

CHAPTER 5

ALIGHTING GEAR

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(Completely revised)

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Description

1. The alighting gear is of the tricycle type and it comprises two main landing wheel assemblies (*fig. 5/1*) attached to the wing structure and one wheel assembly (*fig. 5/2*) situated in the nose of the fuselage, all of which are retractable. The shock absorption is effected by the use of hydraulic controlled compression legs. The general design of the alighting gear is the same in all marks of the aircraft, but there are some variations in detail design which necessitate the use of different parts in the various marks, such parts are indicated in the relevant illustrations and keys.

Negligible damage

2. *Main and nose undercarriage.* No damage which affects these structures can be defined as negligible, and in the event of damage the affected members must be renewed.

3. *Nose wheel top structure, Mk. 5 and 9.* Any smooth isolated dents which are free from cracks or fractures of the metal, and which do not exceed 1/40th of the tube diameter in depth, may be treated as negligible when situated in the end thirds of a member. The nose wheel top structure is illustrated in *fig. 5/5*; the limit of bowing in tubular members which may be treated as negligible is as defined in para. 12 of Chap. 1.

F.S. 1

Wear limits

4. Wear limits of the male and female parts of the alighting gear are shown in the keys which are included opposite the pertinent key diagrams (*fig. 5/3 and 5/4*).

Application of keys

5. *Dimensions, new.* The figures given in this column are the maximum and minimum sizes to which new parts are made. The difference between the two dimensions is the manufacturing tolerance and is an expression of the accuracy of workmanship required by the design.

6. *Permissible worn dimension.* The figure given in this column is the limiting dimension to which the part may be worn and still be refitted for a further period of service, provided that its mating part is selected so that the permissible worn clearance (*para. 8*) is not exceeded. In the extreme, this would necessitate the mating part being to the high, or low, limit of the dimension new (high for male parts and low for female parts).

7. *Clearance, new.* This column gives maximum and minimum clearances which result from mating two new parts.

8. *Permissible worn clearance.* This is the maximum clearance permitted between two mating parts which are assembled to undergo a further period of service.

(A.L.29, May 58)

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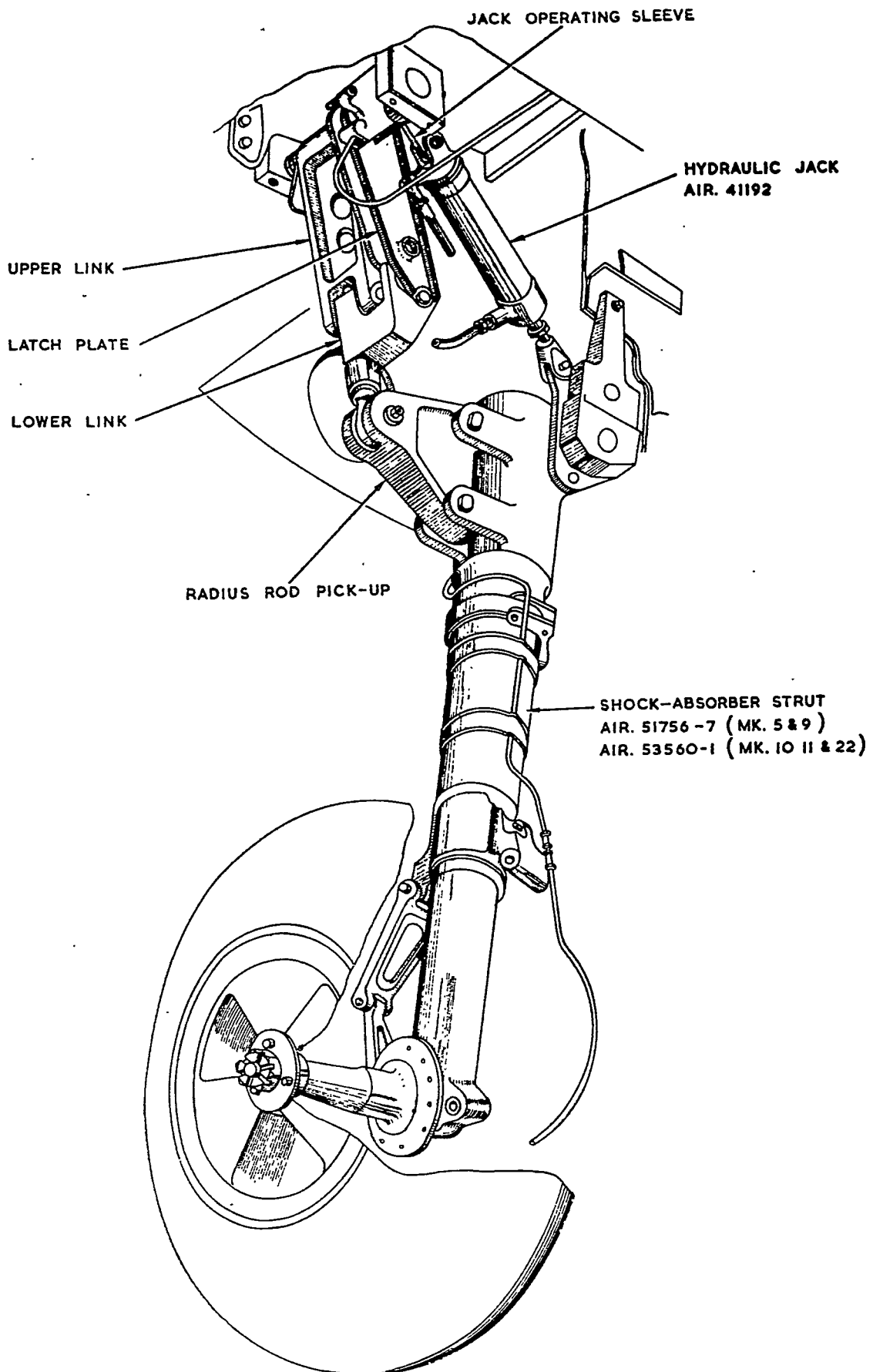


