

ENGINEERING: ENGINEERING SYSTEMS ENABLEMENT QUALITY MANAGEMENT SYSTEM

CUTTING AND FETTLING

OF

CENTRE PIECE CASTINGS FOR KOEDOESPOORT FOUNDRY

TECHNICAL SPECIFICATION



Specification number	EF_KDS_SPEC_2002
Version number	00
Compiler name	Engineer
Signature	
Date	07/12/2023
Approver name	Principal Engineer
Signature	
Date	07/12/2023

TABLE OF CONTENTS

1	Document version.....	3
2	Purpose	3
3	Scope of specification.....	3
4	Reference documentation	3
5	Definitions and abbreviations	3
6	Technical requirements	4
7	Quantity.....	5
8	Post purchase support.....	5
9	Documentation required	5
9.1	Procurement stage	5
9.2	On delivery	5
10	Delivery	5
11	Time frame	6
12	Acceptance criteria.....	6
13	Appendices	7

1 DOCUMENT VERSION

This specification supersedes all previous specifications for the cutting and fettling of Centre piece castings for the Koedoespoort (KDS) Foundry. |

2 PURPOSE

The purpose of this document is to provide the potential supplier with the minimum technical requirements for the cutting and fettling of Centre piece castings for the KDS Foundry. Cutting and fettling of Centre piece castings is a KDS Foundry process that is conducted for the purpose of removal of unwanted excess metal and any unnecessary metal projections on the surface of a casting. |

3 SCOPE OF SPECIFICATION

This specification applies to the cutting and fettling of the different types of Centre piece castings produced at KDS Foundry. The cut and fettle do not include the welding repair of the components. Weld repair by the contractor is prohibited unless granted written permission to do so by Transnet Engineering's Materials and Manufacturing Principal Engineer.

Table 1: Types of Centre piece castings produced at the KDS Foundry.

No	Component Description	Material grade	Drawing no	Item no
1	Centre piece CP155C95/3	M201 AAR Grade B	CME68_013013_016	068013013
2	Centre piece CP155C95/4	M201 AAR Grade B	CME68_013025_016	068013025
3	Centre pieces CP155C95/5	M201 AAR Grade B	CME_127_12_016	868010003

4 REFERENCE DOCUMENTATION

Technical drawings of the Centre piece castings referenced in Table 1 above. |

5 DEFINITIONS AND ABBREVIATIONS

Cutting refers to the removal of risers, gating system, vents, and sprue to remain with the cast component.

Fettling refers to the trimming or clean the rough edges of the excess cast metals within geometrical requirements. |

6 TECHNICAL REQUIREMENTS

The supplier shall receive the castings as sets of Centre piece castings (refer to Appendix 1 and 4).

6.1 Centre piece cutting:

Cutting off larger components into smaller parts (i.e. set of 6 or 4 centre piece castings into individuals).

Removal of unnecessary and unwanted material from a casting.

Client requirements:

The supplier shall be required to cut off the runners, risers, gating system, metal flow-offs, possible flesh and all the other excess material on the Centre piece castings (see Appendices).

Proposed equipment:

Lancing tube, cutting torch.

6.2 Centre piece grinding and dressing:

Removal of undesired material from the surface of a casting through abrasive action.

Client requirements:

The supplier shall be required to grind off the excess material projections mainly on the sections previously cut. This should be done to a required level as per the prescribed component drawing.

The supplier must ensure that castings are not overly ground (see Appendix 3 and 6).

Proposed equipment:

Big wheel grinder, surface and baby grinder, small and big angle grinder, and pencil grinders.

NB: Any work done on the casting must be conducted as prescribed and depicted in this technical specification and respective drawing, this is to ensure the maintenance of a casting's overall quality, structural and dimensional accuracy. Suppliers are prohibited from performing any form of welding on the castings. Damaged castings will be rejected pending an NCR and cost of the component will be recovered from the service provider. The agreement of penalties between parties will be reached during the contractual stage.

6.4 Process requirements

- Visual inspection prior and post processes.

- Sort and categorize components.
- Use of certified and latest issued drawings.
- Use calibrated machinery and equipment.
- Maintain Records of all calibrations.
- Follow typical Process flow, shown in Appendices.]

