2025 Formula SAE Japan

2025 Formula SAE Japan Local Rules

1st Edition

Issued: December 20, 2025

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The purpose of this document is to inform of the local rules that must apply to 2025 Formula SAE Japan. Any additional local rules that become necessary must be posted on the FSAEJ official website as they become available. These local rules are valid for 2025 Formula SAE Japan only.

Formula SAE Japan Rules Committee

GR - General Regulations

J2025-GR-01 Competition Year

(refer to Formula SAE® Rules 2025 GR. 9.2.1, FSAEJ 2025 Participation Rules Article 10)

Competition Year starts when the vehicle takes its first technical inspection at the competition, not when the team registers.**J2025-GR-02 Formula SAE Japan Eligibility(refer to Formula SAE® Rules 2025 GR.9.3.2, FSAEJ 2025 Participation Rules Article 10)**

Second Year Vehicles may enter Formula SAE Japan only in the EV Class, if they meet or are modified to meet all the rules of 2025 Formula SAE Japan.

F - Chassis and Structural

J2025-F-01 Baseline Steel Material

(refer to Formula SAE® Rules 2025 F.3.4.2)

The baseline steel material must be a material that satisfies the following condition.

Mild or alloy steel with a minimum tensile strength of 290 N/mm^2 as guaranteed by a mechanical strength standard. The “STKM11A” is one of them.

J2025-F-02 Upper Side Impact Member and IA height

(refer to Formula SAE® Rules 2025 F.6.4.4, F.8.5.6)

The followings are accepted at the Technical Inspection:

(1) Photo evidence

Teams may bring photo evidence shown in APPENDIX J-F-1 and skip the measurement.

(2) Team proposed measurement methods

Teams may propose measurement methods if they are appropriate.

If none of the above is presented, the Technical Inspectors indicate the measurement methods, and teams must follow them.

J2025-F-03 Custom Impact Attenuator

(refer to Formula SAE® Rules 2025 F.8.4.2)

Add the following to F.8.4.2 as e.

e. Designed with a closed front section.

J2025-F-04 Standard Foam Impact Attenuator

(refer to Formula SAE® Rules 2025 F.8.3.3d)

DuPont Styro Corporation's DX-45 is considered equivalent material to IMPAXX™ 700 for Standard Foam Impact Attenuator.

J2025-F-05 Thickness of the floor or bottom for Accumulator Container

(refer to Formula SAE® Rules 2025 F.10.2.1.b)

An aluminum sheet thickness of 3.2 mm (0.125 inches) is accepted up to a negative tolerance of 10%.

J2025-F-06 Detachable Rear Impact Protection

(refer to Formula SAE® Rules 2025 F.11.3, F.5.1.2)

For Detachable Rear Impact Protection (Rear Bulkhead and bracing)

Tubing Attachments must meet all of below:

・F.5.4 Fasteners in Primary Structure

・F.5.13 Other Bracing Requirements

Using Welded Tube Inserts is strongly recommended.

Composite Attachment must meet all of below:

・F.5.4 Fasteners in Primary Structure

・F.7.8.1 Strength per an attachment

・F.7.8.3 Load condition

・F.7.8.4 Proof in the SES

・F.7.8.5 Minimum fastener requirement

・F.7.8.6 Backing Plate

・F.7.8.8 Solid inserts or local elimination.

Be sure to understand that RIP is F.1.10 Primary Structure

J2025-F-07 Clarification regarding Monocoque

(refer to Formula SAE® Rules 2025 F.4.2.2)

Add to F.4.2.2

g. The thickness of Outer/Inner Skin and Core described about Laminate Test in the SES must be actual measured value. And, they must NOT be local minimum thickness.

Since this item is a test report, it is inappropriate to evaluate it using design thickness.

h. Any changes to the value described about Laminate Test in the SES after approval are prohibited. However, if changes are unavoidable, resubmission may be permitted depending on the reason until the submission of the shakedown certificate.

