

SECTION 10

VEHICLE ATTACHMENTS

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10.1 SCOPE

This subsection specifies requirements for components to be fitted as operational attachments to new and substantially modified rail freight vehicles.

10.2 GENERAL PRINCIPLES AND REQUIREMENTS

10.2.1 HANDRAILS/HANDHOLDS

Handrails/handholds are to be a bolted type and conform to Diagram 10-1, located in accordance with Section 2.

Handrails shall be attached direct to the vehicle body or superstructure or by means of securing brackets which are permanently fastened to the vehicle body. These brackets shall be manufactured and secured using the fixing criteria specified in subsection 10.2.3.

10.2.2 FOOTSTEPS

Rail freight vehicles may be fitted with one or more footstep types depending upon vehicle configuration, handbrake type and location in accordance with Section 2.

These footsteps shall conform to the following Diagrams:

- | | | |
|-----|----------------------------|--------------------|
| (a) | Stirrup step | refer Diagram 10-2 |
| (b) | Side handbrake step | refer Diagram 10-3 |
| (c) | End step | refer Diagram 10-4 |
| (d) | Stirrup step (Narrow type) | refer Diagram 10-9 |

10.2.3 SUPPORT BRACKETS AND FIXING CRITERIA

10.2.3.1 Brackets used for securing handrails/footsteps to the vehicle shall be at least equivalent to 75 x 75 x 10 steel angle welded to the vehicle by 6 mm minimum x 50 mm minimum length fillet welds both sides of the joint. Where flat bar or plate is used the minimum thickness shall be 12 mm.

10.2.3.2 Brackets may be of steel or aluminium and may be welded to the vehicle or attached using M16 bolts or swage lock pin fasteners of equivalent strength. Welding shall be in accordance with AS 1554.1 for steel and AS 1665 for aluminium.

10.2.3.3 Handrails and footsteps shall be attached to the underframe, body or securing brackets by means of M16 bolts or swage lock pin fasteners of similar diameter. Swage lock pin fasteners shall be of a type which is removable in the field without special tools and the fastener holes shall accommodate M16 bolts for field replacement when required.

10.2.3.4 All nuts or swage collars shall be on the outside of the connection.

10.2.3.5 No fastener shall protrude past the nut or collars by more than 5 mm and shall be cut/ground if required to remove the excess and any sharp edges.

10.2.3.6 Bolts shall be secured by any of the following:

- (a) spring washer and nut
- (b) nut and approved locking compound
- (c) unused nylon insert nut
- (d) self-locking nut

10.2.3.7 For the correct positioning of support brackets, steps/handholds in relation to specific freight vehicle types refer Section 2 Part 2.4 and Diagrams 2-1 to 2-7.

10.2.4 LADDERS, PLATFORMS AND WALKWAYS

The design, construction and installation of all access platforms, walkways, stairways and ladders where applicable shall comply with AS 1657, 'SAA Code for fixed platforms, walkways, stairways and ladders'.

Additional stiffening of structural members may be required to ensure a robust design resistant to vibration and suitable for railway working.

10.2.5 AUTOMATIC VEHICLE IDENTIFICATION

Under the auspices of the Standards Association of Australian (SAA), there is a working committee TE/19 preparing a draft specification on Automatic Electronic Identification (AEI) of vehicles.

This committee comprises 14 members, two of which have been seconded from the ROA.

This subclause shall be left open until the committee releases its report and recommendations for the use of such equipment in Australia.

10.2.6 WAYBILL CLIP

10.2.6.1 Waybill clips shall generally conform to Diagram 10.5 and shall be located on diagonally opposite corners of the vehicle on, or in close proximity to, the data plate.

10.2.7 DUMMY COUPLINGS

10.2.7.1 The vehicle headstock shall be equipped with a dummy coupling to suit each flexible hose coupling fitted.

10.2.7.2 Dummy couplings shall be suitable for use with the 32 mm nominal bore flexible hose couplings specified in Section 7.

10.2.8 SHUNTING PADS

10.2.8.1 Shunting pads suitable for propelling vehicles by means of a tractor shall be manufactured generally as shown on Diagram 10-6 and be located on the outer extremity of the vehicle headstock in such a position as to minimise uncoupling rod damage.

10.2.8.2 Shunting pads may be attached on the non-uncoupling rod corners of vehicles at the discretion of the owning system.

10.2.9 EMERGENCY TOWING FIXTURES

10.2.9.1 Each vehicle shall be equipped with facilities for towing in emergencies. Two (2) emergency towing fixtures as shown on Diagram 10-7 shall be attached to each headstock.

10.2.9.2 These towing fixtures shall be located such that a minimum lateral clearance of 76 mm from the coupler head and shank exists with the maximum lateral offset of the coupler.

