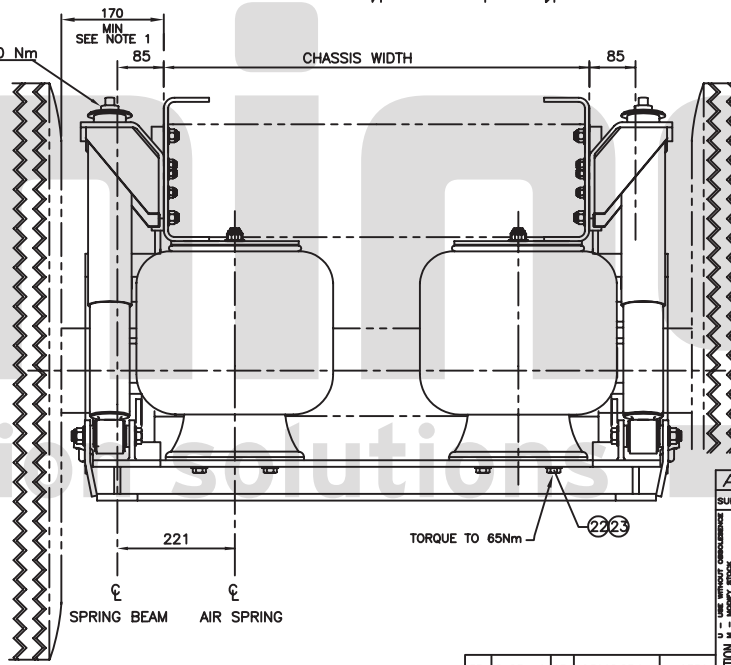
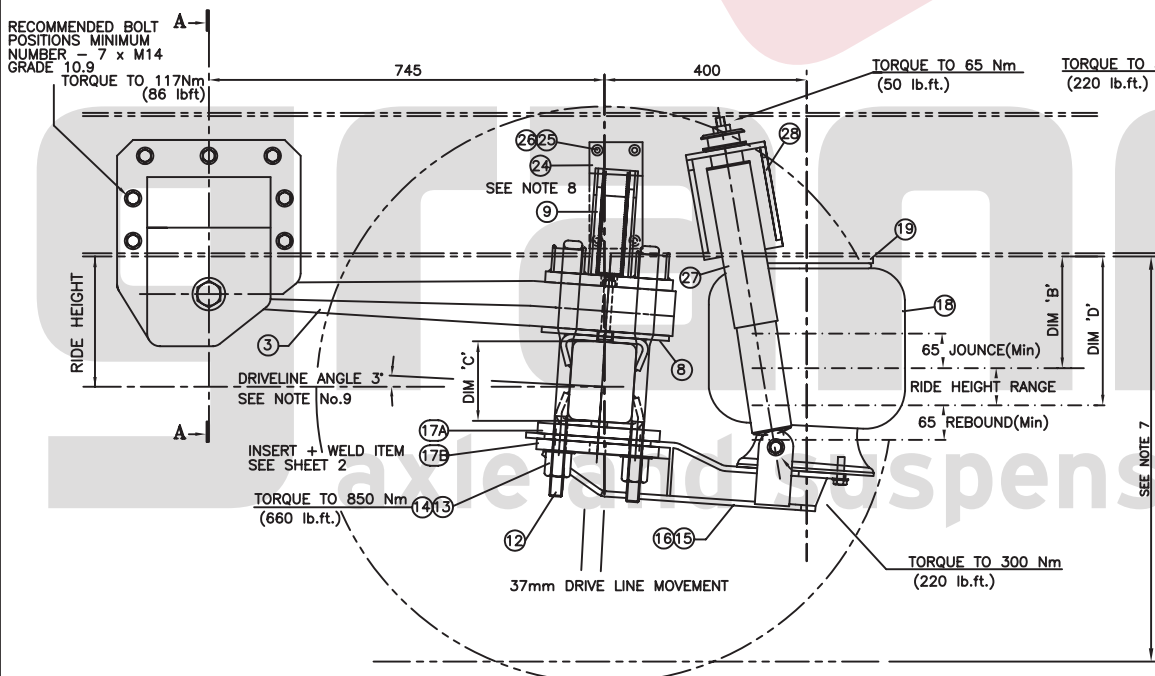
