



**RFQ for  
FSC 4W RH  
FSC 4W RH + HA Fastening fixture**

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

Improving the experience of a world in motion

# 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. MACHINE DEFINATION, REFERENCE IMAGES
3. CTPS REQUIREMENTS
4. MACHINE CONTENTS
5. OPERATIONAL DETAILS
6. ADIENT INPUT FOR MACHINE DESIGN
7. MACHINE DESIGN REQUIREMENTS
8. QUALITY REQUIREMENT FOR PRODUCT
9. PRODUCT INFORMATION
10. INDUSTRIAL ENGINEERING REQUIREMENTS
11. RECOMMENDED MAKES
12. ACCEPTANCE CRITERIA
13. DOCUMENTATION, SPARE & TRAINING
14. PACKAGING, TRANSPORTATION & INSTALLATION
15. TIMELINE
16. DV/PV BUILD SUPPORT
17. 19.WARRENTY, SUPPORT TILL SOP & AFTER SALES SUPPORT
18. RFQ SIGN OFF

# 1.SUPPLIER SCOPE OF WORK

Supplier will design & manufacture complete Workstations as per details in RFQ. After manufacturing, 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.**

## 2.MACHINE DEFINATION & REFERENCE IMAGES

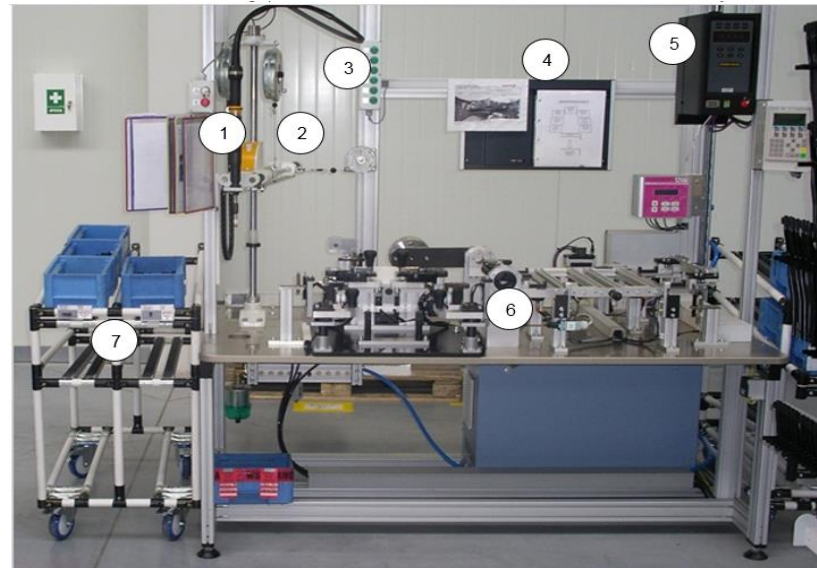
This is a CoC Fastening workstation for Fastening of Height Adjuster (MHA-3000) to FSC 4W RH Assembly. This workstation should be made to carry out CoC fastening of following variants

1) FSC 4W RH

**This is based on existing design of workstation.** It consist of item no 1 to 7, The workstation controls through HMI & PLC. It has part presence sensors. This workstation should be made for safe working. **The workstation should meet all 39 requirements of CTPS**

System will have other accessories as per Adient requirements.

- Machine should have Biometric Bypass system
- Siemens HMI (KTP-700) to be used as back end
- \* Machine should have server connectivity



Overall Workstation  
Schematic view

- (1) Fastening tool
- (2) Reaction bar/torque arm
- (3) Light signal for torque OK
- (4) Work instruction and visual aids for performing the fastening process
- (5) Control unit
- (6) Holding fixture
- (7) screws/material supply

## FSC 4W RH + HA Fastening



There should special clamping arrangement with 2 pneumatic cylinders along with 3 Nos. Air pressure switch to apply forces F1, F2 & F3 in given sequence as per existing arrangement

### Operator Panel

Explains every assembly step by visualizing the assembly station and the work steps to be done

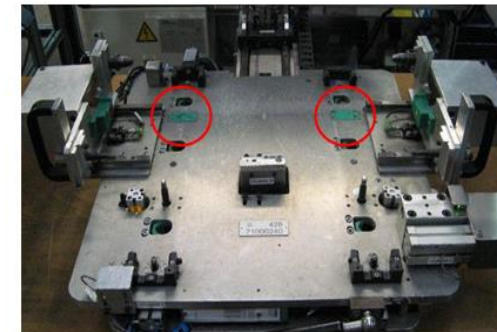


### Fixture

#### 13.8.3 Component Presence Control

- For presence control every station must feature induction controlled sensors as standard.
- For protection purposes the sensors must be provided with plastic covers.

