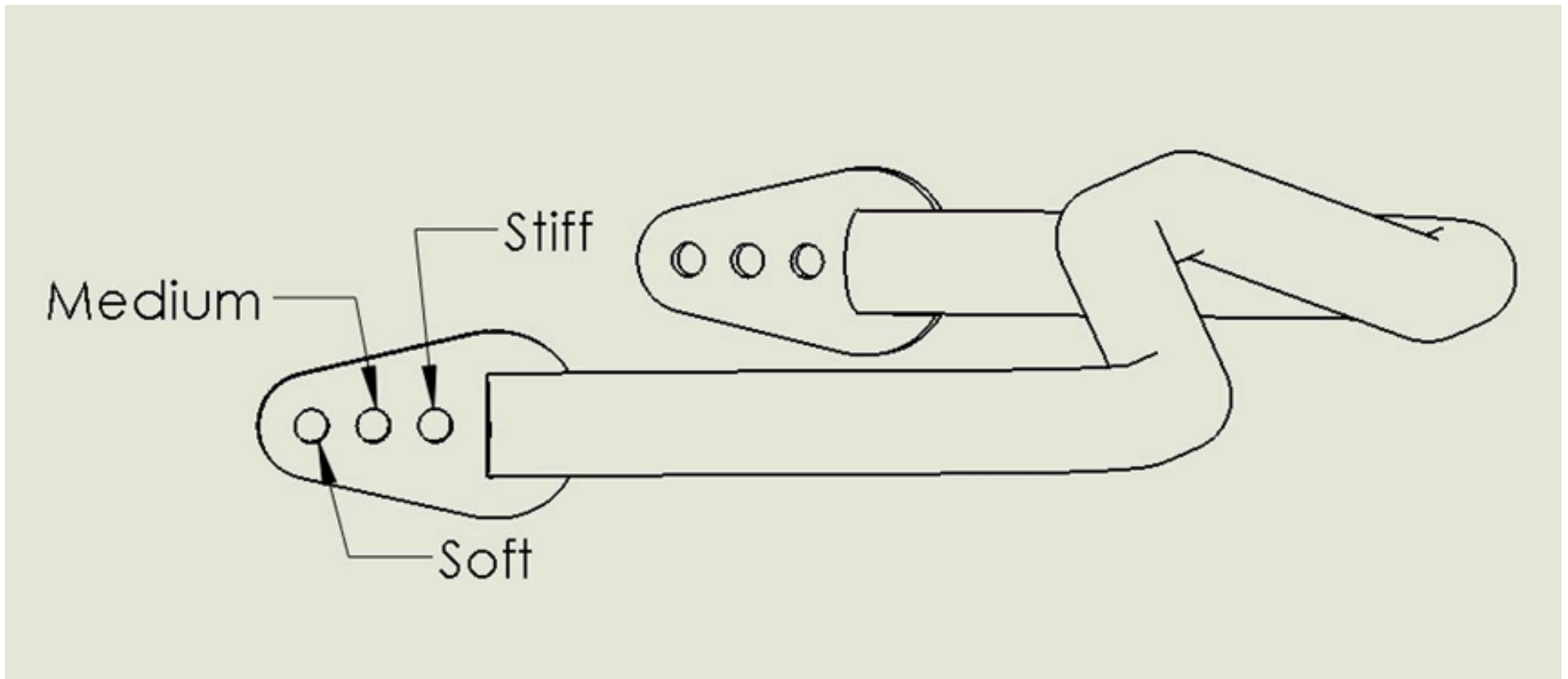



Figure 13: Sway Bar End Link Settings

# 17.0 Basic Handling Guide:

	Front		Rear	
	Comp / Bump	Rebound	Comp / Bump	Rebound
<b>Straight line braking - front lockup</b>	-			
<b>Straight line braking - rear lockup</b>	+			-
<b>Trail braking - Slow turn-in response</b>	+			+
<b>Trail braking - Understeer</b>	-			+
<b>Trail braking - Oversteer</b>	+			-
<b>Turn in (no braking) - Understeer</b>		-		+
<b>Turn in (no braking) - Oversteer</b>		+		-
<b>Steady State Turning - Understeer*</b>	-	-	+	+
<b>Steady State Turning - Oversteer*</b>	+	+	-	-
<b>Corner exit - Understeer</b>		-	+	
<b>Corner exit - Oversteer</b>		+	-	
<b>Straight line accel - lack of traction</b>		-	-	

\* Steady state = no damper influence

## 18.0 Brembo Racing Brake Package:

	TECHNICAL BULLETIN	Series	MX-5 Cup
		Page	1/1
		Date	3-31-2021

### Subject: Miata MX-5 Cup Caliper Rebuild – General Maintenance

- The attachment provides detailed instructions on the procedure for caliper service and rebuild.
- Rebuild kits are available from Mazda Motorsports, part number 0000-03-5416, which contain the following:
  - 05769143 – 38 mm pressure seal, Miata Gen4 OEM front (x4)
  - 20779904 – 38 mm dust boot, Miata Gen4 OEM front (x4)
  - 05281213 – Bleed screw, standard, total length approx. 29mm (1.1in). under hex head approx. 16mm (0.6in) (x2)
  - 05150220 – Cap for bleed screw (x2)
  - 98503240 – Instructions (same as those included with this bulletin) x 1

### **Due to the increase in operating temperature, the calipers should be serviced after every race weekend for optimal performance and safety.**

- Other items for consideration
  - It is known that the calipers are operating at higher temperatures than what would be desired. This is the reason for the recommendation to rebuild calipers after each race weekend.
  - Use of temperature stickers on the calipers. A simple tool that will provide accurate running temperature of the caliper. These can be purchased through various racing parts distributors.
  - Use of thermal paint on the rotors can provide an approximate temperature range the brake system is functioning in.
  - Thermal paint information - The colors will change to white when exposed to temperature for roughly 30 seconds (or longer).
    - Green – 430C (806F)
    - Orange – 560C (1040F)
    - Red – 610C (1130F)

# Brembo Racing Brake Package:

Brembo Racing Brake Package must be ordered through Mazda Motorsports.

Scott Kaluza: SKaluza@mazdausa.com

Mazda Motorsports Phone: 800-435-2508

## 3) BRAKES

**NOTE:** Brembo Front Brake Kit (0000-03-5423) & PAGID Brake Pads (0000-03-5106-61 / 0000-03-5116-29) are **required** for the Mazda MX-5 Cup Series Only



PAGID Front Brake Pads (MX-5C Required)  
0000-03-5106-61



PAGID Rear Brake Pads (MX-5C Required)  
0000-03-5116-29



Brembo Front Brake Kit (MX-5C Required)  
0000-03-5423



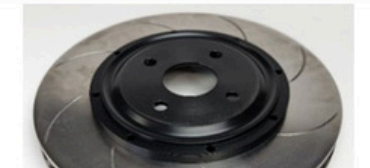
Brembo Front Brake Kit (MX-5C Required)



Brembo Front Brake Kit (MX-5C Required)



Brembo Front Brake Kit (MX-5C Required)



Brembo Front Brake Kit (MX-5C Required)



Brembo Front Brake Kit (MX-5C Required)

Torque specifications for Brembo Racing Brake Package Kit:

- Caliper bracket to car = same as OEM caliper specification
- Caliper to bracket = 80 ft.-lbs. (108 Nm)
- Disc screws = red Loctite + 62 to 72 in-lbs. (7 to 8 Nm)
- Caliper bridge bolts = 12.5 ft.-lbs. (150 in-lbs., 16.9 Nm)
- Bleed screw (cold) = 124 in-lbs. (10.3 ft.-lbs., 14 Nm)

PAGID Brake Pads:

Front - 0000-03-5106-61

Rear - 0000-03-5116-29

**MUST BE USED WITH NEW BREMBO RACING BRAKE KIT**

**Subject: Hardware Replacement / Maintenance**

To keep the disc operating at optimum performance, the hardware MUST be inspected after EVERY race weekend (MX-5 Cup) or EVERY full day the car is run (Club Level, etc.) This means completely disassembling the bell from the disc and inspecting the bushings, the screws, and the washers.

**General Inspection**

Verify that the disc is still floating and not "locked." If the disc is "locked," with no movement between bell and disc, then it needs to be disassembled and checked immediately before use.

**Hardware**

Bushings, screws, and washers.

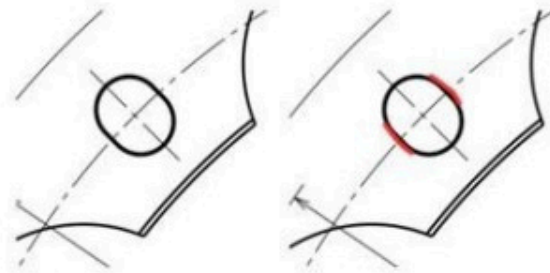
- The bushings, X203026, are round. If these have any kind of distortion or wear (ovalized), then they must be replaced. If the deformation becomes too great the bushing can "ovalize," eventually splitting causing a failure.
- The screws, A10834105, are a one-time use item, and must be replaced once the bell and disc are disassembled.
- The Washers, 05579320, should not have any indentations or deformities of any kind. If they do show signs of wear, then they need to be replaced.

The more often you replace the hardware, the longer the life the entire disc assembly will have.

**Discs**

P/N 09A89170 (LH) / 09A89180 (RH) (Mazda Part#s LH 0000-03-5470 and RH 0000-03-5480)

The disc mounting holes are oval. If the disc mounting holes are distorted, the disc must be replaced. Most common areas for wear and distortion are pictured below and highlighted in red.

**Bells**

P/N 16B77053 (Mazda Part# 0000-03-5472)

The bell holes are round. The bells are coated in a black anodized finish. If excessive wear occurs within the disc assembly components, the underlying aluminum of the bell will be exposed. In such cases, replacement of the bell is necessary.

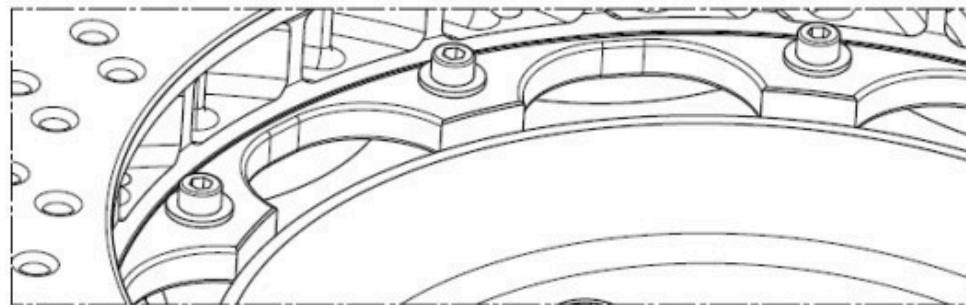
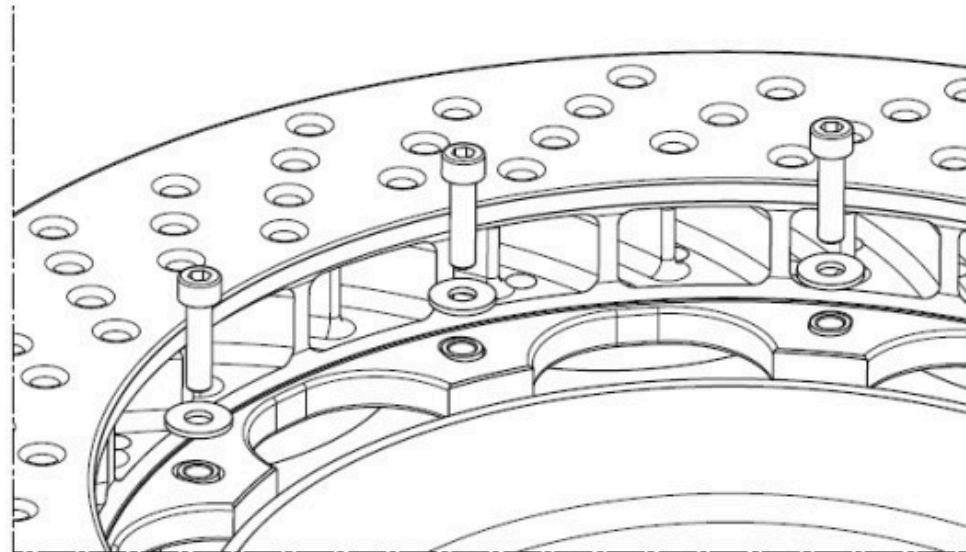
**Installation**

The disc needs to be reassembled according to the instructions below.

Complete hardware pack P/N 915518 (Mazda Part# 0000-03-5478, need one pack per disc) Includes the bushings, screws, and washers for one disc assembly.

**DISC SCREW TORQUE IS 62 INCH POUNDS.**

The screws come with red Loctite pre-applied.



INSTALL DISC MOUNTING HARDWARE AS SHOWN. SCREWS ARE DELIVERED WITH THREAD LOCK COMPOUND ALREADY APPLIED. SCREWS ARE TORQUED TO 7 Nm (62 in-lbs). THE FASTENERS WILL NOT FIRMLY CLAMP THE BELL AND DISC TOGETHER, THEREFORE, THE BUSHINGS WILL SEEM TO BE SLIGHTLY LOOSE.

## 19.0 Michelin Pilot Sport Tire:

### Michelin Pilot Sport Tire

Tire Package information can be found  
in the MX-5 Cup Car Series Handbook  
(page #04)

Link: [Mazda MX-5 Cup Car  
Competitors](#)

To Order:

EXCLUSIVE OFFICIAL DEALER:

Jackson Motorsports Group,

Simpsonville, SC 1.800.722.3234

Contact: Paul Hanna 1.864.272.3171

paul.hanna@jacksonmg.com

MSPN #:

Dry: 58304

Wet: 18613



Tire: Michelin Pilot Sport Competition  
Size: 20/61-17



# 20.0 Basic Service Intervals:

As with any standard service items, these intervals should be adjusted based on your level of use and special on-track conditions. The service intervals are based on 10-12 events per year, with a typical event weekend having approximately 3 hours of track time.

FLUIDS	SPEC FLUID	AFTER EACH EVENT	EVERY OTHER EVENT	ANNUALLY
Engine Oil	5w-40 Idemitsu Oil	Inspect and Replace		
Differential Oil	75w-90 Idemitsu Oil	Inspect and Replace		
Transmission Oil	75w-90 Idemitsu Oil	Inspect and Replace		
SADEV Transmission Oil	75w-90 Idemitsu Oil	Inspect and Replace		
Brake Fluid	DOT 4 or Higher	Bleed		Full Flush
Engine Coolant	Maxima Kool Aid / Mo Kool W/Distilled Water			Full Flush

FILTER	MAZDA PART NUMBER	AFTER EACH EVENT	EVERY OTHER EVENT	ANNUALLY
Engine Oil Filter	PE01-14-320A	Replace		
Transmission Filter	000-08-5032		Service	Replace
Differential Filter	000-08-5032		Service	Replace
Intake Air Filter	PEES-13-3A0	Replace		

<b>CHASSIS PARTS</b>	<b>AFTER EACH EVENT</b>	<b>REPLACE</b>
Hub Bearing (front/rear)	Clean and Inspect	Annually
Wheel Studs	Clean and Inspect	Biannually
Tie Rod End (left/right)	Clean and Inspect	As needed
Eccentric Bolts	Clean and Inspect	Annually
Rear Axles	Clean and Inspect	Biannually
Engine Mounts	Clean and Inspect	As needed
Drive Shaft	Clean and Inspect	As needed
Rear Upright (left/right)	Clean and Inspect	As needed
Front Upright (left/right)	Clean and Inspect	As needed
Rear Suspension (left/right)	Clean and Inspect	As needed
Upper Control Arm (left/right)	Clean and Inspect	As needed
Lower Control Arm (left/right)	Clean and Inspect	As needed
Wheels	Clean and Inspect	As needed
Sway Bars (front/rear)	Grease Front Bushings	As needed
Drop Links Front (left/right)	Clean and Inspect	Biannually
Drop Links Rear (left/right)	Clean and Inspect	Biannually
Brake Duct (left/right)	Clean and Inspect	As needed
Torrington Bearings	Clean and Inspect	As needed
Dampers	Clean and Inspect	As needed

<b>CHASSIS PARTS</b>	<b>AFTER EACH EVENT</b>	<b>REPLACE</b>
Fire Bottle	Check Battery/Bottle Pressure	As needed
Safety Equipment	Clean and Inspect	See Service Date
Diff/Trans Cooler Pump Seals	Review Cooling Data	Rebuild Annually
Diff Bushings	Clean and Inspect	As needed
Front Brake Caliper Seals	Inspect	Annually
* Front Brake Rotor Hat Hardware	Inspect	Annually
Brake Line	Clean and Inspect	Annually
Power Plant Frame	Clean and Inspect	Biannually
Front Brake Caliper Pad Pins - Brembo GT Caliper (Pre 2023)	Inspect	Annually

<b>BRAKES</b>	<b>NOTE:</b>	<b>AFTER EACH EVENT</b>	<b>EVERY OTHER EVENT</b>	<b>ANNUALLY</b>
*Front Brake Rotor Hat Hardware	To keep the disc operating at optimum performance, the hardware MUST be inspected after EVERY race weekend (MX-5 Cup) or EVERY full day the car is run (Club Level, etc.) This means completely disassembling the bell from the disc and inspecting the bushings, the screws, and the washers.	Inspect		Annually

# 21.0 Transmission and Differential Filter Service:

(DASH 6 Lines Only) The filter body is labeled “IN” and “OUT”, see figure 14, to indicate fluid flow direction through the filter. Note the direction of flow and ensure the filter is reinstalled in the correct orientation. The Transmission and Differential Pumps have an arrow showing the direction of fluid flow, see figure 15, these must agree with the flow direction of the filters. Fluid will not flow through the filter in the opposite direction and you will damage your transmission or differential.

