

UGL REGIONAL LINX



ENGINEERING SPECIFICATION – TRACK TOOLS

CRN-SPC-CVL-713026361-1198

CRN-CP-202

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Document Control

Function	Position	Name	Date
Approver	A&E Manager	Lucio Favotto	26/01/2022

Revision	Issue Date	Revision Description
1.2	13/12/2021	UGLRL Operational Standards Template applied
2.0	24/12/2021	First approved and issued UGLRL version
3.0	26/01/2022	For issue to intranet and website – no change

Summary of changes made from previous version

Section	Summary of change
All	This document is based on the previous rail infrastructure maintainer (RIM). Full revision history is available on request from UGLRL.

1 Scope and Application

This specification details requirements for the manufacture of hand tools for use Country Regional Network (CRN) track.

2 References

2.1 Australian and International Standards

- AS 1085.1 – Railway Track Material – Steel Rails
- AS 3678 – Hot rolled structural steel plates, floor plates and slabs
- AS 1442 – Carbon steels and carbon manganese steels – hot rolled bars and semi-finished products
- AS 1448 – Carbon steels and carbon manganese steels – forgings
- AS 1444 – Wrought alloy steels - Standard, hardenability (H) series and hardened and tempered to designated mechanical properties
- AS 3797.1 – Hand hammers – General Arrangements

Unless otherwise specified, all references relate to the latest standard versions, including amendments and relevant superseding standards.

2.2 CRN Documents

Nil

2.3 Other References

Nil

5 Rail Podgers

This section details the manufacturing specification for rail podgers for 45 to 53kg rails.

5.1 Material

AS 1448, K 1055.

5.2 Manufacture

Podgers shall be cleanly forged. All fins and flashes shall be dressed to surface level.

Bend podger from straight cone 267mm long.

5.3 Heat treatment.

Heat Treatment: Fine Grain normalise

5.4 Dimensions

The dimensions are detailed in Figure 3.

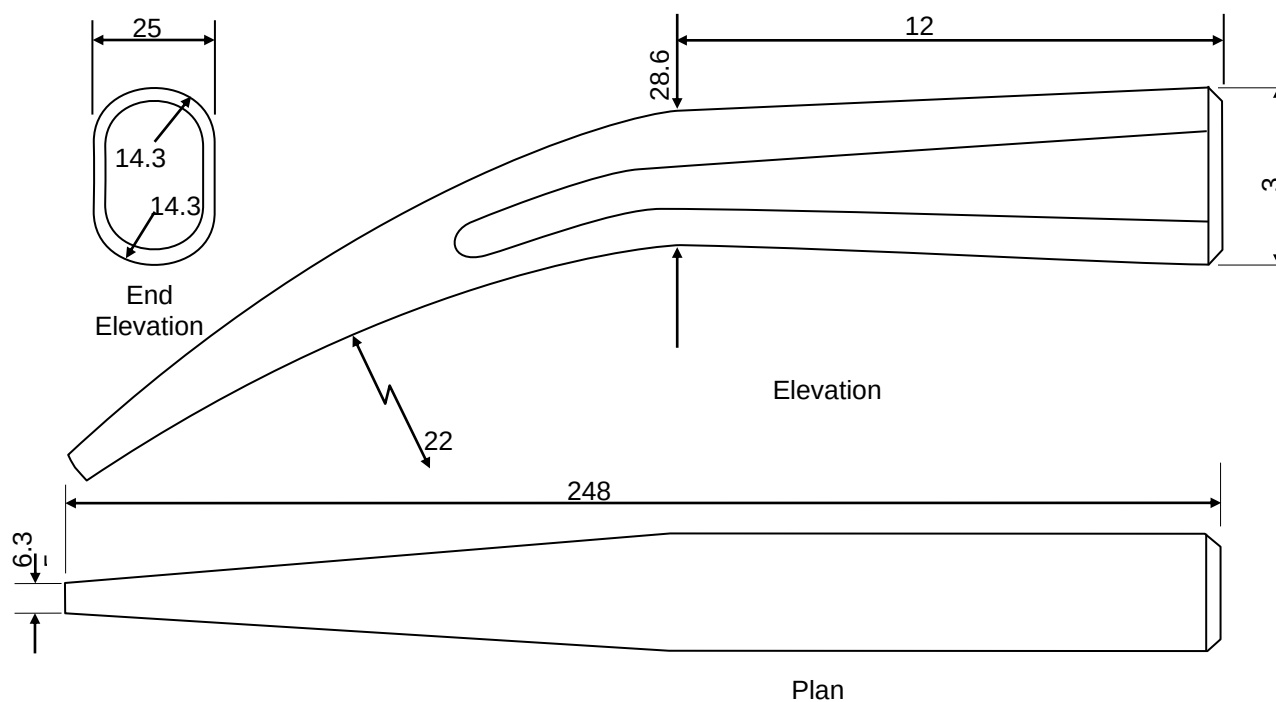


Figure 3 Podger

6 Cold Set

This section details the manufacturing specification for a Cold Set.