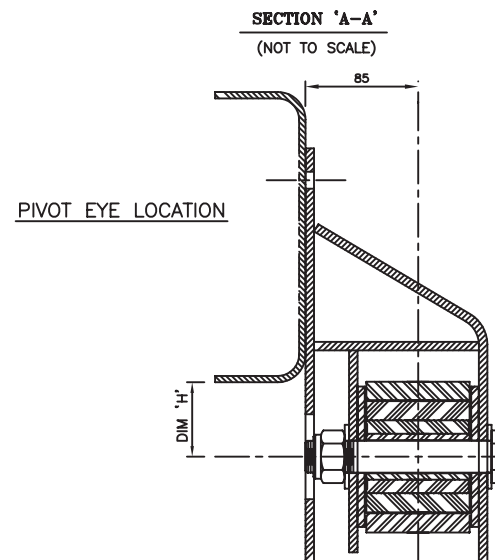
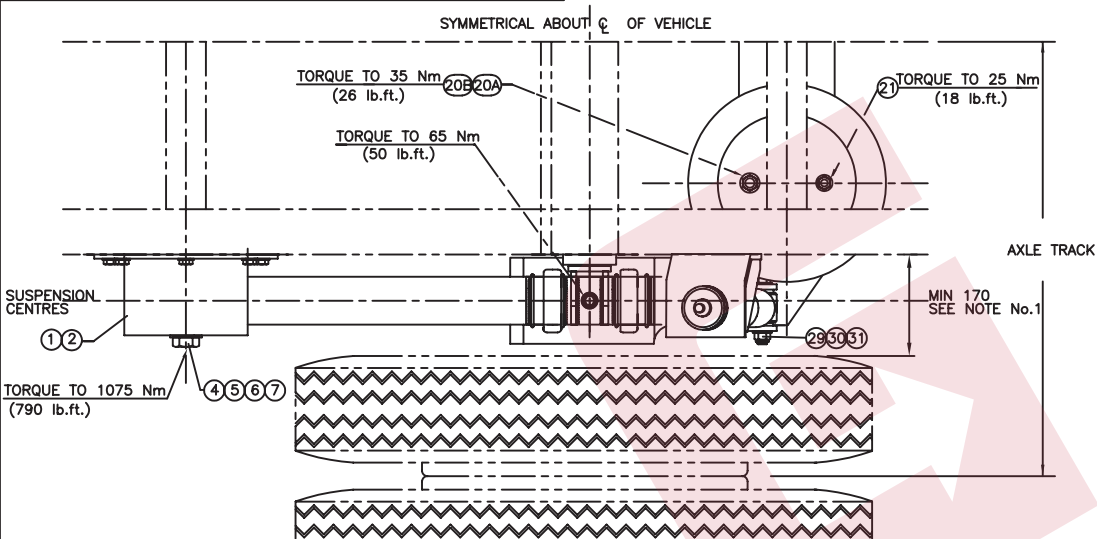


