TECH TIPS

Subaru Service and Technical Support Line Newsletter

June 2016

ARTICLES CONTAINED IN THIS ISSUE

2016 CALENDAR OF SUBARU HOLIDAYS

Independence Day
Monday, July 4, 2016

Labor Day
Monday, September 5, 2016

Thanksgiving
Thursday, November 24, 2016

01 QMR OF THE MONTH

We are pleased to announce this month's winner of QMR of the Month:

Daniel Meister from
Anderson Subaru in Pensacola, FL

Daniel submitted a very detailed QMR on his diagnosis and repair of a 2016 WRX with 13,000 miles where the customer reported they were hearing a rattle from the left most dashboard air vent when driving above 3000 rpm. Based upon the complaint, Daniel started his diagnosis by confirming the condition. He found the sound was originating from the clutch hose bracket in the engine compartment. Inspecting further, Daniel found that after removing the hose retaining clip, there were clear witness marks from vibration on it. He adjusted the clip so that it held the hose more rigidly to the bracket preventing any movement. This eliminated the sound as confirmed during a test drive to check the effectiveness of the repair. Daniel's report included many clear photos of the condition as he found it as well as a short video. The video showed how he confirmed the source of the sound statically by vibrating the hose by hand after duplicating the condition during the initial test drive. These details made it very clear how he arrived at the final result and provided useful feedback for manufacturing.

In appreciation for going the extra mile and sharing his experience with us, Daniel will be receiving the following from his FSE:

An **Apple iPad® Mini tablet** with a custom
Subaru Confidence in Motion case

Any Subaru Service Technician can participate in QMR of the Month. See the February 2013 and January 2016 Tech Tips for full details. You may see your name here in a future Tech Tips.

01 QMR OF THE MONTH AWARD PRESENTATION

As part of our "enhanced" QMR of the Month recognition program, we will be including a photo (whenever available) of the recipient's award presentation in TIPS. The winner selected from QMR of the Month submissions received during April, was Daniel Meister, a Technician at Anderson Subaru in Pensacola, FL. Daniel is shown above receiving his award and is joined by: (l to r), Billy Anderson, Dealer Principal, Ricky Stokes, Service and Parts Director and Jeff Sharkey, Field Service Engineer, SOA.

Congratulations and **THANK YOU** to April's QMR of the Month Award recipient!

01 SUBARU UNIVERSITY

Subaru-U is committed not only to the development of future Technicians, but also educating and training of existing Service personnel on how Automotive Education works and how to give back to local programs. The Subaru-U Program is a true partnership that cannot work unless all parties strive to make it work.

Over the next few months, a series of short articles will be released to help inform you, our retailers, about the education side of Subaru-U and what you can do to make the program a success and get the most out of it.

The ASE Family

Most customers have seen it, that white, blue and gold patch that adorns the shoulders of many technicians nationwide. Most Technicians today can tell you quite easily what ASE stands for. But what really is ASE? Why does it exist? What does ASE do? There is a lot more to ASE than just working to develop the current and future generations of qualified automotive Technicians. This is an overview of not only ASE but also the other organizations and what their purposes are in the ASE family.

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ASE- The National Institute for Automotive Service Excellence (originally NIASE) was created in 1972 as an independent organization designed to develop and implement a series of tests to benchmark and assess the competency of Technicians nationwide. Since that time, certification has expanded to not only Automotive but other areas such as Medium/ Heavy Truck, Collision Repair, Transit Bus and Parts Specialist. Although there have been many who are skeptical about the value of Technician Certification, it is currently the only method of measuring technical knowledge and competency of automotive Technicians. ASE Technicians generally make more money than their non-certified counterparts. In fact, Subaru now requires a Technician to be ASE certified in a particular area before being granted Specialist status in that area. Subaru has also developed Technician cash incentives through ASCENT to encourage completion of ASE Certification tests. Being an ASE certified Technician gives piece of mind to customers and helps to promote the service business.