6.1 Material

AS 1448, K 1055.

6.2 Manufacture

Cold sets shall be cleanly forged. All fins and flashes shall be dressed to surface level.

6.3 Heat treatment.

Heat treated to 470 to 570 HV (Vickers) on cutting edge extending 70mm towards top.

Striking face to be 200 to 230 HV.

6.4 Dimensions

The dimensions are detailed in Figure 4.

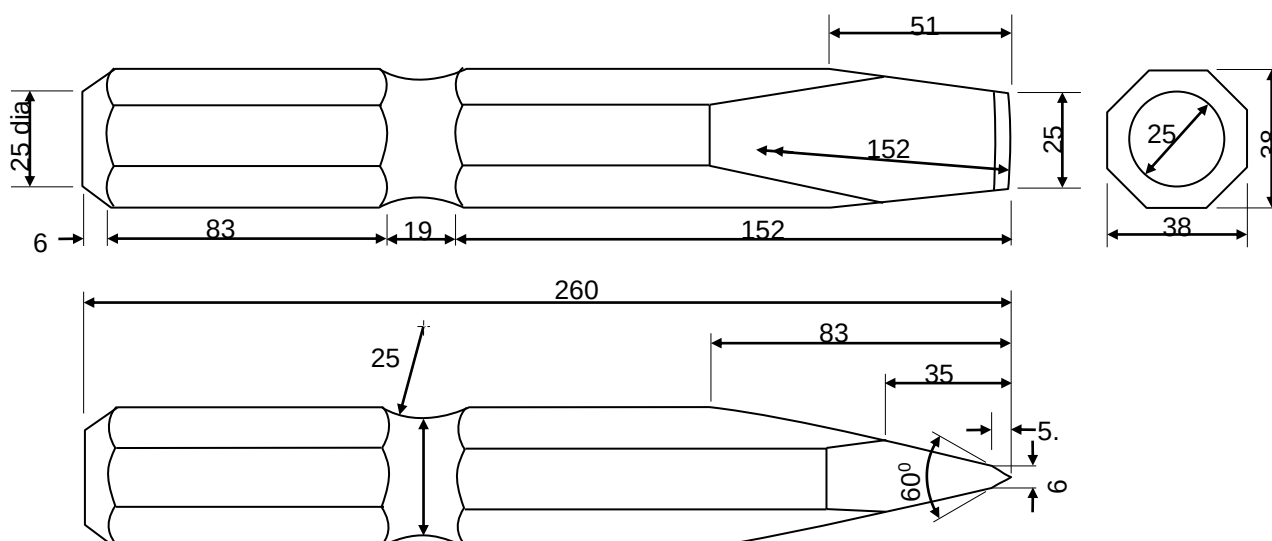


Figure 4 Cold Set

7 Rail Centre Punch

This section details the manufacturing specification for a Centre Punch.

7.1 Material

AS 1448, K 1055.

7.2 Manufacture

Centre punch shall be cleanly forged. All fins and flashes shall be dressed to surface level.

7.3 Heat treatment.

Heat treated to 470 to 570 HV (Vickers) on cutting edge extending 70mm towards top.

Striking face to be 200 to 230 HV.

7.4 Dimensions

The dimensions are detailed in Figure 5.

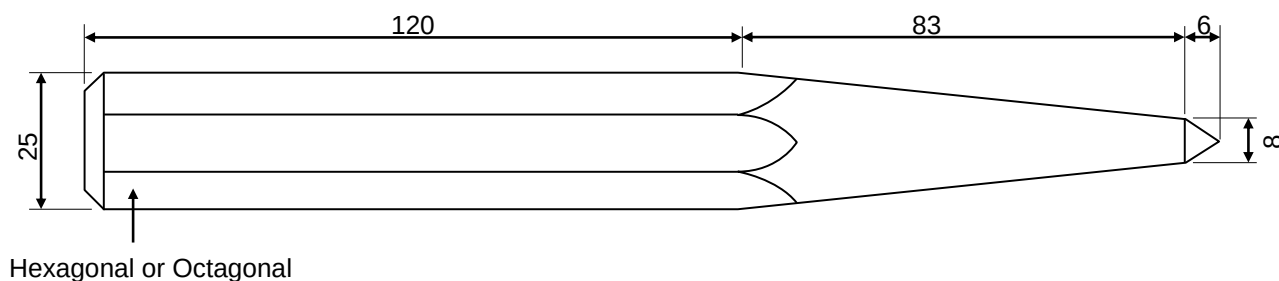


Figure 5 Centre Punch

8 Welders' Hot Set

This section details the manufacturing specification for a Welders' Hot Set.