COPYRIGHT © 1997 DR

THIRD ANGLE PROJECTION



SUSPENSION MODEL	DIM 'C' AXLE SECTION	DIM 'B'	DIM 'D'	DIM 'H'
PDH20-110AA	120	240	320	95
PDH20-110BA	150	215	285	70

DO NOT SCALE IF IN DOUBT ASK
 ALL DIMENSIONS ARE IN MILLIMETRES
 ORIGINAL FRAME SIZE 809mm x 562mm
 COMPONENTS TO CARRY PART NO. AT LOCATION (C)
 BATCH DATE (D)
 SUPPLIER CODE (E)
 BURRS AND SHARP EDGES TO BE REMOVED (F)

DESIGNED FOR PDH SUSPENSIONS
 UNSPECIFIED TOLERANCES
 NO DECIMALS ± 1mm
 ONE ± 0.5mm
 TWO ± 0.2mm
 ANGULAR ± 0 - 3'

ITEM	PART NO.	QTY	DESCRIPTION	NOTES
BILL OF MATERIALS				
DRAWN BY S.J.MORAN AUTHORIZED D.S.				
DATE 25 NOV 97 CHECKED MPQ				
ALL ALTERATIONS TO BE VIA CAD SCALE 1:5				
ESTIMATED WEIGHT ACTUAL SUPERSEDES				

A1 1ST ISSUE - ENGLISH
 SUFF CHANGE & REASON (DISP/ORTH) BY DATE

MODIFICATIONS

Granning UK Ltd.
 Unit 27, Millers Dale, Industrial Estate,
 Barncliffe, Cleethorpe, East Yorkshire, DN34 9JF

Granning UK Ltd. CLAIMS PROPRIETARY RIGHTS TO ALL THE INFORMATION DISCLOSED ON THIS DRAWING. IT IS NOT TO BE REPRODUCED OR USED FOR MANUFACTURE OR FOR ANY OTHER PURPOSE OR DISCLOSED TO ANY THIRD PARTY WITHOUT OUR WRITTEN PERMISSION.

MATERIAL

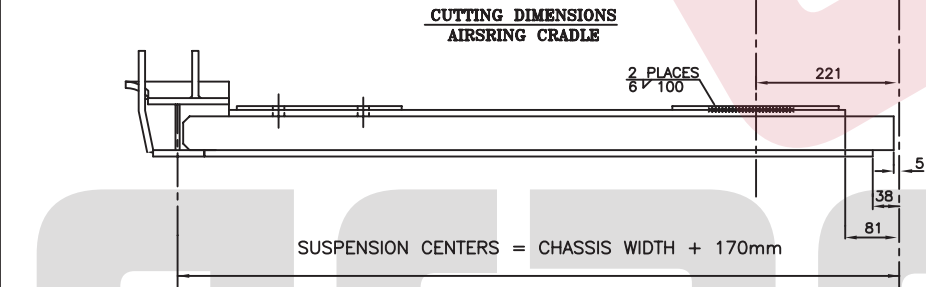
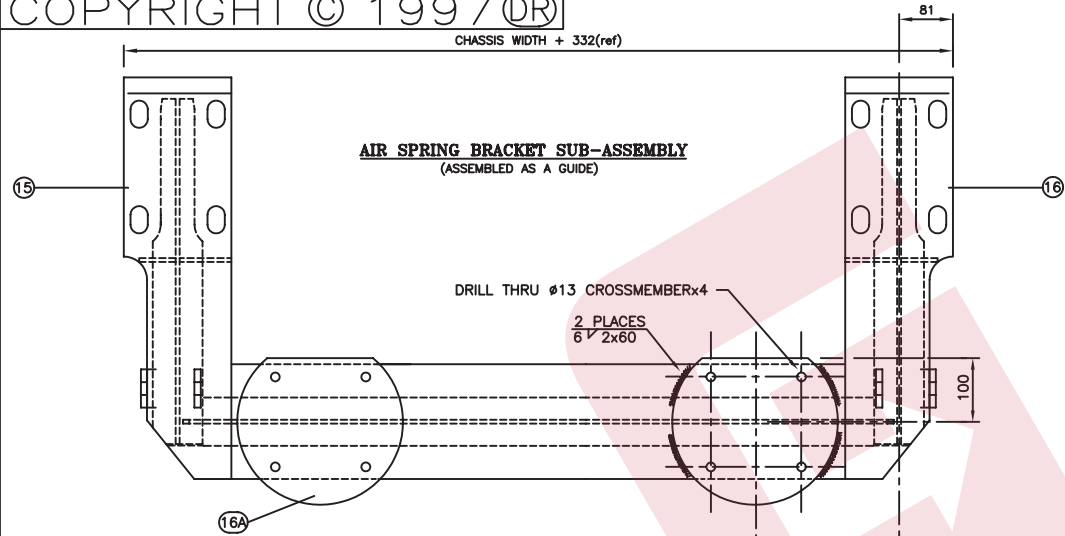
FINISH