7 QUANTITY

KDS Foundry produces an average of 1000 Centre piece castings per month, however quantities of Centre piece castings that need to be cut and fettled shall be indicated as and when required.]

8 POST PURCHASE SUPPORT

- Availability of supplier and his premises for any issues arising.
- Weigh/count, record and return the scrap resulting from the cut and fettling process. The returning consignment i.e., castings and scrap must not be less than 15 percent of the collected weight.]

9 DOCUMENTATION REQUIRED

9.1 Procurement stage

- [N/A]

9.2 On delivery

- [Job completion and quality check sheet accompanied by a delivery note.]

10 DELIVERY

Upon delivery, the castings shall;

10.1 Be stacked and packed in an orderly sequence.

10.2 Be stored and transported in a moisture free and dry environment.

10.3 Branded with an identification logo on the casting. (i.e., spray painted with supplier's logo).

10.4 Centre piece castings cut off scrap including risers, runners and gating system must be returned to the KDS Foundry.]

Delivery address:

[Transnet Engineering: ESE Foundry office building A16

Mop Road
Opposite Foundry business
Koedoespoort
Pretoria
0186 |

11 TIME FRAME

Expected lead times shall be as stipulated on the RFQ or tender document.

Supplier is expected to collect castings for cut and fettle on terms indicated on the RFQ or tender document. |

12 ACCEPTANCE CRITERIA

It is the responsibility of the supplier to ensure the understanding of the requirements/technical requirements of a required product or service. It is also the responsibility of the supplier to enquire and seek clarity on areas that may be unclear.

Upon the delivery of a product/service, the product/service shall be evaluated for conformance to specification requirements, using the acceptance criteria stipulated in the tender document.

13. Appendices

Appendix 1: As received Centre piece castings/5.



Figure 1: Bottom view of Centre piece castings, as received by supplier.



Figure 2: Top view of Centre pieces castings, as received by supplier.

Appendix 2: Cutting/5

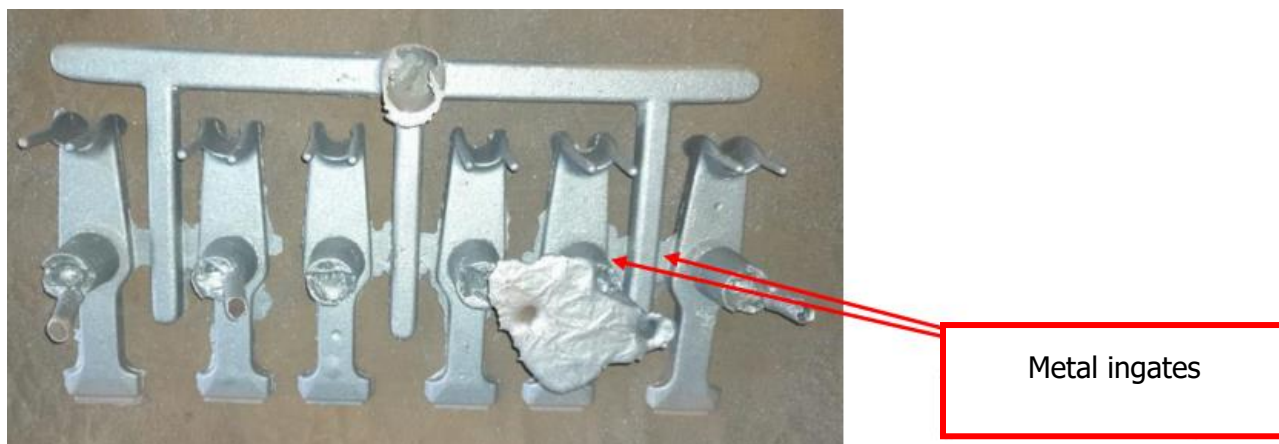


Figure 3: Illustrates a bottom view of the Centre piece castings showing relevant sections to be cut off. (NB: Removal of flesh is necessary)



Figure 4: Illustrates the bottom view of Centre piece castings and relevant sections to be cut off.