NATEF- The National Automotive Technicians Education Foundation is the branch that provides accreditation to automotive education. Programs that are accredited have developed curriculum which meets specific objectives identical to other certified programs. This validates content consistency regardless of location. Founded in 1983 as an independent, non-profit 501(c)(3) organization, the mission of the National Automotive Technicians Education Foundation (NATEF) is to improve the quality of automotive Technician training programs nationwide at the secondary, post-secondary, public and proprietary schools. To accomplish this mission, NATEF examines the structure, resources and quality of training programs and evaluates them against standards established by the industry. These standards reflect the skills students must master on an ongoing basis to be successful in the industry.

AYES- Automotive Youth Educational Systems, or AYES, consists of Business and Education partnerships between both automotive retailers, aftermarket service employers, high school and college automotive technology schools.

Their goals are: To develop career-ready, entry-level automotive Technicians and service personnel, give high school automotive technology students the opportunity and guidance to explore rewarding automotive careers, and to provide the tools and support to develop and practice the skills needed to succeed in the industry. In addition to taking the academic courses toward their high school degrees, high school students take challenging classroom/laboratory courses in basic automotive technology, collision repair & refinishing, or diesel technology. The goal of the AYES model is a 320-hour internship opportunity. During this internship, students work alongside a trained and qualified mentor, usually an ASE-certified Master Technician, to help prepare them for entry-level career positions or advanced studies in automotive technology. AYES Students are enrolled in NATEF-accredited automotive service and collision repair programs. Employer partners promote automotive careers at the local level. They are also asked to get involved with their school's Advisory Committee, sponsor one or more students for paid internships, and often assist AYES Students in acquiring the needed tools to become successful.

ATMC- The Automotive Training Managers Council was founded in 1984 as a non-profit organization designed to promote the advancement of training and professional development within the automotive service industry. Recently reorganized as a member of the ASE Industry Education Alliance, the ATMC continues to help members stay abreast of innovations in automotive training by facilitating interaction among its members. The Council sees itself as a "think tank" of sorts for the automotive training industry, using its collective wisdom and experience to look into the foreseeable future on how people will learn, then helping each other prepare for that future. ATMC is a diverse group with about a third of its members coming from the OEMs, a third from the Aftermarket, and a third from entities that serve the training industry e.g. software developers, publishers, educators, along with tool and equipment manufacturers.

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01 SUBARU UNIVERSITY

We all share a common goal of improving the quality of training and development in the transportation industry.

CASE- The Continuing Automotive Service Education (CASE) program offers an accreditation of providers of training for working Technicians. The Automotive Training Managers Council (ATMC) will evaluate the training providers' process of developing and delivering training and then recommend accreditation as an ASE Accredited Training Provider of Continuing Automotive Service Education (CASE). CASE certification is usually granted to organizations providing OEM Technician development.

NACAT- North American Council of Automotive Teachers (NACAT) is the ONLY international organization devoted to teachers and trainers of automotive technology and its related fields. NACAT's mission is to promote, update and improve automotive service education. It is the ongoing goal of NACAT to develop and maintain a strong professional organization that will serve the needs of automotive educators in public and private enterprise throughout North America.

Without these and other organizations, the quality of the automotive Technician, Technician education and training would undoubtedly be suspect at best. If you are a retailer and wish to work with your local automotive institution, ask them if they support these groups while making sure that you do also. As an industry, we need to work together to instill the faith from our customers and continue to increase the quality of work for and from the Technicians of today and tomorrow.

References:

About NATEF. Retrieved from http://www.natef.org/About-NATEF.aspx

About us-AYES. Retrieved from https://www.ayes.org/About-Us.aspx

ATMC-What is ATMC? Retrieved from http://www.atmc.org/page-1675113

ATMC-About CASE. Retrieved from http://www.atmc.org/page-1675135

What is NACAT? Retrieved form http://www.nacat.org/index.php/about-us/7-faqs/nacat-faq/12-what-is-nacat

03 AT LEARNING CONTROL INFORMATION

There have been a limited number of reports brought to the attention of Techline involving the Learning Control process aborting and being accompanied by the message "AT learning ended abnormally". When Technicians encounter this error, referring to the applicable Service Manual to verify the procedure should be the first step to determine the root cause. Another source of information pertaining to this can be found under the Help tab in the Subaru Select Monitor III. **Figure 1** shows the two different error messages you can receive during the AT Learning Control process. Each has a different diagnostic approach. Incorporated with the error messages are the Main Cause and Remedy tables, which are found in both the applicable Service Manual and under the Help tab of Subaru Select Monitor III.