8.1 Material

Steel to AS 1442 K1055

8.2 Manufacture

Hot set shall be cleanly forged. All fins and flashes shall be dressed to surface level.

8.3 Heat treatment.

Heat treated to 470 to 570 HV (Vickers) on cutting edge, extending 70mm towards Handle Eye.
Striking face to be 200 to 230 HV.

8.4 Dimensions

The dimensions are detailed in Figure 6.

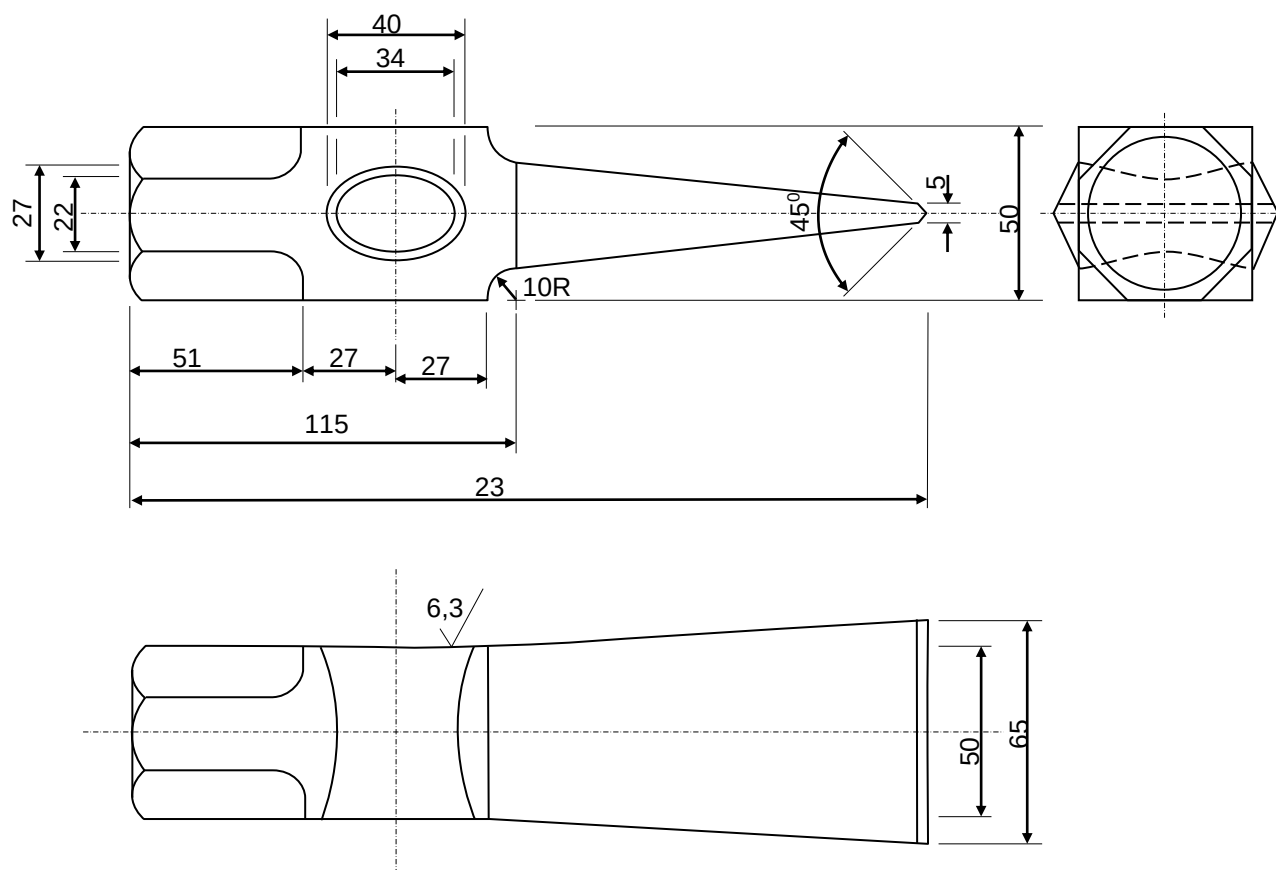


Figure 6 Welder's Hot Set

9 Spiking Hammer

This section details the manufacturing specification for Spiking Hammers.