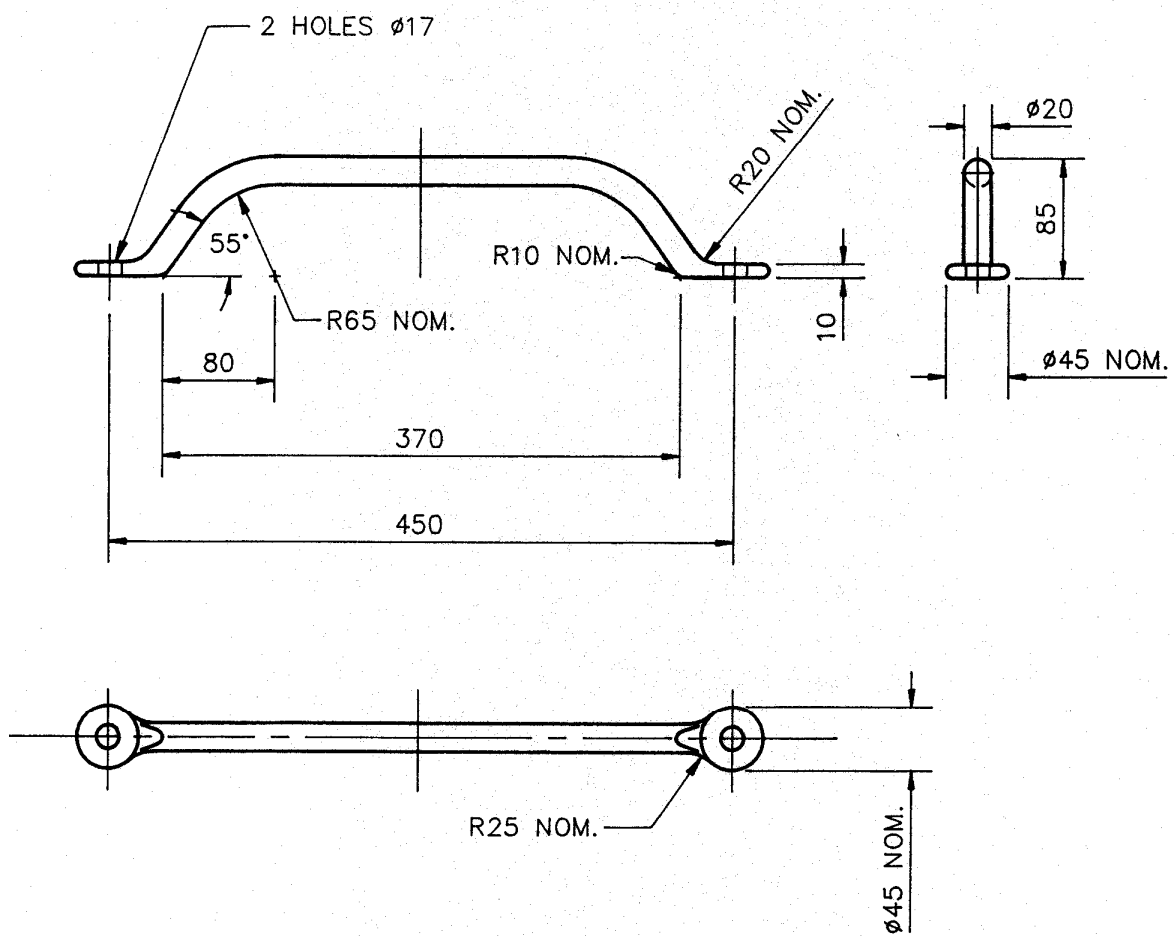
10.2.9.3 Other types of towing attachments may be fitted to the vehicle side sills or underframe at the discretion of the owning System.

10.2.10 UNCOUPLING GEAR

The uncoupling rod shall be of such design that at no time during a wagon/coupler movement shall any portion of the mechanism extend beyond the wagon extremities or the rollingstock gauge.

A typical design of bottom operated uncoupling rod is shown on Diagram 10-8.