TITLE
 GENERAL INSTALLATION
 HEAVY DRIVE AXLE SUSPENSION

DRAWING NO. 18166-1
 SHEET 1 OF 3 A1

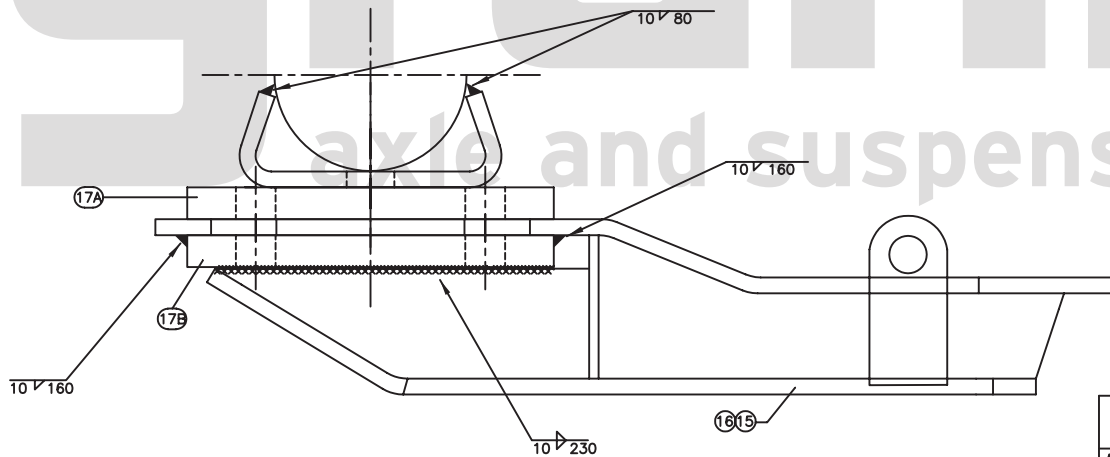
COPYRIGHT © 1997 DR

THIRD ANGLE PROJECTIO

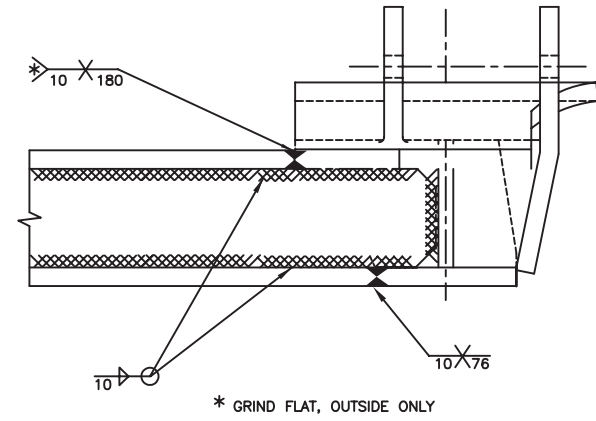


CUT CRADLE PART No.15 TO THESE DIMENSIONS THEN WELD TO PART No.16 AS SHOWN.

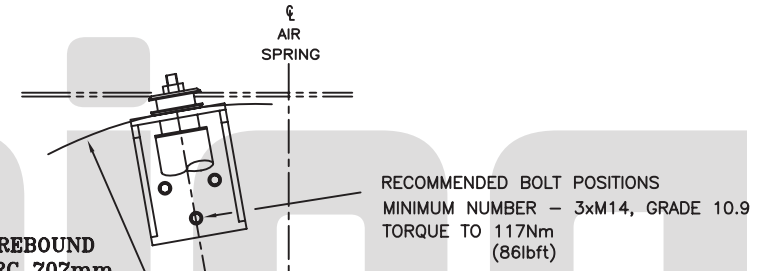
CLAMP PLATE WELDING DETAIL (NOT TO SCALE)



WELDING INSTRUCTIONS
AIRSPRING CRADLE



SHOCK ABSORBER MOUNTING



WITH SUSPENSION IN FULL REBOUND POSITION MOUNT S/A ON ARC 707mm ALLOWING SUFFICIENT CLEARANCE FROM MOVING PARTS AND AIRSPRING