9.1 Material

Steel to AS 1442, K1055B, K1045 or BHP – XK15B35

9.2 Manufacture

Spiking hammers shall be cleanly forged to conform to AS 3797.1. All fins and flashes shall be dressed to surface level.

9.3 Heat treatment.

Hardness on faces to be 470 to 560 HV on striking face, extending 70mm towards the handle eye.

9.4 Dimensions

The dimensions are detailed in Figure 7.

Tolerances – eye dimensions: $\pm 1\text{mm}$, length and width $\pm 2 - 3\text{mm}$

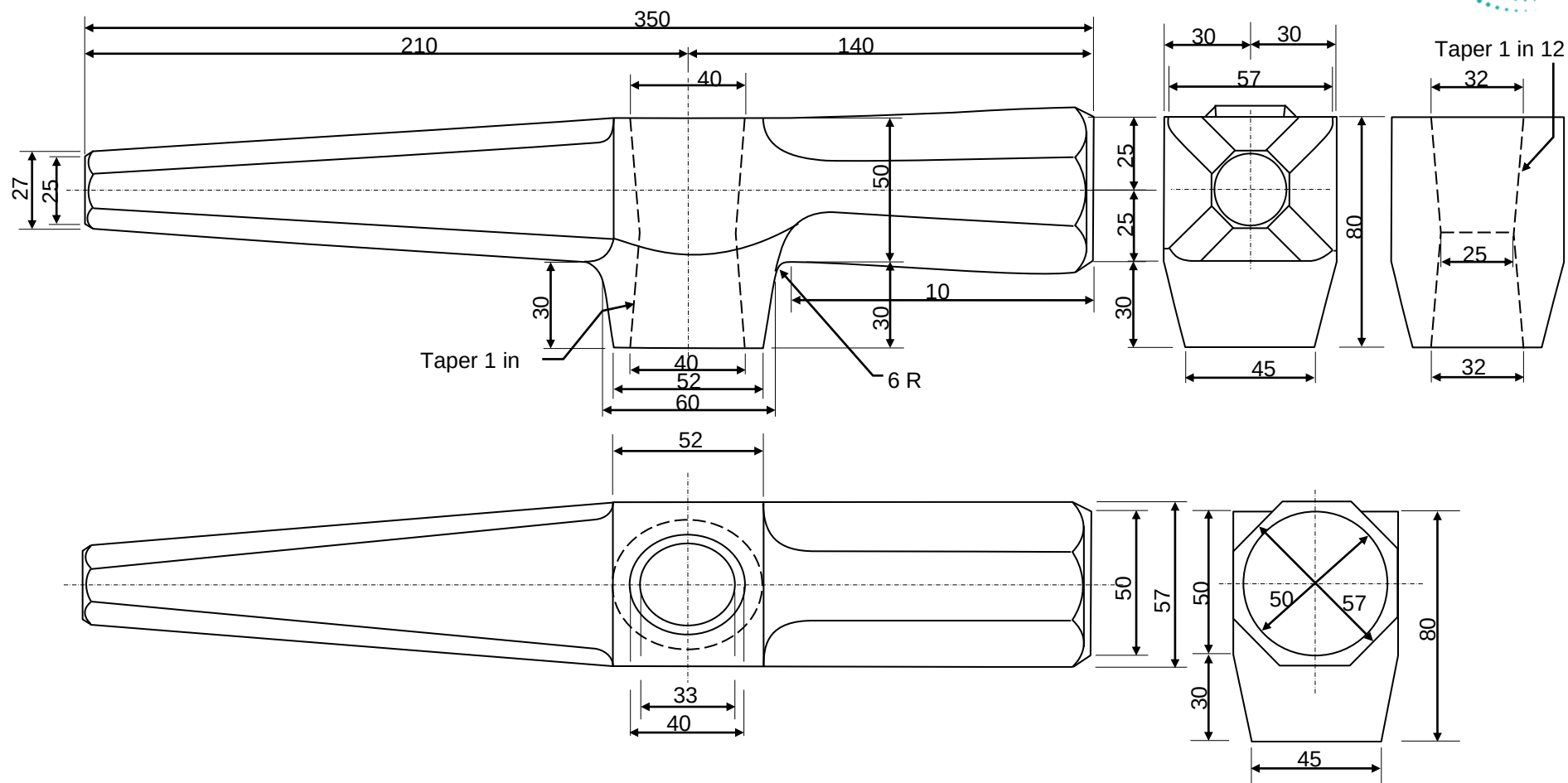


Figure 7 Spiking Hammer

10 Rail Template

This section details the manufacturing specification for rail templates to suit the following rail sizes – 31, 41, 47, 50, 53 and 60kg/m.