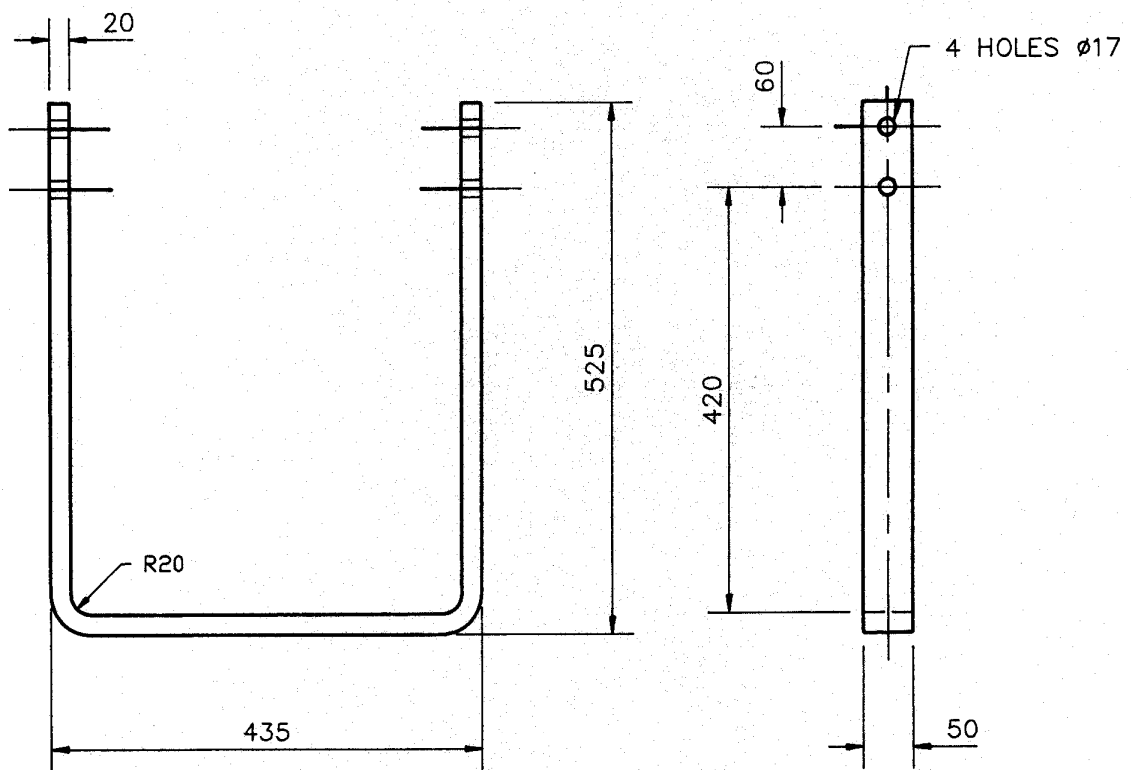
DIAGRAM 10-1
SHUNTER'S HANDHOLD



MATERIAL: STEEL BAR $\phi 20 \times 560$ AS3679-250-FORGED

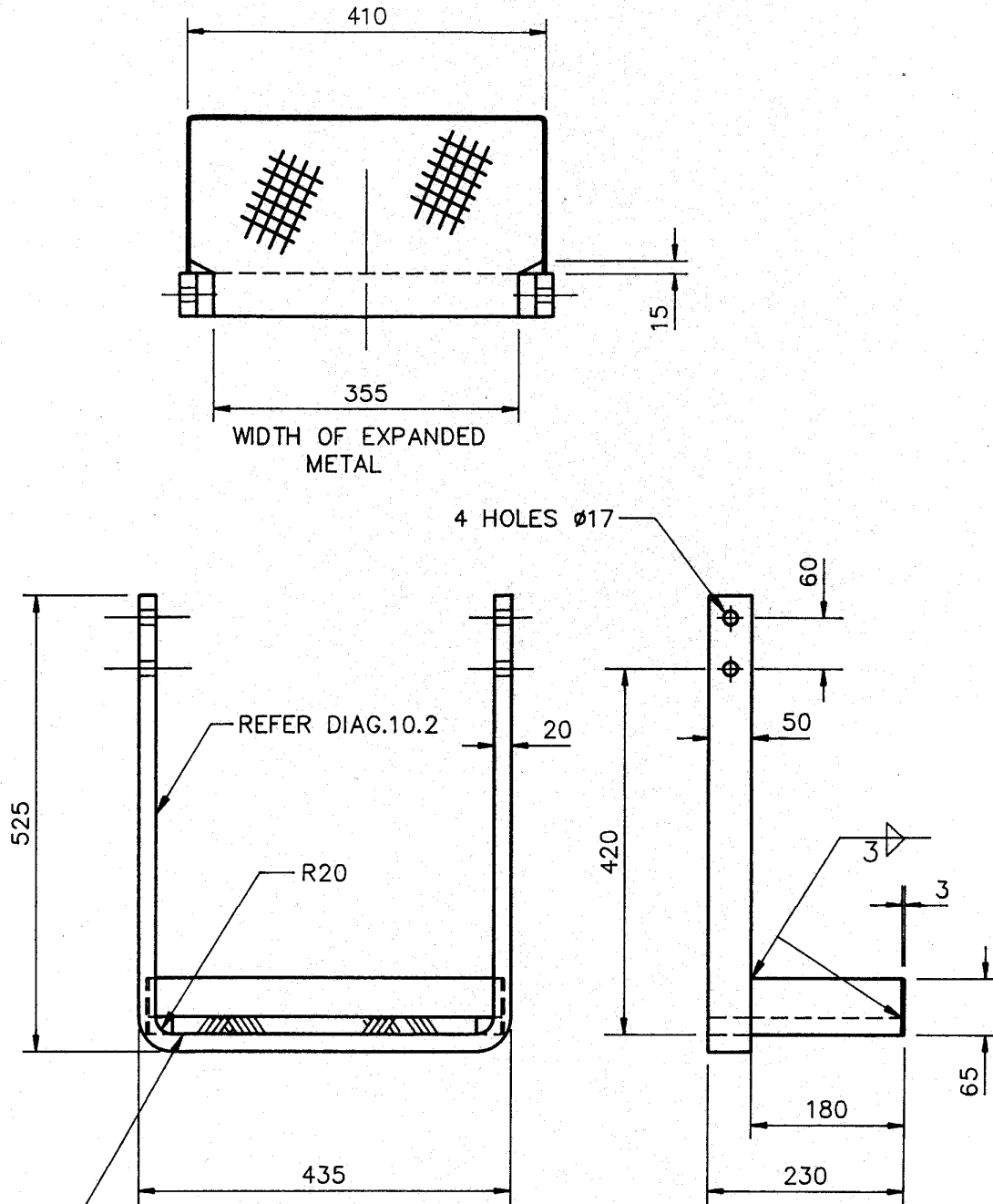
DIAGRAM 10-2

STIRRUP STEP



MATERIAL: STEEL BAR 50x20x1420 AS3679-250 HOT BENT.

