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CHAPTER 5

ALIGHTING GEAR

CHAP.
5

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Chapter 5 ALIGHTING GEAR

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INTRODUCTION

501. The main alighting gear and nose wheel units are of Dowty design and manufacture. The nose unit is rearward retracting with levered suspension, incorporating a liquid spring shock-absorber, steering system, centring jack, and a retracting strut assembly. The main unit assembly is forward retracting, incorporating a liquid-spring shock-absorber, and is carried on four twin-tyred wheels, fitted to a trailing bogie.

DESCRIPTION AND SPECIAL TOOLS

502. For a detailed description of the alighting gear and a list of special tools refer to A.P.1803E, Vol. 1, Section 3, Chapter 8, and Section 6, Chapter 7.

ASSEMBLY

503. Bearing beams for the main units are made from light-alloy, and are assembled to the outboard engine ribs, and the mainplane ribs at the wing root. The main bearing brackets for the nose unit are mounted on beams which are assembled on the rear face of the cabin rear pressure bulkhead. Negligible damage and torque loadings for the main bearing beams and brackets on the alighting gear are given on their respective illustrations. Where the torque loadings are given in ft. lbs. this means that the figures quoted are for a spanner 1 ft. long.

Note . . .

The spanner must never be hammered when tightening the nuts, or bolts.

Worn tolerances

504. A detailed list of the permissible worn tolerances allowed on the main bearing bushes, etc., are given with the illustrated drawings in this chapter. For further details of the alighting gear refer to A.P.1803D, Vol. 2, Part 2, and Vol. 2, Part 3. Data regarding fits and clearances in relation to worn tolerances are specified under four headings:— "Dimensions New," "Permissible Worn Dimensions," "Clearances New," and "Permissible Worn Clearance." The figures in the column "Dimensions New" are the drawing sizes to which the parts are manufactured. Dimensions quoted in the column "Permissible Worn Dimensions" represent the limits of size to which parts may be worn and refitted for a further period of service. These dimensions have been so fixed that the components are fit for the full period of further service which is normally permitted between complete overhauls. For "Non-Selective Assembly" any two parts which are not worn beyond the limits given may be mated. "Selective Assembly" requires that a part worn within the stated limits may be assembled with a mating part, new or otherwise, provided that, when

assembled, the clearance does not exceed that stated in the "Permissible Worn Clearances" column.

Assembly of alighting gear beam torque-loaded bolts

505. Assemble the bolts in the beams, and nose undercarriage bearing brackets in the following sequence.

- (1) Remove the lanolin from bolts and nuts.
- (2) Lightly coat with Celloseal spec. DTD.900/4301 the shank of the bolts, and the bores in the beam. Assemble while the treatment is still wet. Refer to Fig. 502-503-504.
- (3) Prior to torque loading, lightly grease the nut, and the threaded portion of the bolt. Use grease spec. DTD.825 or DTD.866. Washers to be coated with Celloseal before assembly.
- (4) After finally torque loading and completing assembly, coat the bolt heads, nuts and washers with lanolin spec. DTD.663 or DTD.279B.

Materials required.

Stores Ref.	Spec.	Description
34B/9100489	DTD.663 or	Lanolin
34B/9100483	DTD.279B	"
33C/1197	DTD.900/4301	Celloseal
34B/9100512	DTD.825 or	Grease
34B/9423152	DTD.866	"

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(A.L.10, Mar. 58)