To Service the Inline Filter:

- Remove filter body and disassemble as shown in figure 16.
- Clean out any debris and reassemble.
- Reinstall in correct orientation as described above.



Figure 14: Transmission and Differential Cooler Line Filter, Assembled



Diff & Trans Oil Filter Housing (one each) 0000-02-5606

Please reference Mazda MX-5 Cup Car Technical Service Bulletin #2021-04-23 #2  
Optional: Replacement and or Removal of Differential and Gearbox Filters

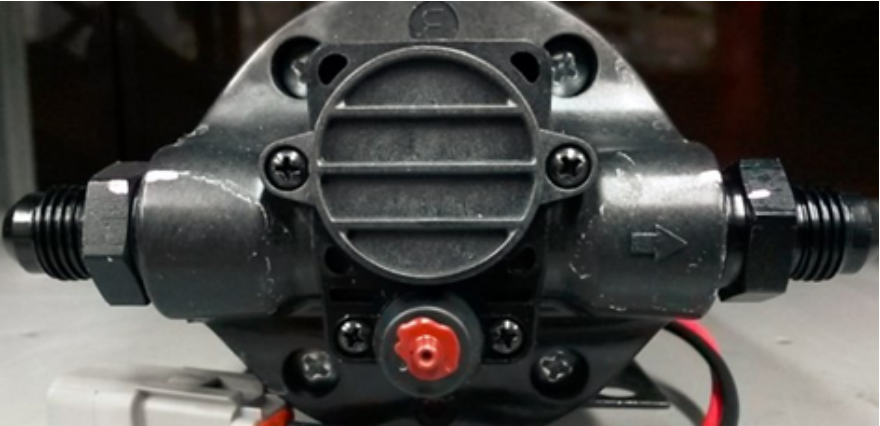


Figure 15: Transmission and Differential Cooling Pump



Figure 16: Transmission and Differential Cooler Line Filter, Disassembled

(DASH 8 Lines Only)

Differential & Gearbox Hose Kit Update

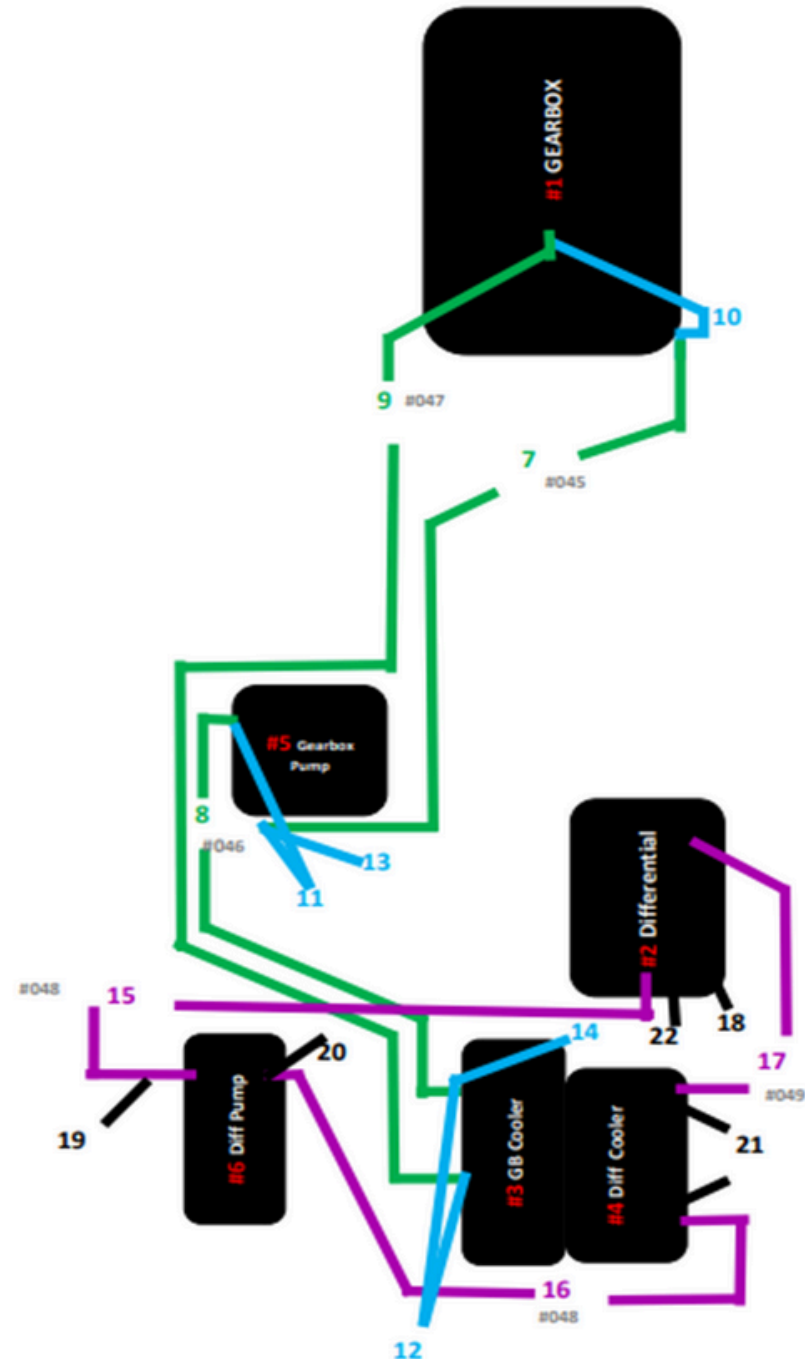
#	Description
1	Gearbox (GB)
2	Differential (Diff)
3	GB Cooler
4	Diff Cooler
5	GB Pump
6	Diff Pump

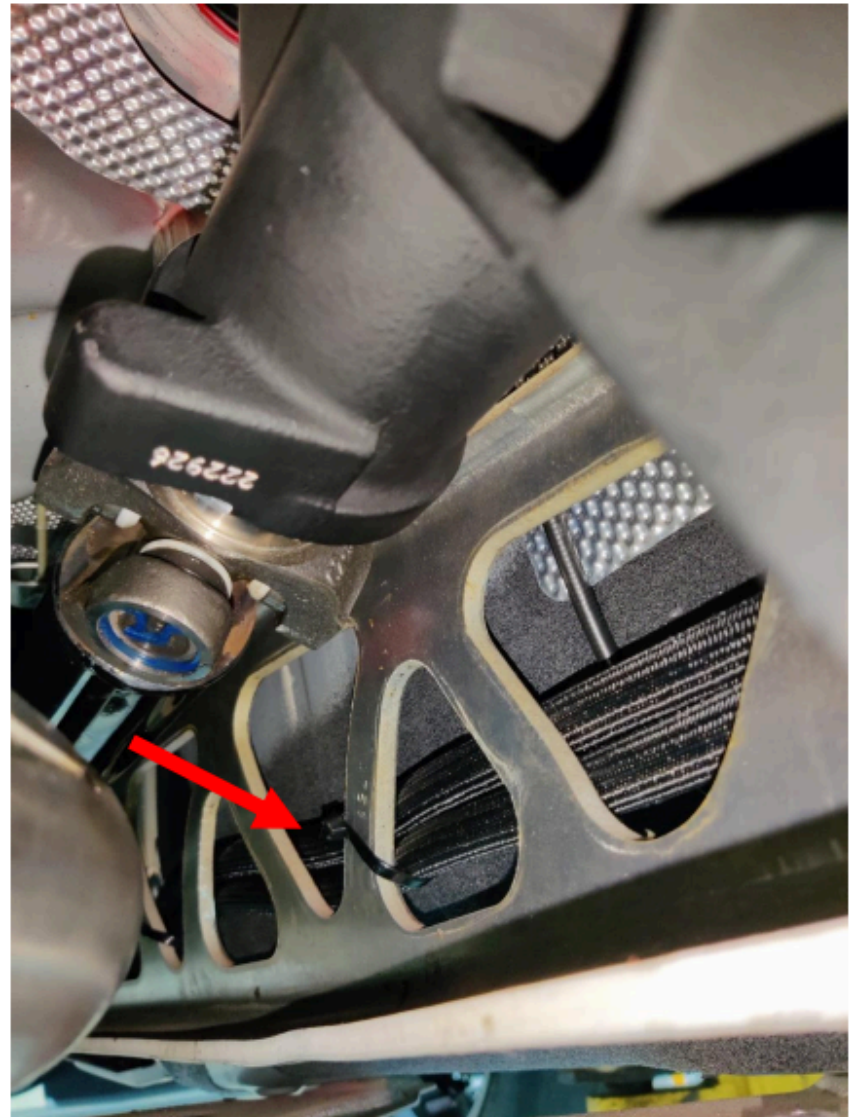
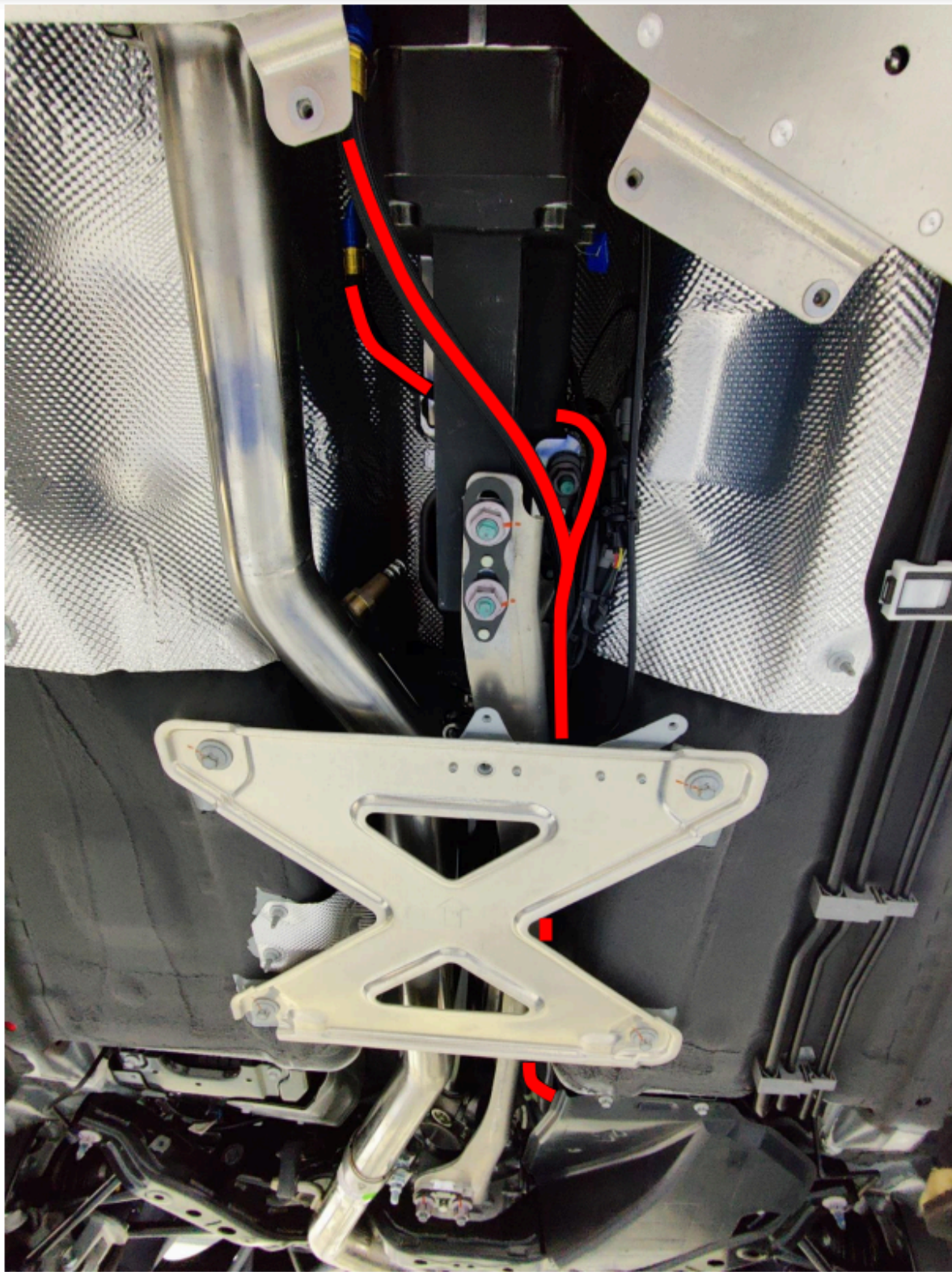
	GearBox Hoses	Part #	Length	Fitting	Fitting
7	GB Out to GB Pump In (FLIS - 045)	0000-08-D809	48"	ST	ST
8	GB Pump Out to GB Cooler In (FLIS - 046)	0000-08-D810	37"	ST	90
9	GB Cooler Out to GB In (FLIS - 047)	0000-08-D811	100"	90	90SW

	GearBox Fittings	Part #	QTY	Size	Size
10	-6 AN Female to -8 Male AN (GB)	0000-08-D801	2	-6	-8
11	3/8" 90 Deg. NPT to -8 AN (GB Pump)	0000-08-D802	2	3/8" NPT	-8
12	-8 AN Male to 22mm Male (GB Cooler)	0000-08-5014	2	-8	22mm
13	-8 AN Filter	0000-08-D804	1	-8	-8
14	-8 AN Female to -8 AN Male with 1/8 Sensor Hole	0000-08-D805	1	-8	-8

	Differential Hoses	Part #	Length	Fitting	Fitting
15	Diff out to Diff Pump In (FLIS - 048)	0000-08-D812	24"	45	90SW
16	Diff Pump Out to Diff Cooler In (FLIS - 048)	0000-08-D812	24"	45	90SW
17	Diff Cooler Out to Diff In (FLIS - 049)	0000-08-D813	9"	45	90SW

	Differential Fittings	Part #	QTY	Size	Size
18	-8 AN Male to 18mm Male (Diff Out)	0000-08-D806	1	-8	18mm
19	3/8" NPT Male to -8 AN Male with 1/8 Sensor hole (Diff Pump)	0000-08-D807	1	3/8" NPT	-8
20	3/8" NPT Male to -8 AN Male (Diff Pump)	0000-08-D808	1	3/8" NPT	-8
21	-8 AN Male to 22mm Male (Diff Cooler)	0000-08-5014	2	-8	22mm
22	-8 AN Filter	0000-08-D804	1	-8	-8



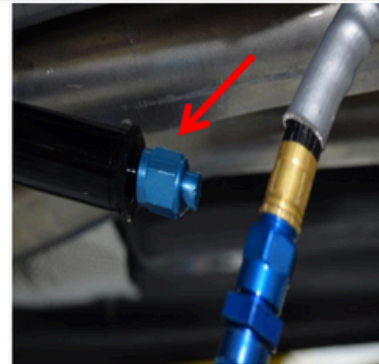


# MAZDA MX-5 CUP SADEV FLUID CHANGE INSTRUCTIONS

1. Pump out old transmission fluid with a Trans. Pump via Transmission Override Switch (PIC #6).
2. Measure out 1.5 quarts (Wet System) or 2 quarts (Dry System: New installation including lines and coolers) of Idemitsu Pro Racing Gear Oil 75W-90 in a measuring container (PIC #1).
3. Disconnect the line from the back end of the filter; install an “AN” plug to prevent debris entering the line (PIC #2).
4. Install a suction line extender onto the suction line that was just disconnected from the filter (PIC #3) (extender line will need to be made -6an Male on one end).
5. Disconnect rear fan DT connector (to prevent a draw on the battery) (PIC #5).
6. Place suction line into the container of Flis Performance 75W/90 gear oil (PIC #4).
7. Turn on the transmission override switch (PIC #6).
8. Pump fluid until container is empty.
9. Turn off the transmission override switch.
10. Remove AN cap from filter and suction line extender.
11. Reconnect suction line to filter (Do Not Overtighten).
12. Clean off any excess fluid.
13. Reconnect fan DT connector.