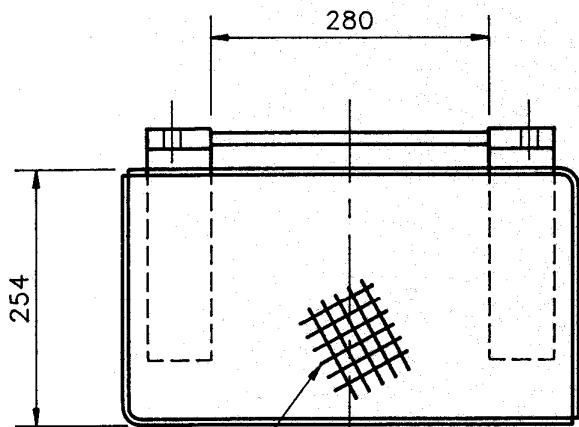
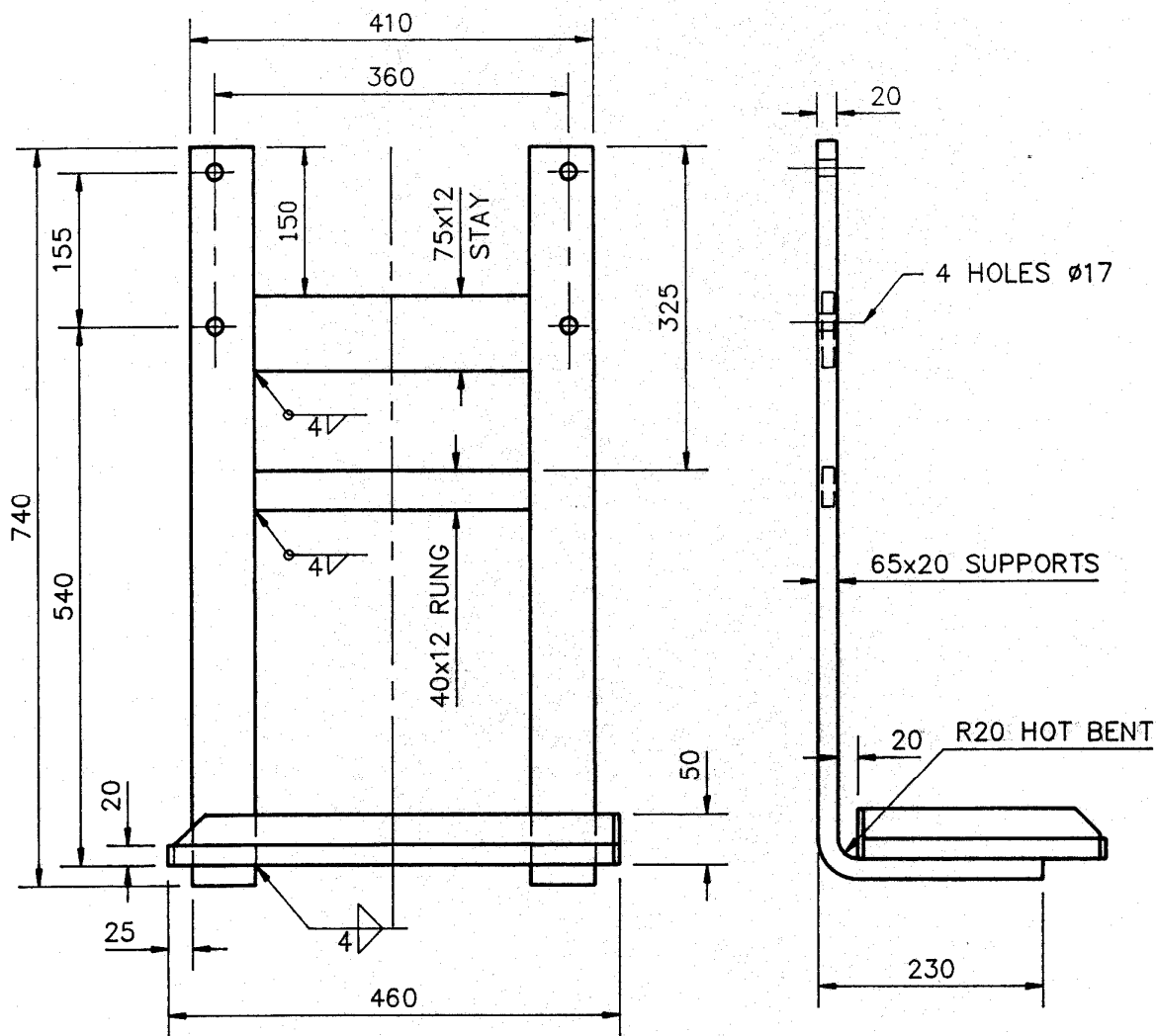
DIAGRAM 10-3
SIDE HANDBRAKE STEP