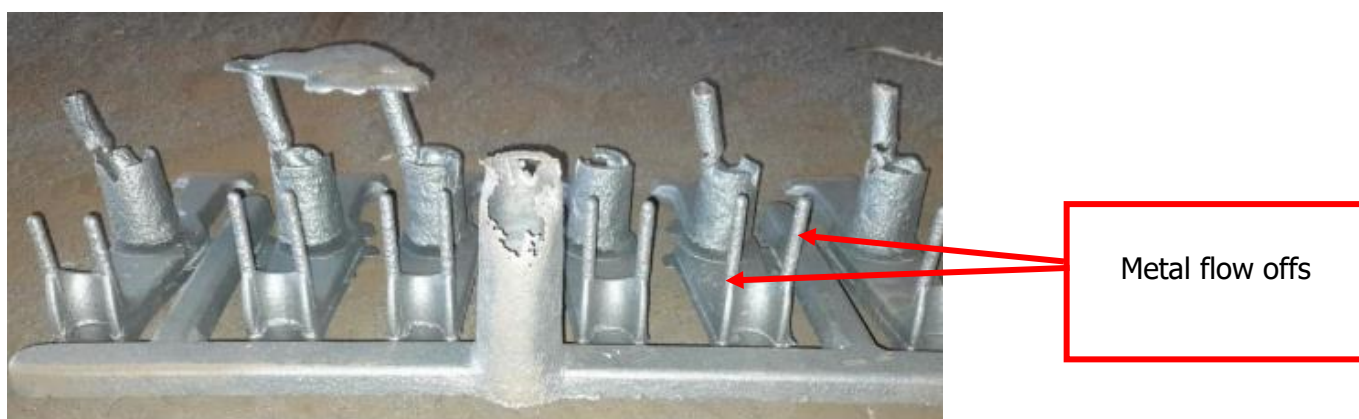


Figure 5: Illustrates sections to be cut off by supplier from Centre piece castings.

Appendix 3: Post grinding and dressing/5



Figure 6: Illustrates top view of a typical KDS Foundry Centre piece casting post grinding and dressing.



Figure 7: Illustrates side view of a typical KDS Foundry Centre piece casting post grinding and dressing.

Appendix 4: As received /3&4



Figure 8: Illustrates the top view of a typical Centre piece casting (set of 4) as received by the supplier.