Picture #1



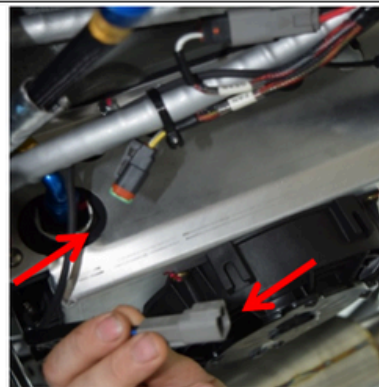
Picture #2



Picture #3



Picture #4



Picture #5



Picture #6

## Adjusting the Gear Pot in Your SADEV Gearbox:

*If the Gear Pot Voltage (GPV) falls in the low 0.840's or goes above 0.860's the SADEV will experience shifting issues and the Gear Pot will need to be adjusted.*

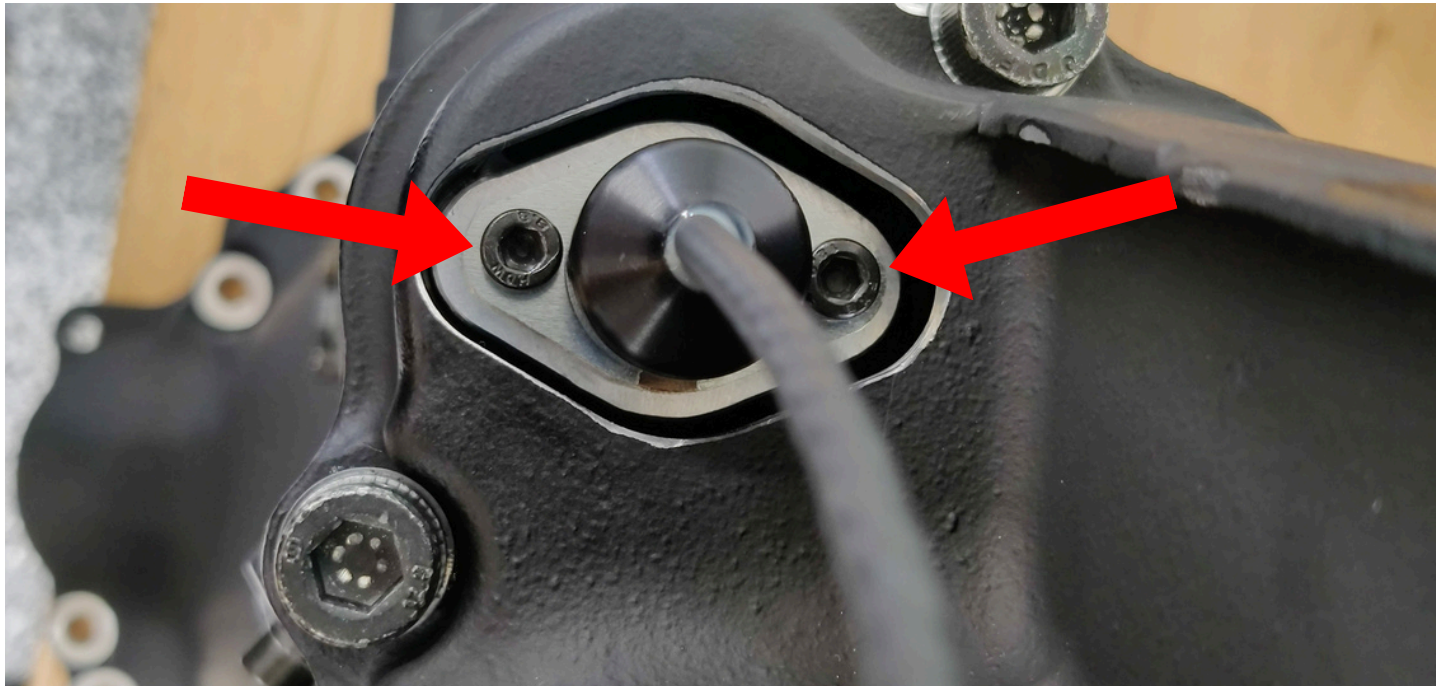
***Important Note:*** *Ensure your Mazda MX-5 Cup Car is in neutral before proceeding.*

**Locate the Gear Pot:** The Gear Pot is situated on the left side of the gearbox (driver side).

**Prepare for Adjustment:** Before adjusting, make sure the car is in neutral, stationary and the engine is turned off. This prevents any accidental movements.

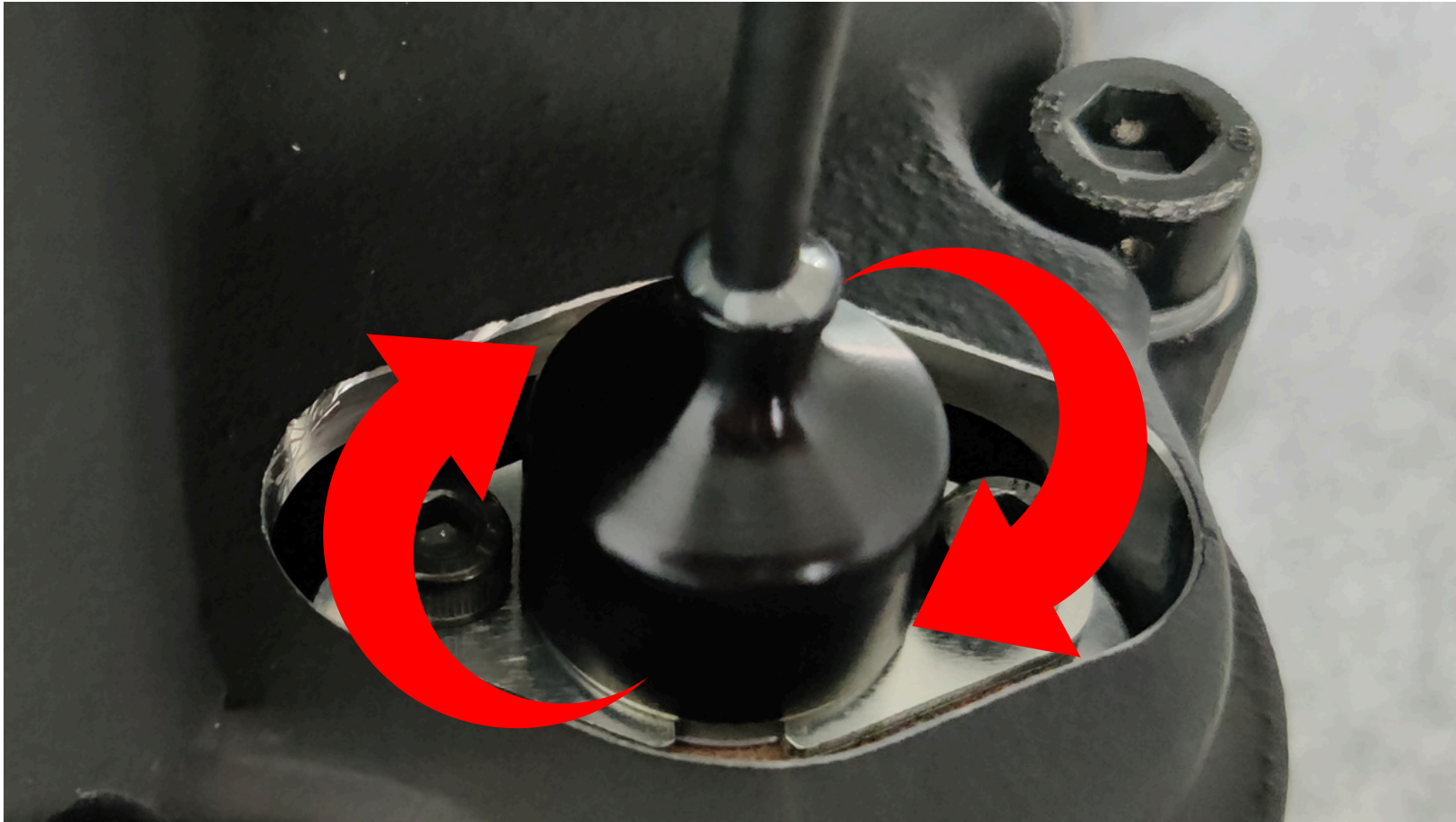
**Access the Gear Pot:** Using an M4 hex drive socket or wrench, ***gently*** back off the two M5 Socket Head Caps screws securing the Gear Pot.

**Caution:** Do not loosen the bolts all the way to prevent the small metal triangle flanges from falling out or possibly dropping into the gearbox.



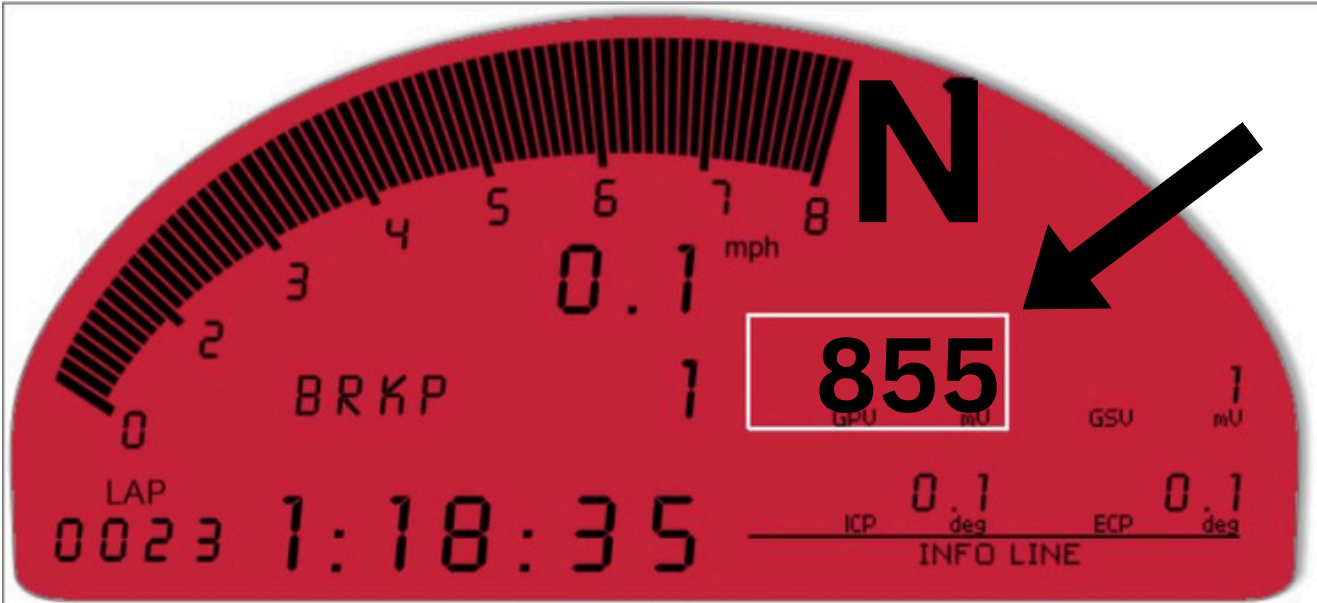


**Adjust the Gear Pot:** With the bolts partially loosened, the Gear Pot can now be rotated left or right by hand to make adjustments.



Aim to set it back to **0.855**. You can monitor this number on your AiM Dash (GPV).

**Exercise Caution:** Adjust the Gear Pot with a gentle touch, avoiding rapid movements. It may become harder to dial in if spun too quickly. Take your time to make precise adjustments.



Gear Position Sensor Setup	
Reverse (-1) V = 0.54	4th Gear V = 3.092
Neutral (0) V = 0.855	5th Gear V = 3.729
1st Gear V = 1.178	6th Gear V = 4.364
2nd Gear V = 1.818	
3rd Gear V = 2.449	

**Finalize Adjustment:** Once you've reached the desired setting of 0.855, **carefully** tighten down the M5 Socket Head Caps screws. Ensure they are securely fastened to prevent any movement during operation.

**Verification:** After tightening, double-check the Gear Pot's position to confirm it remains at 0.855. This ensures proper adjustment and optimal gearbox performance.

**Test Drive:** Before resuming regular driving, conduct a test drive to ensure the gearbox operates smoothly and the adjustment has been successful.

**If the GPV falls in the low 0.840's or goes above 0.860's the Gear Pot will experience shifting issues and the Gear Pot will need to be adjusted.**

By following these steps carefully, you can adjust the Gear Pot in your SADEV gearbox effectively and ensure optimal performance for your Mazda MX-5 Cup Car.

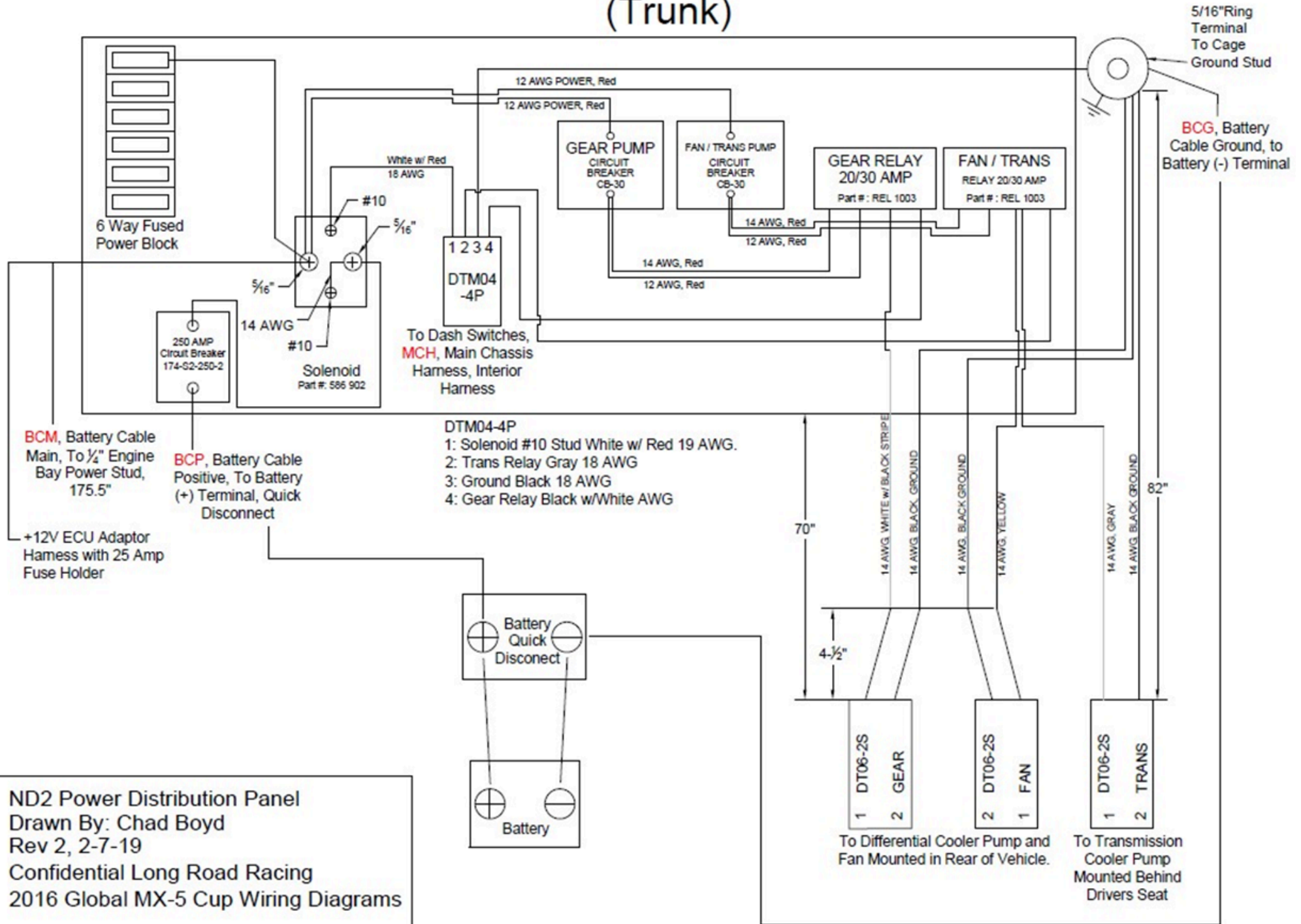
**NOTE: Please be aware that this pertains specifically to the Mazda MX-5 Cup Car Series Homologated SADEV, distinct from the limited release of the ND.1 Long Road Racing SADEV gearbox in 2016.**

**If you have any questions, please reach out to Flis Performance.**

# 23.0 Wiring Diagrams:

## 23.1 Power Distribution Panel (Trunk)

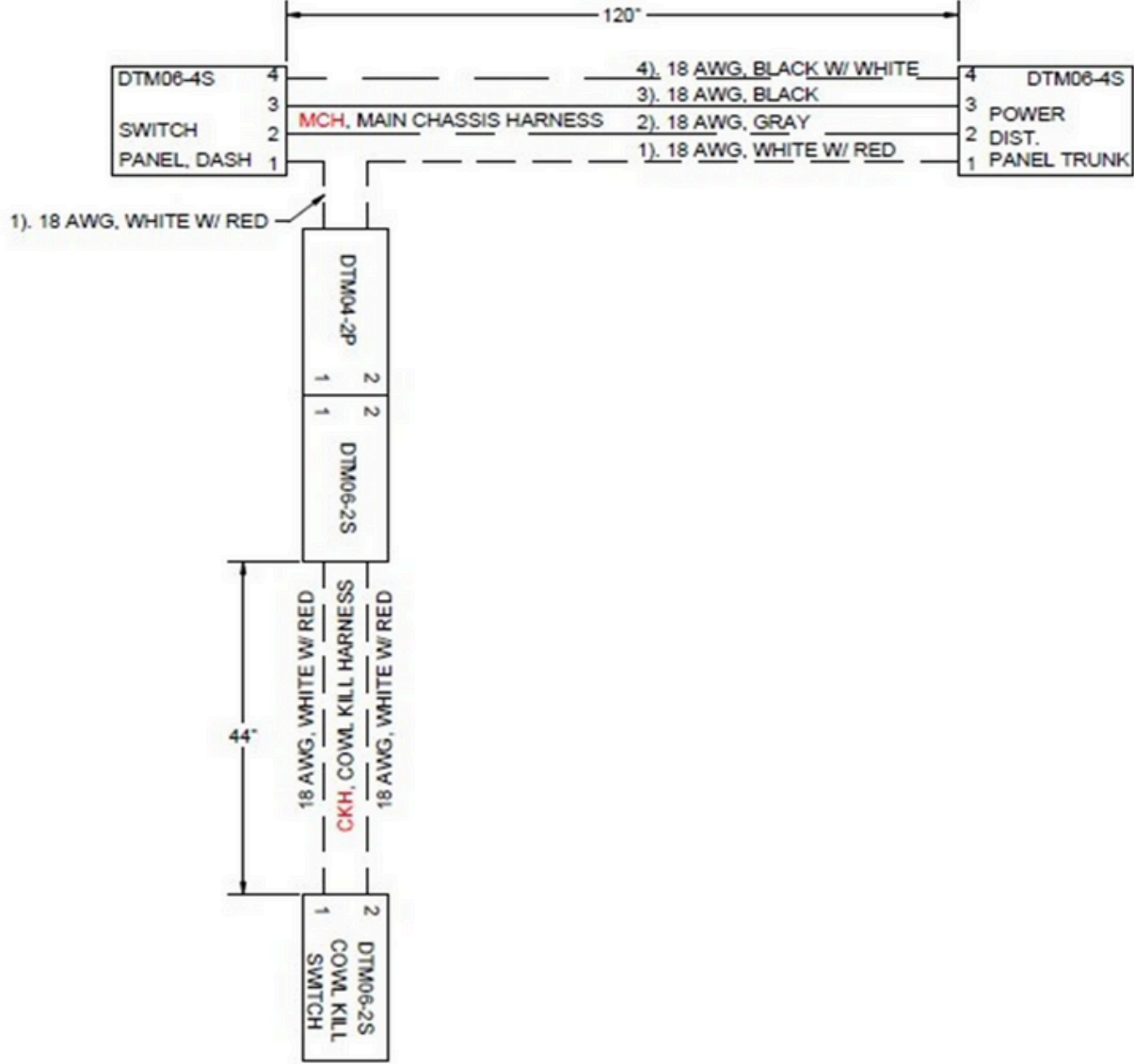
### ND2 Power Distribution Panel (Trunk)