#### example for induction controlled sensors for presence control





# 3. CTPS REQUIREMENTS



## Torque System Integrity

Item	Torque Box / Tool Setup
<b>Hardware</b>	
1	Are <b>Critical Torques</b> performed by DC Electric Controllers equipped with <b>Torque Transducers</b> and <b>Angle Encoders</b> ?
2	Does the operator have a <b>Visual Indicator</b> of the acceptance / rejection status of the job? <b>Green = accept Red = reject</b>
3	Are Torque Tools rigidly mounted to a <b>reaction arm</b> that ensures the screw is driven perpendicular to joint and that the operator cannot influence the final angle readings?
4	If more than one safety critical screw is installed in the station, does the reaction arm(s) have position sensing?
5	Does the action of <b>Bypassing</b> the exit criteria require that the <b>Supervisor/Team Leader</b> be <b>physically located at the station</b> where the issue has occurred?
6	Does the bypass mechanism have an automatic reset so that it cannot be left in bypass mode. (ex. spring loaded keyswitch)
7	If more than one safety critical screw is installed in the station, is there a light box indicating the status of each screw to the operator? (Blinking indicates the next screw to be completed and solid indicates the screw is properly tightened)
<b>Setup</b>	
8	If application is <b>shoulder bolt OR layered part</b> (3 or more components), is rundown angle monitoring used?
9	If the nut-member is pre-threaded, does the ODS require the operator to hand start the screw before applying the torque tool?
10	In the event of an <b>electrical failure</b> , when Torque box is powered up, does the PLC maintain the correct count or lock out the fixture until a supervisor resets with a key ?
11	Are DC torque controllers programmed for <b>Torque Control and Angle Monitoring per the Direct Current Torque Tool Setup Work Instruction</b> ?
12	Are all DC torque boxes programmed in <b>Two Stage</b> tightening to allow a reduction in run down speed (RPM) as torque value approaches minimum torque target?
13	Do the torque settings (target, min, max) match the chart drawings?
14	Are the following alarms enabled (Atlas Copco3000 or greater) "Alarm on rehit" "Alarm on Tq<target" "Alarm on lost trigger"
15	Is the capability to change tool parameters controlled at a <b>Quality Supervisor/Engineer</b> level using either a key or password?
16	Can the position sensors on the reaction arm read non-metal objects which could send false readings? (ex. the sensors on a conveyor mounted arm read the operator's leg?)
17	Are the Torque Tools <b>physically limited</b> such that they can only be used in the <b>work zone</b> for which they are intended?
18	If there are multiple PSETs at the station, have all build recipes been verified to ensure the correct PSET is called for the part? Is determination of PSET done electronically in the PLC?
19	Are Torque Tools <b>only enabled in forward and reverse mode when the tool is in a valid position</b> ?
20	Are Torque Tools <b>disabled in the forward and reverse</b> mode for each valid position once the correct torque has been met for that position? (ex. Once correct torque is received for position 1, tool is disabled in that position, but enabled in remaining positions where torque has not been achieved)
21	If rundowns must be completed in a defined sequence, is the tool only enabled in the next valid position in the sequence? (ex. when position 1 is complete, tool is only enabled in position 2)
22	When attempting to <b>Re-hit</b> a properly torqued joint, do the <b>Position Sensing, Angle Parameters or Re-Hit Alarm</b> prevent the re-hit from being counted as <b>"OK"</b> a second time?
23	Does the build station or fixture prevent the part from continuing or being released until <b>all exit criteria are met</b> ?
24	Is it possible to <b>loosen a joint</b> that has already been correctly tightened, <b>re-torque the same joint</b> and achieve a second <b>"OK"</b> count to PLC (double count the same joint)?