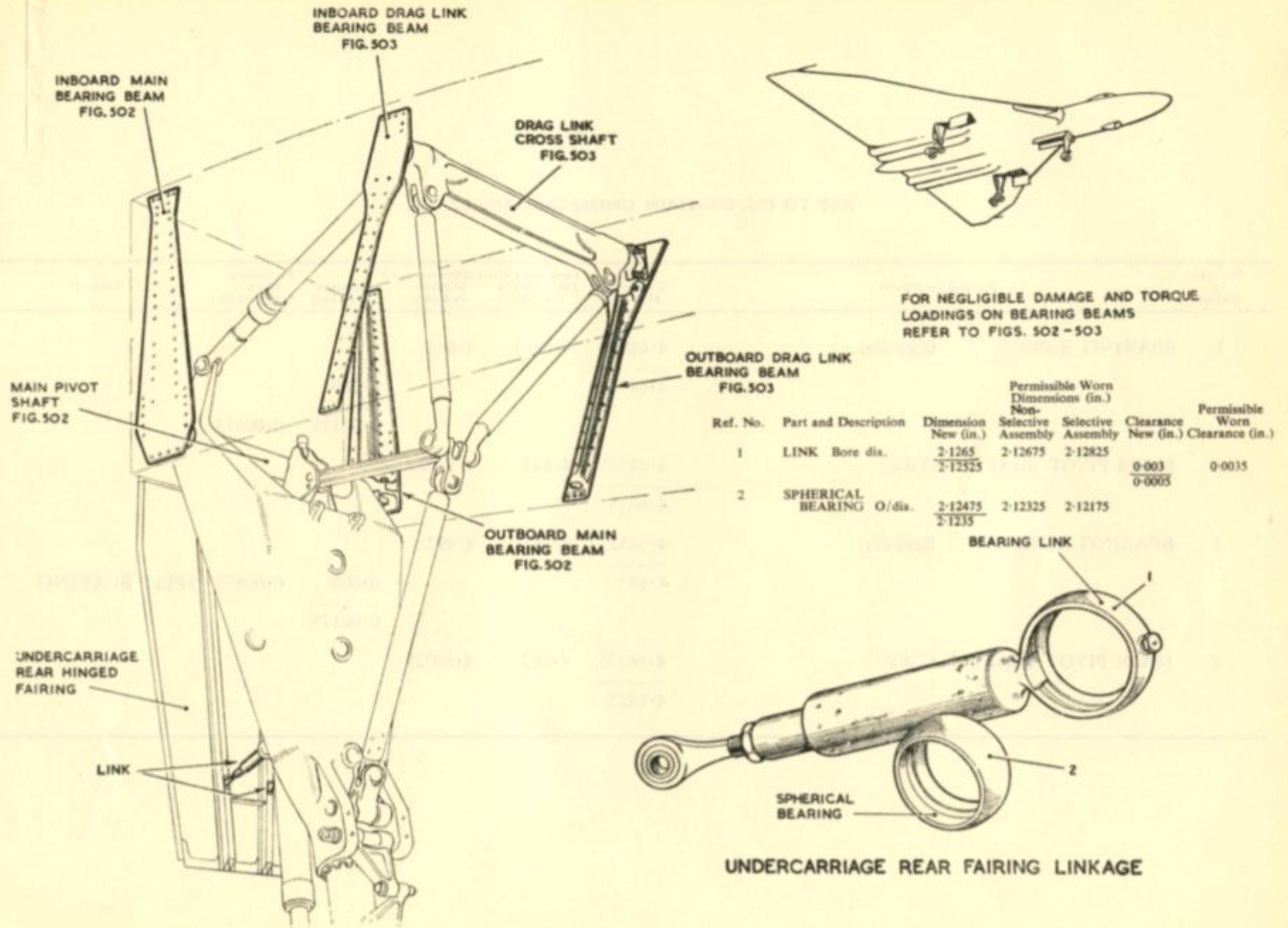


Fig. 501. U/C Main bearing beams—Key diagram

KEY TO FIG. 502—MAIN UNDERCARRIAGE BEAMS

Ref. No. on Diagram	Part and Description	Dimension New (in.)	Permissible Worn Non-Selective Assembly	Dimensions (in.) Selective Assembly	Clearance New (in.)	Permissible Worn Clearance (in.)	Remarks
1	BEARING BUSH Bore dia.	4·6885 <u>4·687</u>	4·6895	4·692	0·005 <u>0·00175</u>	0·00675	
2	MAIN PIVOT SHAFT O/dia.	4·68525 <u>4·6835</u>	4·683	4·68025			
3	BEARING BUSH Bore dia.	4·6885 <u>4·687</u>	4·6895	4·692	0·005 <u>0·00175</u>	0·00675	SPLIT BEARING
4	MAIN PIVOT SHAFT O/dia.	4·68525 <u>4·6835</u>	4·683	4·68025			