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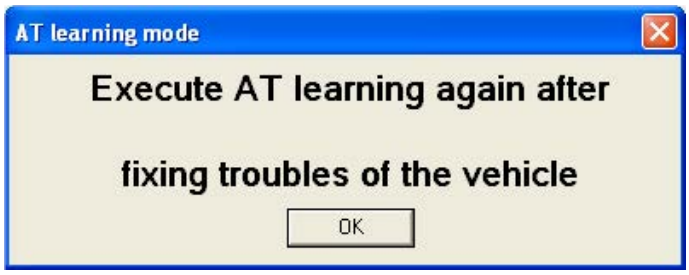
Figure 1 **Error Messages and Explanations**



Main causes of the contents shown	Remedy
Detection of DTCs	**Correct the DTCs and then perform the AT learning procedure again.**

Main causes of the contents shown	Remedy
Detection of DTCs	**Correct the DTCs and then perform the AT learning procedure again.**
• Un-instructed operations were taken during the AT learning process. • Depressing the brake pedal is not enough • Pulling the parking brake lever is not enough • Abnormal Idle Up	**Execute the [AT learning mode] again from the beginning**

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03 AT LEARNING CONTROL INFORMATION

When performing the Learning Control procedure, be aware of items such as:

Brake pedal application

- Firm pressure applied to the pedal is required. If insufficient pressure is applied to the brake pedal, the process will abort.
- When commanded to release the brake pedal, do so immediately and let the pedal return on its own.

Throttle input

- No throttle input should be used at any point during the Learning Control procedure.
- Any RPM deviation not created by the Learning Control process will abort the procedure, so verify there are no outside influences that could affect this.

Parking brake application

- Application of the parking brake requires enough force to keep both rear wheels stationary. Any movement of the rear wheels will abort the process.
- Verify the parking brake operates appropriately (no adjustments needed, calibration performed, etc.) according to the applicable Service Manual.

Fluid Temperature

- Please refer to the applicable Service Manual for the appropriate Learning Control procedures, including the required fluid temperature range.
- The process cannot be performed at the incorrect fluid temperature.
- Verify the fluid level is correct, as this will affect fluid temperature in some cases.

In rare cases when the tips provided above do not aid in completion of the Learning Control process, performing a short test drive of 5-7 miles may resolve the issue. In the event a test drive is determined as the next step, keep in mind the fluid temperature may rise beyond the specification required for Learning Control to complete, in which case a cool down period will be necessary.

03 TRANSMISSION REPLACEMENT PROCEDURES

As a reminder, when installing new or Remanufactured transmissions into Subaru vehicles, it is important to follow **ALL** required procedures. Neglecting to follow **ALL** required procedures will result in non-warranty failures, comebacks, and unsatisfied customers. **Figure 1** is an excerpt from Service Bulletin 03-67-12R, with a specific outlined section on transmission fluids. New or Remanufactured transmissions are **not filled with fluids** therefore, these procedures are critical when servicing.

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Figure 1

IMPORTANT

Before replacing a transmission with a remanufactured unit, it is critical that the installing technician performs the following:

- Ensure that the transmission radiator cooler and lines are clear of all debris and are not kinked or obstructed. The transmission oil cooler must be properly flushed per Subaru Service Bulletin 16-42-90R. Claims for transmission replacement or repair that fail to perform this procedure are subject to rejection or debit.
- If applicable for the model, install or replace the auxiliary filter.
- Check the remanufactured unit to ensure that it is the correct transmission for the application and not damaged in any way.
- Ensure all shipping plugs are removed from the remanufactured transmission prior to installation.
- Ensure the front differential and transmissions are filled with the proper gear oil and ATF:
  - All 5AT units (2006MY & after) must use "ATF-HP/PS Fluid" in the transmission.
  - All CVT units in vehicles with naturally aspirated H4 engines must use "CVTF-II" fluid in the transmission, which is green. Remanufactured CVT's for 2010-2014MY vehicles may contain a residual amount of the old "CVT C-30" fluid, which is blue. Mixing green and blue fluids in pre-2015MY vehicles is acceptable. Any 2015MY and up CVT should never contain, and cannot use, the blue "CVT C-30" fluid.
  - All CVT units in vehicles with turbo H4 or H6 engines must use "CVT ATF High Torque" fluid in the transmission, which is orange.
- Depending on model and model year of vehicle, learning procedures may be required. Please refer to Subaru Service bulletin 16-72-07 for details. Failure to perform the learning procedures could result in performance issues.