10.1 Material

The template and handle shall be Mild Steel plate 2mm thick.

10.2 Manufacture

The template profile shall be shaped to suit AS 1085.1 rail profiles in 31, 41, 47, 50, 53 and 60kg/m as applicable.

Each template to be stamped with the relevant rail size in 13mm numerals as indicated in

The handle shall be welded to the template by welding in accordance with AS 3678.

Holes shall be drilled in accordance with Table 1.

Rail Size	X	Y	Z
60	88	130	75
53	62	127	68
50	88	130	67
47	62	127	62
41	62	127	60
31	62	127	52

Table 1 Hole locations

Manufacturing tolerances for the template shape shall meet the rail size and profile tolerances detailed in AS 1085.1.

10.3 Dimensions

The dimensions are detailed in Figure 8.

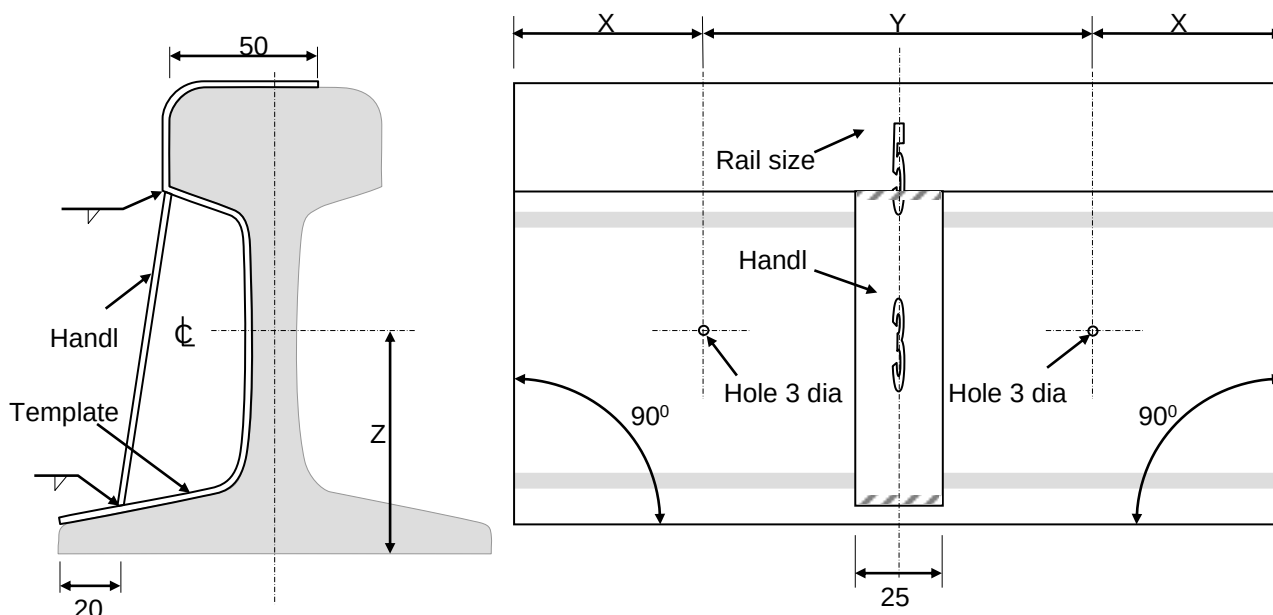


Figure 8 Rail template

11 Sleeper Tongs

This section details the manufacturing specification for Sleeper Tongs.

11.1 Material

Steel to AS 1442, K1055B, K1042, K1045

11.2 Manufacture

Tongs shall be cleanly forged. All fins and flashes shall be dressed to surface level.

11.3 Heat treatment.

Fine grain normalise

11.4 Dimensions

The dimensions are detailed in Figure 9.