(refer to Formula SAE® Rules 2025 F.7.1.4)

Inspection holes are required for:

- FB (Front Bulkhead)
- FBHS (Front Bulkhead Support)
- FHB (Front Hoop Brace)
- SIS Floor (Floor of Side Impact Structure)
- MBHS (Main Hoop Brace Support)
- SP (Steering Protection)
- (EV only) ASP (Accumulator Side Protection)
- (EV only) TSP (Tractive System Side Protection)
- (EV only) RIP (Rear Impact Protection)

They are NOT required for any attachment points.

The area around the inspection hole (approximately 10 mm from the center of the hole) must not be painted, have stickers or sheets attached.

T - Technical Aspects

J2025-T-01 Method of Inspection for Cockpit Opening and Internal Cross Section

(refer to Formula SAE® Rules 2025 T.1.1.1, T.1.2.1)

(1) Template **T.1.2.1 may be moved vertically within 50 mm** only in order to avoid interference with the rack and pinion unit.

(2) Template **T.1.2.1** may be split into left and right sections to enable inspection even when the rack and pinion unit is positioned on the lower frame. In other words, the slit in template **T.1.2.1** may be extended to the top and bottom sides.

(3) Template **T.1.2.1** must be placed perpendicular to an axis formed assuming a straight line from the cockpit to the pedals and moved parallel to that axis. During this movement, template **T.1.2.1** may be rotated within ±45 degrees around the back and forth axis.

(4) The splined part of the steering shaft may be excluded from the inspection range of Template **T.1.1.1.**

J2025-T-02 Driver Harness Installation

(refer to Formula SAE® Rules 2025 T.2.5 - T.2.7)

One belt may be attached to the eyebolt compliance with JIS B 1168-1994.

- If shoulder or lap harness is mounted to the above as an eyebolt, it must be M10 or greater.
- If anti-submarine harness is mounted to the above as an eyebolt, it must be M8 or greater.

  "As an eyebolt" stands for fastening with its thread.
- T.2.4.4b is NOT required for the above as a pad-eye, if its base is welded all perimeter.

  "As a pad-eye" stands for cut off its thread part and welding its eye part.

For shoulder and/or anti-submarine, wrap mounting is recommended.

Refer to the table of APPENDIX J-T-1.

J2025-T-03 Relaxation of Requirement for Accelerator Pedal Position Sensors (APPS)

(refer to Formula SAE® Rules 2025-T.4.2.3)

APPS sensors do not need to satisfy the rule T.4.2.3.

J2025-T-04 Scatter Shield

(refer to Formula SAE® Rules 2025 T.5.3.2)

The small gap between the Scatter Shields adjacent to the hole in the motor casing is permitted.

The scatter shield is not required if the motor holes are on a surface perpendicular to the axis of rotation.

J2025-T-05 Material of Firewall

(refer to Formula SAE® Rules 2025 T.1.8)

Based on GR1.5, the following rules are established.

Material of Firewall must be, at minimum, one of these:

・Steel thickness 0.5mm

・Aluminum thickness 0.7mm

・embrella® (Multi-layer any thickness or Single-layer over 1.0mm)

・Equivalent above and meet F.1.18 (Evidence will be required in the technical inspection)

Aluminum Tape must NOT be used as Firewall.

J2025-T-06 The heat-resistant temperature of the catch tank

(refer to Formula SAE® Rules 2025 T.5.6)

Based on GR1.5, the following rules are established.

The heat-resistant temperature of catch tank must be appropriate.

For ICV coolant, it must be 120℃ or higher.

For ICV engine oil, it must be 140℃ or higher.

For EV coolant & oil, it should be 120℃ or higher, and it must be higher than 100℃.

The temperature of boiling water with pressure type radiator cap will be higher than 120℃.