Fig. 5/1. Main undercarriage
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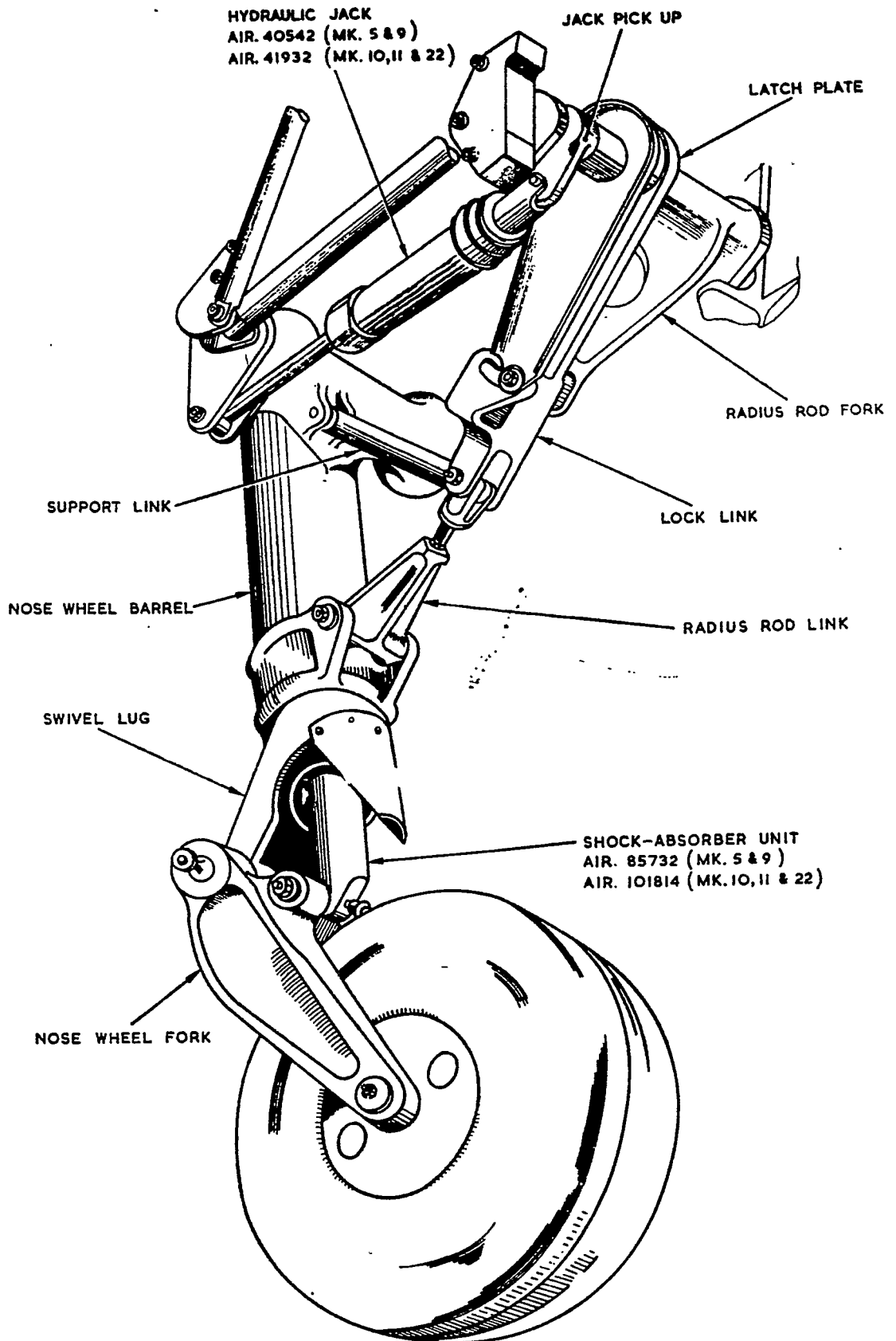