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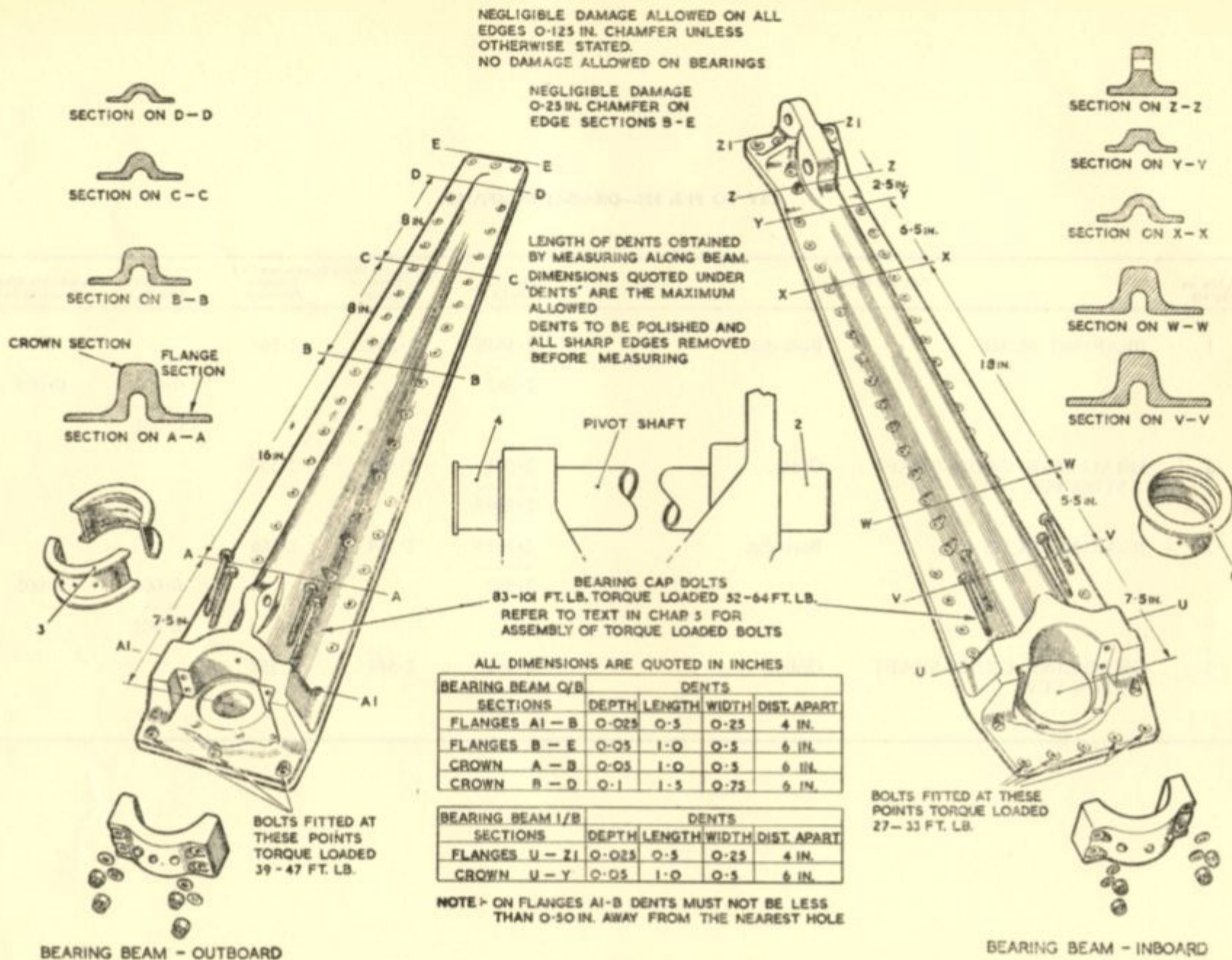


Fig. 502. Main undercarriage beams

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KEY TO FIG. 503—DRAG-LINK BEAMS