Appendix 5: Cutting /3&4

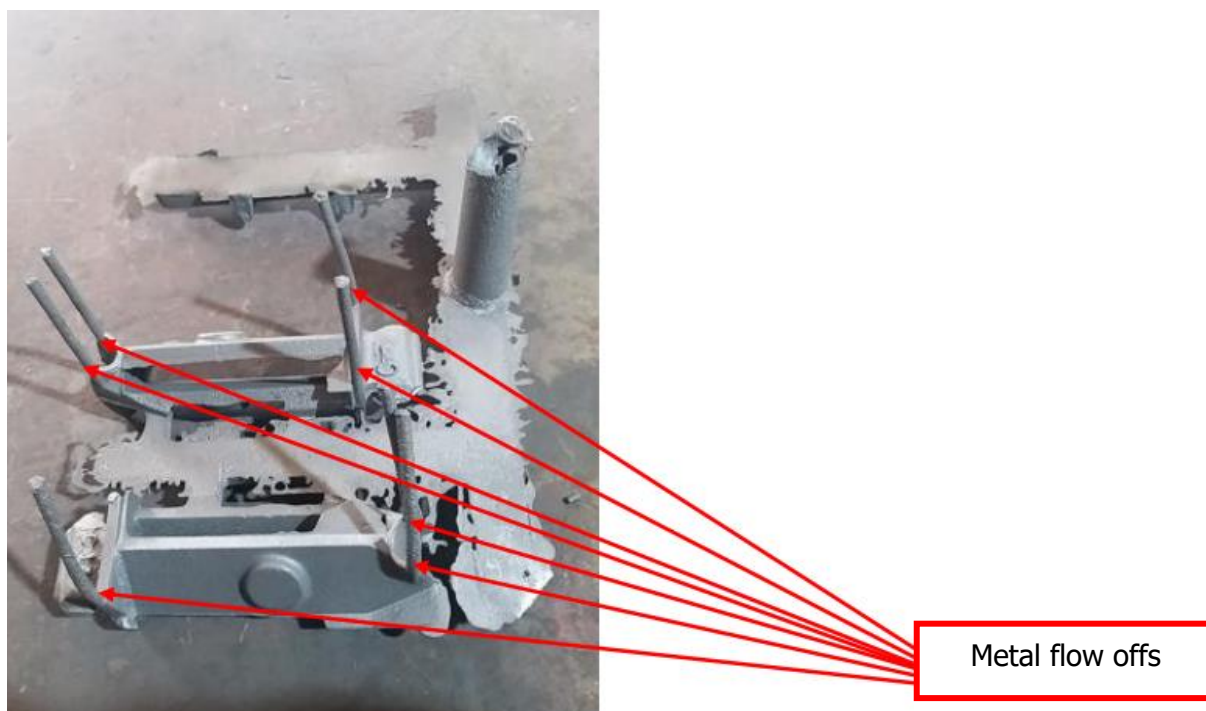


Figure 9: Illustrates the areas and sections to be cut off by the supplier.

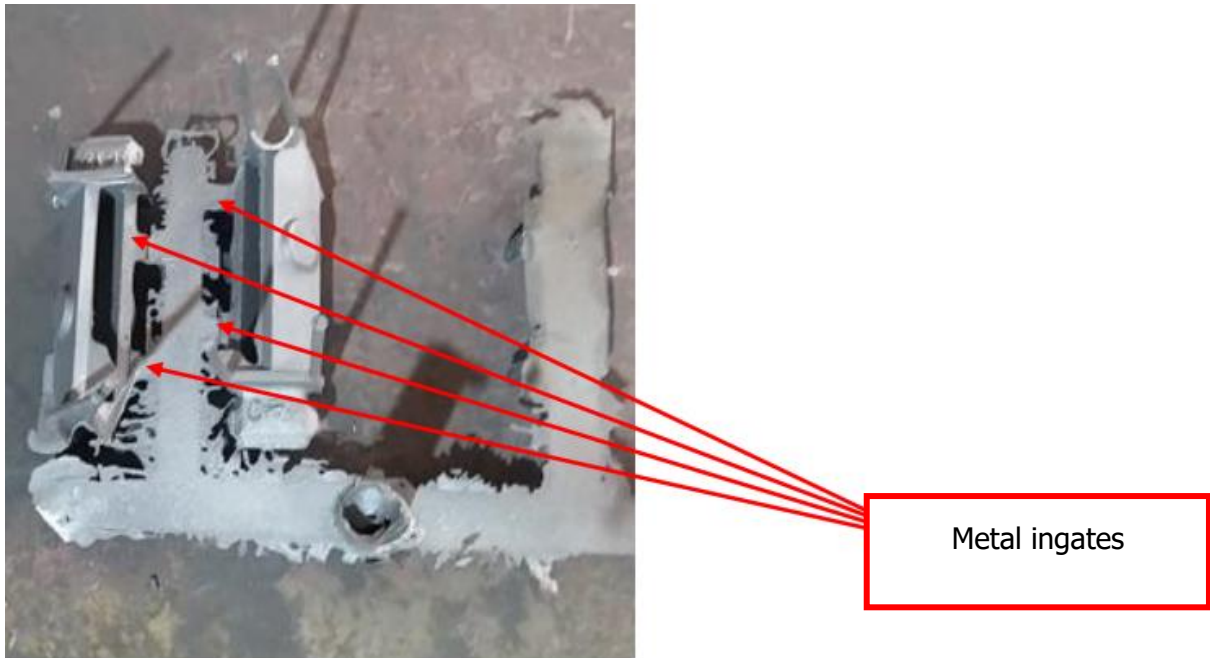


Figure 10 (A&B): Illustrates areas and sections to be cut off by the supplier.

Appendix 6: Post cutting /3&4



Figure 11: Illustrates the expected Centre piece outlook post cutting.



Figure 12: Illustrates the expected Centre piece outlook post cutting.

Appendix 7: Post grinding and dressing /3&4



Figure 13: Illustrates the expected Centre piece castings look post grinding and dressing.



Figure 14: Illustrates the expected Centre piece castings outlook post grinding and dressing.