



# **RFQ for Equipment Modification of FSC 4W RH-Power & FSB RH-Power**

**12<sup>th</sup> Apr 2025**

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# Overview

## Secrecy/Confidentiality :

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ADDRESS	Adient India Pvt. Ltd. , Rajiv Gandhi Infotech Park, Hinjewadi Tal. Mulshi, Pune
PROJECT NAME	M & M – U171
SITE LOCATION	Adient, Pune
ANNUAL VOLUME	120,000 car set
PROGRAM LIFE	7 YEARS
QUOTE TYPE	Final Production Equipment

# INDEX

1. SUPPLIER SCOPE OF WORK
2. MODIFICATION DETAILS & REFERENCE IMAGES
3. ADIENT INPUT FOR MACHINE DESIGN
4. MACHINE/WORKSTATION DESIGN REQUIREMENTS
5. QUALITY REQUIREMENT FOR PRODUCT
6. PRODUCT INFORMATION
7. INDUSTRIAL ENGINEERING REQUIREMENTS
8. RECOMMENDED MAKES
9. ACCEPTANCE CRITERIA
10. DOCUMENTATION, SPARE & TRAINING
11. PACKAGING, TRANSPORTATION & INSTALLATION
12. TIMELINE
13. DV/PV BUILD SUPPORT
14. 19.WARRENTY, SUPPORT TILL SOP & AFTER SALES SUPPORT
15. RFQ SIGN OFF

# 1.SUPPLIER SCOPE OF WORK

Supplier will make necessary modifications in following equipment of FSC 4W RH Power & FSB RH Power as per details in RFQ. After modifications, supplier will do trials & prove at their end and later after installation at Adient works location. Supplier should meet Adient's Quality, Safety & Cycle time requirements.

**Supplier should comply to all requirements mentioned in RFQ. For any deviation, separate sign-off will be done.**

- 1) FSB RH – Motor assembly & Push nut pressing workstation
- 2) FSC 4W RH – Cross member and Motor assembly fixture
- 3) FSC 4W RH – Track to Riser Fastening workstation
- 4) FSC 4W RH – HA Fastening workstation
- 5) FS& RH & FSC 4W RH – Noise Chamber check Machine

# 2.MODIFICATION DETAILS & REFERENCE IMAGES

Existing fixture, workstation and machines of For FSB Power & FSC Power (Driver seat) are used for Tata Mid size SUV model. In upcoming program of M&M U171, driver power seat (Power FSB & Power FSC) also planned to use same equipment of Tata Mid Size SUV with necessary modifications as per details on following pages

# 1) FSB RH – Motor assembly & Push nut pressing workstation

## Modification Details

- 1) Replaceable mounting fixture for both variants
- 2) Addition of new checking position sensor as per new variant
- 3) Addition of variant in HMI
- 4) PLC program change



Existing workstation  
photo-snap

## 2) FSC 4W RH – Cross member and Motor assembly fixture

### Modification Details

- 1) Replaceable mounting fixture for both variants
- 2) Addition of new checking position sensor as per new variant
- 3) PLC program change



Existing fixture photo-snap



### 3) FSC 4W RH – Track to Riser Fastening workstation

#### Modification Details

- 1) Replaceable mounting fixture for both variants
- 2) Addition of new mimic board
- 3) HMI program change



Existing workstation  
photo-snap

## 4) FSC 4W RH – HA Fastening workstation

### Modification Details

- 1) Replaceable mounting fixture for both variants
- 2) Addition of new mimic board
- 3) HMI program change
- 4) Addition of new checking positions for HA



Existing workstation  
photo-snap



## 5) FS& RH & FSC 4W RH – Noise Chamber check Machine

### Modification Details

- 1) Replaceable mounting fixture for both variants
- 2) Addition of new mimic board
- 3) HMI program change
- 4) Addition of new checking positions



Existing Machine  
photo-snap

### 3. ADIENT INPUT FOR MACHINE DESIGN

Adient will share detailed RFQ along with following data to the supplier

- 1.CAD Data (3D) for each assembly
2. Engineering Drawing of assembly & its child parts with all details

### 4. MACHINE/WORKSTATION DESIGN REQUIREMENTS

- 1)Supplier will understand quality & functional requirement of drawings & accordingly submit proposal for modifications
  - 2)For fixture manufacturing following points should be considered
    - Modular jig/Fixture design to adopt product design changes
    - Robust Poka yoke system for prevention of missing, mis-oriented & wrong parts
  - 3)Supplier should have necessary 3D CAD design software for design
  - 4)Supplier & Adient will do necessary design reviews.
  - 5)Supplier will take care of all safety interlocks during design
  - 6)Machine should be maintenance friendly & easy to maintain
  - 8)Machine PLC logic should be edited from remote location through Data card using software like Teamviewer
- After DAP sign off, Machine will be kicked off for manufacturing