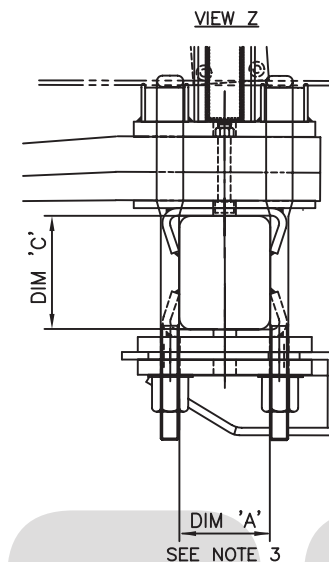
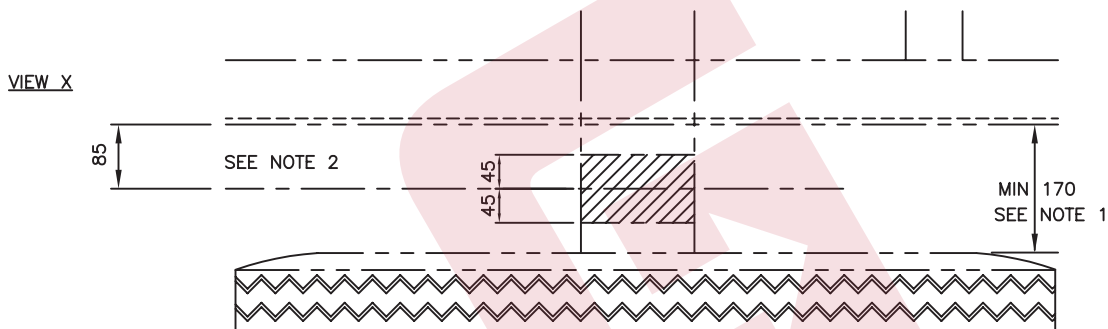
DO NOT SCALE IF IN DOUBT ASK		DESIGNED FOR PDH SUSPENSIONS		DRAWN BY S.MORAN AUTHORIZED D.S	
ALL DIMENSIONS ARE IN MILLIMETRES		UNSPECIFIED TOLERANCES		DATE 24 NOV 97 CHECKED MPQ	
ORIGINAL FRAME SIZE 809mm x 562mm		NO DECIMALS ± 1mm		SCALE NTS	
PART NO. AT LOCATION		ONE ± 0.5mm		SUPERSEDES	
BATCH DATE		TWO ± 0.2mm			
SUPPLIER CODE		ANGULAR ± 0 - 3			
BURRS AND SHARP EDGES TO BE REMOVED		ESTIMATED WEIGHT		ACTUAL WEIGHT	

1ST ISSUE - ENGLISH	
SUPP	CHANGE & REASON (DISP) ORIGIN BY DA
MODIFICATIONS	
Granning UK Ltd.	
Granning UK Ltd. CLAIMS PROPRIETARY RIGHTS TO ALL THE INFORMATION DISCLOSED ON THIS DRAWING. IT IS NOT TO BE REPRODUCED OR USED FOR MANUFACTURE OR FOR ANY OTHER PURPOSE OR ENCLOSED TO ANY THIRD PARTY WITHOUT OUR WRITTEN PERMISSION.	
MATERIAL	
FINISH	
TITLE	
GENERAL INSTALLATION HEAVY DRIVE AXLE SUSPENSION	
DRAWING NO. 18166-	
SHEET 2 OF 3	

COPYRIGHT © 1997 DR

THIRD ANGLE PROJECTION

- 1) The minimum room required from the outside of the chassis to the tyre/brake drum is 170mm. Do not fit to a vehicle with less room here without consulting Granning UK engineering. This makes this suspension unsuitable for vehicles such as Mercedes Benz 17 series. See sheet 1, and view x.
- 2) Note the ϕ of spring is 85mm from the outside of the chassis and the spring is 90mm wide. Ascertain that there are no obstructions in the contact area that will prevent the saddle from locating or clamping correctly. Ensure the top and bottom of the axle are totally flat in this area or totally circular in the case of a circular section axle, See view x.