ND2 Power Distribution Panel  
 Drawn By: Chad Boyd  
 Rev 2, 2-7-19  
 Confidential Long Road Racing  
 2016 Global MX-5 Cup Wiring Diagrams

# 23.2 Main Chassis Harness(Trunk to Dash)

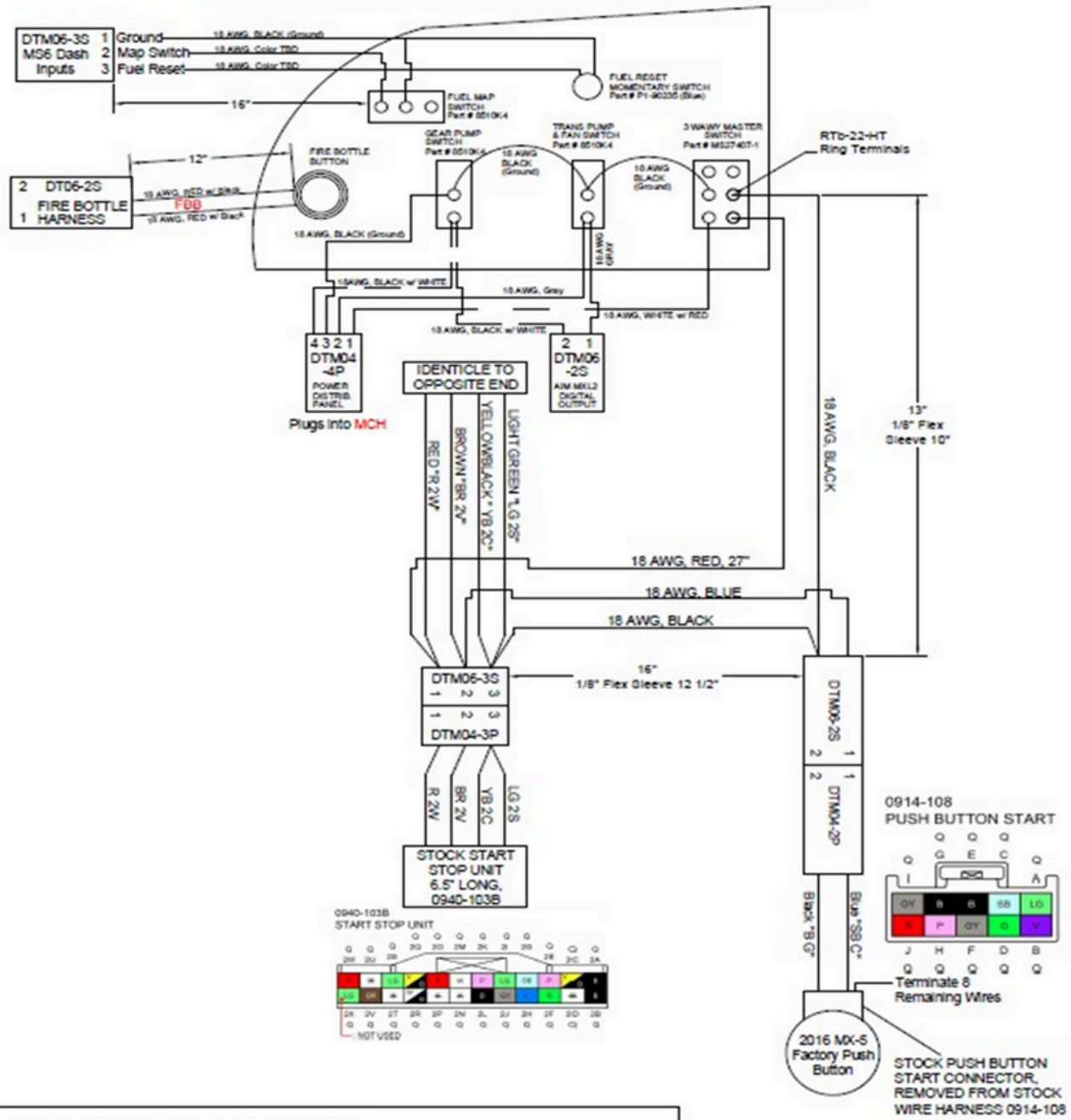
## Main Chassis Harness Part # 0000-08-5050



Main Chassis Harness  
 Drawn By: Chad Boyd  
 Rev: 3, 1-15-16  
 Confidential Long Road Racing  
 2016 Global MX-5 Cup Wiring Diagrams

# 23.3 Switch Panel and Start Button (Dash)

## ND2 Switch Panel and Start Stop Unit

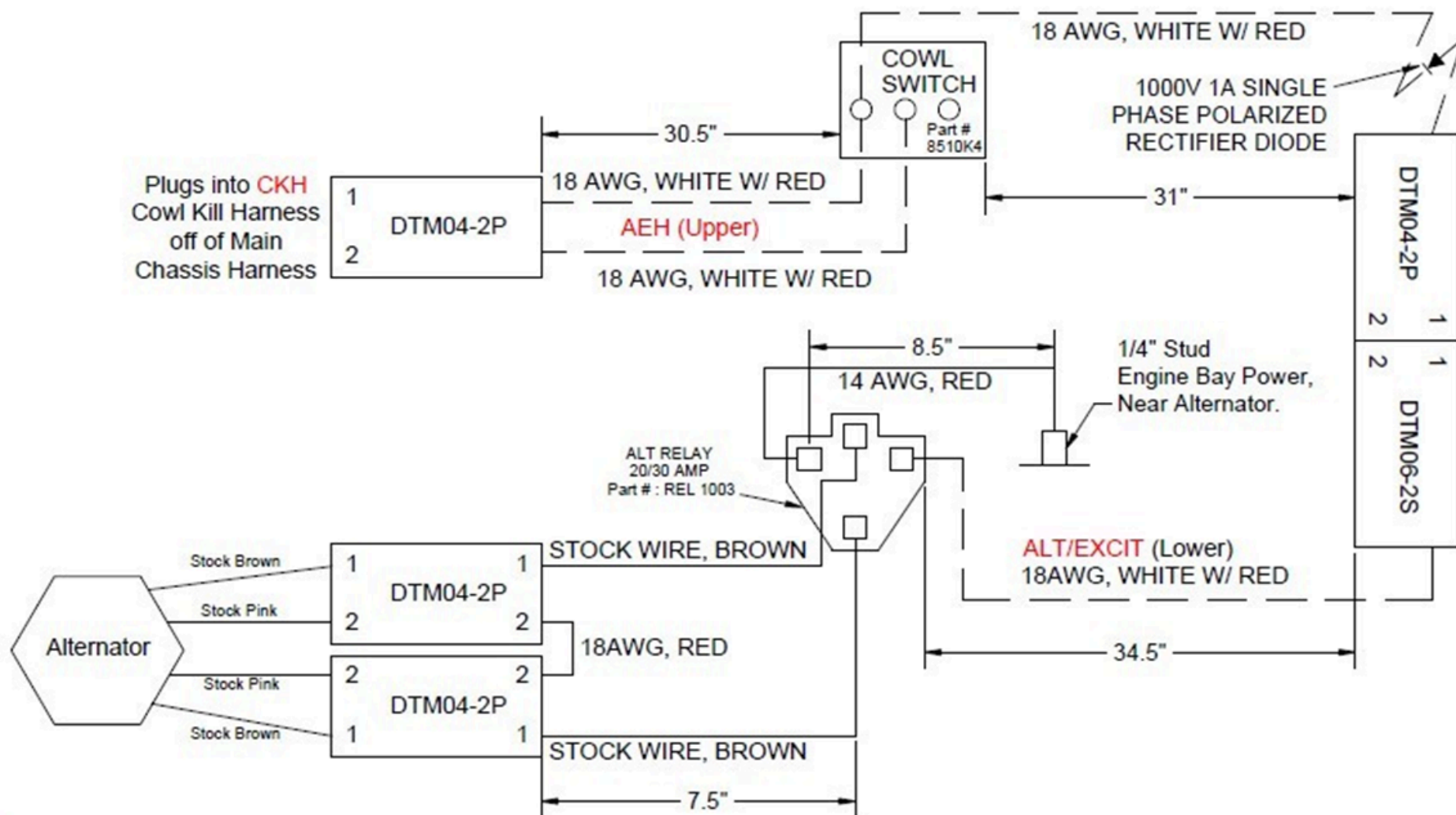


ND2 Switch Panel and Start (Dash)  
 Drawn By: Chad Boyd  
 Rev: 2, 1-29-19  
 Confidential Long Road Racing  
 2019 Global MX-5 Cup ND2 Wiring Diagrams

## 23.4 Engine Bay (Cowl and Alternator Relay)

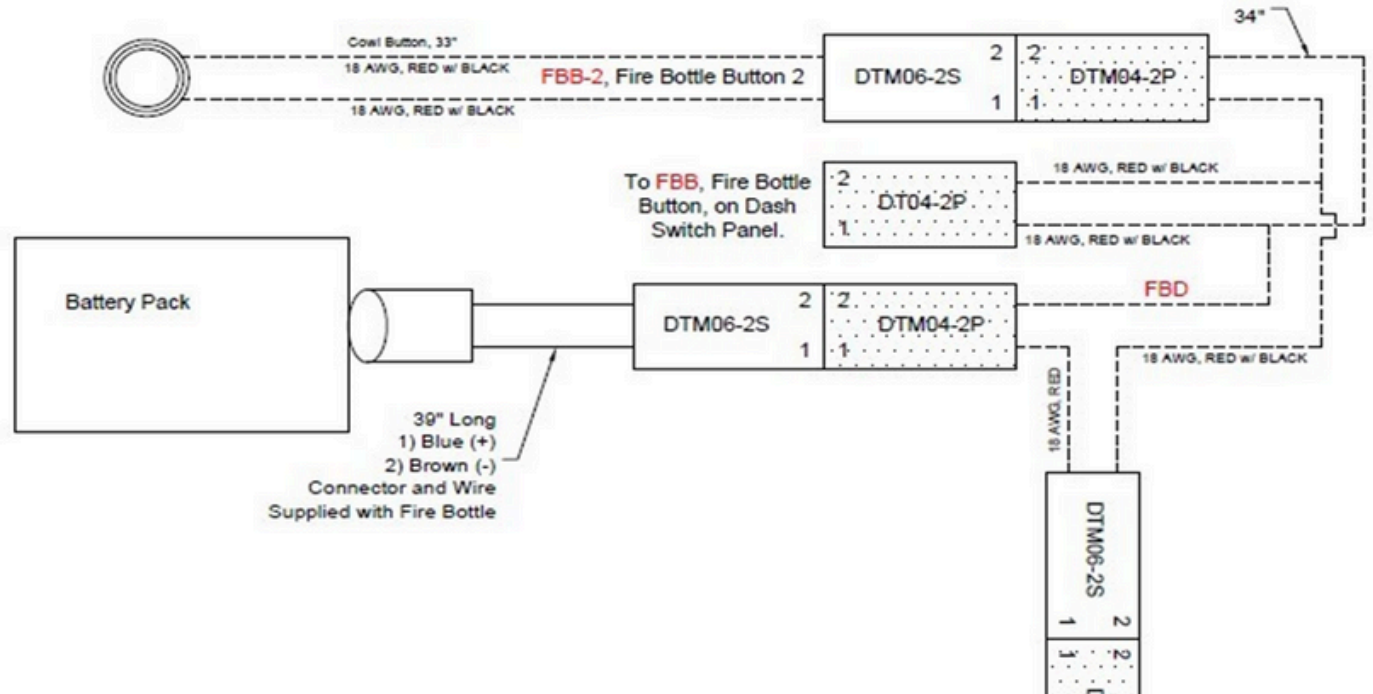
# Engine Bay (Cowl Kill Switch and Alternator Relay)

Part # 0000-08-5051



Engine Bay (Cowl and Alt. Relay)  
Drawn By: Chad Boyd  
Rev: 4, 1-15-16  
Confidential Long Road Racing  
2016 Global MX-5 Cup Wiring Diagrams

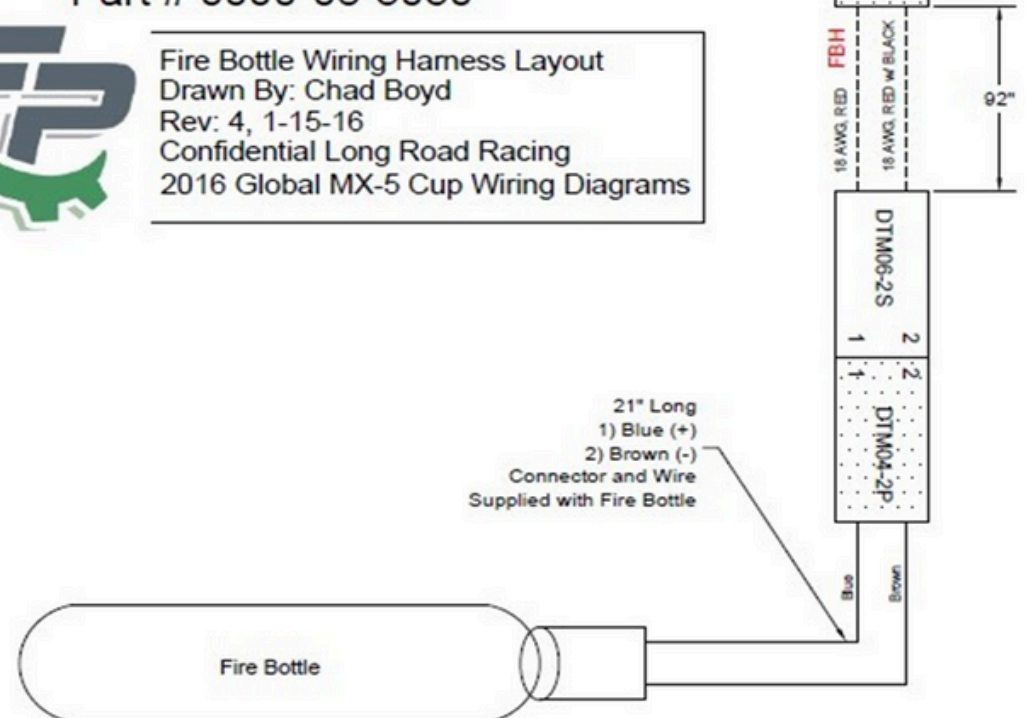
# 23.5 Fire Bottle Wiring Harness Layout



## Fire Bottle Wiring Harness Part # 0000-08-5050



Fire Bottle Wiring Harness Layout  
 Drawn By: Chad Boyd  
 Rev: 4, 1-15-16  
 Confidential Long Road Racing  
 2016 Global MX-5 Cup Wiring Diagrams





## 24.0 Nut and Bolt:

- Despite the extensive Quality Processes in place during the manufacturing of your vehicle, it is highly recommended and general good practice with any race car, to do a full nut and bolt check on the car before first use, and in between on-track sessions.

## 25.0 Torque Specifications:

This list is not comprehensive. For items not listed consult the MX-5 Service Manual from Mazda.

<b>1 Front Suspension</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Front Upper control Arm	2	40-47
Front Lower Damper Bolt	1	40-47
Front Upper Damper Nut	3	37-43
Front Hub	3	91-100

<b>2 Front Brakes</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Front ABS Sensor	1	71-88 in-lbs.
Front Caliper	2	59-74
Front Brake Line Banjo Bolt	1	110 in-lbs
Front Brake Bleeders	4	107-141 in-lbs.

<b>3 Rear Suspension</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Rear hub	3	91-100
Rear Axle Nut	2	175-202
Rear Damper Top Mount Nut	2	34-40
Rear Damper Lower Bolt	2	49-59

<b>4 Rear Brakes</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Rear Brake Caliper Bracket	2	38-48
Rear Brake Caliper	2	15-18
Rear ABS Wheel Speed Sensor	1	71-88 in-lbs.
Front Brake Line Banjo Bolt	1	110 in-lbs.
Rear Brake Bleeders	2	54-70 in-lbs.