EXPANDED METAL SIMILAR TO GRIDMESH STYLE GR400 STEEL SECURED BY WELDING

MATERIAL: STEEL AS3679-250
AS3678-250

DIAGRAM 10-4



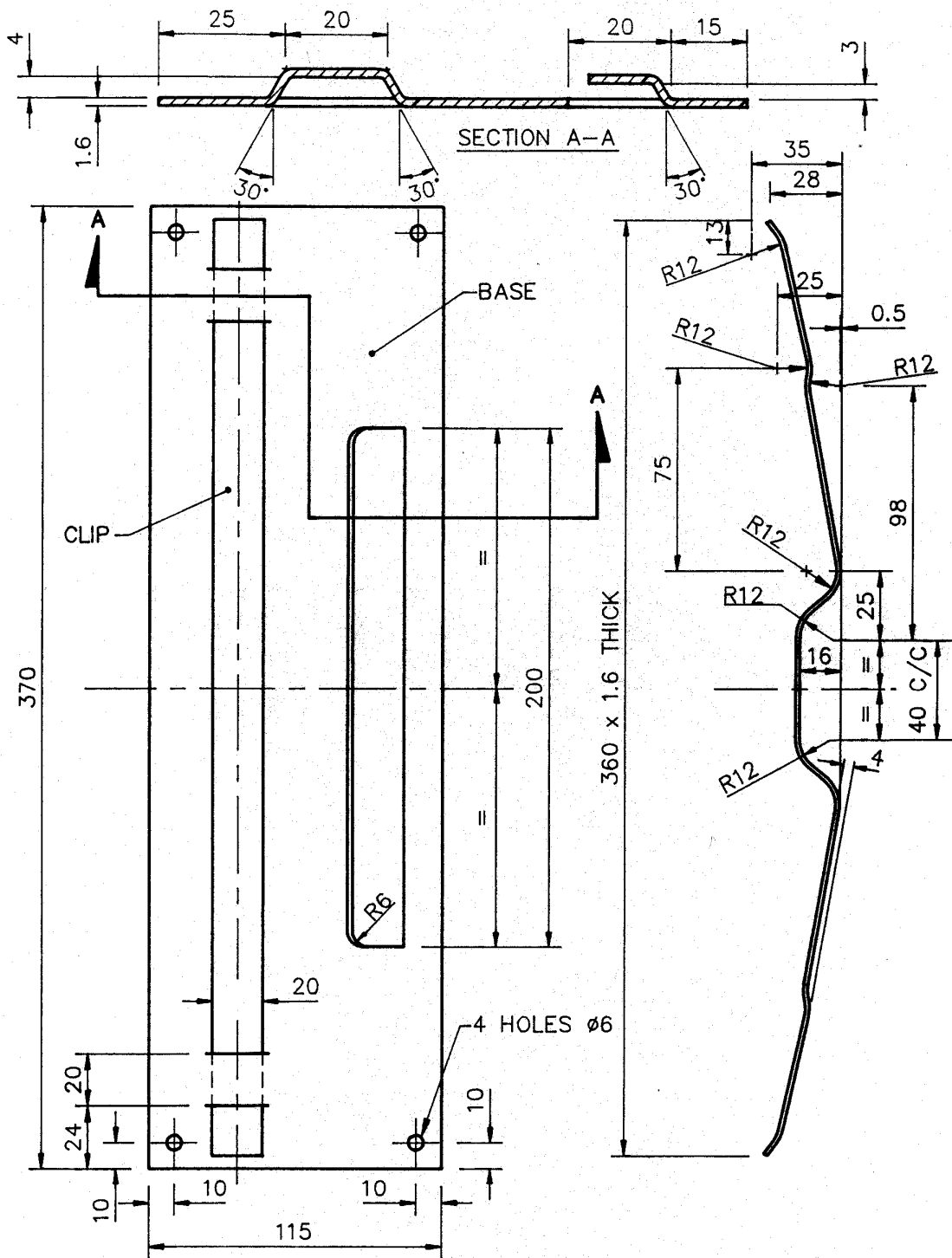
EXPANDED METAL SIMILAR TO GRIDMESH
STYLE GR400 STEEL SECURED BY WELDING

MATERIAL: STEEL AS3679-250
AS3678-250

END STEP

DIAGRAM 10-5

WAYBILL CLIP

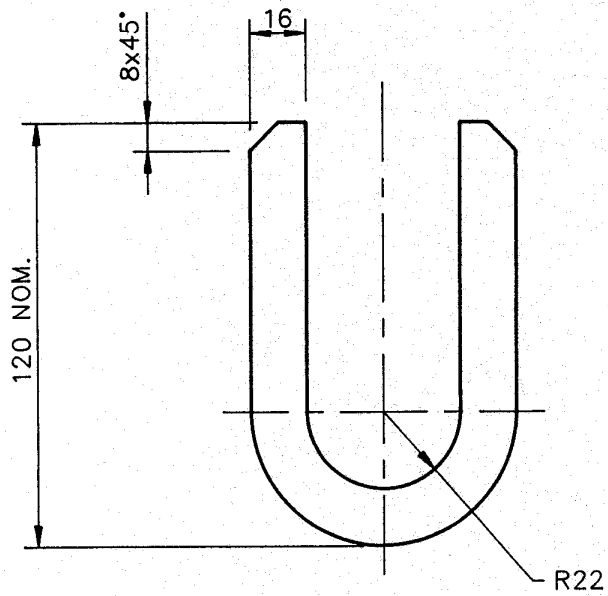
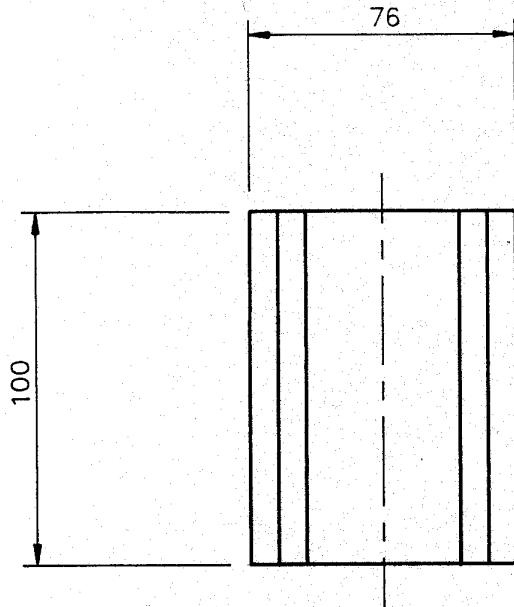


CLIP-MATERIAL: SPRING STEEL TO AS1447.

BASE-MATERIAL: STEEL TO AS1595-CA2S-G.
ZINC PLATE AFTER FORMING.
OR ALTERNATIVELY GALVANISED
STEEL SHEET.

REMOVE SHARP EDGES.