## CTPS Requirements

25	Are there any other tools at the station that are not <b>electronically interlocked</b> to the build line PLC that would allow an operator to achieve torque on, or loosen, a safety critical joint? (Click Wrench, Air Tool, Wrench, Socket)
26	Are there <b>two</b> Torque Tools at the same station with <b>different</b> torque parameters and the <b>same socket size</b> that can be used on the wrong joint?
27	Is there a regular calibration schedule <b>Traceable to N.I.S.T.</b> for each <b>DC Torque Controller</b> and <b>Tool</b> and complies with the manufacturer's guidelines for <b>Calibration Frequency</b> at least 1 time / year? <b>Certificate of Calibration</b> on file in Quality Records. (take photocopy)
28	Are the current <b>Torque Parameter Settings</b> for each <b>Critical Torque Station</b> <b>documented</b> on the torque parameter worksheet and maintained in a workbook?
29	Is there a <b>Change Log</b> for modifications made to the Critical Torque Parameter Settings for each DC electric Torque box including initials of person making the change? (sign and date the Parameter Settings print out sheet in the back of the box or in the workbook)
30	Are the final angle parameters set up properly (minimum no less than 20 degrees and maximum no greater than 250 degrees)?
31	Is there additional angle control in place when 20-250 is <b>not</b> adhered to (ex. Postview, Rundown Angle Monitor, etc)
<b>2 &amp; Out Controls</b>	
32	Is number of rundown attempts for a specific joint limited to 4 or less by the PLC
33	If the PLC receives <b>two "NOK" signals</b> from the torque controller for a particular joint, does the PLC disable the tool in all positions and require supervisor intervention?
34	If the retry limit is reached, is the seat sent to a station for tear down?
35	Is the attempt limit in alignment with current attempt capability data. (ex attempt capability is 100% @ 3 attempts, the attempt limit is 3 in the PLC)
36	Is there additional control in place when >2 attempt limit is in place. (ex. Postview, Rundown Angle Monitor, etc)
<b>Capability</b>	
37	% Pass on initial attempt known, is greater than 99.5% and documented for each joint
38	Are the CpK's for each <b>Critical Torque</b> station <b>checked, documented and adjusted</b> as required on a regular schedule to ensure that they are greater than or = to 1.67CPK? (Network or Manual)
39	Is there an open action plan for improvement for joints not capable of the torque CPK, final angle(20-250) or the 2 & out limit requirement?

## CTPS Requirements

Requirements	OK	NOK
<ul style="list-style-type: none"> <li>At all assembly stations a red lockable container with automatic counting devices for nok-parts must be provided (see technical order conditions)</li> </ul>		
<ul style="list-style-type: none"> <li>Release of the station / machine after producing a NOK-part must be allowed only after previous acknowledgment</li> </ul>		
<ul style="list-style-type: none"> <li>For emergency stop, power failure and / or opening the protection door / protection enclosure the currently processed component must be coded as NOK.</li> </ul>		
<ul style="list-style-type: none"> <li>NOK-parts must be kept clamped in the fixture. Open with key switch and unloading of the NOK-parts on a separate slide with light curtain.</li> </ul>		
<ul style="list-style-type: none"> <li>The following failures must be detected and reject the NOK part: <ul style="list-style-type: none"> <li>Process failures</li> <li>Emergency stop or change in function mode</li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li>The station's status must be indicated with color lights (Andon) <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> <div style="text-align: center;"> <p>NA</p>  </div> <div style="text-align: center;"> <p>EU</p>  </div> </div> </li> </ul>		
<ul style="list-style-type: none"> <li>The lights must be mounted visible for the station operator</li> </ul>		