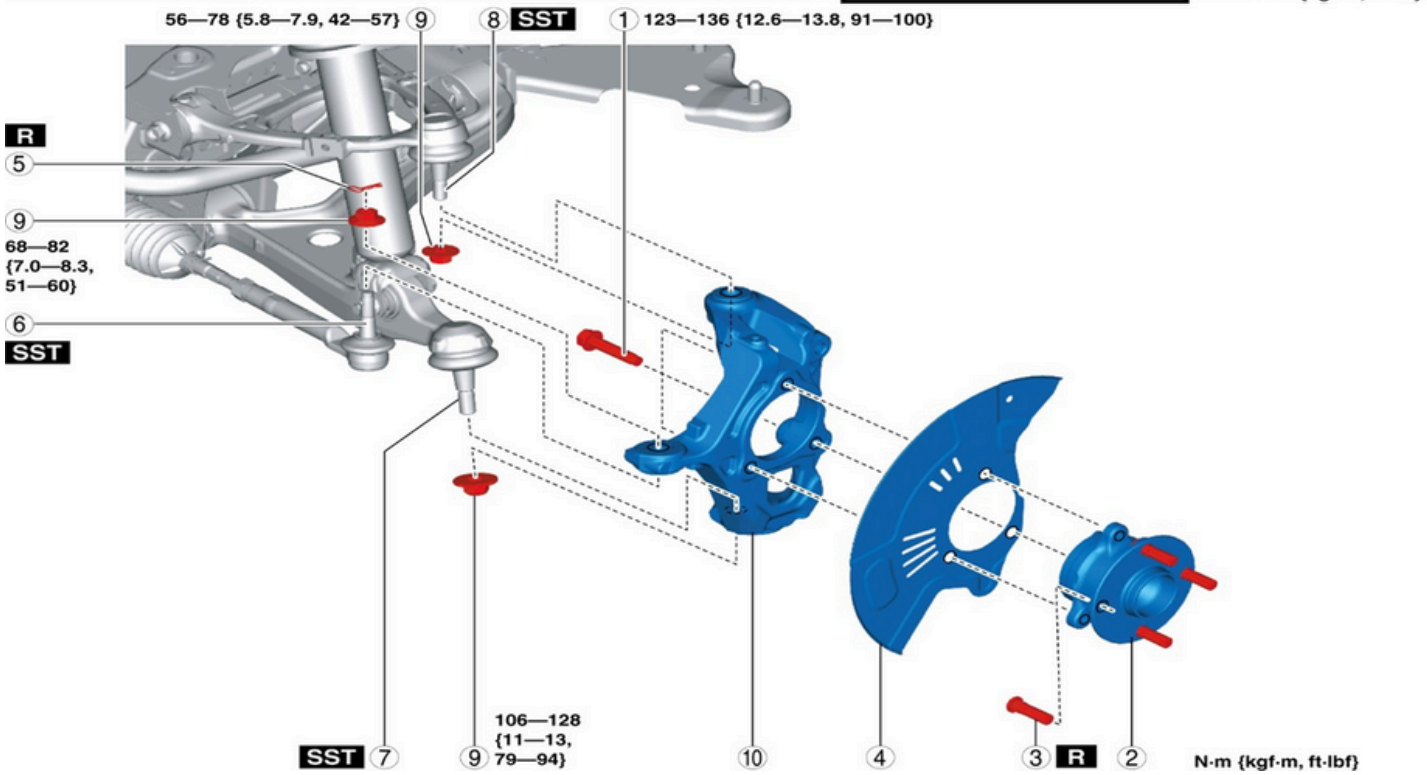
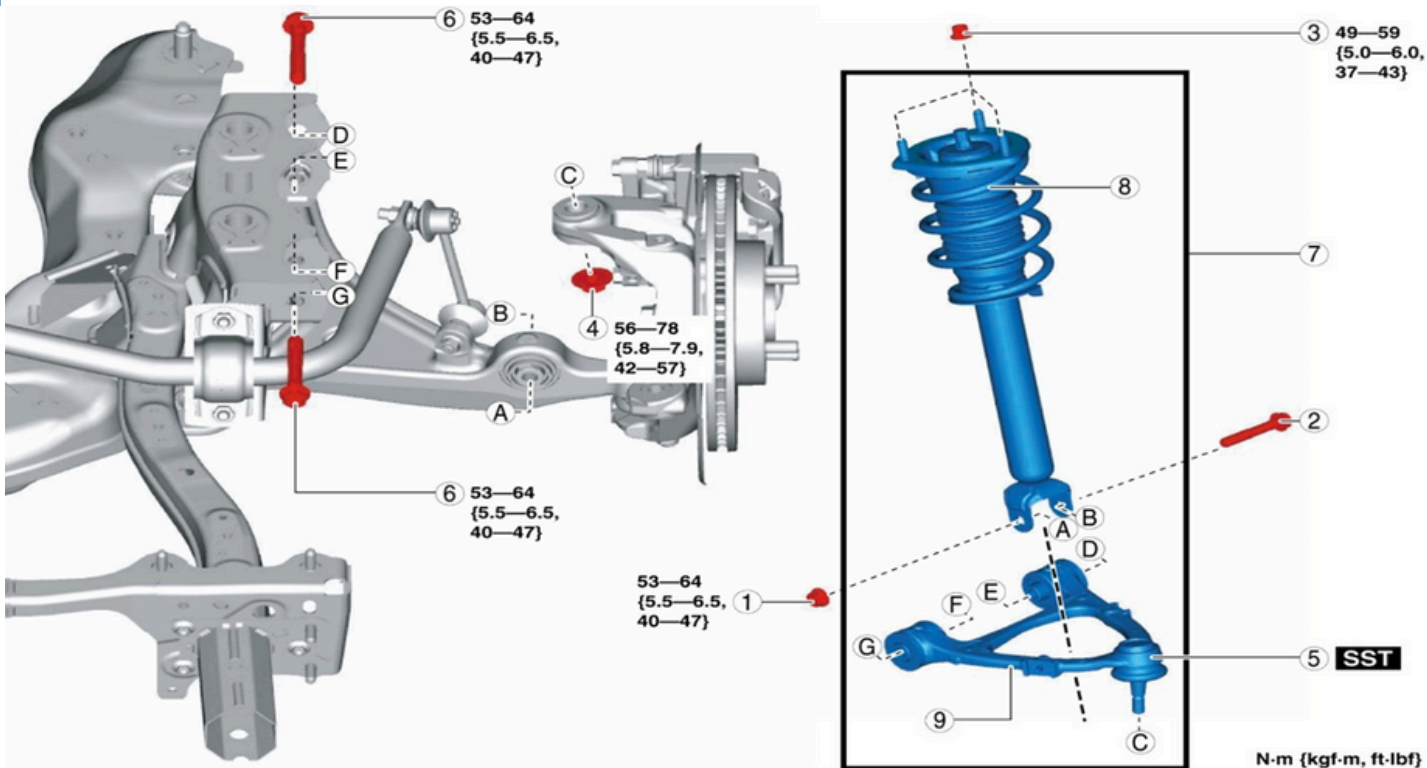
<b>5 Engine Bay</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Strut Tower Brace Center	2	12-19
Strut Tower Brace (Damper Nuts L&R)	6	37-43
Header Nuts	5	32-47
Motor Mount Lower	3	25-33
Motor Mount Upper	3	22-29
Motor Mount Upper Nut	1	24-30
Oil Filter Sandwich Plate Nut	1	35

<b>6 Under Car</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Tunnel Member "X" Brace	4	14-19
Member Bracket	4	14-19

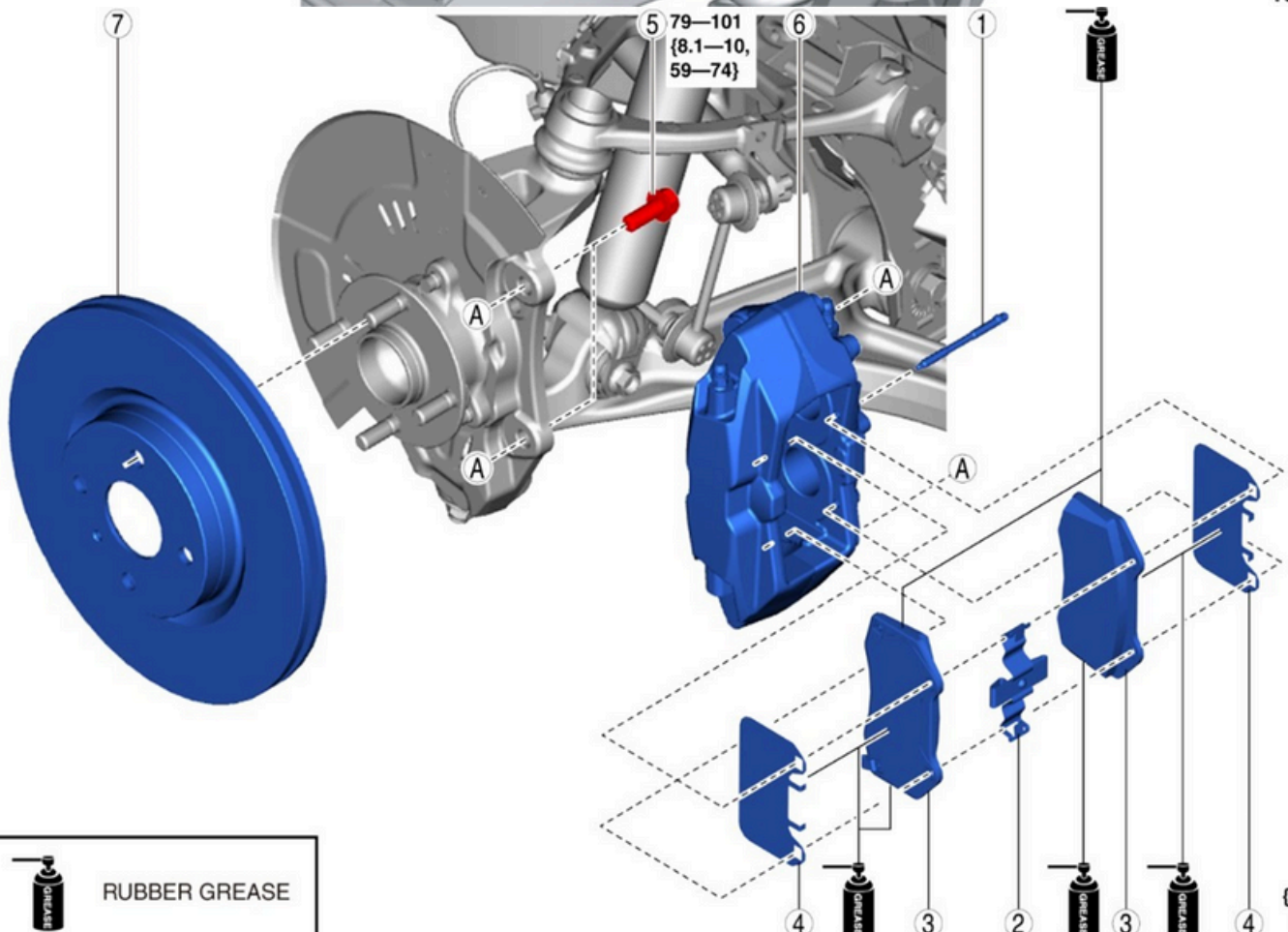
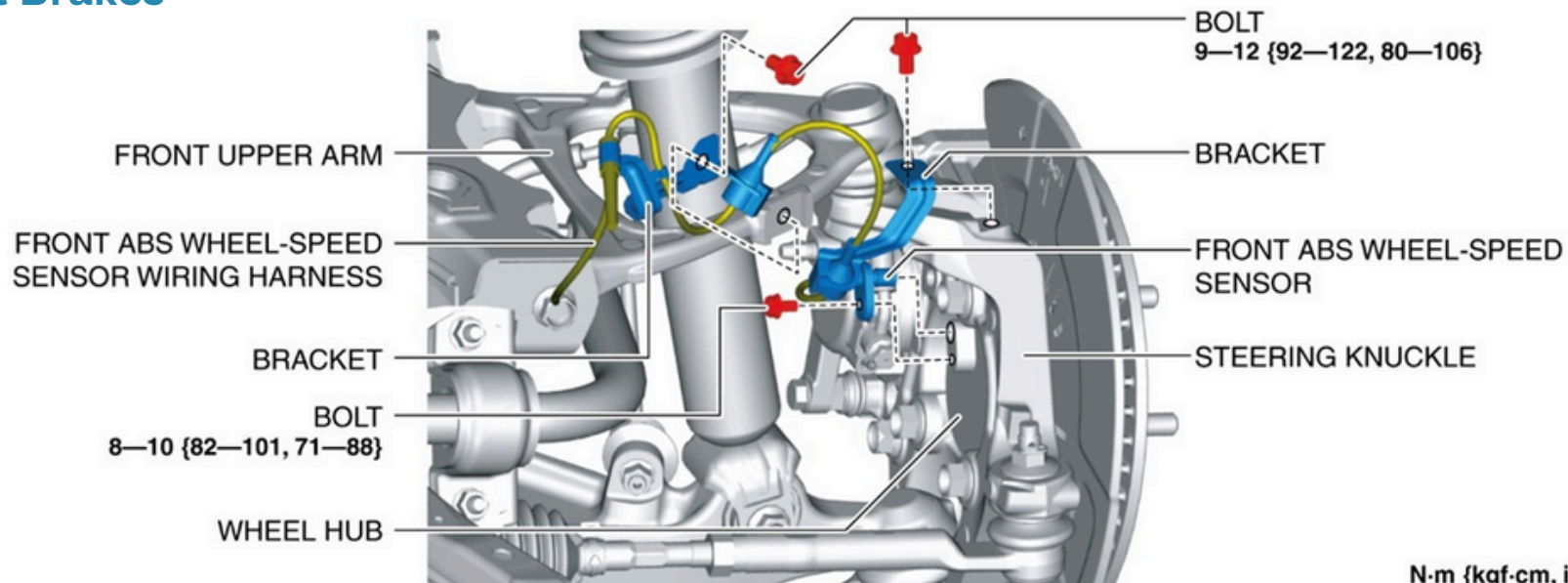
<b>7 Differential and Transmission</b>	<b># of Fasteners</b>	<b>Torque Spec ft.-lbs.</b>
Diff Bracket Top	4	40-51
Diff Bracket Sides (Mount Rubbers)	2	40-51
Rear Subframe Primary	6	78-92
Drive Shaft (Propeller Shaft)	4	37-43
Power Plant Framework Differential End	4	121-147
Power Plant Framework Transmission End	4	100-120