DIAGRAM 10-6
SHUNTING PUSH PAD



MATERIAL - 100 x 16 MS BAR
A.S. 3679 -250 HOT BENT

DIAGRAM 10-7
EMERGENCY TOWING FIXTURE

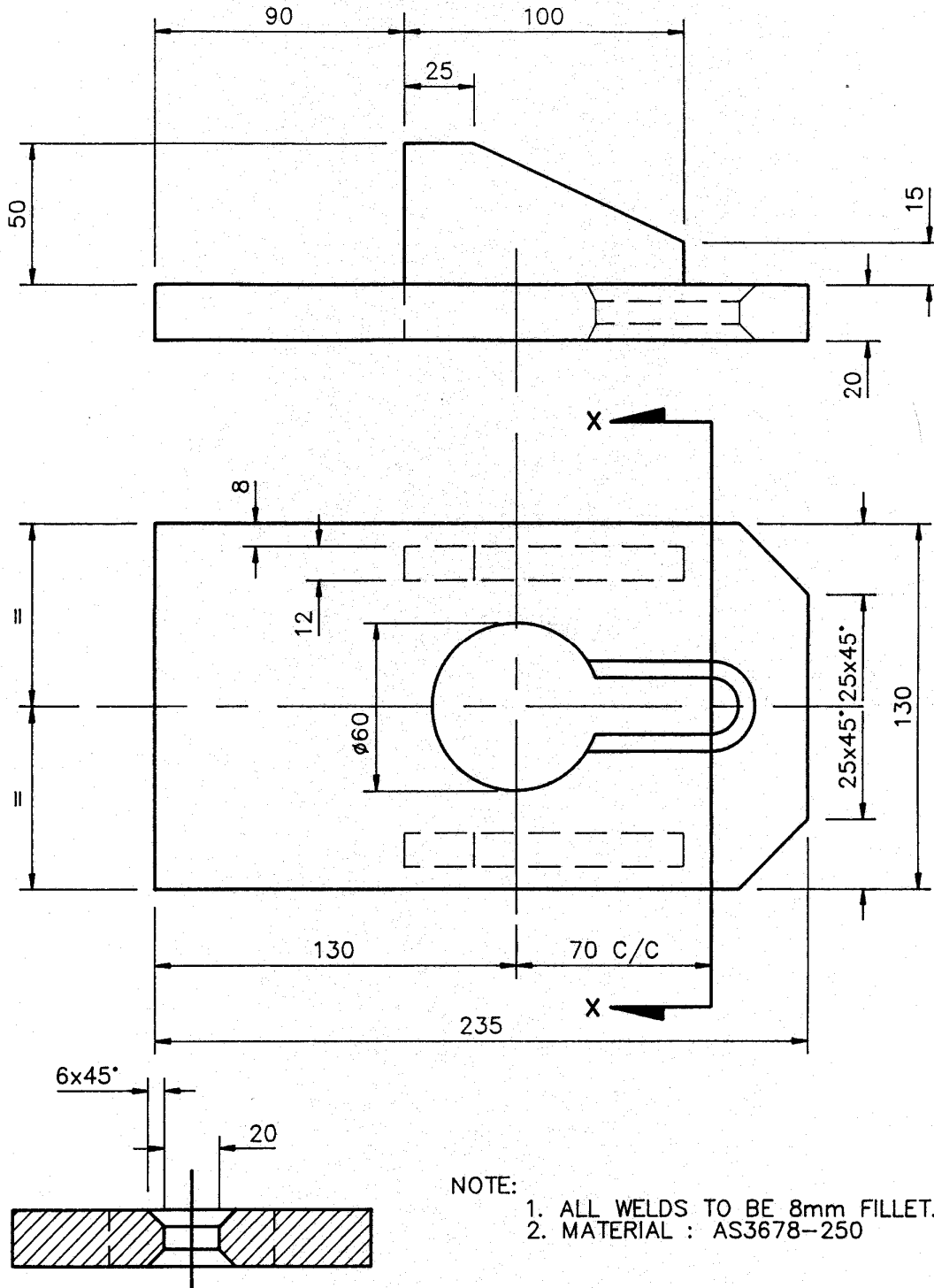
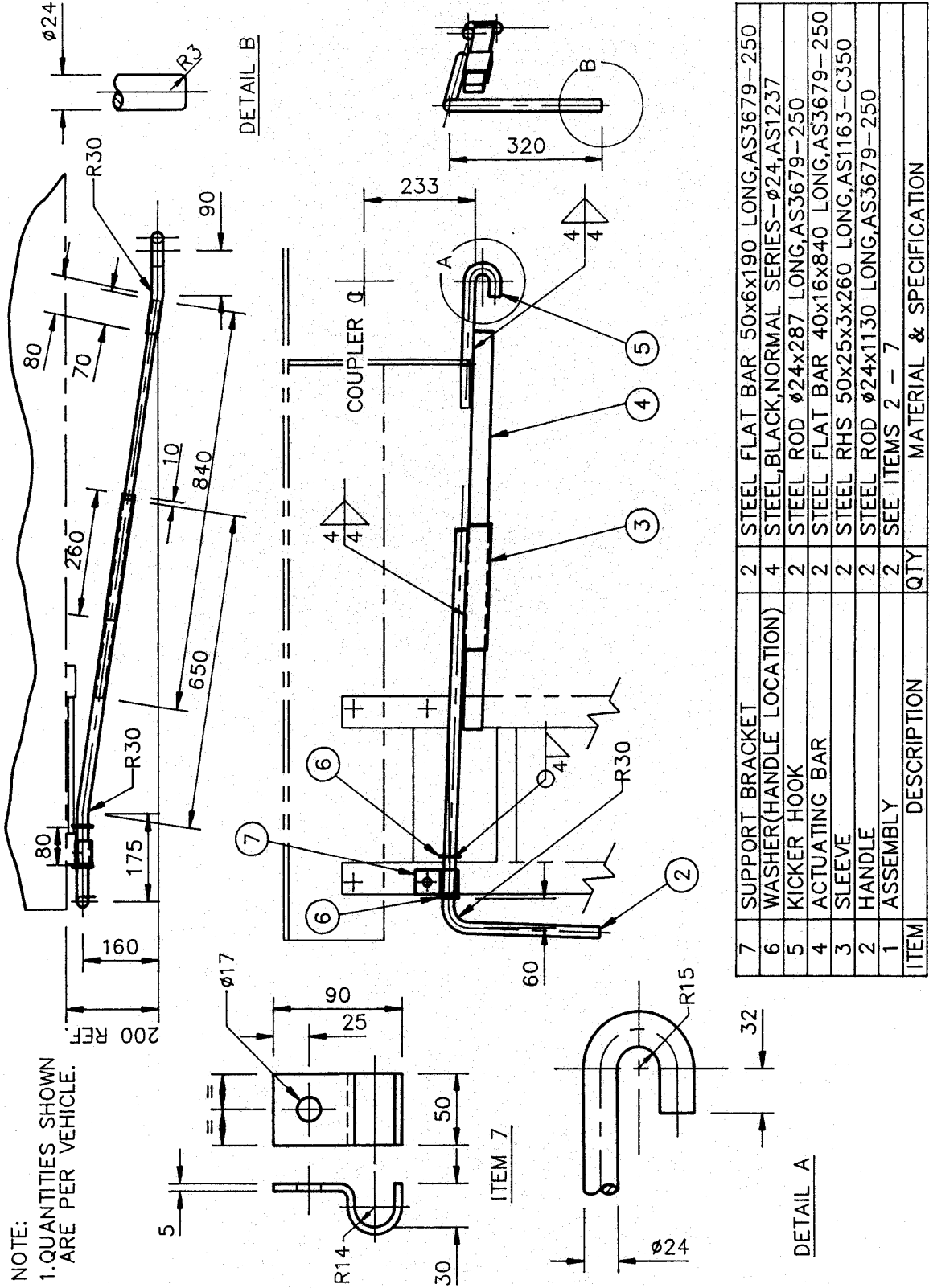