Fig. 5/2. Nose wheel undercarriage

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KEY TO FIG. 5/3. (Wear limits, main undercarriage)

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
1	OLEO CASING LUGS		REFER TO A.P.1803		
2	SPECIAL BOLT (GOO.1013)	$\frac{0.6875}{0.6870}$	0.6860	$\frac{0.0010}{-0.0005}$	0.0020
3	RADIUS ROD PICK-UP (GOO.1003/4)	$\frac{0.6880}{0.6870}$	0.6895		
4	RADIUS ROD PICK-UP (GOO.1003/4)	$\frac{0.8755}{0.8745}$	0.8775	$\frac{0.0030}{0.0010}$	0.0040
5	SPECIAL BOLT (GOO.53)	$\frac{0.8735}{0.8725}$	0.8705	$\frac{0.0030}{0.0010}$	0.0040
6	RADIUS ROD EYE-BOLT (GOO.1015) (BUSH, GOO.40)	$\frac{0.8755}{0.8745}$	0.8775		
7	RADIUS ROD TOP LINK (GOO.1983/4)	$\frac{0.6880}{0.6870}$	0.6900	$\frac{0.0030}{0.0010}$	0.0040
8	BOLT (GOO.51)	$\frac{0.6860}{0.6850}$	0.6840	$\frac{0.0030}{0.0010}$	0.0040
9	RADIUS ROD BOTTOM LINK (GOO.59-60) (BUSH, GOO.38)	$\frac{0.6880}{0.6870}$	0.6900		
10	JACK HEAD		REFER TO A.P.1803		
11	SPECIAL BOLT (GOO.1901)	$\frac{0.3736}{0.3730}$	0.3715	$\frac{0.0024}{0.0010}$	0.0035
12	JACK PICK-UP (GOO.1979) (BUSH, GOO.48)	$\frac{0.3754}{0.3746}$	0.3771		
13	JACK FORK END (GOO.1707)	$\frac{0.3754}{0.3746}$	0.3773	$\frac{0.0024}{0.0008}$	0.0035
14	SPECIAL BOLT (GOO.87)	$\frac{0.3738}{0.3730}$	0.3715	$\frac{0.0024}{0.0008}$	0.0035
15	JACK LEVER (GOO.1007/8) (BUSH, GOO.86)	$\frac{0.3754}{0.3746}$	0.3773		
16	LATCH PLATE (GOO.1088/9)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0030
17	SPECIAL BOLT (Stepped) (GOO.203)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0030
18	ROLLER (GOO.71)	$\frac{0.3754}{0.3746}$	0.3774		
19	LATCH PLATE (GOO.1087)	$\frac{0.2503}{0.2497}$	0.2540	$\frac{0.0033}{-0.0003}$	0.0045
17	SPECIAL BOLT (Stepped) (GOO.203)	$\frac{0.2500}{0.2470}$	0.2455		