<b>8 Wheels</b>	<b>16</b>	<b>80</b>
-----------------	-----------	-----------

# 25.1 Front Suspension



# 25.2 Front Brakes



N·m {kgf·cm, in·lbf}

N·m {kgf·m, ft·lbf}

RUBBER GREASE

5 79-101 {8.1-10, 59-74}

1

4 3 2 3 4

1

2

12—16 N·m  
{123—163 kgf·cm,  
107—141 in·lbf}

1

2

12—16 N·m  
{123—163 kgf·cm,  
107—141 in·lbf}

4

R

5

R

3

BRAKE FLUID

4

R

5

R

5

R

4

R

5

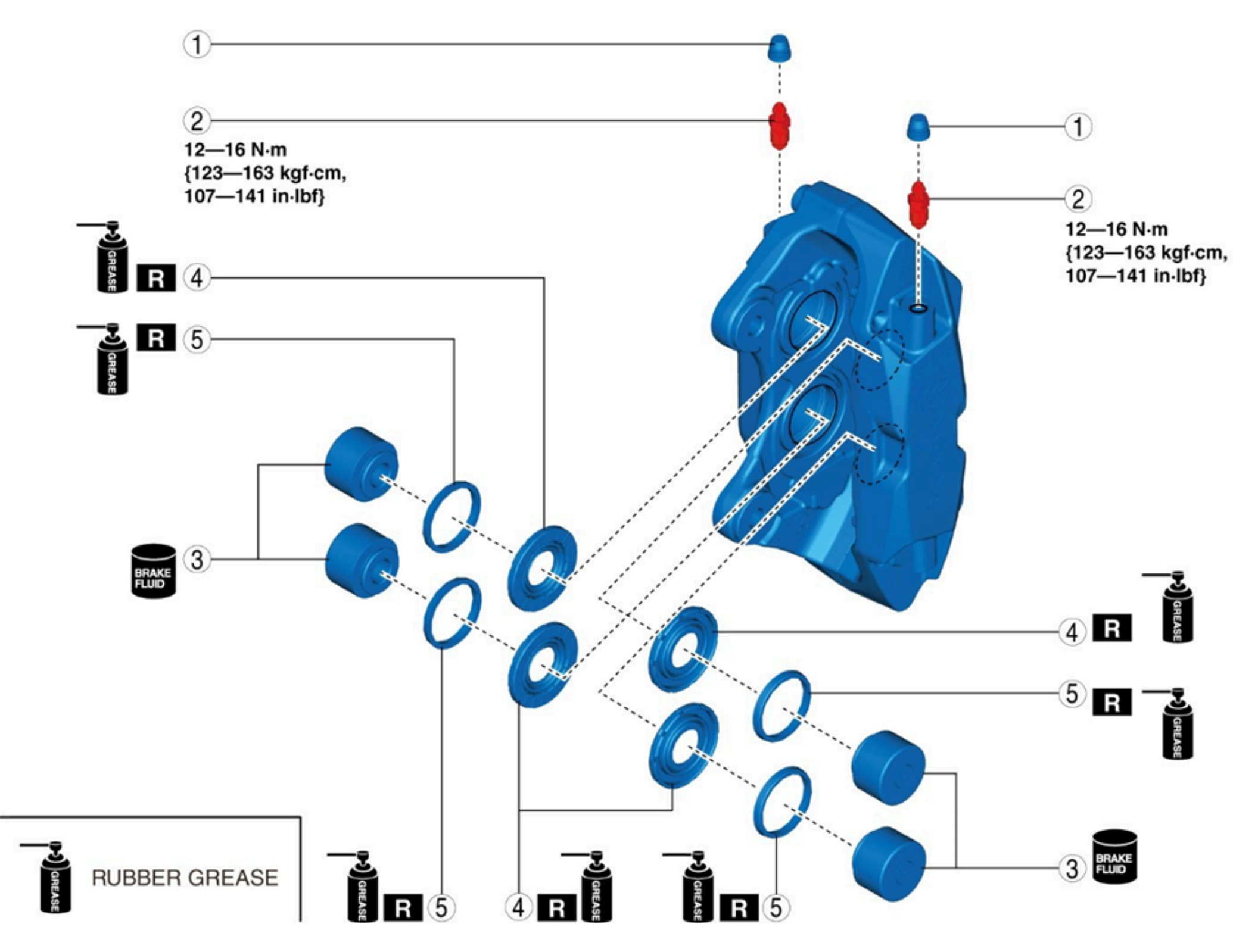
R

3

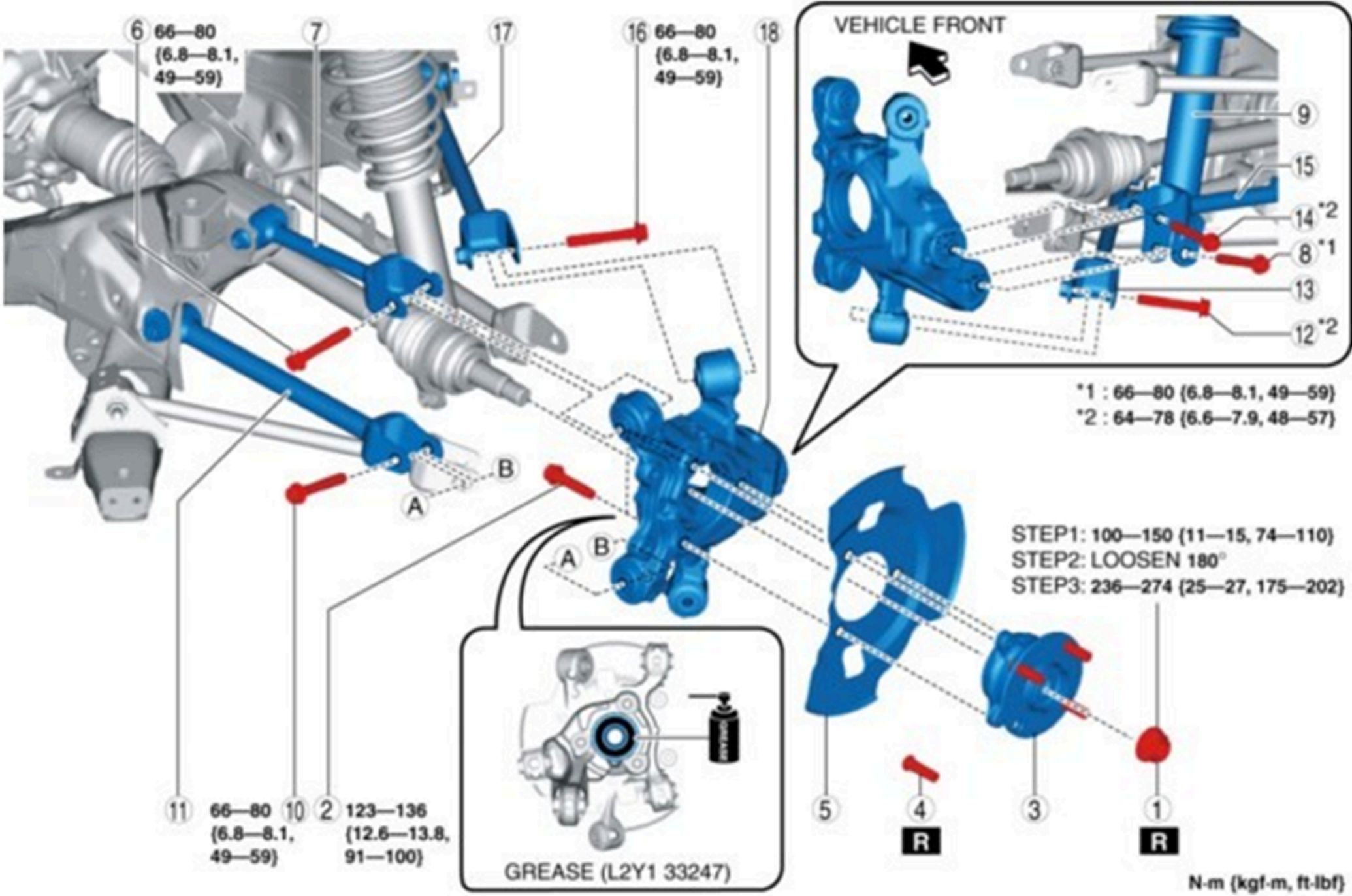
BRAKE FLUID



RUBBER GREASE



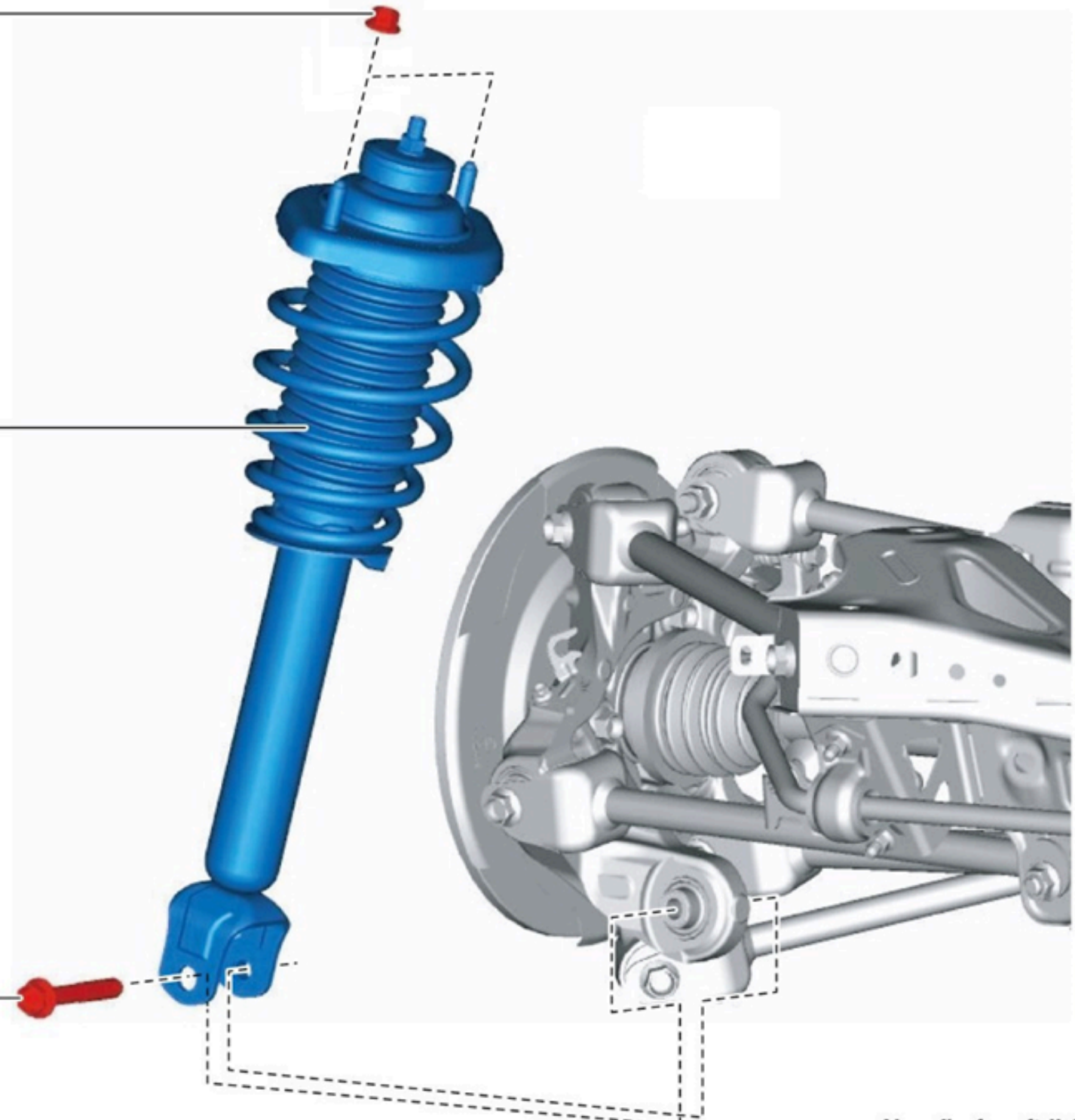