Failing to fill the front differential or the AT with fluid in the replacement transmission will result in catastrophic failure which is not a matter for warranty. Locating the correct fluid type to be used can be found in the applicable Service Manual under the General Description section for the specific unit being installed into the vehicle. In order to verify the specific transmission being serviced (e.g. TR580, TR690), referencing the applicable Service Manual Identification section will assist in locating the unit type label. **Figure 2** is an excerpt from the Service Manual showing the process of checking the front differential fluid level on a TR580 CVT. **NOTE:** When checking the front differential fluid level after transmission installation, some residual fluid will drain from the check orifice and is not to be included with the total amount. Nor should it be considered an indication that the differential is full. Always add gear oil until it flows from the stand tube to ensure the differential is completely full.

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03 TRANSMISSION REPLACEMENT PROCEDURES

Figure 2

Differential Gear Oil

CONTINUOUSLY VARIABLE TRANSMISSION

3. Differential Gear Oil

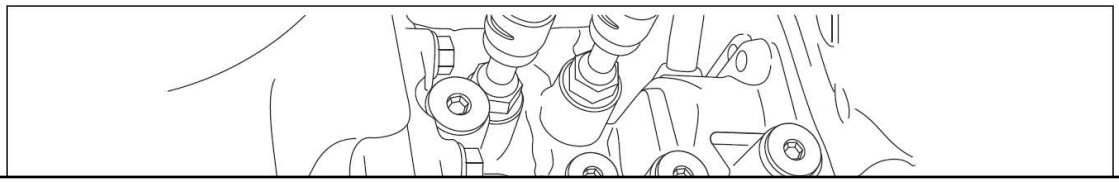
A: INSPECTION

Check that there is no leakage of differential gear oil from the converter case.

B: ADJUSTMENT

NOTE:
Immediately after removing the overflow drain plug, remaining gear oil (approx. 8 cc) may come out of the overflow pipe. This is not included in the specified amount. When removing the overflow drain plug, make sure the gear oil flows out of the overflow drain plug hole by filling with gear oil.

1) Lift up the vehicle.
2) Remove the under cover front - transmission.
3) Remove the filler plug.



Please review Service Bulletins 03-67-12R and 16-63-99R for additional procedure information outlining transmission replacement.

07 NO CRANK NO START DIAGNOSIS

If you receive a concern from a customer of a no crank or no start, here are a few things that could aid your diagnosis. Before attempting to diagnose, collect as much information as possible. Often times, the issue is lack of information. Many times when the car will not start, there will be a message on the combination meter which can point you in the right direction. Below are some standard questions that if the customer can answer will help you diagnose the vehicle. If the issue is intermittent and you cannot duplicate, it these are things to review with the customer so they know what to look for if the issue occurs again.

- When the issue occurs, does the green light on the Start button illuminate? If the green light on the push start button does not come on, is it orange or blank? If the light appears blank there is a possibility there was no brake switch input, or there is a power or ground failure. Check the related connections and brake switch input. If power and ground are OK, check the vehicle's ignition lock antenna and related connections.
- Is there any message displayed on the combination meter when the issue occurs? If so, what is the message? Examples below:

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Place vehicle in park: Indicates the keyless access module is not receiving a park input. Check the park switch in the shifter assembly. If no issue, check the inhibitor switch circuit for failures.

Keyless access disabled: Indicates the key is not in range or recognized. Check the in car antenna circuit. If no issue found, be sure to check the fuses and power supply for the keyless access system.

Steering Wheel Locked: This indicates the steering wheel lock was not disengaged. Try to wiggle the steering wheel back and forth to release the steering wheel lock. The start button LED will flash GREEN.