VE - Vehicle and Driver Equipment

J2025-VE-01 Vehicle Number stickers

(refer to Formula SAE® Rules 2025 1.1)

The Vehicle Number stickers will be supplied to the teams at the competition site by the organizer. They have approximate dimensions of 297 mm (width) × 210 mm (height). Locations; In three places, on the front of the chassis and the left and right sides. The left and right sides must be attached in a place that can be seen from the side.

J2025-VE-02 SAE Logo

(refer to Formula SAE® Rules 2025 VE.1.3)

The SAE International Logo is not required.

J2025-VE-03 Size of Technical Inspection Stickers

(refer to Formula SAE® Rules 2025 VE.1.4)

The stickers indicating that the technical inspection has been passed are divided in parts, with total dimensions of 150 mm (width) × 100 mm (height).

J2025-VE-04 Transponder

(refer to Formula SAE® Rules 2025 VE.1.5)

Any transponder is NOT used in 2025 Formula SAE Japan.

J2025-VE-05 Quick Jack

(refer to Formula SAE® Rules 2025 VE.2.1)

It must be possible to move the vehicle at all times using the quick jack shown in the APPENDIX J-VE-1 without any additional manual effort. It must also be possible to utilize the quick jack without interfering with the vehicle body (i.e., the cowling, undercover, and so on).

J2025-VE-06 Fire Extinguishers

(refer to Formula SAE® Rules 2025 VE.2.3)

(1) Teams may use fire extinguishers with NO pressure gauge. However, each fire extinguisher must be within its expiration date and the operation lever seal must be in place. For fire extinguishers without a displayed expiration date, it must be within 5 years from the date of manufacture.

(2) The fire extinguishers should be 3-ABC type

(3) There is no problem when CO2 type is used outside, but there is a risk of suffocation when used indoors such as garages.

Therefore, care must be taken. (Ex of security: Preparing indoor & outdoor products.)

"Refer to Carbon Dioxide as a Fire Suppressant: Examining the Risks | US EPA "

J2025-VE-07 Driver's Equipment

(refer to Formula SAE® Rules 2025 VE.3)

The equipment in accordance with the latest standards which is equivalent or safer than Formula SAE® Rules 2025 is accepted.

IC – Internal Combustion Engine Vehicles

J2025-IC-01 Fuel Allowed at FSAEJ

(refer to Formula SAE® Rules 2025 IC.5.1.1)

The fuel provided is only unleaded gasoline with Research Octane Number (RON) of 100.

J2025-IC-02 Fuel Supply

(refer to Formula SAE® Rules 2025 IC.5.2)

Teams may fully refuel the tank of the vehicle at the fueling station before undergoing the Technical Inspections.

J2025-IC-03 Extracting fuel from the Fuel Tank

(refer to Formula SAE® Rules 2025 IC.5.3.5)

The Fuel System must have a provision for emptying the Fuel Tank without any electric motor pump.

J2025-IC-04 Color of Master Switches

(refer to Formula SAE® Rules 2025 IC.9.4)

In ICV Class, the Master Switches must be red.

The cockpit-mounted switches except the Master Switch must NOT be red.

EV – Electric Vehicles

J2025-EV-01 Energy Meter Specification

(refer to Formula SAE® Rules 2025 EV.3.2.1 , AD.2.2)

EV teams must use the Energy Meter distributed by the organizer for the Dynamic Event.Formula Student Germany FSE2016 Energy meters will be used as Energy Meters.

J2025-EV-02 Energy Meter data download

(refer to Formula SAE® Rules 2025 EV.3.4.2)

The EM data download will be conducted by officials.

Immediately after participating in each Dynamic Event, each team must bring its vehicle to the designated data download area to download area.

J2025-EV-03 Relaxation of Tractive System connectors

(refer to Formula SAE® Rules 2025 EV.5.9, IN.4.7.1)

Tractive System connectors outside of a housing must meet one of the two:

- Contain an Interlock EV.7.8 which must Open the Shutdown Circuit EV.7.2.2
- Be sealed at EV Inspection IN.4.7.1

J2025-EV-04 Relaxation of Requirement for Bolted Electrical Connections

(refer to Formula SAE® Rules 2025 EV.6.4.3)

The positive locking features of bolted electrical connections in EV.6.4.3 is not required if the following three conditions are met.