# 25.3 Rear Suspension



45—55 {4.6—5.6, 34—40} ②

③

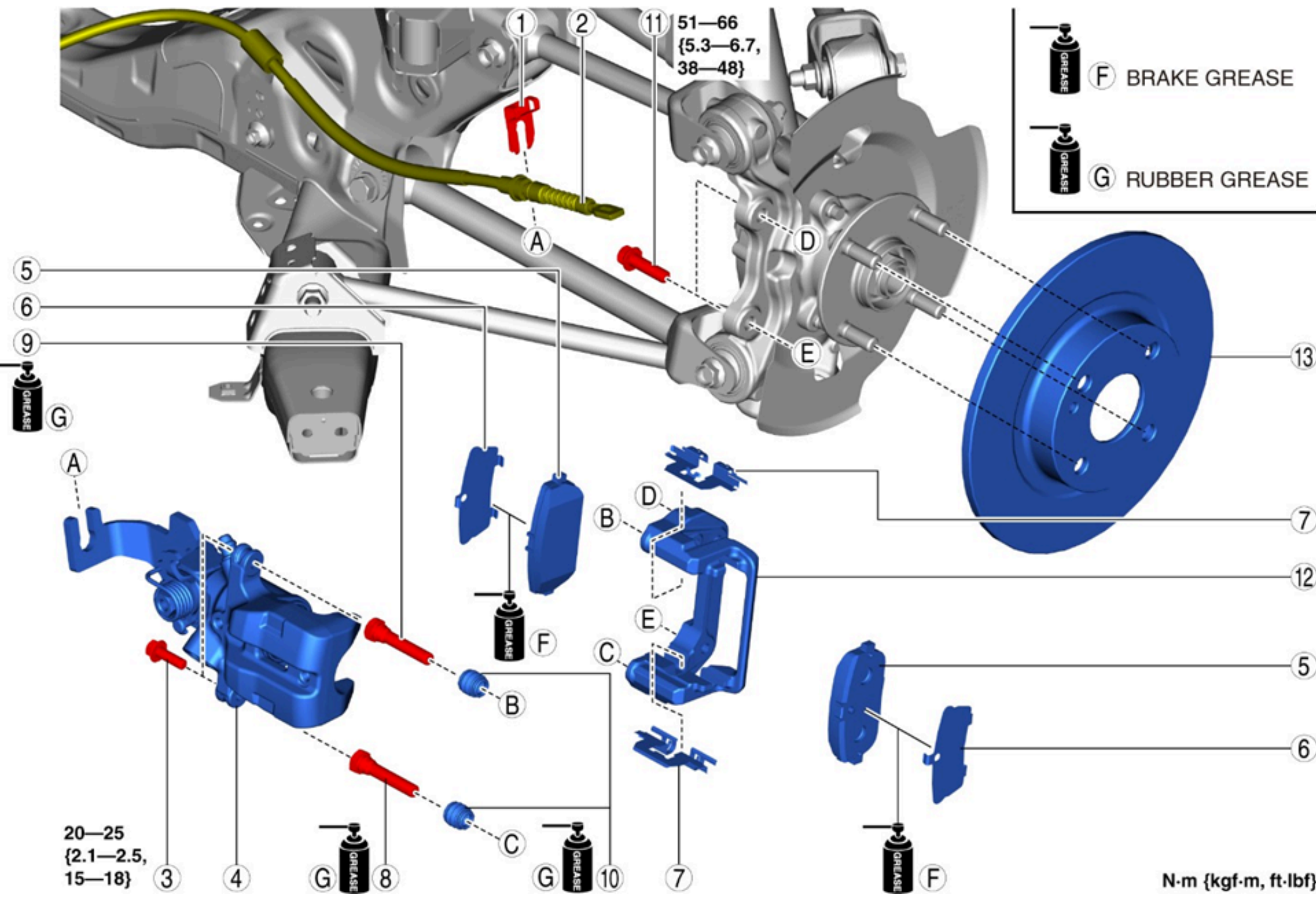
66—80 {6.8—8.1, 49—59} ①



N·m {kgf·m, ft·lbf}



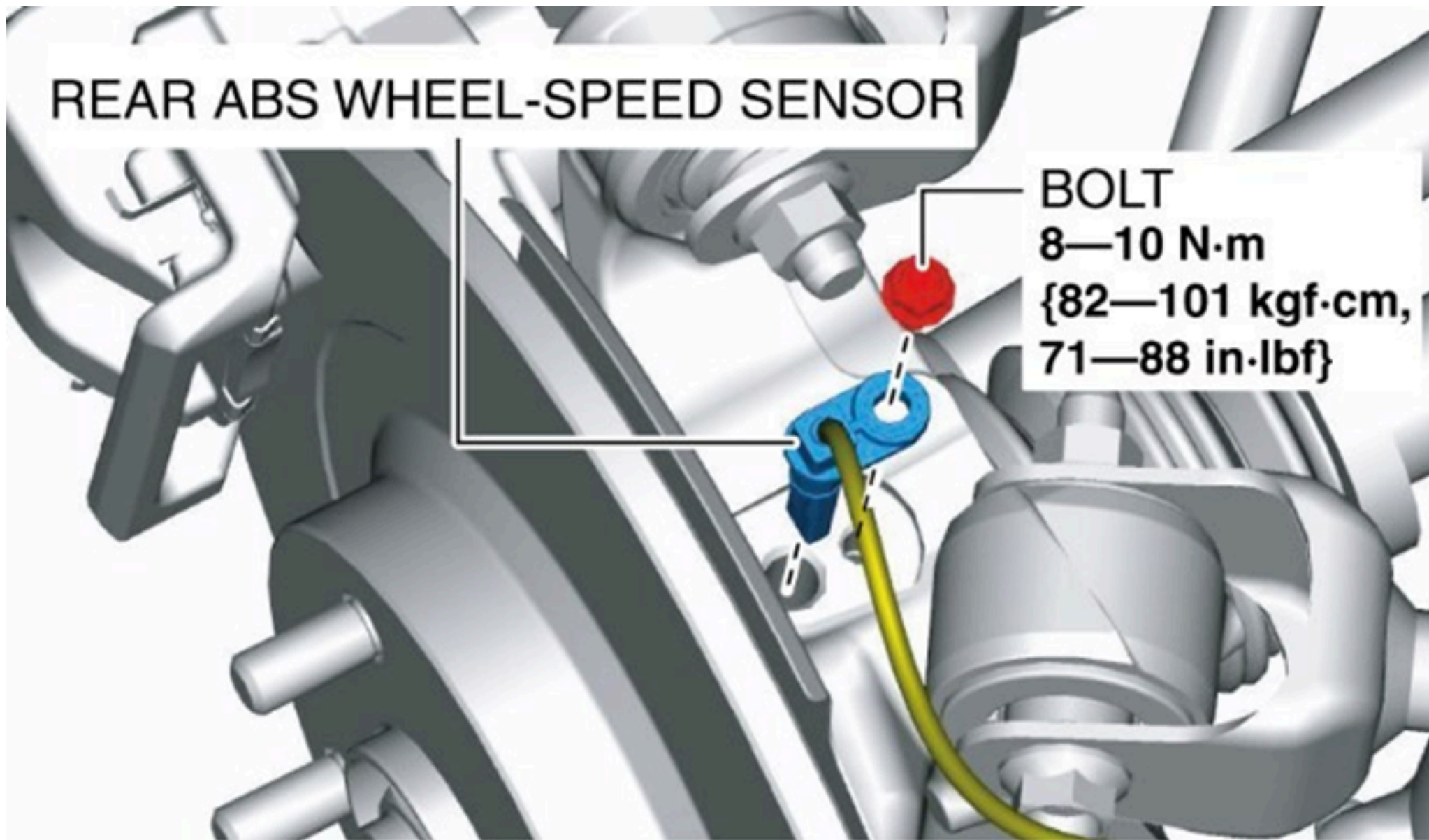
# 25.4 Rear Brakes



N·m {kgf·m, ft·lbf}

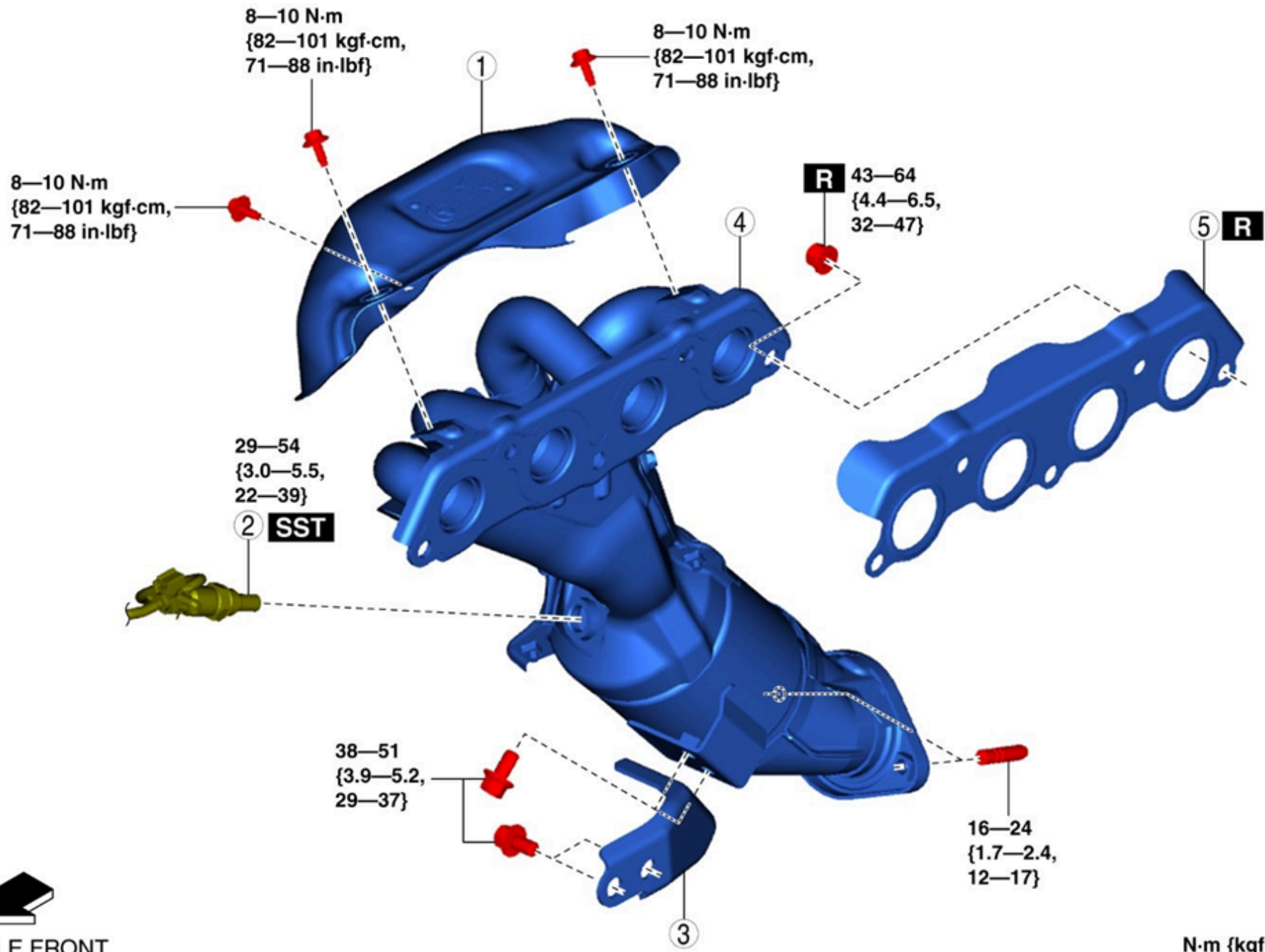
## REAR ABS WHEEL-SPEED SENSOR

**BOLT**  
8—10 N·m  
{82—101 kgf·cm,  
71—88 in·lbf}



## 25.5 Engine Bay

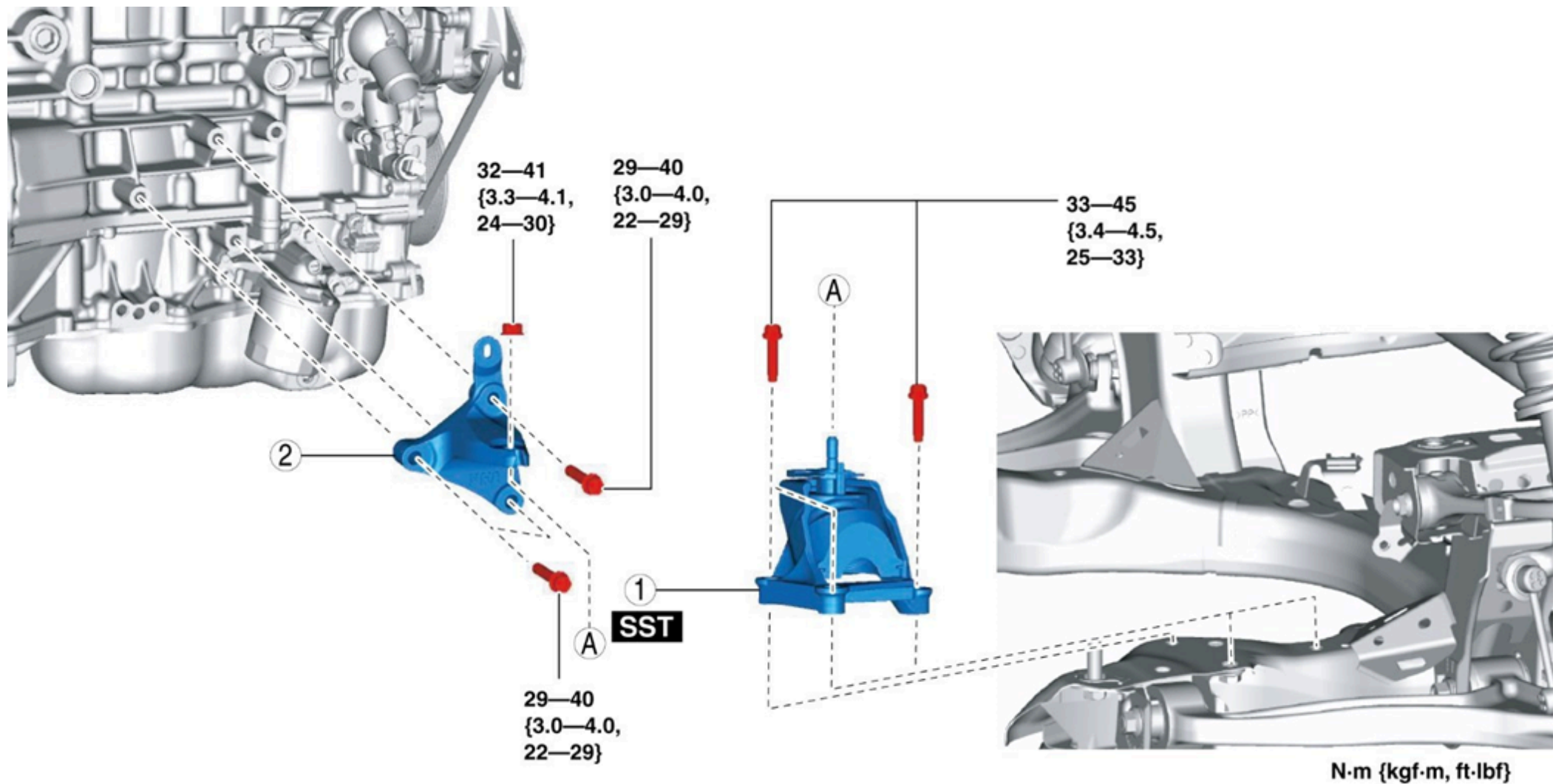




  
VEHICLE FRONT

N·m {kgf·m, ft·lbf}

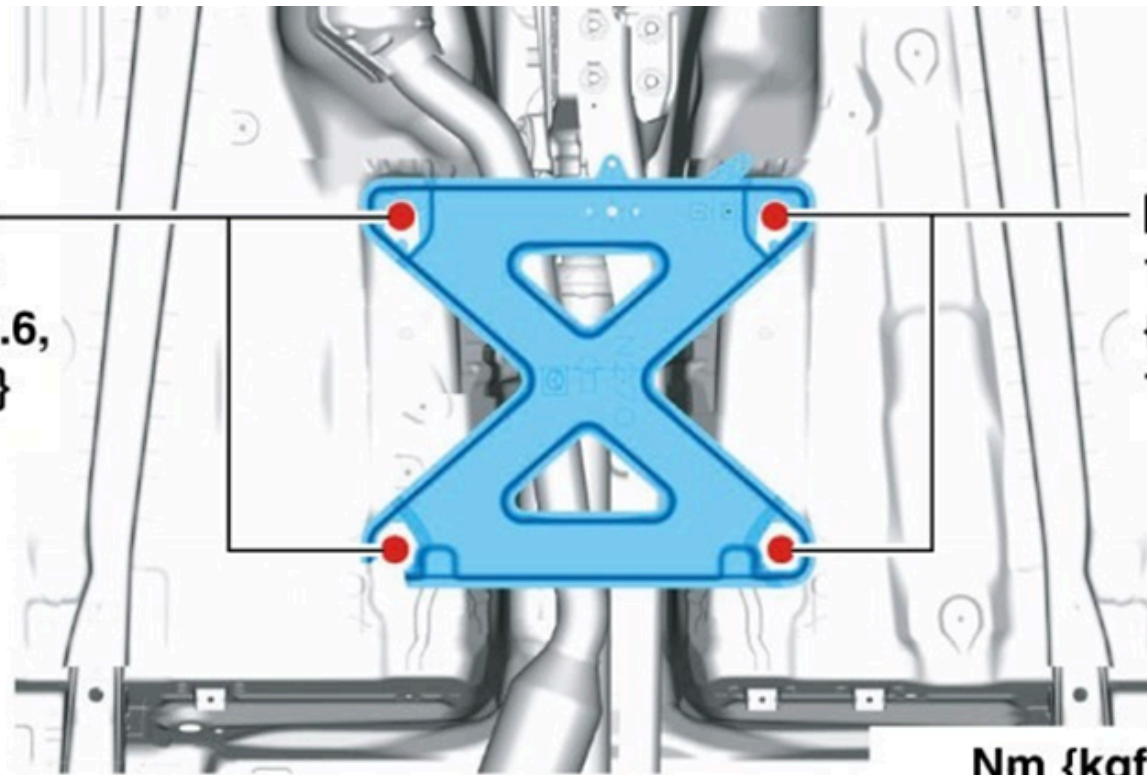
Note: Stock Exhaust Header shown. Torque specification for Motorsports Header are the same.