- 3) Measure axle cross section at position of spring mounting. Dim 'A', see view z.
- 4) This suspension comes in either of two sizes of saddle clamp. From the above dimension choose from 150mm or 120mm. $\phi 127$ axles fit into 120mm saddleclamp. From this sheet assert whether you require a;

PDH20-110AA = 120mm Dim'A'

PDH20-110BA = 150mm Dim'A'

- 5) Measure height from underside of chassis to floor at position of drive axle vehicle unladen (h) .
- 6) Note f dimension from brake load sensing valve setting plate.
- 7) Ascertain required ride height (h-f) or (h-3/4f) based on an evaluation of the unladen mass of the vehicle and the plated mass of the axle. Remove original suspension and set chassis to this height. Prop chassis safely.
- 8) Alternative lateral location and stability provided by panhard rod. Refer to Granning Engineering for further information.
- 9) Driveline angle can be adjusted by altering hanger position. See sheet 1.

10) It is imperative that this suspension is maintained and torqued correctly. If the torque settings are not maintained then catastrophic failure can occur. The customer is to be made aware of this and the torque setting plate (Part No 12678) permanently affixed to the vehicle in a position where it is easily viewed by servicing personnel.

11) In fitting this suspension the brake load sensing valve needs to be replaced by a valve that senses the air spring pressure and thus modulates the brakes. Note complete details from original load setting valve plate. Refer to drawing No. 80100 for suspension pressure details. A suitable valve is to be selected to give outputs similar to those of the original valve when signaled by the pressure in the airsprings. The valve is to be set and tested to ensure accurate setting and then fitted along with a setting instruction plate (Granning part No.11999) stamped with the correct settings.

12) If raise/lower is to be employed a height limiting valve is to be incorporated into the circuit to protect the suspension components. See drawings 18752 and 18753 for Granning Recommendation.

- 13) Valve kits available: AP200 VALVE KIT PRIMARY
 AP201 VALVE KIT PRIMARY RAISE/LOWER
 AP203 VALVE KIT PRIMARY DUAL CONTROL
 AP204 VALVE KIT PRIMARY DUAL CONTROL RAISE/LOWER

DO NOT SCALE IF IN DOUBT ASK		DESIGNED FOR PDH SUSPENSIONS		DRAWN BY S.J.MORAN AUTHORIZED D.S	
ALL DIMENSIONS ARE IN MILLIMETRES		UNSPECIFIED TOLERANCES		DATE 25 NOV 97	
ORIGINAL FRAME SIZE 809mm x 562mm		NO DECIMALS ± 1mm		CHECKED MPQ	
BATCH DATE		ONE ± 0.5mm		SCALE 1:5	
SUPPLIER CODE		TWO ± 0.2mm		SUPERSEDES	
BURRS AND SHARP EDGES TO BE REMOVED		ANGULAR ± 0 - 3'		ESTIMATED ACTUAL	
COMPONENTS TO CARRY PART NO. AT LOCATION		ALL ALTERATIONS TO BE VIA CAD		DISPOSITION	
DISPOSITION		BILL OF MATERIALS		MATERIAL	
DISPOSITION		BILL OF MATERIALS		FINISH	
DISPOSITION		BILL OF MATERIALS		TITLE	
DISPOSITION		BILL OF MATERIALS		GENERAL INSTALLATION	
DISPOSITION		BILL OF MATERIALS		HEAVY DRIVE AXLE SUSPENSION	
DISPOSITION		BILL OF MATERIALS		DRAWING NO. 18751	
DISPOSITION		BILL OF MATERIALS		SHEET 3 OF 3 A1	

A1 1ST ISSUE - ENGLISH	
SUFF	CHANGE & REASON [DISP] [ORIG] BY DATE
MODIFICATIONS	
Granning UK Ltd.	
Granning UK Ltd. CLAIMS PROPRIETARY RIGHTS TO ALL THE INFORMATION DISCLOSED ON THIS DRAWING. IT IS NOT TO BE REPRODUCED OR USED FOR MANUFACTURE OR FOR ANY OTHER PURPOSE OR DISCLOSED TO ANY THIRD PARTY WITHOUT OUR WRITTEN PERMISSION.	
MATERIAL	
FINISH	
TITLE	
GENERAL INSTALLATION	
HEAVY DRIVE AXLE SUSPENSION	
DRAWING NO. 18751	
SHEET 3 OF 3 A1	