·The connections must be properly fastened.

·Connections must not be subjected to external forces (tension, torsion, bending) from the wiring.

·The above conditions of the connections must be demonstrated at the EV inspection. (Proper fastening can be indicated by records of the tightening torque and/or rivet crimping force).

J2025-EV-05 Relaxation of insulation distance

(refer to Formula SAE® Rules 2025 EV.6.5.7)

When devices such as opto-couplers are used on the printed circuit board and the devices themselves have an approved isolation voltage (e.g. 3KV recognized by UL1577) above the maximum tractive system voltage, the

internal structure of the device does not need to comply with the spacing in EV.6.5.7.

J2025-EV-06 Relaxation of Requirement for the Overcurrent Protection

(refer to Formula SAE® Rules 2025 EV.6.6.3)

In the case of using parallel connected cells / strings, if each parallel cell / string has an overcurrent protection device designed to protect when all the current flows through only one side of the cell / string, then the overcurrent protection device do not need to comply with EV.6.6.3.

J2025-EV-07 Relaxation of BMS galvanic insulation

(refer to Formula SAE® Rules 2025 EV.7.3.2)

The BMS does not need to comply with EV.7.3.2 if a non-modified ready-made BMS with a data sheet is used, as approved in the ESF.

J2025-EV-08 Relaxation of Prohibition of Cell Balancing during shutdown

(refer to Formula SAE® Rules 2025 EV.7.3.3)

Cell balancing function on the BMS does not need to comply with EV.7.3.3.

J2025-EV-9 Relaxation of Placement of Temperature Sensor

(refer to Formula SAE® Rules 2025 EV.7.5.3, EV.7.5.4)

If the team uses a ready-made cell assembly with integrated temperature sensors without any modification, the temperature sensor is not required to apply to EV.7.5.3 and EV.7.5.4., as approved in the ESF.

J2025-EV-10 Relaxation of BSPD inspection methods

(refer to Formula SAE® Rules 2025 EV.7.7.4.b)

The BSPD test excludes the application of EV.7.7.4 b.

In EV vehicle inspections, the output signal of the current sensor can be replaced by a voltage signal from the power supply.

J2025-EV-11 Color of Shutdown Buttons

(refer to Formula SAE® Rules 2025 EV.7.10.3,EV.7.10.4)

The color of the EV shutdown button must be red.

All switches in the driver's cockpit other than the shutdown button must be other than red or orange.

J2025-EV-12 Relaxation of Chargers Requirements

(refer to Formula SAE® Rules 2025 EV.8.2.4, EV.8.4.1)

The following three functions may be exempted, provided that the Electrical System Form (ESF) describes the “Charging Procedure” and the “Charging Abnormality Procedure” and that the charging is performed by trained and skilled team members based on these procedures as approved in the ESF, with monitoring of the charging status.

(1) Interlock function related to the connection status of the connector specified in EV.8.2.4.

The ESF “Charging Procedure” must include a procedure for checking the connection status of the connector between the charger and the Accumulator Container.

(2) Function to open Charging Shutdown Circuit by BMS specified in EV.8.4.1 b.
(BMS abnormality detection information must be visible. The ESF must list the BMS abnormality detection items and their detection thresholds, along with the procedure for terminating charging.)
(3) Function to open Charging Shutdown Circuit by BMS specified in EV.8.4.1 b.
(The detection status of the IMD must be visually confirmed at all times, and the ESF "Charging Abnormality Procedure" must include the thresholds for determining when an abnormality is detected by the IMD, along with the procedure for terminating charging).