# 4.MACHINE CONTENTS

Functional Area	SN	Content	Brief Description of Content
Adient Scope of Supply	1	Electric Nut-runner & Accessories (Atlas Copco)	Electric Nut runner –Controller – PF 8000 Accessories – RBU Silver, Tensor ST cable 5 mtr, Suspension Yoke
Workstation structure & fixture	1	Base stand	Fixture base stand to be made from Standard MS square tube of section 72 mm x 72 mm x 4 mm thk Complete machine structure should be painted with red oxide & high quality spray painting as per RAL shade 9010 (Ivory colour)
			MS top plate on stand with 20 mm thickness.(Appr height of MS plate 850 mm from ground)
			4 no. of Anti-vibration pads(Dia-100 mm) to avoid any movement of machine during operation & enable machine levelling upto (+/- 25 mm)
	2	Upper structure above 850 mm	Upper structure to be made from 72 mm x 72 mm x 4 mm thk MS sq. tube, painted with red oxide & high quality spray painting as per RAL shade 9010 (ivoey colour). Other support members should be made from suitable Aluminium extrusions (40x40 or 40x80) as per strength requirements
			Overhead structure for positioning of Electric nut runner in X, Y & Z directions using Zero gravity balancer, Rail & Tool trolley with reaction arm. High quality Ni-Cr plated dia 32 mm guide rod & recirculating ball bearing (Misumi). LM Guides, End stopper & shock absorber as per requirements.
			Electric nut runner housing and reaction arm arrangement for movement of Electric Nut runner for tightening.
			Structure to support Tubelight & Fan mounting. Also arranagment for display of Work instruction sheet & Mimic board
	3	Fixture	Fixture consist of Base plate, Location & resting blocks, Location pins & Pneumatic clamps
			Clamping – 4 nos. of clamping cylinders to ensure no gap between parts & proper locking of parts. (Cylinder dia – minimum 40 mm)
			Location block, resting block, location pin & clamping pad should be made from hardened steel and should be blacodized
			<b>For HA Clamping – 2 Nos of clamping cylinders + 3 Nos of air pressure switches to be used for application of forces F1, F2 &amp; F3 as per sequence mentioned in product drawing (Minimum cylinder dia 40 mm). PLC programming should be done to achieve this.</b>
			All location block will be located by dowel and clamped by Allen bolts
			All pneumatic cylinders should have flow control valve at inlet & outlet. All pneumatic cylinder should have built in cushioning arrangement.
			Necessary end stopper & shock absorber should be provided to avoid any jerky movement.
			All pneumatic cylinder sizes are approximate for quote working purpose. Actual size will be close to above mentioned sizes. These sizes will be finalised after DAP