Ref. No. on Diagram	Part and Description	Dimension New (in.)	Permissible Worn Dimensions (in.)		Clearance New (in.)	Permissible Worn Clearance (in.)
			Non-Selective Assembly	Selective Assembly		
1	BEARING BUSH	Bore dia. <u>2·5635</u> 2·562	2·564	2·566	0·004	0·005
					<u>0·001</u>	
2	DRAG-LINK CROSS-SHAFT STUB PIN	O/dia. <u>2·561</u> 2·5595	2·559	2·557		
3	BEARING BUSH	Bore dia. <u>2·5635</u> 2·562	2·564	2·566	0·004	0·005
					<u>0·001</u>	
4	DRAG-LINK CROSS-SHAFT STUB PIN	O/dia. <u>2·561</u> 2·5595	2·559	2·557		

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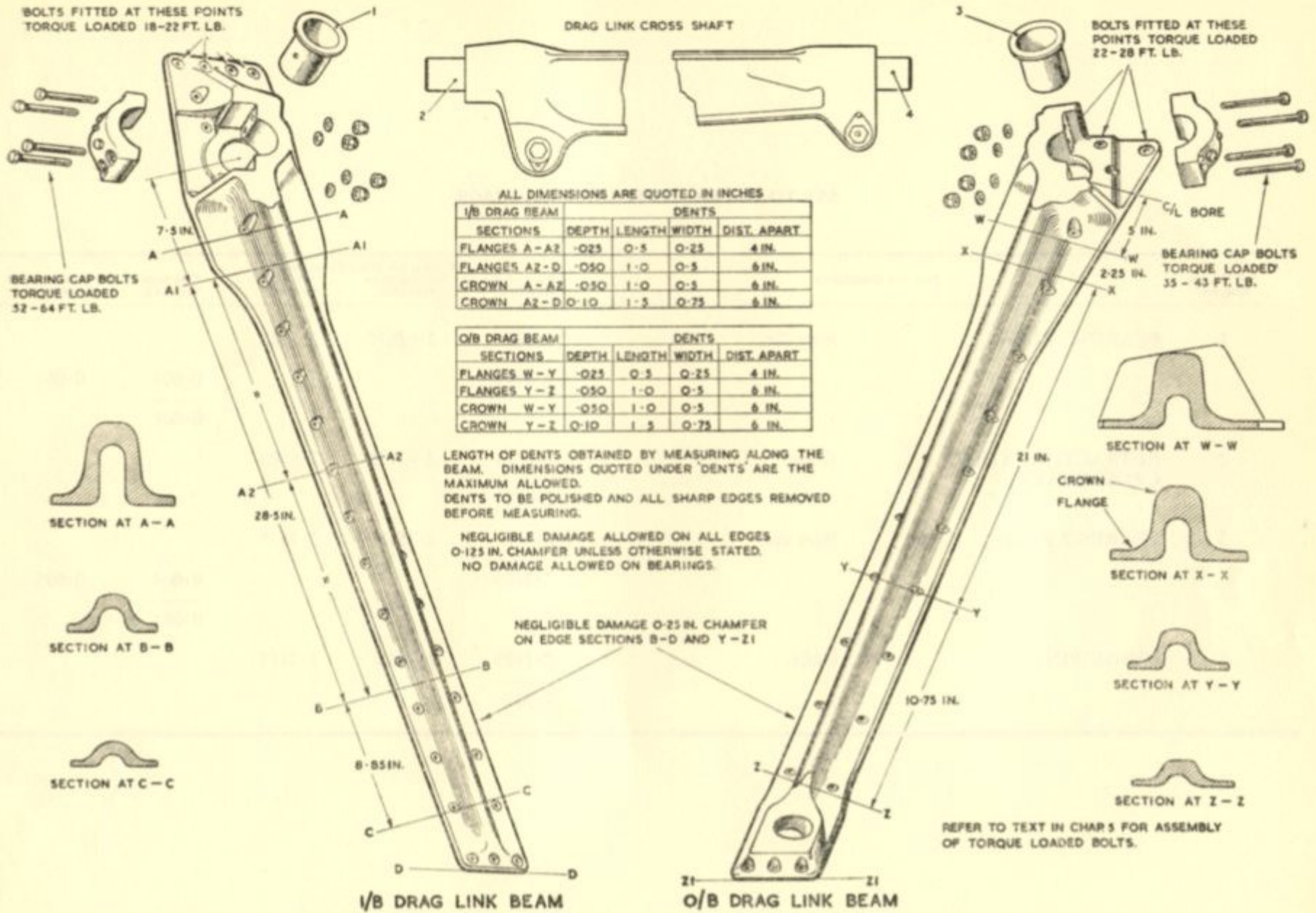
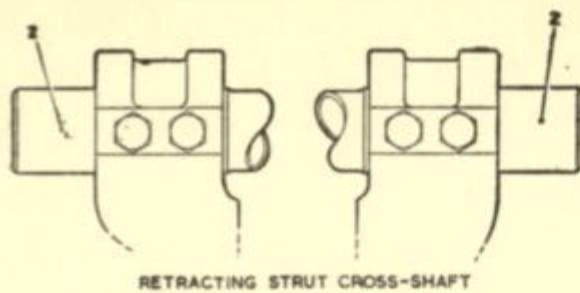