J2025-EV-13 Ready-To-Drive-Sound
(refer to Formula SAE® Rules 2025 EV.9.5)

Ready to Drive (RTD) indicator must be installed on the vehicle. Ready to Drive sound in EV.9.6 is not required and may be installed at the team's discretion.
The vehicle is not required to apply EV.9.5, if a Ready to Drive (RTD) indicator is provided.
The RTD Indicator Light must be:

a. Turn on when vehicle status is Ready to Drive
b. Color: Green
c. Clearly visible to the seated driver in bright sunlight
d. Clearly marked with the lettering "RTD"

IN - Technical Inspection

J2025-IN-01 Seals for the Rain Test
(refer to Formula SAE® Rules 2025 IN.2.6, IN.15.2, IN.11)

Any temporary equipment (tape, wrapping, etc.) installed on the vehicle for waterproofing or other purposes must be sealed after the rain test. If these seals are damaged or lost, the rain test must be done again.

J2025-IN-02 Driver Egress Test
(refer to Formula SAE® Rules 2025 IN.5.2)

In the Driver Egress Test, the direction of egress (i.e., to the left or right of the vehicle) will be instructed by the judges at that time.

J2025-IN-03 Measuring noise after an endurance run
(refer to Formula SAE® Rules 2025 IN.10)

When measuring noise after an endurance run, changes to the engine adjustment map are not permitted.

J2025-IN-04 Sound Measuring Procedure for CVT-Equipped Vehicles
(refer to Formula SAE® Rules 2025 IN.10.1.1)

Teams using a vehicle equipped with a CVT without a neutral position must prepare an apparatus that can safely hold the driving wheels in a completely floating state during sound measurement.

J2025-IN-05 Sound Measuring Procedure

(refer to Formula SAE® Rules 2025 IN.10.1.2)

There is no change to the measurement speed for engines used in 2025 Formula SAE Japan. The measurement speeds for other engines must be released on the team page later. The location of the microphone at an angle of 45° with the outlet in the horizontal plane must be instructed by the judges at that time.

Measuring time will be within 5 minutes from the microphone set up.

The function of stopping engine by master switch is also checked at this section.

J2025-IN-06 Remeasurement of Noise

(refer to Formula SAE® Rules 2025 IN.10.4.3, IN.10.5)

(1) The vehicle that completed the Endurance Event is subject to the noise test.

(2) The method of the noise testing applies IN.10.1.2 and local rule J2025-IN-05 correspondingly.

(3) It calls a penalty as follows according to measurements.

- Up to +1dB of Reference Value (RV) is NO penalty.
- Over +1dB up to +2dB of RV is a penalty of 10 points.
- Over +2dB of RV is a penalty of 20 points.

(4) If it cannot be measured regardless of the reason, the same penalty as the case of Over +2dB will be applied.

J2025-IN-07 Technical Inspection After the Endurance

(refer to Formula SAE® Rules 2025 IN.15, D.14)

The vehicles may be re-inspected after the Endurance and refueling are completed.

If any rule violation is found (in the vehicle or in the driver's equipment), a penalty may be applied.

J2025-IN-08 Clarification regarding Monocoque

(refer to Formula SAE® Rules 2025 IN.8.3.1)

The laminate thickness (In some cases the skin thickness also) will be measured using the special caliper shown in APPENDIX J-IN-1.

And both sides of the inspection holes must be directly visible. Evidence by photographs will not be accepted.

(refer to Formula SAE® Rules 2025 IN.8.3.4)