**Note: Engine Mount Reinforcement Brackets are included and are installed with the Stock Bolts.**

## 25.6 Under Car

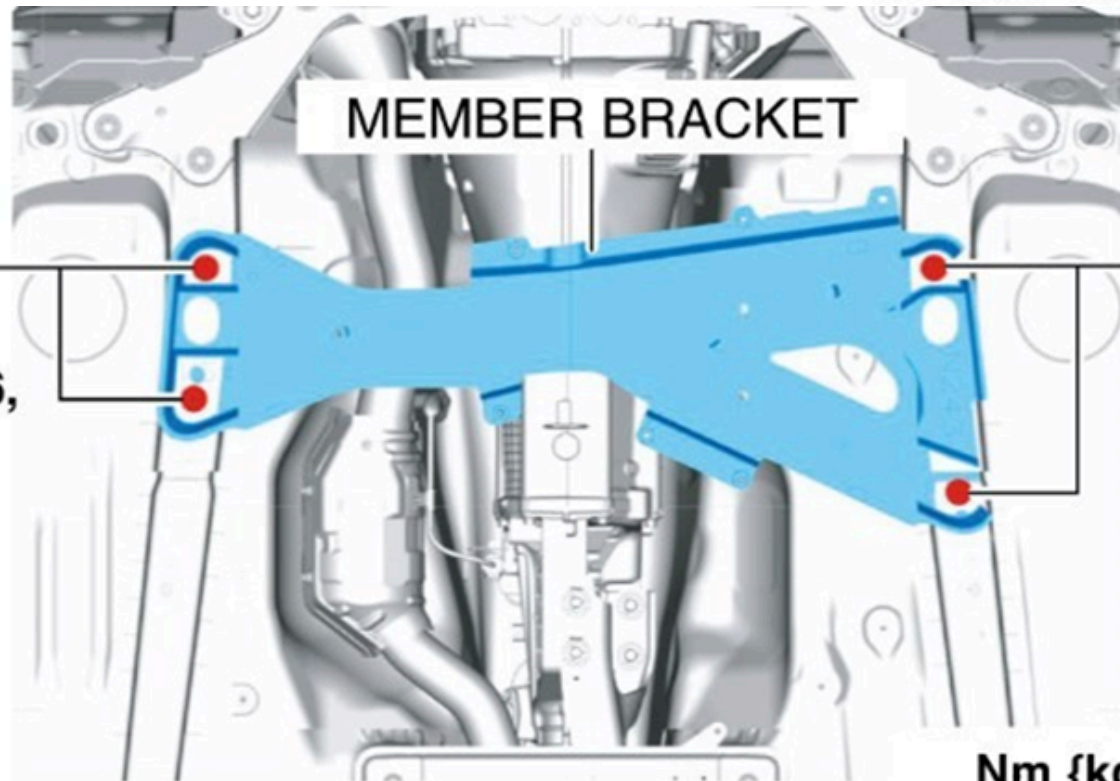
BOLT  
18—26  
{1.9—2.6,  
14—19}



BOLT  
18—26  
{1.9—2.6,  
14—19}

Nm {kgf·m, ft·lbf}

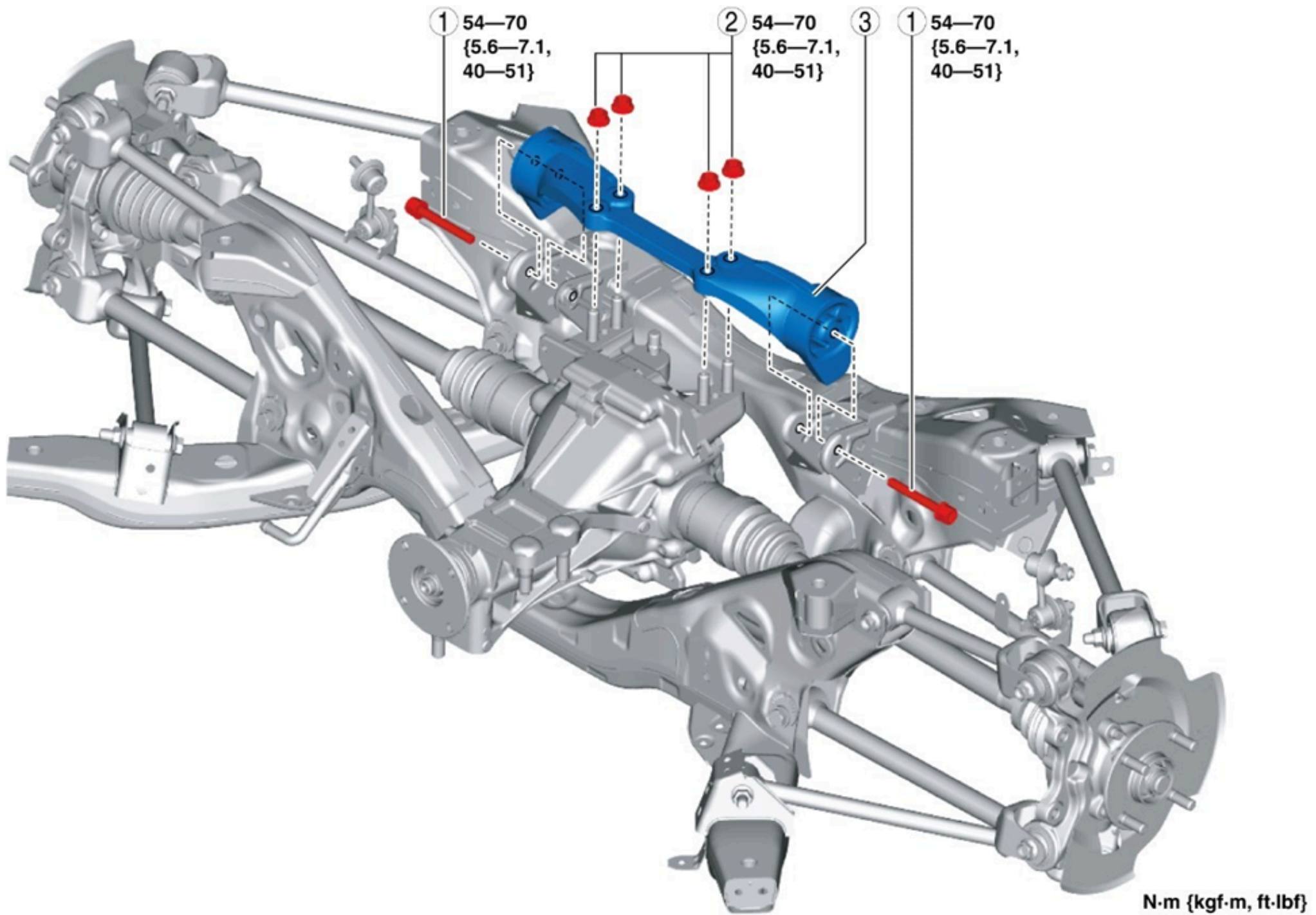
BOLT  
18—26  
{1.9—2.6,  
14—19}



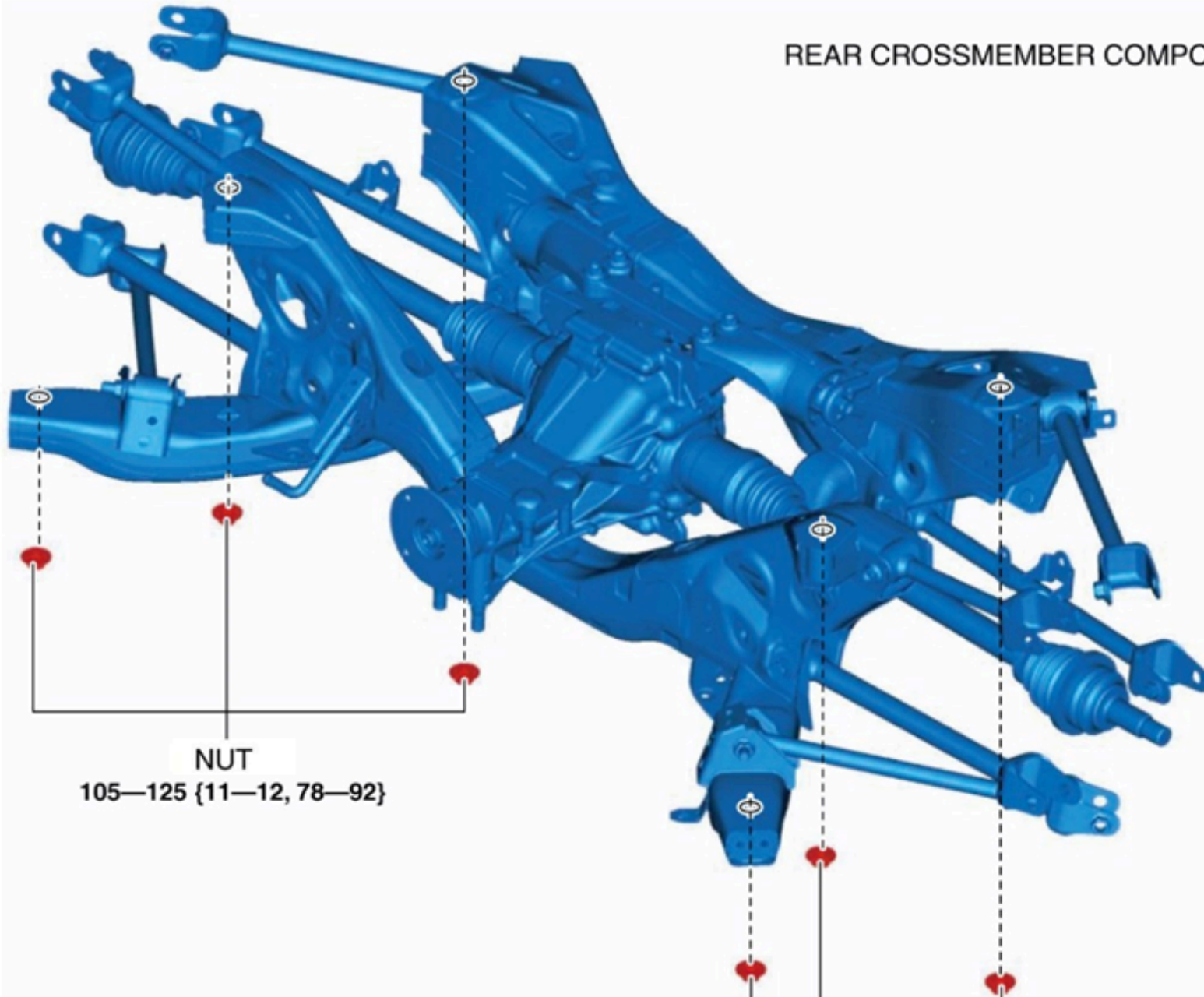
BOLT  
18—26  
{1.9—2.6,  
14—19}

Nm {kgf·m, ft·lbf}

## 25.7 Differential and Transmission



# REAR CROSSMEMBER COMPONENT

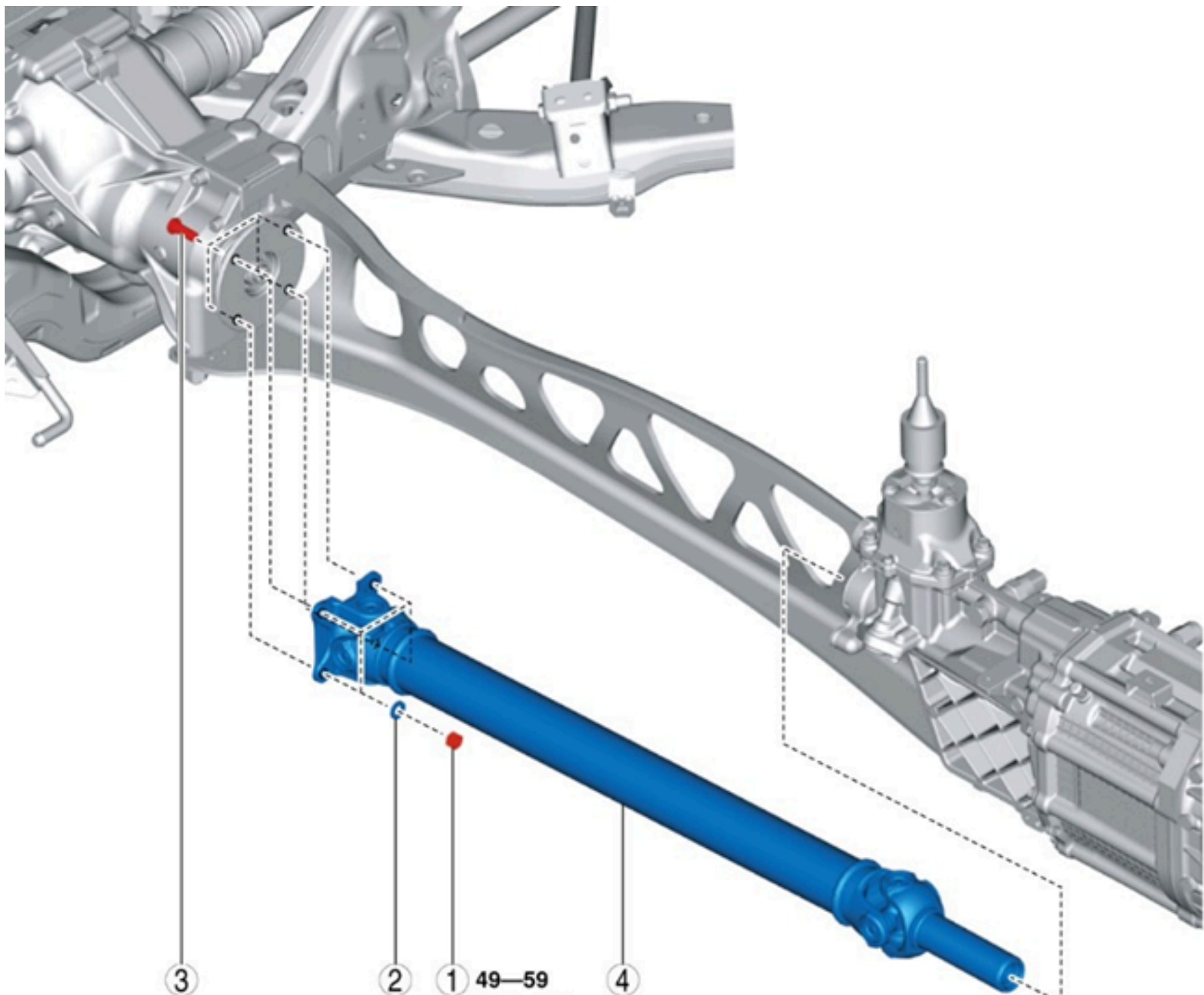


NUT  
105—125 {11—12, 78—92}

NUT  
105—125 {11—12, 78—92}

N·m {kgf·m, ft·lbf}





3

2

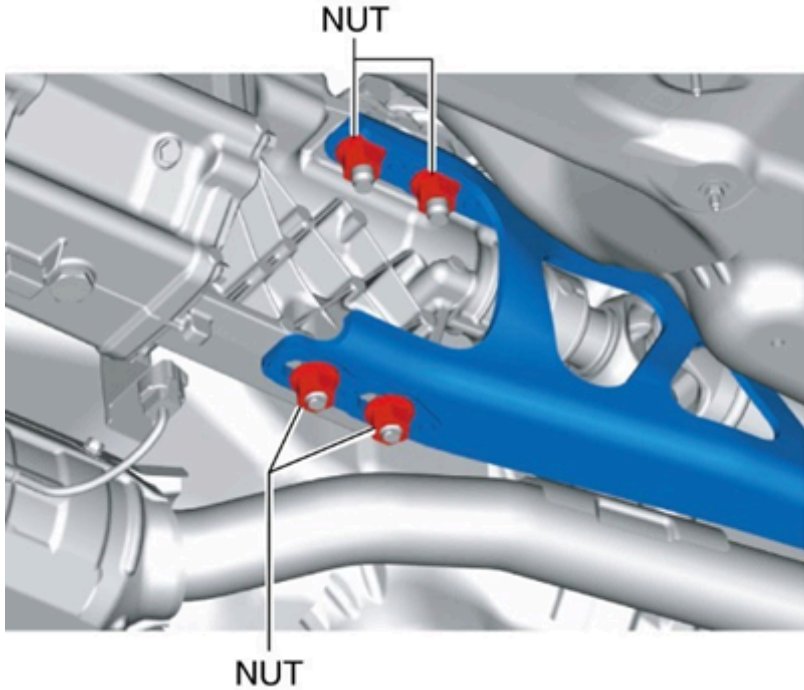
1

4

**R**

49—59  
{5.0—6.0,  
37—43}

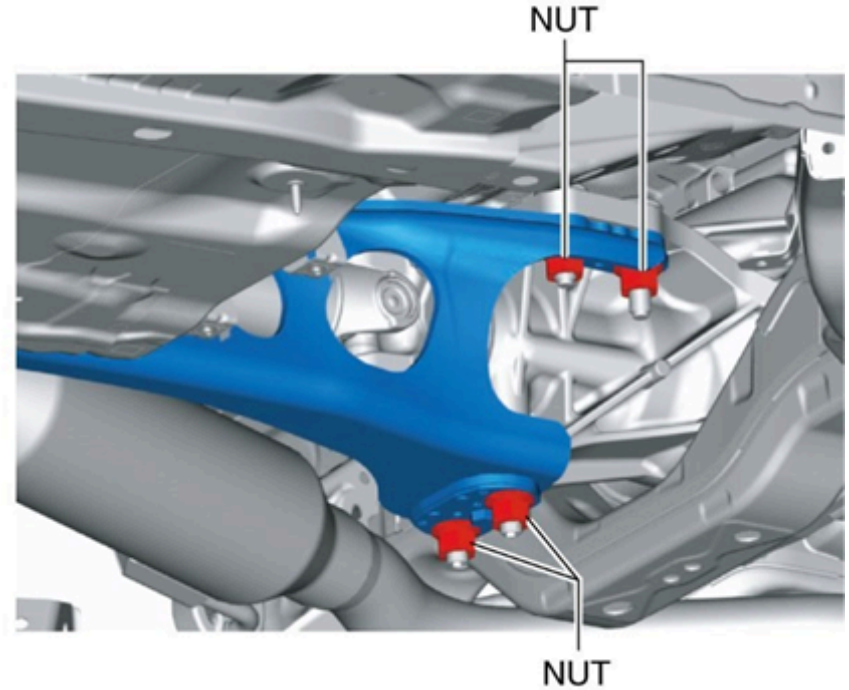
N·m {kgf·m, ft·lbf}



NUT

**Tightening torque**

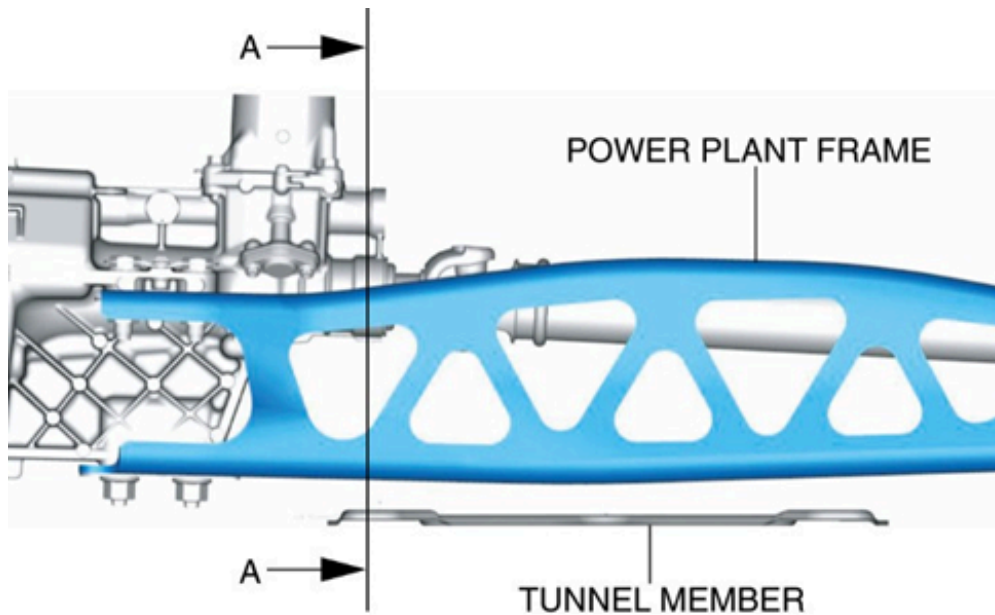
**135–164 N·m {14–16 kgf·m, 100–120 ft·lbf}**



NUT

**Tightening torque**

**164–200 N·m {17–20 kgf·m, 121–147 ft·lbf}**

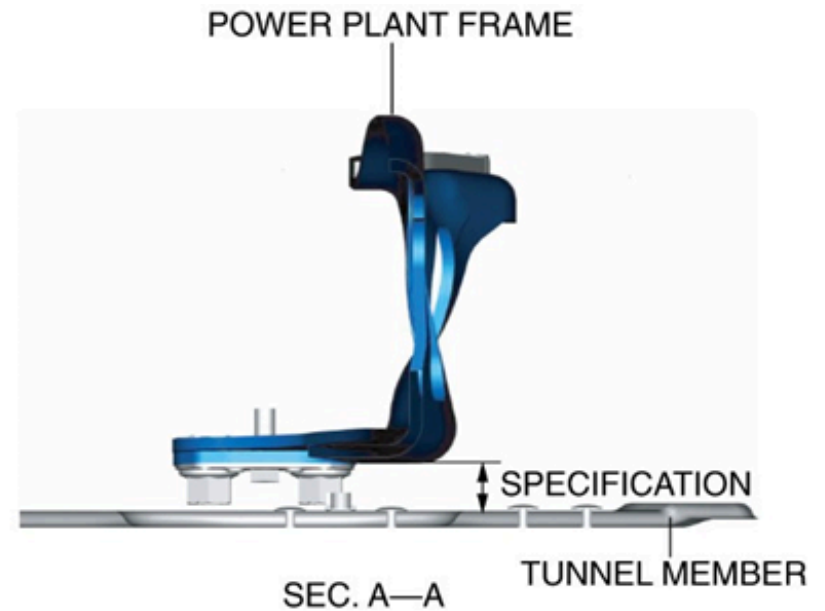


A →

POWER PLANT FRAME

A →

TUNNEL MEMBER



POWER PLANT FRAME

SPECIFICATION

SEC. A—A

TUNNEL MEMBER

**Specification**

- Between bottom surface of power plant frame and top surface of tunnel member: 22.4–28.4 mm {0.89–1.11 in}

## 26.0 Flis Performance Parts:

# Flis Performance Parts

To place an order, please contact:

Ashli Richardson

386-256-7021

Ashli@FlisPerformance.com

As of January 01, 2022 the Flis Performance Shoulder Belt Extension Bracket (Part #0000-08-5110-FPSH) will be the only homologated option for shoulder belt extension bars. Please note all Shoulder Belt Extension Brackets are built to order. **All existing extension brackets must be approved by the Series Technical Director. extension brackets must be approved by the Series Technical Director.**



Flis Performance Shoulder Belt Extension Bracket (Part #0000-08-5110-FPSH) Optional

ND2-TSB-2022-12-21 #B - Flis Performance  
Updated SADEV Heat Resistant Shift Knob - Optional



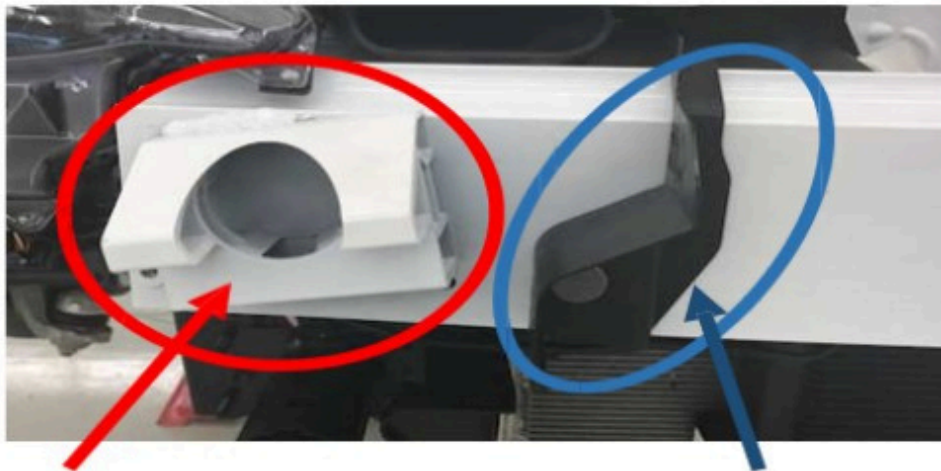
This Muffler Delete Pipe reduces damage to both front / rear bumper covers and assists with managing brake temperatures. There is an 8LB difference from the Muffler Delete Pipe weighing 6LBS and the MX-5 Cup Muffler weighing approx. 14LBS. Please adjust total weight accordingly.

Please keep your MX-5 Cup Muffler in your race inventory at every event.



Muffler Delete Pipe (Required)  
FLIS\_MFLR\_DLT

ND2-TSB-2023-01-10 - Flis Performance High Energy Bumper  
Insert - Required



Right & Left protrusions that must be removed

Air Guide that must be removed



High Energy Bumper Insert  
FPFTBUMPSPT



Dual Brake Duct Fog (Fascia-Left)  
0000-03-5601-LTDL (Optional)



Dual Brake Duct Fog (Fascia-Right)  
0000-03-5601-RTDL (Optional)



Dual Brake Duct Flange (Left) 0000-  
03-5601-BKLT (Optional)



Dual Brake Duct Flange (Right)  
0000-03-5601-BKRT (Optional)



Dual Brake Duct Kit (Optional)  
0000-03-5601-DLKT

# FAQ's

## MX-5C Series Used Car Check List:

Please refer to the Homologation Document for all Homologated parts.

### REQUIRED:

- High Energy Bumper Insert
- Brembo Front Brake Kit
- Pit Road Speed Limiter
- Muffler Delete Pipe
- MX-5C SADEV Gearbox
- Idemitsu Engine Oil 5w-40
- Idemitsu Gear Oil 75w-90

### OPTIONAL (Highly Recommended):

- Dual Brake Duct Kit
- C&R High Pressure Radiator 30lb Cap
- Diffuser
- Dash 8 Differential & Gearbox Line Kit
- AiM Sensors
- Braille Battery
- Shoulder Belt Extension Bracket
- Flis Performance Heat Resistant Shift Knob