Fig. 503. Drag link beams

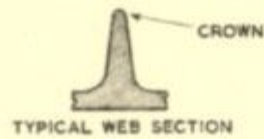
KEY TO FIG. 504—NOSE UNDERCARRIAGE

Ref. No. on Diagram	Part and Description	Dimension New (in.)	Permissible Worn Non-Selective Assembly	Dimensions (in.) Selective Assembly	Clearance New (in.)	Permissible Worn Clearance (in.)	
1	BEARING BUSH	Bore dia.	2·626 2·6245	2·62675	2·6285	0·004 0·001	0·005
2	RETRACTING STRUT CROSS-SHAFT	O/dia.	2·6235 2·622	2·62175	2·6195		
3	BEARING BUSH	Bore dia.	2·751 2·7495	2·7515	2·7535	0·004 0·001	0·005
4	HINGE PIN	O/dia.	2·7485 2·747	2·7465	2·7445		

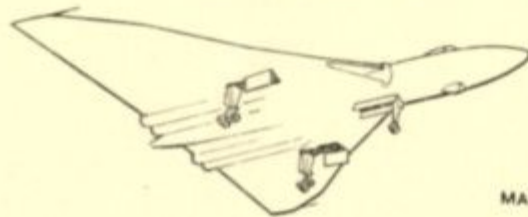
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RETRACTING STRUT CROSS-SHAFT

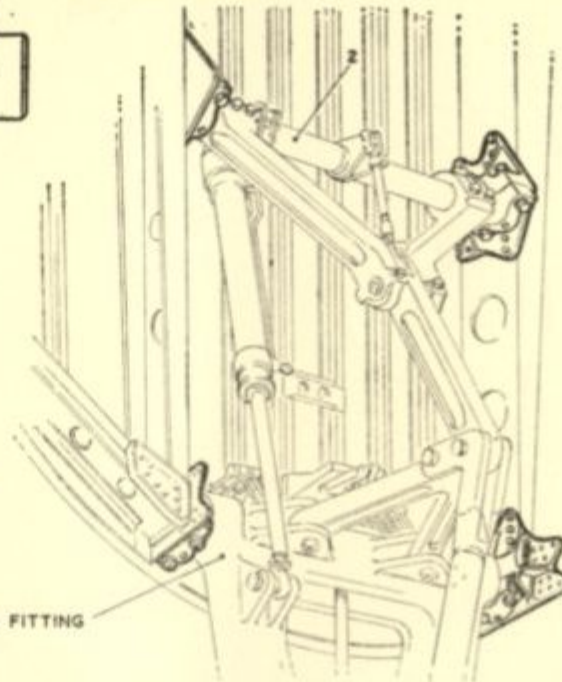


TYPICAL WEB SECTION

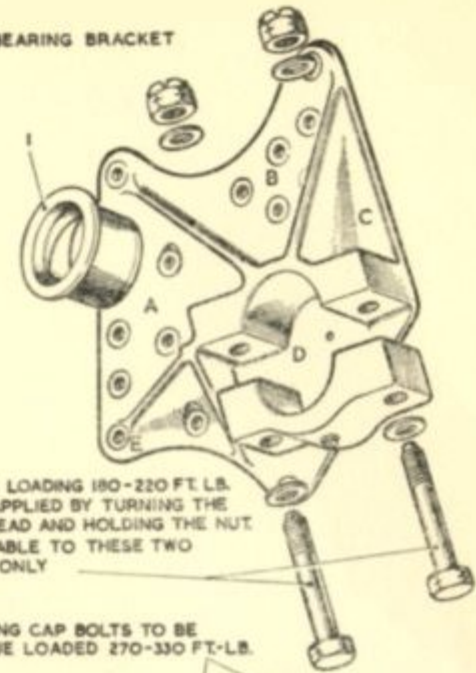


MAIN FITTING

REFER TO TEXT IN CHAP 5 FOR ASSEMBLY OF TORQUE LOADED BOLTS.