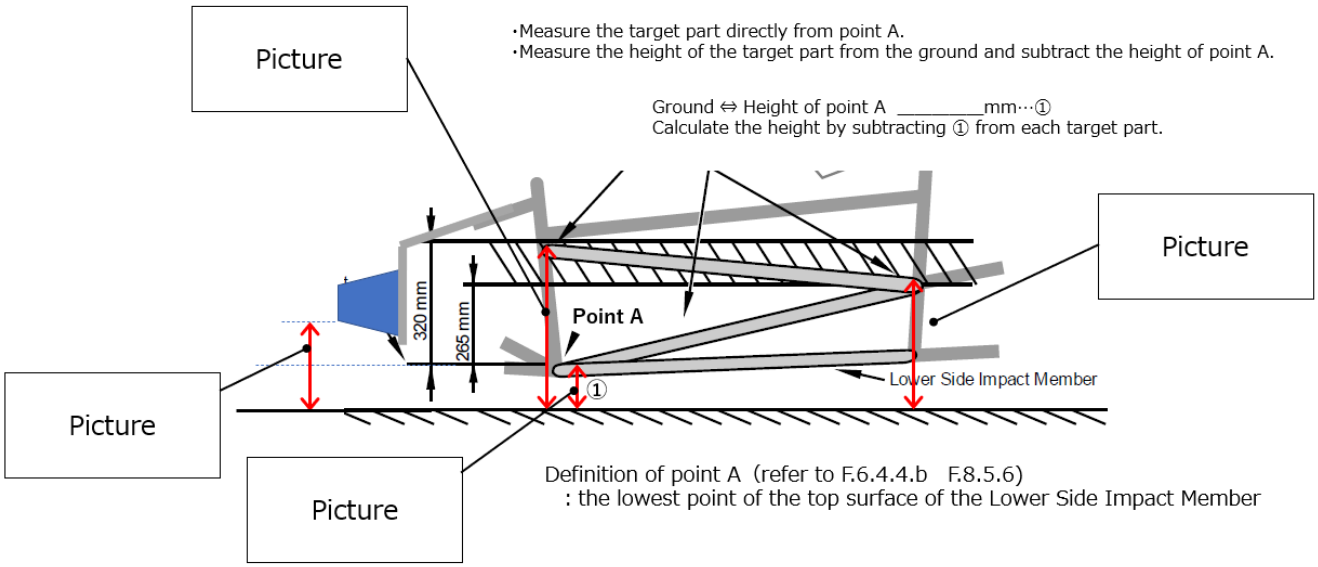
If the laminate test sample is thicker than the thickness described about Laminate Test (F.4.2) in the SES, the vehicle will be disqualified from the inspection.

If the laminate thickness of the actual vehicle is thinner than that described in the SES, F.4.4 Flat Panel calculation based on actual measurements must be equivalent or more. If it is not equivalent, the vehicle will be disqualified from the inspection.

The thickness of laminate in the SES will be adjusted by that of core. Scale option (layer repeats) must NOT be changed.

APPENDIX J-F-1 Photo Evidence (J2025-F-02)

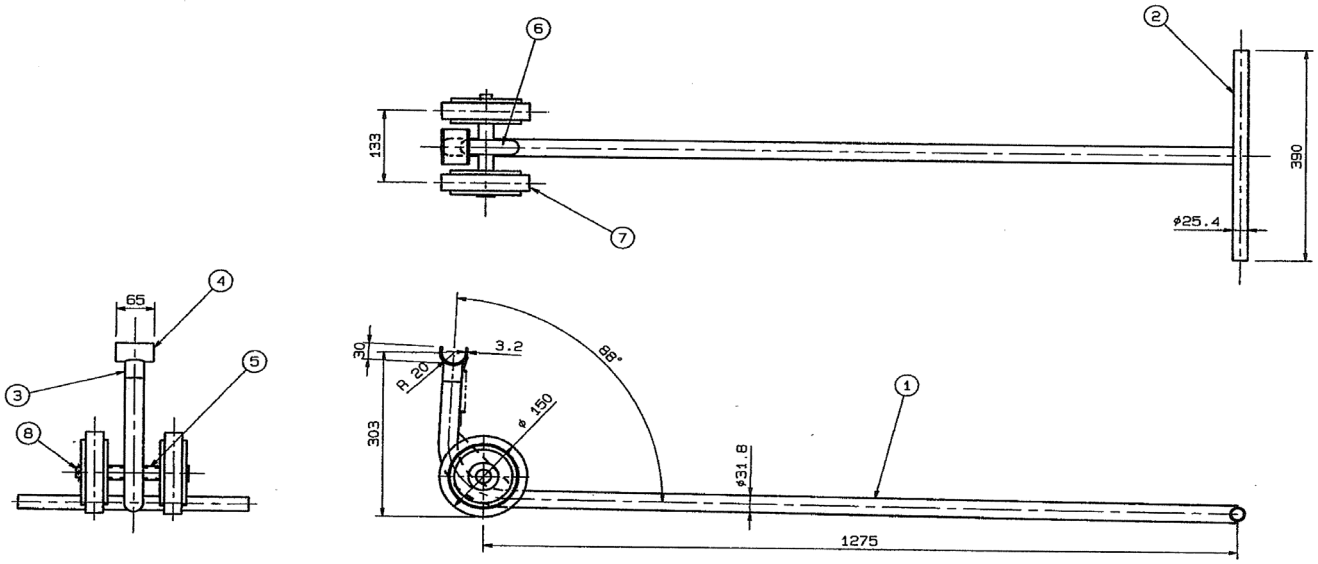
The dimensions that can prove conformity to each regulation are presented with photo evidence.