- If the vehicle is equipped with a Remote Engine Start, does it operate?
- Have all the keys been tried?
- How often does the issue occur?

Examples below from a 2016 Impreza:

Foot Off brake, Access key in vehicle.

Foot on Brake, Access key in Vehicle.

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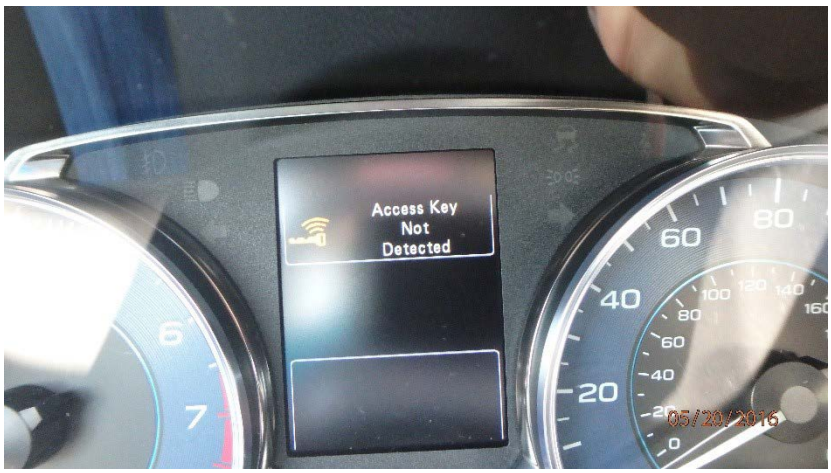
Foot off brake, start button pressed (ACC Mode)

Steering wheel locked message in IP (Start button LED flashes GREEN)



Key not detected message in combination meter display. Start button LED OFF.

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07 NO CRANK NO START DIAGNOSIS

Transmission select lever is not the “P” position, or the park signal is not received.

00 STIS NEW RELEASES

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
A091SSG000	Accessory Installation Guide	2015-17MY Legacy and Outback Engine Block Heater Kit (4 Cylinder)	21-Jun-16
06-55-16	Technical Service Bulletin	Design Change to Stop Light Switch	17-Jun-16
06-46-14R	Technical Service Bulletin	Revised Brake Light Switch Adjustment Procedure for DTCs C1531 and C0054	17-Jun-16
06-48-15R	Technical Service Bulletin	Design Change to Stop Light Switch	17-Jun-16
SOA801P010	Accessory Installation Guide	Legacy and Outback Door Edge Guards	16-Jun-16
SOA801P020	Accessory Installation Guide	WRX and WRX STI Door Edge Guards	16-Jun-16
SOA801P000	Accessory Installation Guide	Forester Door Edge Guards	16-Jun-16
10-84-16R	Technical Service Bulletin	New A/C Compressor / Clutch Assembly	14-Jun-16
E2610CA010	Accessory Installation Guide	STI Side Under Spoiler	14-Jun-16

All revised publications are highlighted in yellow.

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00 STIS NEW RELEASES

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
15-202-16	Technical Service Bulletin	Turbo Boost Gauge Removal Procedure	27-Jun-16
06-55-16R	Technical Service Bulletin	Design Change to Stop Light Switch	24-Jun-16
06-42-12R	Technical Service Bulletin	ABS Wheel Speed Sensor (rear)	24-Jun-16
06-56-16	Technical Service Bulletin	New Rear Wheel ABS Sensor Replacement Parts	24-Jun-16
A091SSG000	Accessory Installation Guide	2015-17MY Legacy and Outback Engine Block Heater Kit (4 Cylinder)	21-Jun-16
06-46-14R	Technical Service Bulletin	Revised Brake Light Switch Adjustment Procedure for DTCs C1531 and C0054	17-Jun-16
06-48-15R	Technical Service Bulletin	Design Change to Stop Light Switch	17-Jun-16
SOA801P010	Accessory Installation Guide	Legacy and Outback Door Edge Guards	16-Jun-16
SOA801P020	Accessory Installation Guide	WRX and WRX STI Door Edge Guards	16-Jun-16
SOA801P000	Accessory Installation Guide	Forester Door Edge Guards	16-Jun-16
10-84-16R	Technical Service Bulletin	New A/C Compressor / Clutch Assembly	14-Jun-16
E2610CA010	Accessory Installation Guide	STI Side Under Spoiler	14-Jun-16
05-60-15R	Technical Service Bulletin	Rattling Sound from Front Suspension While Driving Inspection Method for Loose Strut Retaining Nut	13-Jun-16
01-173-16	Technical Service Bulletin	New SDS Notebook Login Procedure	9-Jun-16
12-200-16	Technical Service Bulletin	Rear Combination Lamp and Related Enhancements	8-Jun-16
A091SSG000	Accessory Installation Guide	2017 Forester Engine Block Heater Kit (Non-Turbo)	8-Jun-16