TOP BEARING BRACKET



TORQUE LOADING 180-220 FT. LB. TO BE APPLIED BY TURNING THE BOLT HEAD AND HOLDING THE NUT APPLICABLE TO THESE TWO BOLTS ONLY

BEARING CAP BOLTS TO BE TORQUE LOADED 270-330 FT.-LB.

NO PART OF DENTS TO BE LESS THAN 1/8 IN. FROM Q/DIA. OF SPOT FACES ON BRACKET ATTACHMENT HOLES

NEGLECTIBLE DAMAGE

TOP BEARING BRACKET	DENTS					NEGLECTIBLE DAMAGE ALLOWED ON EDGES
	DEPTH	LENGTH	WIDTH	DIST. APART		
A	0-025 IN.	1-0 IN.	1-0 IN.	1-25 IN.		VIA CHAMFER
B	0-025 IN.	0-3 IN.	0-3 IN.	0-7 IN.		1/8 IN. "
C	0-025 IN.	1-0 IN.	0-3 IN.	1-25 IN.		1/8 IN. "
D	0-025 IN.	1-0 IN.	1-0 IN.	1-25 IN.		1/8 IN. "
E	0-025 IN.	0-3 IN.	0-3 IN.	0-75 IN.		1/8 IN. "

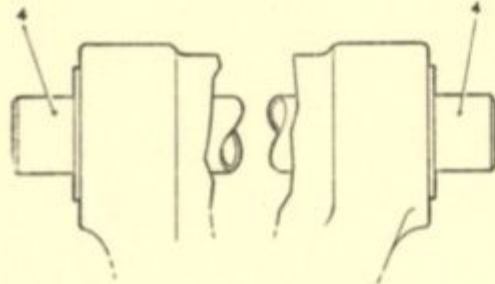
NOTE - NEGLECTIBLE DAMAGE 1/8 IN. CHAMFER ONLY ALLOWED ON EDGES AT CORNER ATTACHMENT HOLES

BOTTOM BEARING BRACKET	DENTS					NEGLECTIBLE DAMAGE ALLOWED ON ALL EDGES
	DEPTH	LENGTH	WIDTH	DIST. APART		
ALL SECTIONS	0-025 IN.	0-3 IN.	0-3 IN.	0-7 IN.		1/8 IN. CHAMFER

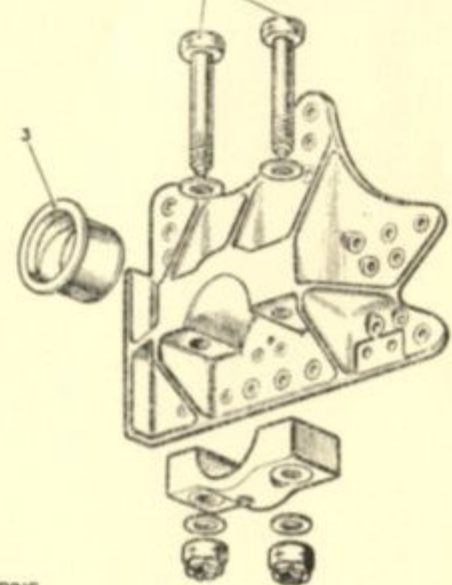
WEB SECTION

SECTION	DENTS				
	DEPTH	LENGTH	WIDTH	DIST. APART	
CROWN	0-025 IN.	1-0 IN.	0-25 IN.	1-25 IN.	

DENTS TO BE POLISHED AND ALL SHARP EDGES REMOVED BEFORE MEASURING. NO DAMAGE ALLOWED ON BEARINGS



HINGE PINS - MAIN FITTING



BOTTOM BEARING BRACKET

Fig. 504. Nose undercarriage

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