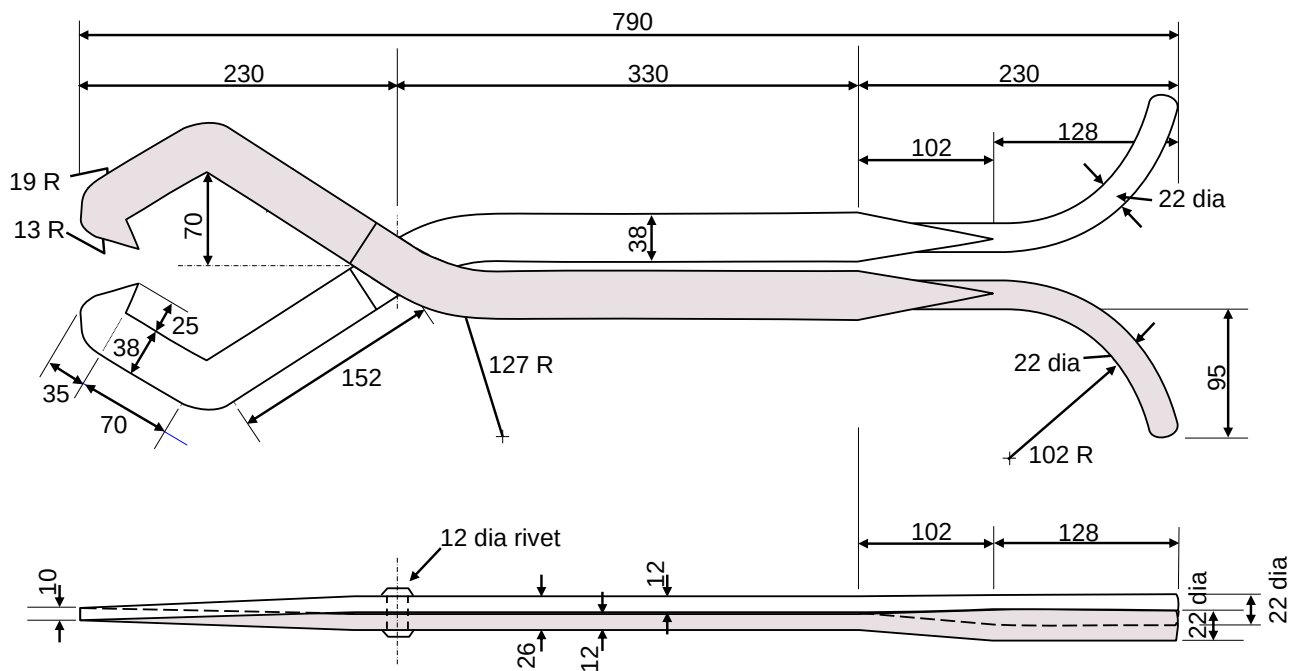


Figure 9 Sleeper tongs

12 Beater Pick

This section details the manufacturing specification for Beater Picks.

12.1 Material

Steel to AS 1442 or AS 1444, K1055B. Cast steel grade 4150/60

12.2 Manufacture

Picks shall be cleanly forged to conform to AS 3797.1. All fins and flashes shall be dressed to surface level.

12.3 Heat treatment.

Hardness 425 to 500 HB. Test points 38mm from each end

12.4 Dimensions

The dimensions are detailed in Figure 10. Tolerance 2% on length, 5% on cross section