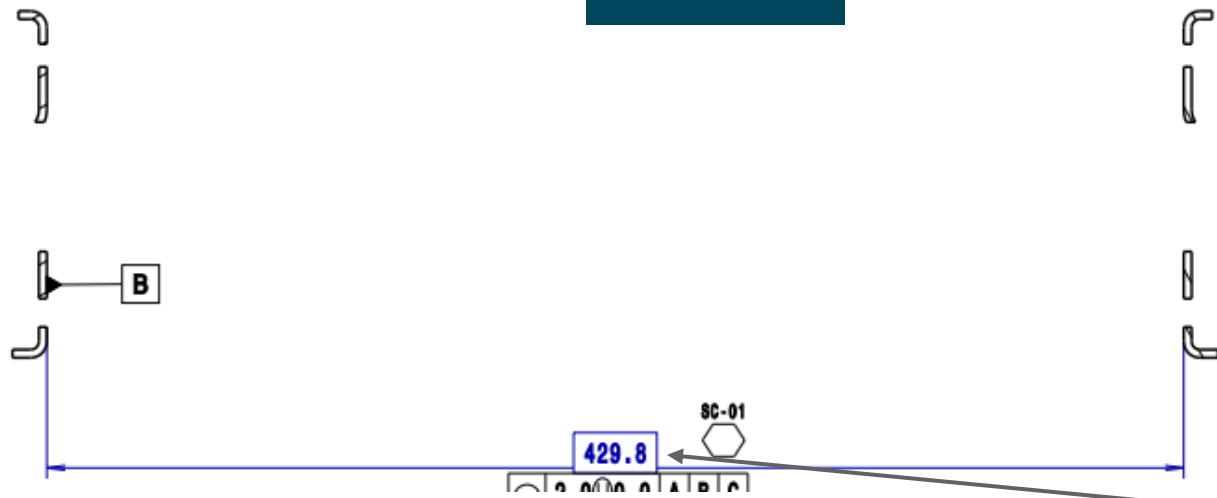
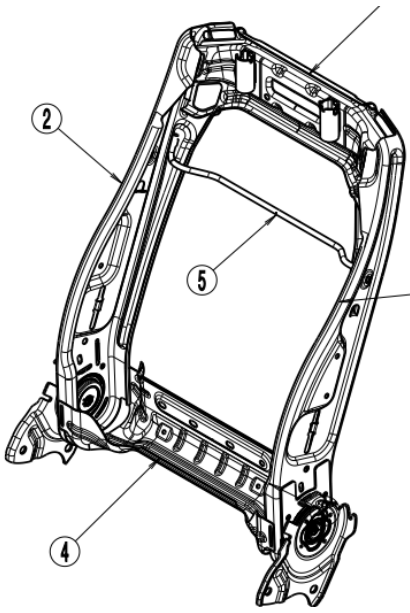
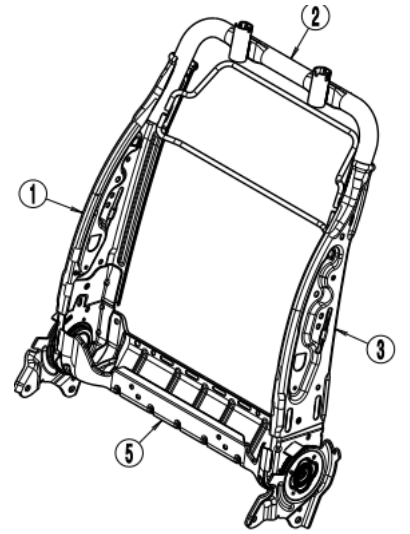
### 5.QUALITY REQUIREMENT FOR PRODUCT

After operation

- 1)HA tightening torque –  $11 \pm 1$  N-m ( 3 Locations)
- 2)Sequence of tightening (As per pre-decided sequence)