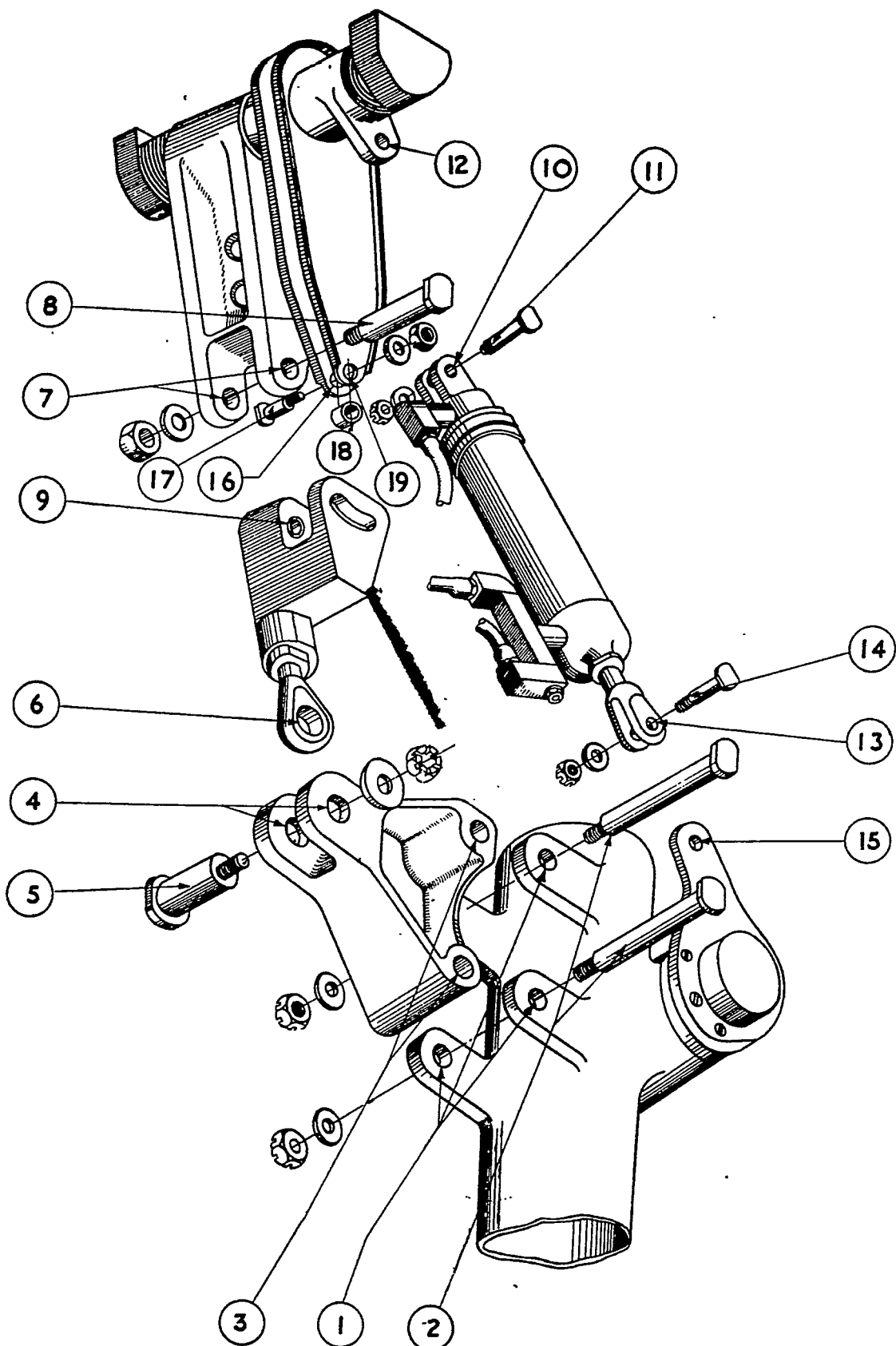


Fig. 5/3. *Wear limits, main undercarriage*

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
1	WHEEL FORK (ALL MARKS, GOO.176) (BUSH, GOO.218)	$\frac{0.7505}{0.7495}$	0.7530	$\frac{0.0030}{0.0010}$	0.0045
2	SPECIAL BOLT (ALL MARKS, 12.20.UN.55)	$\frac{0.7485}{0.7475}$	0.7450	$\frac{0.0030}{0.0010}$	0.0045
3	SWIVEL LUG (MK. 5 AND 9, GOO.232; MK. 10, 11 AND 22, 13.UN.91) (BUSH, ALL MARKS, GOO.218)	$\frac{0.7505}{0.7495}$	0.7530		
4	WHEEL FORK (ALL MARKS, GOO.176) (BUSH, GOO.219)	$\frac{0.7505}{0.7495}$	0.7530	$\frac{0.0030}{0.0010}$	0.0045
5	SPECIAL PIN (ALL MARKS, 12.20.UN.53)	$\frac{0.7485}{0.7475}$	0.7450		
6	PISTON-ROD BUSH		REFER TO A.P.1803		
7	BARREL LOWER PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99) (BUSH, ALL MARKS, GOO.211)	$\frac{0.5004}{0.4996}$	0.5019	$\frac{0.0016}{0.0002}$	0.0025
8	SPECIAL BOLT (ALL MARKS, GOO.1043)	$\frac{0.4994}{0.4988}$	0.4971	$\frac{0.0016}{0.0002}$	0.0025
9	LOWER LINK (ALL MARKS, GOO.1052)	$\frac{0.5004}{0.4996}$	0.5019		
10	BARREL UPPER PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0025
11	SPECIAL BOLT (ALL MARKS, GOO.208)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0025
12	UPPER LINK (MK. 5 & 9, 12.UN.75; MK. 10, 11 AND 22, 13.UN.127)	$\frac{0.3754}{0.3746}$	0.3774		