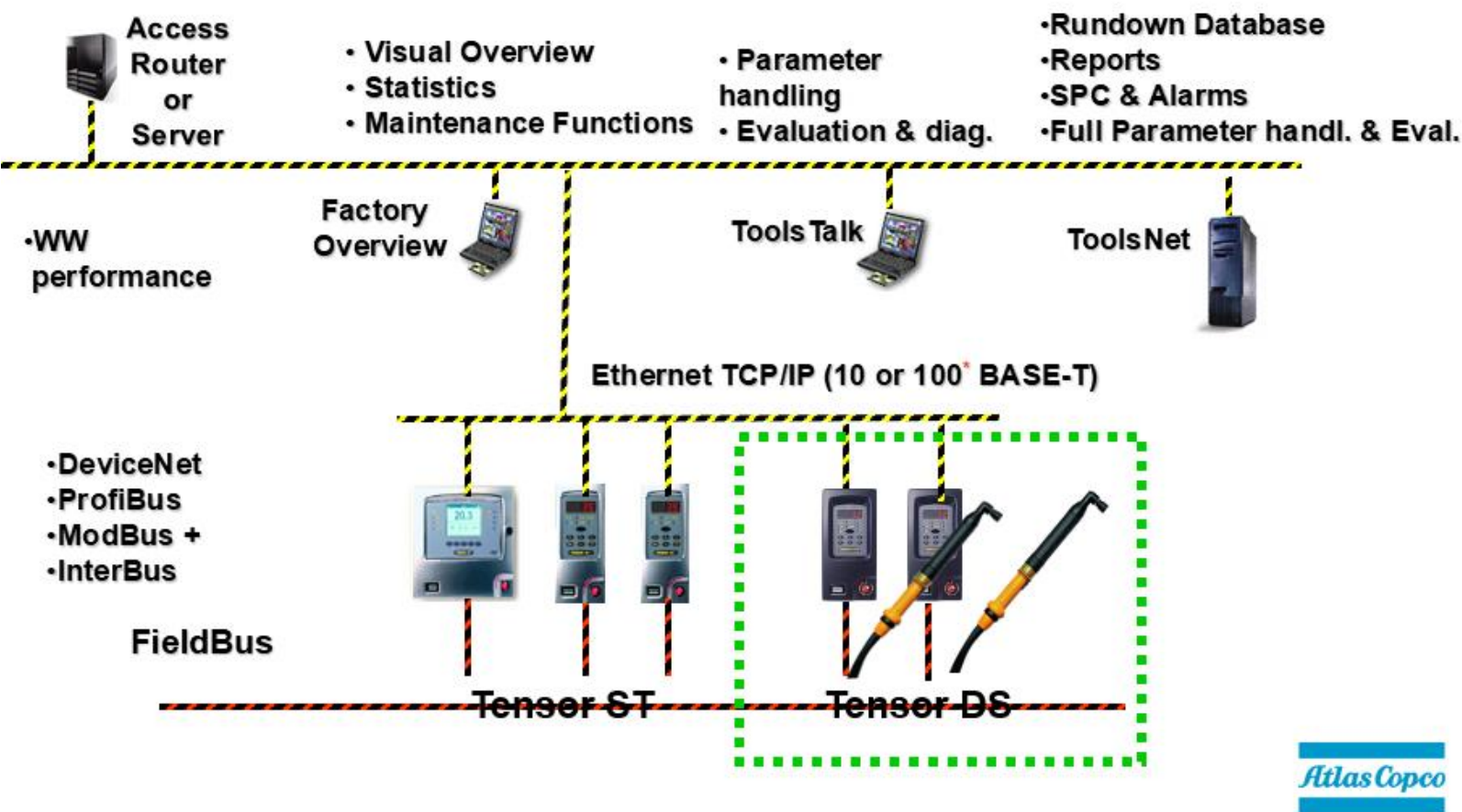
Functional Area	SN	Content	Brief Description of Content
Controls	1	Main Control Panel	Main control panel will have required SMPS, PLC, Relays, Wire connectors etc.
			This panel will be mounted at suitable position for easy access & maintenance
			Panel will have Light, fan, 3 pin socket & door lock arrangement
			Additional 20% space will be kept empty for any future changes
			PLC-Siemens based on number of I/O
	2	Operator Control Panel	Operator control panel will have HMI, Lights & Buttons as per below description.
			It should be mounted at shoulder level. It should be opened from front side & should have locking arrangement
			<b>Lights &amp; buttons on Operator Control Panel</b>
			Push button with light - Control ON, Push button with light - Control OFF, Display light – JOB OK
			Display light – JOB NOK (with blinking light) + RESET button
			Two position selector switch - Machine Light + Fan - ON/OFF, Push Button - EMERGENCY STOP
			Push button – RESET
			Two position selector switch - AUTO/MAINTENANCE - Authorisation Key along with Buzzer
			Display Light - START CYCLE (with blinking light)
			Electric nut runner – parking location light
RED Light - If JOB is NOK (If cycle stopped halfway)			
<b>Mimic Board</b> – Nut fastening map with LED for each tightening location. Light blinking for each successive location.			
Total – 3 Nos			
3	Display	<b>HMI</b>	
		Main control of machine through Colour HMI (7 inch) Siemens make	
		Main screen of HMI should show MODE SELECTION - Auto mode and Manual/Maintenance mode	
		I/O Status, MACHINE STARTUP INSTRUCTIONS, MACHINE END OF SHIFT INSTRUCTIONS	
		Counter - Shiftwise/daywise part produced (OK & NOK) (Record for 1 day); Tool change alarm after 10,000 cycles.	
		Part presence sensor status & Reed switch map (Pneumatic cylinder). Mark all reed switch position on Pneumatic cylinder.	
		Pokayoke functioning - Robust pokayoke logic to detect NOK conditions before operation	
		Pokayoke/Reed switch by-pass should be with Password protect	
		Error log (1 shift error should be traced), Display latest 10 errors	
		Supplier name, contact details, Adient logo, date & time, cycle time, machine mode etc.	
		Any setting/program change should be Password protected	