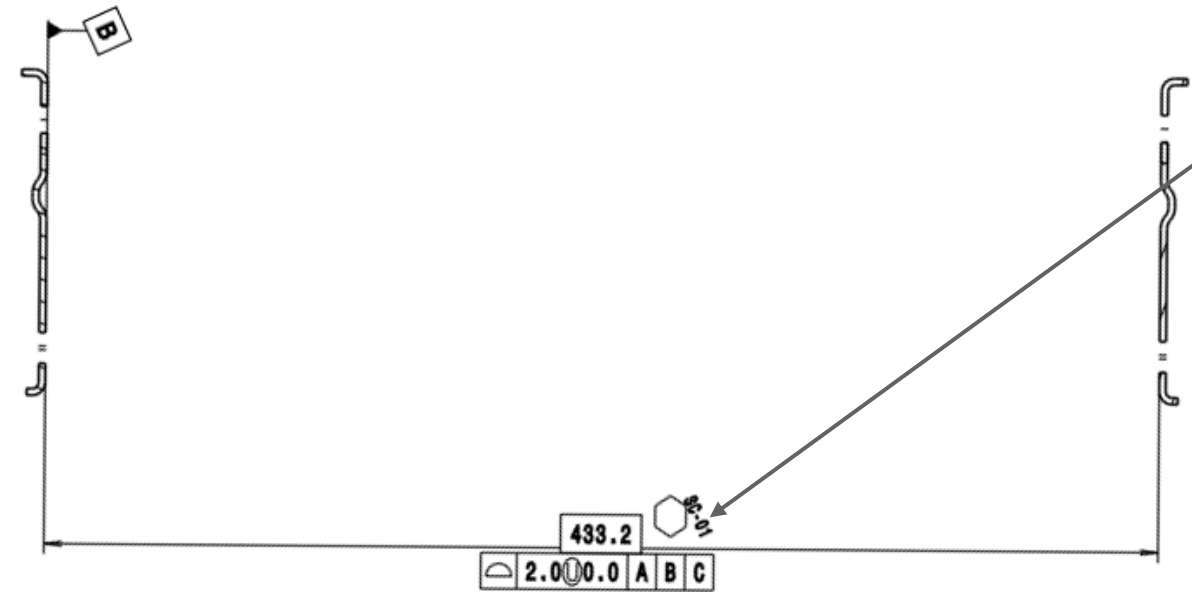
6.PRODUCT INFORMATION

FSB

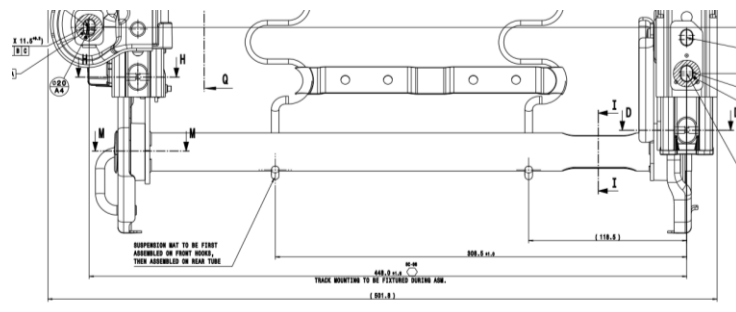
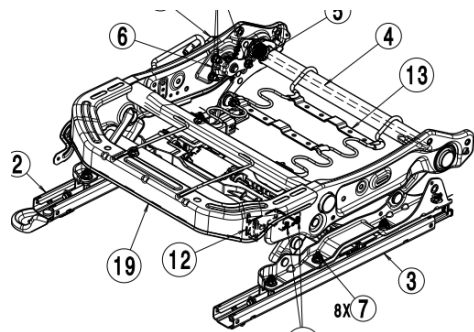


FSB mounting distance - 429.9 mm  
(Tata Mid size SUV)

Difference of 4 mm  
in mounting distance



FSB mounting distance – 433.2 mm  
(M&M U-171)

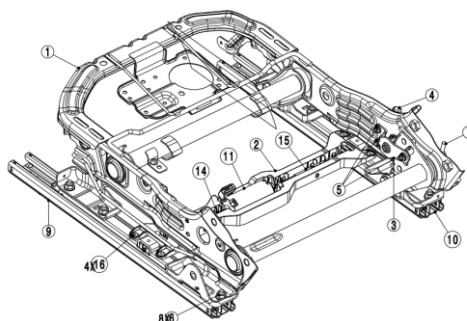


# FSC-4W

Y- Mounting distance 448 mm  
Z-direction offset – 45 mm

FSC mounting distance  
(Tata Mid size SUV)

Difference of 4 mm  
in mounting distance



Y-Mounting distance 445 mm  
Z-direction offset – 0 mm

FSC mounting distance  
(M&M U-171)

## 7. INDUSTRIAL ENGINEERING REQUIREMENTS

1. Machine should be designed with proper ergonomics to reduce operator fatigue.
2. Machine Usage - Three shift & six days working per week. Machine availability should be - 95%
3. No of operator per workstation – 1 No.
4. Machine down time : Should be less than 20 minutes per day
5. **Target Cycle time should match existing cycle time of machines**