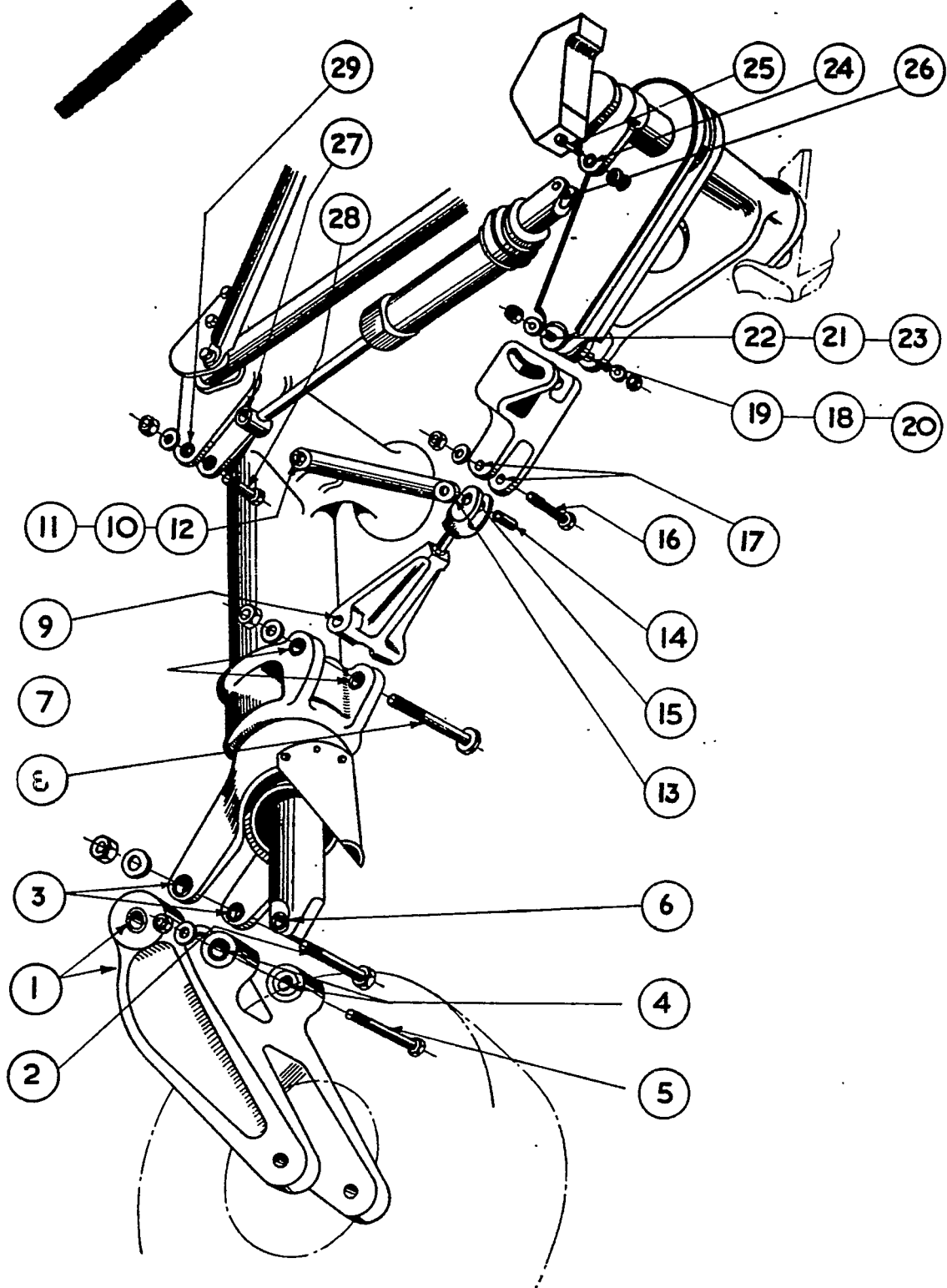


Fig. 5/4. *Wear limits, nose wheel undercarriage*

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)—continued

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
13	UPPER LINK (MK. 5 & 9, 12.UN.75; MK. 10, 11 AND 22, 13.UN.127)	$\frac{0.7505}{0.7495}$	0.7522	$\frac{0.0020}{0.0003}$	0.0030
14	BUSH, OUTSIDE (ALL MARKS, GOO.193)	$\frac{0.7492}{0.7485}$	0.7465	$\frac{0.0020}{0.0003}$	0.0030
15	FORK END (ALL MARKS, GOO.1041)	$\frac{0.7505}{0.7495}$	0.7522		
14	BUSH, INSIDE (ALL MARKS, GOO.193)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
16	SPECIAL BOLT (ALL MARKS, GOO.1044)	$\frac{0.5613}{0.5605}$	0.5590	$\frac{0.0024}{0.0008}$	0.0035
17	RADIUS ROD LOWER (ALL MARKS, 13.UN.123)	$\frac{0.5629}{0.5621}$	0.5645		
18	RADIUS ROD UPPER (ALL MARKS, GOO.1809)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
19	KNUCKLE PIN (ALL MARKS, GOO.1045)	$\frac{0.5613}{0.5605}$	0.5590	$\frac{0.0024}{0.0008}$	0.0035
20	RADIUS ROD LOWER (ALL MARKS, 13.UN.123), (BUSH, GOO.192)	$\frac{0.5629}{0.5621}$	0.5645		
21	LATCH PLATE (MK. 5 & 9, GOO.185; MK. 10, 11 AND 22, 13.UN.165)	$\frac{0.2503}{0.2497}$	0.2540	$\frac{0.0033}{0.0003}$	0.0045