Functional Area	SN	Content	Brief Description of Content
Controls	4	Machine Operation switch	Machine will be operated by two hand Banner K30 Pick to Light touch buttons. One Additional EMERGENCY button will be provided beside this switch.
	5	Process parameter display	Digital air pressure switch (1 No) - Switch for showing incoming air pressure
	6	Part/Condition check sensor	Inductive sensor for track presence (2 Nos/track) – Total – 8 Nos
	7	Nut runner position sensing	X-Y Linear scale for Electric nutrunner position sensing. Separate controller for X-Y scale All sensor should be mounted with 2 bolts & guarded with proper guard to avoid any damage or setting change during regular operation
	8	Electric Connector & wire routing	Inside machine, all electric wire should be routed properly with proper numbering & mounting/harnessing. No loose wires allowed. Outside machine, all electric wire should be routed through conduit pipe Input/Output connector module (WAGO/Siemens) should be used for connectivity of wire inside outside of machine. .These modules should be mounted outside of machine for easy maintenance
	9	Pneumatic pipes & control	Inside machine, all pneumatic pipes should be routed properly through conduit with proper numbering & mounting/harnessing. No loose pipes are allowed. Outside machine, all pneumatic pipes should be routed through Metal square section (60 mm x 60 mm) conduit <u>Standalone valves can be used for less numbers of valves. All pneumatic valve should be 5/3 (5 port/3 position) so that during emergency situations (Light curtain interruption/ Emergency press/ Power off), all pneumatic cylinder should stop instantly in same position.</u>
	10	Light inside machine	2 no. of LED lights 10 Watt each should be fixed on machine structure to project light on Fixture area
	11	Machine earthing	Machine should have internal bus bar to connect to all individual electric units Main supply supply to machine should be connected through ELCB (Earth Leakage Circuit Breaker) as per machine's total power requirement. In case of Earthing failure, machine electric supply will trip.
	12	Bar code printer & scanner	Zebra bar code printer (1 D/2D) & suitable scanner to be selected for tracibility Proper mounting of Bar code printer & scanner to avoid any damages during regular working
NOK parts	1	NOK part handling	NOK part will be produced in case of emergency stop/Torque not achieved to preset value After NOK part is produced in above condition, NOK part light will glow. There will be 2 + 2 retake If torque not achieved after 4 retake then use operator bypass by biometric and remove part and send for rework After completion of above, operator will press reset button to resume normal cycle.

Functional Area	SN	Content	Brief Description of Content
Safety	1	LOTO	Main electrical switch of machine should have LOTO attachment Pneumatic FRL unit should have LOTO attachment
	2	Safety Indication Sticker	Machine should be provided with Standard Safety Indication Stickers e.g. HIGH VOLTAGE, MAIN SUPPLY etc.
Material storage	3	Raw material storage bins	SS bin for storage for M8 nut Appr size 300 mm x 300 mm x 20 mm - 1 No All other child part storage – Adient scope SS Grease storage container for Appr weight 1 kg + Brush for grease application FG storage - Adient scope
	4	First piece storage bin	For storage of 1st piece, make arrangement below machine base table
	5	Rejection bin with Lock & key	Red colour Powder coated box made from MS Sheet 2 mm thk with Lock & Key. The opening hole size should be 100 mm x 100 mm. - Overall size - 200 mm x 200 mm x 200 mm. Bin to be fixed on lower side base plate
	6	Work instruction (ODS) Display	Two parallel Aluminium Extrusion Stand for fixing Work Instruction sheet of size 420 mm x 300 mm
Other requirements	7	Fan for operator	Machine should have mounted Air Recirculation Fan (12") (Crompton Greaves/Almonard/Bajaj)
	8	Machine Name plate	Name plate size 100 mm x 80 mm made from 1 mm thk Aluminium sheet & fixed to base plate. It should have following details Name & address of manufacturer, name of machine, month & year of dispatch, Asset number (Blank field)
	9	Operation Description Plate	Operation description name plate in Blue background & white letter (Use Acrylic sheet 5 mm thk) with mounting (Board height 125 mm, Letter height - 100 mm)

The complete workstation should be connected to central Controller & Server though Toots Net (or equivalent system)