## 8. RECOMMENDED MAKES

1. Electrical switchgears/Contactor : Schneider
2. Sensors – Keyence Retro-diffuse Laser sensor, Inductive sensor - Omron
3. Push Buttons & Indicators – Schneider
4. Cables – Lapp
5. PLC & HMI – Siemens
6. FRL unit & Pneumatics –Festo
7. SMPS/Power Supply – Meanwell/Omron
8. Control Panel & Machine Panel : Local make
9. Recirculating fan – Crompton Greaves , Almonard
10. Aluminum extrusion 40 mm & 80 mm– Local make
11. Polycarbonate sheet 8 mm thk – Lexan

**All makes will be finalized at the time of DAP**



## 9. ACCEPTANCE CRITERIA

1. Equipment run-off and trials will be held at supplier end.
2. All necessary Components will be provided by Adient before trials at supplier end.
3. Required consumables/compressed air/Electric supply will be arranged by supplier.
4. Trial production batch of minimum 50 nos. will be produced at supplier end to meet all Quality & Cycle time requirements
5. Supplier will provide facility for quality checking
6. Completed Equipment Qualification Form & safety analysis using the Adient Job Safety Analysis form.
7. No weld flash or burrs. No sharp corners or edges permitted in any area. Pinch points must be avoided

## 10.DOCUMENTATION, SPARES & TRAINING

1. Supplier will provide necessary Operating & Maintenance supplier's Manuals as Hardcopy & CD (pdf file) with following details
  - 1) System operating instructions
  - 2) Machine Layout
  - 3) Electrical diagram, wiring diagram
  - 4) Pneumatic circuit diagram
  - 5) Complete Fixture Assembly
  - 6) Bill of Material (Electrical & Mechanical)
  - 7) Preventive maintenance sheet (Electrical & Mechanical)
  - 8) List of recommended spare parts & wear parts (Electrical & Mechanical)
  - 9) Engineering drawing of wear part in pdf file
2. Supplier will provide 3D CAD data, drawings, Detailed CMM report of fixture showing datum, location & resting surfaces dimensions
3. **Supplier will provide 1 set of spare wear parts (Locator, Top punch etc.)**
4. Supplier will provide necessary training to Adient personnel for Usage, Handling & Trouble shooting of complete system at supplier end during trials and at Adient plant during installation.

# 11.PACKING, TRANSPORTATION & INSTALLATION

1. Supplier is responsible for proper packaging of machine. For packaging machine should be mounted in heavy duty base wooden platform. Machine should be fixed to base wooden platform by bolts. Complete machine will be Shrink-wrapped to avoid any damage due to water. Machine should be covered with wooden sheets from all side & top side.
2. After packaging supplier will use proper lifting devices to safety load packed machine into Transport vehicle
3. Transport of machine from supplier end to Hinjewadi plant is supplier responsibility.
4. Machine unloading at Adient Hinjewadi plant will be done by Adient team, with recommended unloading instructions from supplier. Supplier should provide specific unloading instruction if any through e-mail communication to Adient Program manager, Launch Manger & AME before dispatch of system
5. Machine installation, integration and setup in Adient plant will be the responsibility of the supplier.
6. Adient will provide Required consumables/compressed air/water/Oil during installation.

# 12.TIMELINE

After receipt of PO/LOI from Adient, within one week period, supplier should provide timeline for implementation mentioning major milestones like

- Clarity of additional inputs required from Adient
- 1<sup>st</sup> Design review between Adient & supplier
- Final design review
- Kick off for long lead time items
- Receipt of manufactured & bought out parts
- Completion of assembly for 1<sup>st</sup> trials
- Completion of trials after corrections
- Final Trial run & equipment validation
- Equipment packing & dispatch etc.

## 13. DV/PV BUILD SUPPORT

Before dispatch of system/machine to Adient, if any DV/PV build of limited quantity (e.g. 50 to 100 nos.) need to be done at supplier end, same should be supported by supplier. This build will be separate from trial run mentioned in **ACCEPTANCE CRITERIA**.

## 14. WARRENTY, SUPPORT TILL SOP & AFTER SALES SUPPORT

1. Complete system should be warranted for 12 months from date of installation
2. After installation of system/machine in Adient, till SOP (Start of regular production) supplier should provide support for any technical issues with 24 hours.
3. After SOP till 1 year period, supplier should provide support for any technical issues with 24 hours

## 15. RFQ SIGN OFF

The selected supplier need to sign off with Company Seal on each page of RFQ as token of acceptance. The final machine/system will be checked against the signed RFQ details. Deviation sign off will be referred for any deviations.

# Thank You