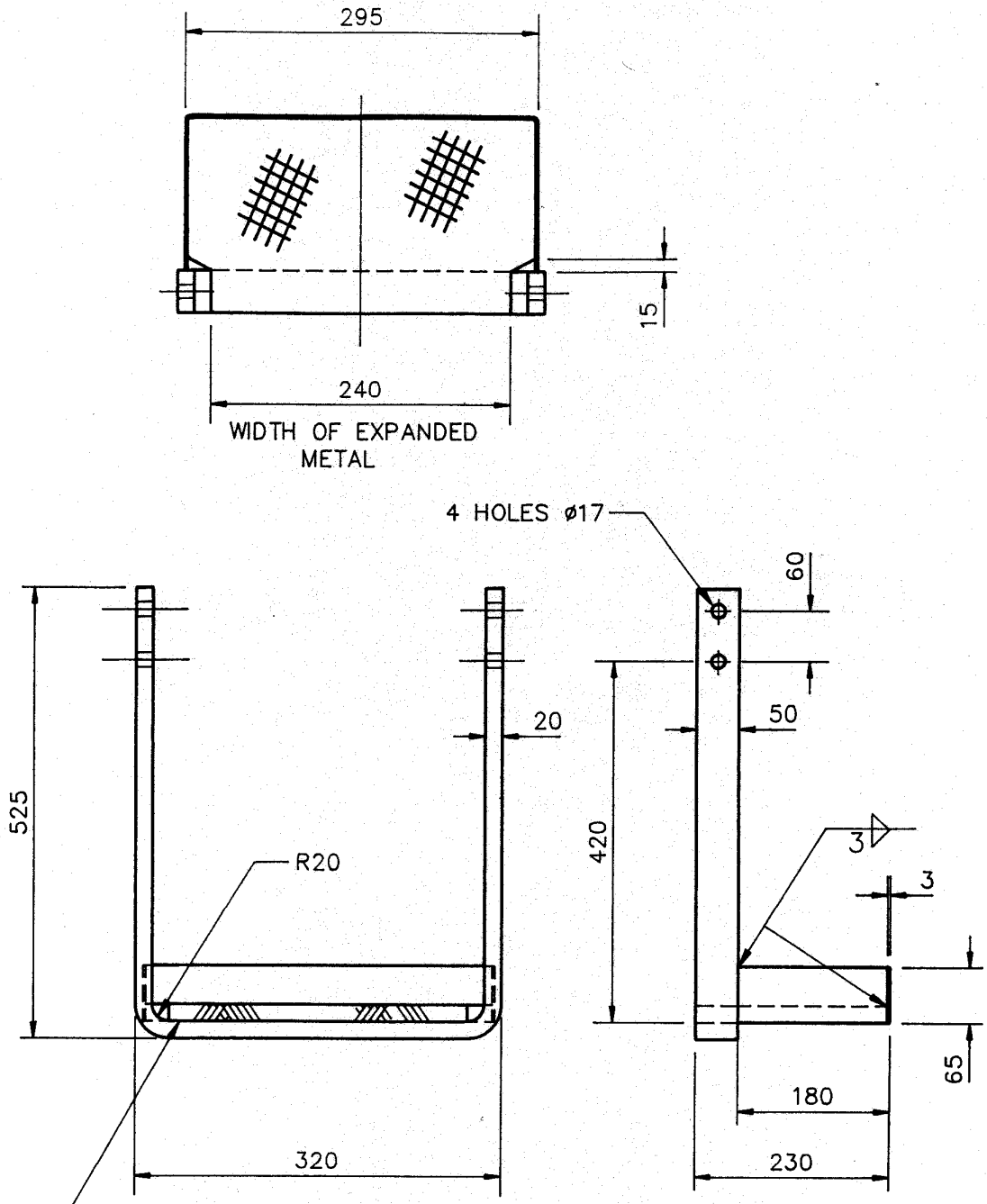
DIAGRAM 10-8
UNCOUPLING ROD



NOTE:
1. QUANTITIES SHOWN
ARE PER VEHICLE.

ITEM	DESCRIPTION	QTY	MATERIAL & SPECIFICATION
7	SUPPORT BRACKET	2	STEEL FLAT BAR 50x6x190 LONG, AS3679-250
6	WASHER (HANDLE LOCATION)	4	STEEL, BLACK, NORMAL SERIES - ϕ 24, AS1237
5	KICKER HOOK	2	STEEL ROD ϕ 24x287 LONG, AS3679-250
4	ACTUATING BAR	2	STEEL FLAT BAR 40x16x840 LONG, AS3679-250
3	SLEEVE	2	STEEL RHS 50x25x3x260 LONG, AS1163-C350
2	HANDLE	2	STEEL ROD ϕ 24x1130 LONG, AS3679-250
1	ASSEMBLY	2	SEE ITEMS 2 - 7

DIAGRAM 10-9
STIRRUP STEP (NARROW TYPE)



EXPANDED METAL SIMILAR TO GRIDMESH STYLE GR400 STEEL
 SECURED BY WELDING
 MATERIAL: STEEL AS3679-250
 AS3678-250