Reference Image





## 5.OPERATIONAL DETAILS

### HA Fastening

1	Pick up & Load FSC 4W assembly on fixture
2	Press CLAMP button to clamp track IB & OB
3	Peel off Barcode sticker & stick on FSC at given poistion
4	Pick up & move scanner near Bar code sticker & scan bar code. Keep scanner to its home position
5	Check CYCLE START light is blinking
6	Apply grease on HA gear & HA link on FSC
7	Pick up & locate HA on Side member.
8	Pick up & locate ASM BUSHING CRASH BKT (4090731) on HA bolts
9	Pick up 3 nuts & pre-assemble with on 3 bolts
10	Manually move slide to apply force on HA
11	Press CLAMP button to apply for Force- F1, F2 & F3 on HA
7	Hold & move Electric nut runner(For HA) from parking postion to 1st location.Tighten Nut to pre-set torque.
8	Repeat above procedure for remaining 2 nuts as per tightening sequance.
9	After tightening completion, move the Electric runner to parking position.
10	Operate HA though full height by operating from Top to bottom and Bottom to Top.
11	Unload completed parts & keep at WIP location

## 6. 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

## 7. MACHINE DESIGN REQUIREMENTS

- 1)Supplier will understand quality & functional requirement of drawings & accordingly design the machine
  - 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 shall be fork-truck accessible. All machine parts shall be mounted inside perimeter of frame.
  - 7)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

## 8.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)

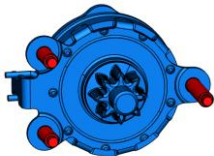
# 9.PRODUCT INFORMATION

Height Adjuster Fastening (FSC 4W LH)  
Tightening torque – 11 ± 1 N-m ( 3 Locations)



FSC 4W Assly.  
(with Tracks)

+



HA (RH)

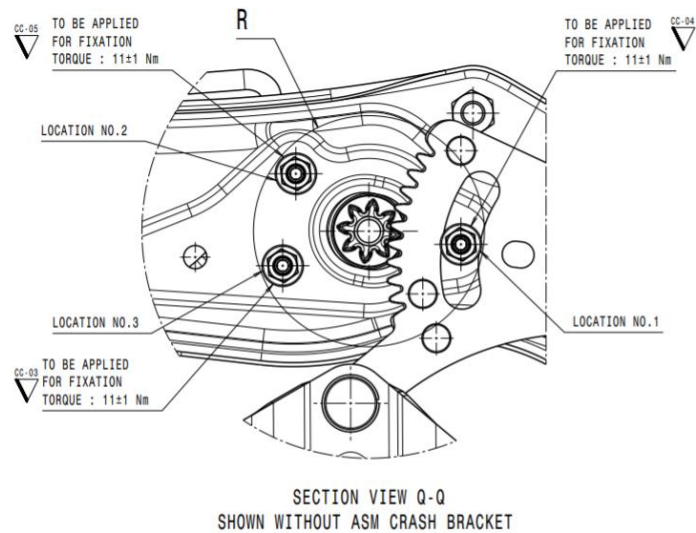
+



M6 NUT  
(3 Nos)



FSC 4W Assly.  
(with Tracks+HA)



- INSTALLATION SEQUENCE FOR HA:
1. WITH TRACK & WITHOUT TORSION SPRING HA
  2. APPLY FORCE F2. 20N IN Y- DIRECTION ON MARKED AREAS.
  3. ASM HA TOOTH POSITION 12 O' CLOCK
  4. ASSEMBLE ASM HA/CRASH BRACKET IN SHOWN POSITION
  5. HA INSTALLATION POSITION:  
2ND LAST TOOTH OF QUADRANT LINK
  6. PRE TIGHT THE NUTS OF HA. (NOT TIGHTENING)
  7. APPLY FORCE F1 200N+30N IN DIRECTION AXIS PINION /TOOTH SEGMENT.
  8. INCREASE F2 FORCE TO 100N+30N IN Y-DIRECTION
  9. TIGHTENING THE NUTS OF HA. PUMP/CRASH BRACKET IN SHOWN SEQUENCE ORDER
  10. REMOVE FORCE F1 & F2

## 10.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 is shown below

SN	Assembly Description	Target Cycle Time with 100% efficiency
1	Fastening of HA (FSC 4W RH)	70 seconds

## 11. RECOMMENDED MAKES

1. Electrical switchgears/Contactor : Schnider
2. Sensors – Keyence Retro-diffuse Laser sensor, Inductive sensor - Omron
3. Push Buttons & Indicators – Schnider
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**

## 12. 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 100 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

## 13.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.



## 14.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 safely 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.

## 15.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.

## 16.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**.

## 17.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

## 18.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**