All revised publications are highlighted in yellow.

CONTINUED ON THE NEXT PAGE

00 STIS NEW RELEASES

ITEM CODE	ITEM TYPE	TITLE	CREATED DATE
A091SSG000	Accessory Installation Guide	2014-2017 Forester Engine Block Heater Kit (Turbo)	8-Jun-16
WTD-65	Subaru Product / Campaign Bulletin	Inspection and Repair Procedure for Stop Sale / Recall Campaign WTD-65: Steering Column	8-Jun-16
WTD-65_RP	Other / Miscella-neous	Inspection and Repair Procedure for Stop Sale / Recall Campaign WTD-65: Steering Column	8-Jun-16
15-201-16	Technical Service Bulletin	Tonneau Cover Design Change	7-Jun-16
	HTML Diagnostics	2017MY WRX and WRX STI Service Manual V1	7-Jun-16
12-201-16	Technical Service Bulletin	Paint Chipping between Hood Grille (Scoop) and Hood	7-Jun-16
12-186-15R	Technical Service Bulletin	Paint Chipping between Hood Grille (Scoop) and Hood	6-Jun-16
H501SVA100	Accessory Installation Guide	2017 WRX Auto Dimming Interior Mirror	2-Jun-16
H501SSG301	Accessory Installation Guide	2017 Forester Interior Auto Dimming Mirror	2-Jun-16
H501SSG300	Accessory Installation Guide	2017 Legacy and Outback Interior Auto Dimming Mirror	2-Jun-16
18-187-16	Service Manual Correction	Service Manual Corrections	2-Jun-16
MSA5P2605C	Technician Reference Booklet	Electrical Theory and Diagnosis (June 2016)	2-Jun-16
MSA5P2106C	Technician Reference Booklet	Engine Theory and Diagnosis (June 2016)	2-Jun-16
E771SAL300	Accessory Installation Guide	2015-17MY Legacy Rear Bumper Applique	1-Jun-16
07-109-16	Technical Service Bulletin	Hard Starting	31-May-16
15-200-16	Technical Service Bulletin	Fujitsu-TEN / FTEN / (F10) Navigation: Voice Recognition Concerns	26-May-16

All revised publications are highlighted in yellow.

***** NOW YOU CAN E-MAIL YOUR TECHTIPS INPUT AND SUGGESTIONS TO: TECH@SUBARU.COM *****

This is your chance to offer suggestions for use in future issues of TechTIPS! Make sure that if you e-mail us, you place in the subject line of your e-mail "For TechTIPS Newsletter". Thank you!

MODEL: _____

YEAR: _____

VIN: _____

Description of situation encountered: _____

_____

_____

_____

Your suggestion for repair procedure, product improvements, etc.: _____

_____

_____

_____

Please attach separate sheets, if necessary. You may also want to include Service Manual diagrams or references, or your own drawings to assist in describing your suggestion. All information submitted becomes the property of Subaru of America, Inc. Permission is granted to Subaru of America, Inc. to print your name and suggestions in TechTIPS and other Subaru of America, Inc. publications. Mail items to: PO Box 6000, Cherry Hill, NJ 08034-6000.

Your Name: _____

Signature: _____

Dealer's Name: _____

City: _____

Date: _____

Dealer Code: _____

SUBARU TECHLINE
Hours of Operation

Monday – Thursday 8:30 am to 7:30 pm
Friday 10:30 am to 5 pm and Saturday 9 am to 3 pm