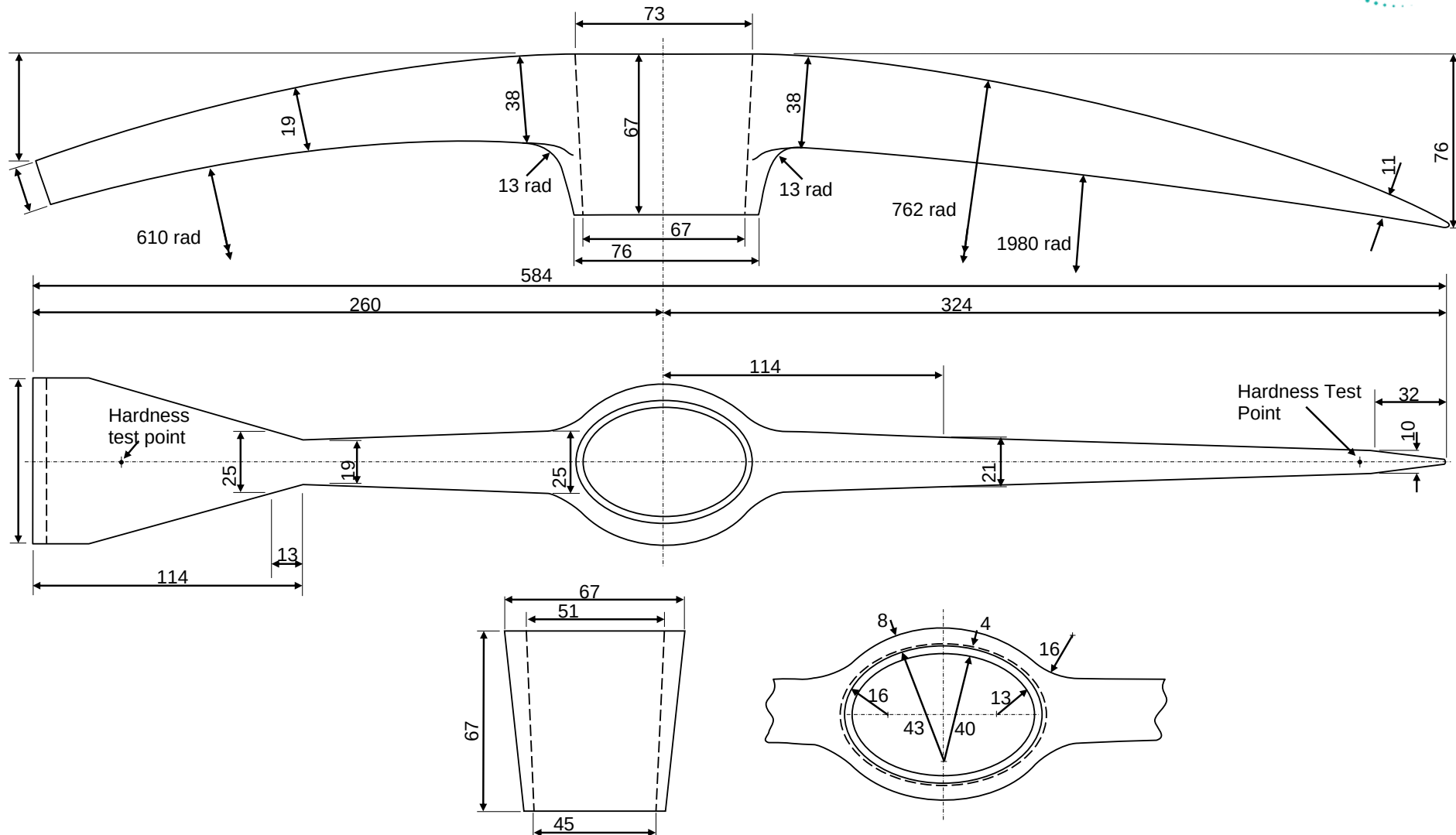


Figure 10 Beater Pick

13 Draw Wedge

This section details the manufacturing specification for Draw wedges.

13.1 Material

Steel to AS 1442, K1055B

13.2 Manufacture

Wedges shall be cleanly forged. All fins and flashes shall be dressed to surface level.

13.3 Heat treatment.

Hardness 250HB $\pm$ 20.

13.4 Dimensions

The dimensions are detailed in Figure 11

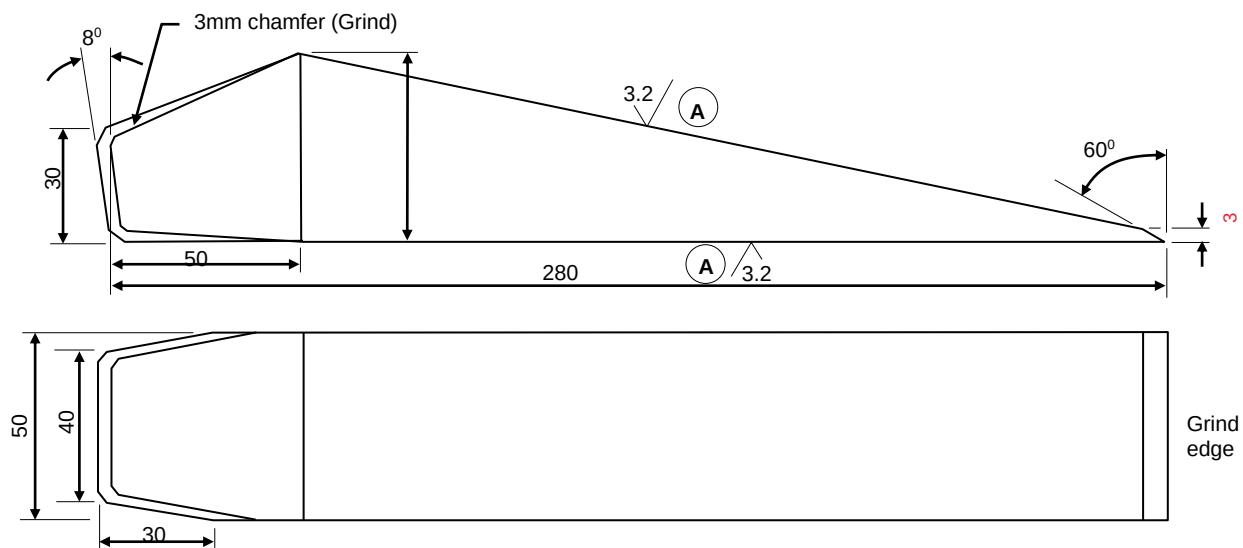


Figure 11 Draw wedge

14 Claw Bar

This section details the manufacturing specification for Claw Bars.

