Base Load Power Hub (BLPH)

TRACEABILITY PROCEDURE - TRANSITION PIECE FLANGE

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Rev.	Date	Description	Prepared	Reviewed	Approved
0	05/04/2024	Issue for Review (IFR)	Ainhoa Lasa	Ainhoa Lasa	Urtzi Landa
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GRI Flanges Iraeta

FIHI Forging Industry S.L.



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Revision / Change Log

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DOCUMENT MONITORING

	Posición	Nombre	Fecha	Firma
Elaborado por:	Coordinador SIG	Eneritz Bergara	18/12/2018	
Revisado por:	Técnico Calidad de Producto	Ainhoa Lasa	19/12/2018	
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INSPECTION MONITORING

Inspection Number	Date	Description
0	06/09/2013	First document
1	06/11/2014	Revised ítems 4.3.5 y 4.3.6. (for Cooper)
2	17/08/2016	General revision of traceability texts
3	06/12/2017	Amendments of pharagraphs 4.3.2, 4.3.5 y 4.3.6
4	19/12/2018	Amendment of pharagraph 4.1.3

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1 PURPOSE

The purpose of this document is to describe the process to carry out the full traceability of flanges in the production process at Forjas de Iraeta Heavy Industries.

2 SCOPE OF APPLICATION

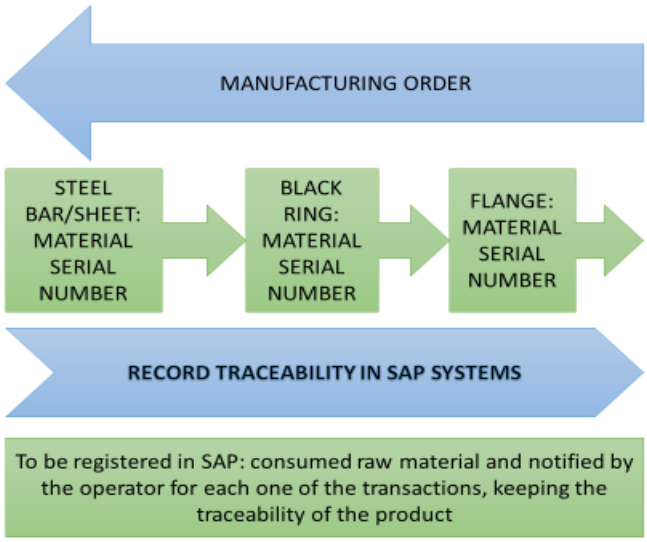
The purpose of this document is to follow the entire production process.

3 REFERENCES

IN_PRD_05_01_05 Extraction of samples
IN_PRD_03_01_01 OF opening, launch and closing

4 DESCRIPTION

Traceability diagramm:



4.1 RECEPTION OF MATERIAL

4.1.1
Incoming material (Steel bars and Steel sheets) is identified individually in SAP with the following information:

- Provider Name
- Measurements
- Casting
- Quality
- Lot Number
- Provider ID

SAP System assigns two different numbers to each steel bar/sheet:

- Material: Linked to the dimensions of the bars/sheets (steel bar/sheet model).
- Lot Number: FIHI´s own number for each steel bar/sheet.

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4.1.2
The person responsible of its reception must enter provider´s casting and lot info in SAP Systems for each FIHI Lot.
Once the above is completed each steel bar/sheet is assigned in SAP with the provider´s lot and casting numbers.

4.1.3
When the steel bars/sheets are received and before storing them, the MP warehouse´s operator must check out the goods "in situ" against the documentation sent by the provider.
Upon receipt, all bars/sheets must be marked with the following information:

- Lot Number: Unique number assigned to each bar by SAP, as to obtain all its information and traceability
  - It is COMPULSORY to mark each bar
- Material Number: common number associated to each section of the bar, making it possible to obtain traceability information of the bar and group them within the flange drawings that can be assigned to.
  - It is NOT necessary to mark each bar with the material number.
    - Even if it is not compulsory, it will help to identify the Material code in one or various bars grouped together, helping to identify them from the forklift truck.





(Sample picture of correct traceability)

In case the paint gets erased, traceability will be ensured by comparing the provider´s label against the data registered in SAP

4.2 MANUFACTURING ORDER ASSIGNMENT

4.2.1
A manufacturing route has been created in SAP with clients´ specific requirements for each type of flange.

The planning department sends a manufacturing order for an expected flange style (material) and for an specific number of flanges (lot number), following instructions for the opening, launch and closing of OF,IN_PRD_03_01_01.

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Once that is completed, a unique lot number will be assigned to each of the flange.

Depending on the steps taken, different material and lot numbers will be created.
Depending on the manufacturing process, a flange can have several material and lot numbers.

4.3 PROCESS SEQUENCE

4.3.1 Joined Bars or Plates prior to bending process

When the operator receives the material, it will always be traced with M and L (Material and Lot Number).
When the material is used in SAP (change of status in the process), SAP automatically creates a new M and L.
This new information must be written with fixolid on the material.