APPENDIX J-T-1 Driver Harness Installation (J2025-T-02)

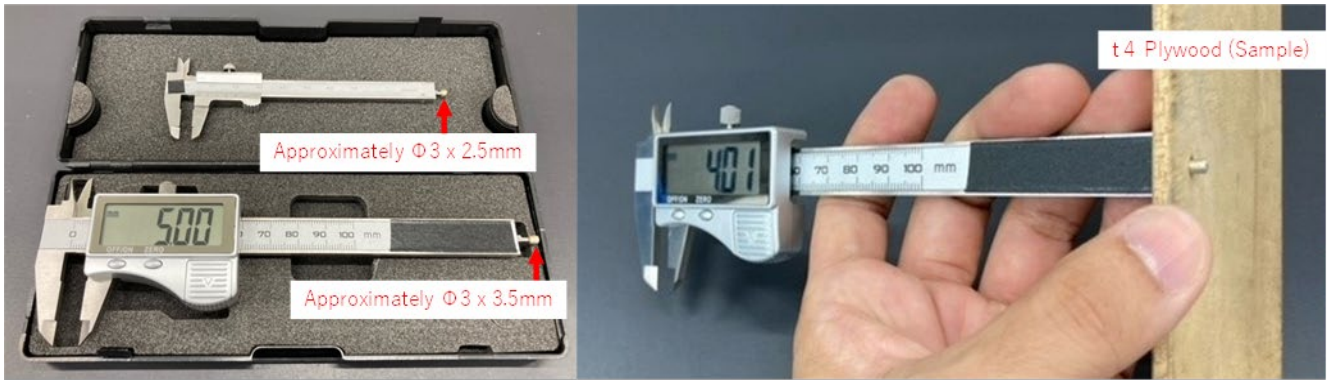
		1 Belt		2 Belts
		Shoulder/Lap	Anti-sub	All
Eye-Bolt compliance with JIS B 1168-1994	M8	Not OK	OK	Not OK
	M10 or more	OK	OK	Not OK
above as Pad-Eye (welded all perimeter)	M8 or more	OK	OK	Not OK

APPENDIX J-VE-1 <u>Quick Jack</u> (J2025-VE-05)



NO	PART NO	NAME	QTY	MATERIAL
8		SHAFT	1	S45C
7		TYRE	2	
6		GUSSET	1	SPCC t1.6
5		HOUSING	1	SPCC#25.4xt2.3
4		SUPPORT	1	SPCC t3.2
3		NECK	1	SS400
2		HANDLE	1	STKM#25.4xt1.6
1		MAIN TUBE	1	STKM#31.8xt1.6
		QUICK LIFT JACK	1	

APPENDIX J-IN-1 Special caliper for measuring laminate thickness (J2025-IN-08)



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