14.1 Material

AS 1448 K1060, K1055 or K1045

14.2 Manufacture

Utility claw bars shall be cleanly forged as a single unit. All fins and flashes shall be dressed to surface level.

14.3 Heat treatment

Utility claw bars shall be hardened and tempered. Hardness at ends shall be 300 – 340 HV.

14.4 Weight

10kg.

14.5 Dimensions

The dimensions are detailed in Figure 12.

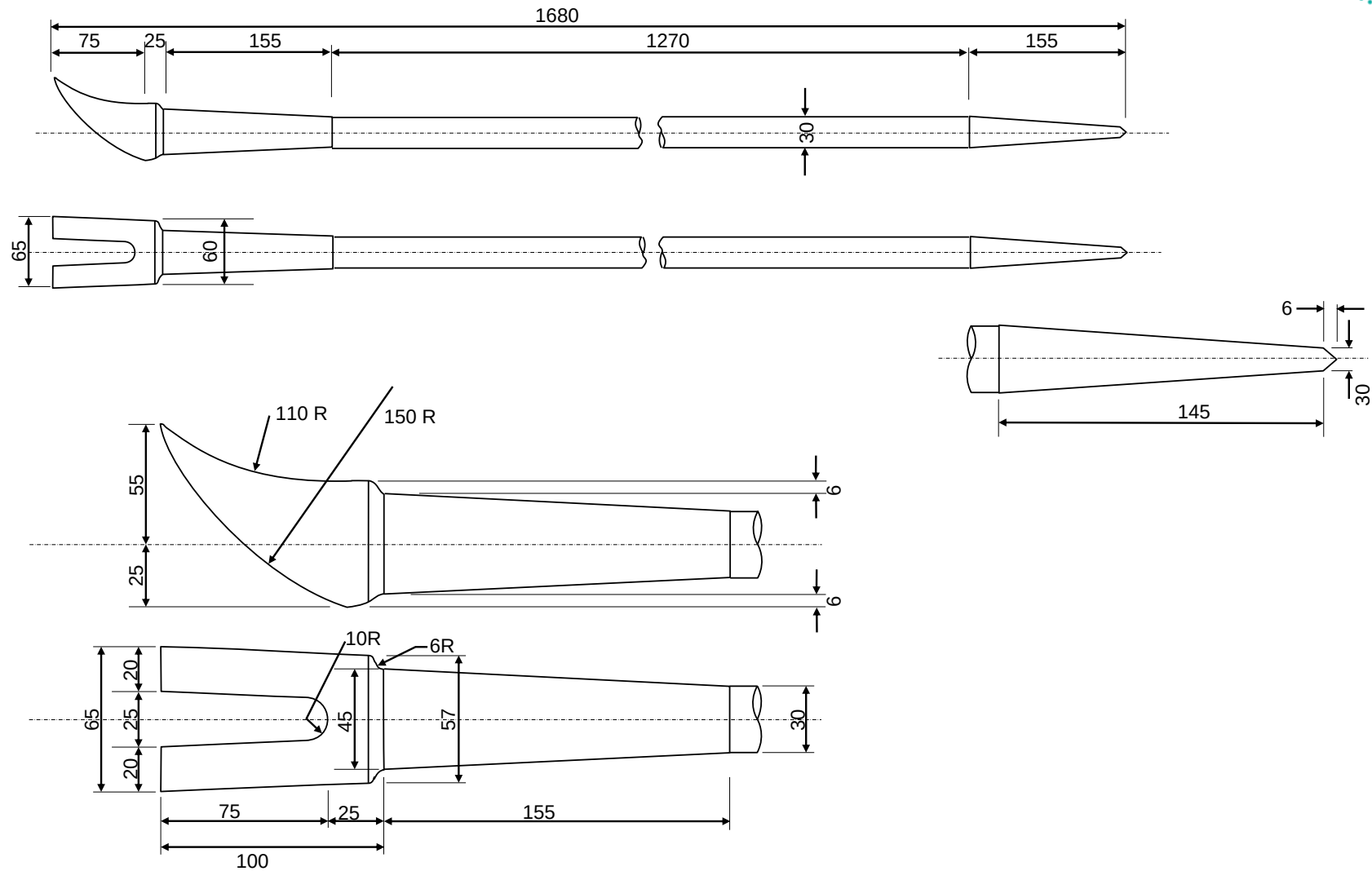


Figure 12 Claw Bar