4.3.2 Bending

When a new ring is going to be manufactured, the operator must enter the material number in SAP and a new window will appear with a list containing different lots. The rim to be selected from that list, is the one with the fixolid written on the material.
When the correct lot is selected, SAP will provide the operator with the new material and lot numbers for each of the rings.
Once the ring is produced, the operator must write with fixolid, the code of the new material and/or the SN (manufacturing order, OF) and the lot number provided by SAP.
At the same time and to continue with the traceability of the furnace, the operator must:

- Stamp on the ring: lot number (next to welding)
- Stamp on the piece taken for testing: casting number

For the stamping process, the metallic numbers/words must be big enough to avoid an accident on the hands when hammering. If the punch is diminished substantially, request and exchange to the manager.

4.3.3 Welding

During the welding process, traceability of the welded rings does not differ.

4.3.4 UT Welding Inspection

During UT inspections the traceability of the welded rings does not differ.

4.3.5 Normalizing/HeatTreatment

During the heat treatment process, the traceability of the welded rings does not change. However, it does changes on the normalizing of the bars.
When a group of rings/bars are ready for the heat treatment process, furnace operators must get the rings/bars ready and stamp the heat treatment number on each of the black ring/bar and also on the pieces taken for testing.

During the stamping process, the operator must ensure that the metallic number/letters are big enough to avoid damaging the fingers with the hammer. If the punch is reduced greatly, please ask for a replacement to the manager.

On the second stage, the furnace operator will prepare a diagram to identify where in the furnace is located each ring/bar and will register the location of the billets taking for sampling with format F_PRD_05_01_05_03 Furnace sampling location.

Once the above is complete, the furnace operator must input in SAP the lot number corresponding to the flanges/bars that are having the heat treatment with their heat treatment number.
This is when each of the bars/black rings will get a heat treatment number in the system.

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When the heat treatment process is finalized, the furnace operator must identify, on the inner side of the ring or on the corner of the bar, with fixolid, the material number and/or SN (Manufacturing order, OF), lot number, casting number, and the treatment number determined on the furnace diagram, always checking that there is a match between the furnace diagram and the stamp on the rings, bars and the pieces taken for testing.

4.3.6 Machining process

When a new ring is going to be machined, the operator must input the material number in SAP. Once that information is entered in the system, a list with different lot numbers will pop out. The ring marked with fixolid must be selected.

When the correct lot number is selected, SAP will provide the operator with the new material and lot numbers for each of the flange. The operator will then mark with fixolid the OF and lot numbers on the ring, to ensure its traceability.

When a new flange is being manufactured, the operator must stamp all information shown on the manufacturing order, together with all the information related to the flange.

For the stamping process, the metallic numbers/words must be big enough to avoid any accidents on the hands when hammering. If the punch is diminished substantially, request an exchange to the manager.

4.3.7 NDT Inspections

During NDT Inspections, traceability of the flange does NOT change.

4.3.8 Drilling

During the drilling process, traceability of the flange does NOT change.
Once the flange has been drilled, SAP will enter this flange into the stock

4.3.9 Dimensional Inspection

During the sizing inspection, traceability of the flange does NOT change.

4.3.10 Final Inspection

During NDT Inspections, traceability of the flange does NOT change.

4.3.11 Dispatch

During dispatch, traceability of the flange does NOT change.
Traceability will be completed with each client´s specific requirements.
The dispatch department will then prepare the issuing document (outbound delivery note). All information corresponding to the flange is gathered from SAP and gets reflected on this document.

5 EQUIPMENT/SECURITY EQUIPMENT

SAFETY STANDARDS:

- Working area must be clean and tidy at all times.
- Always check that the equipment is in good condition and with adequate protection before making use of it. If you notice any abnormality on the equipment, please inform your manager so it can be repaired.

To carry out the tasks shown on this manual correctly, it is compulsory the usage of the following personal protective equipment:

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- Working clothes
- Protective goggles
- Ear protectors
- Security boots



We would like to remind you that if during the stamping process the punch is reduced greatly, a replacement must be requested to the person in charge.

6 WASTE MANAGEMENT

All finished fixolid Paint and GP-X should be deposited in the green containers located in the clean areas in plant.

At the same time, the following items must be always recicled:
- Non contaminated packaging (without oils, paint, etc): YELLOW CONTAINER
- Paper and cardboard: BLUE CONTAINER
- General rubbish: GREY CONTAINER
- Hazardous waste: ¨SPRAY¨CONTAINER, located near the furnace area
- Clothing and absorbing items: RED CONTAINER

Please remember that there are anti-spill kits with instructions located in all clean areas in the event of spillage. Any items used within these kits together with the sepiolite, must be deposited in the red containers.

7 APPENDIX

N/A

8 DATA LOGGING

Based on the Registry list **F_SOP_11_01_02**.

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RAW MATERIAL RECEPTION CONTROL FORM

F_PRD_05_01_01_01_R0
Format review date: 24/09/2015

Delivery Note description:			
DELIVERY NOTE NUMER	**DIMENSIONS**	**QUALITY**	**SUPPLY STATUS**
SUPPLIER			
DATE			

Material Description

MATERIAL	LOTE	ID (in case of Gerdau indicate OF+ID)	Casting	* MANDATORY INSPECTION (numerical data)				* VISUAL INSPECTION (indicate with an X the characteristic, for which the deviation has been detected)						VERIFICATION (indicate OK/NO OK. In case of NOT OK indicate the result)
				WIDTH	THICKNESS	LENGTH	EDGE RADIUS	FLATNESS	SURFACE CONDITION	ROMBOICITY	CONVEXITY / CONCAVITY	CURVATURE	ROTATION	

* these columns shall be completed following the instruction IN_PRD_05_01_01

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