22	SPECIAL BOLT (Stepped) (ALL MARKS, GOO.203)	$\frac{0.2500}{0.2470}$	0.2455		

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)—continued

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
21	LATCH PLATE (MK. 5 & 9, GOO.186; MK. 10, 11 AND 22, 13.UN.166)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0030
22	SPECIAL BOLT (Stepped), (ALL MARKS, GOO.203)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0030
23	ROLLER (ALL MARKS, GOO.70)	$\frac{0.3754}{0.3746}$	0.3774		
24	JACK LEVER (MK. 5 & 9, GOO.187; MK. 10, 11 AND 22, 13.UN.163) (BUSH, ALL MARKS, GOO.48)	$\frac{0.3754}{0.3746}$	0.3773	$\frac{0.0024}{0.0008}$	0.0035
25	SPECIAL BOLT (MK. 5 & 9, GOO.756; MK. 10, 11 AND 22, 13.UN.135)	$\frac{0.3738}{0.3730}$	0.3715		
26	JACK HEAD		REFER TO A.P.1803		
27	JACK ROD END FITTING (ALL MARKS, GOO.647) (BUSH, GOO.201)	$\frac{0.3754}{0.3746}$	0.3775	$\frac{0.0029}{0.0011}$	0.0040
28	SPECIAL BOLT (ALL MARKS, GOO.649)	$\frac{0.3735}{0.3725}$	0.3710	$\frac{0.0029}{0.0011}$	0.0040
29	JACK PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99) (BUSH, ALL MARKS, GOO.210)	$\frac{0.3754}{0.3746}$	0.3775		

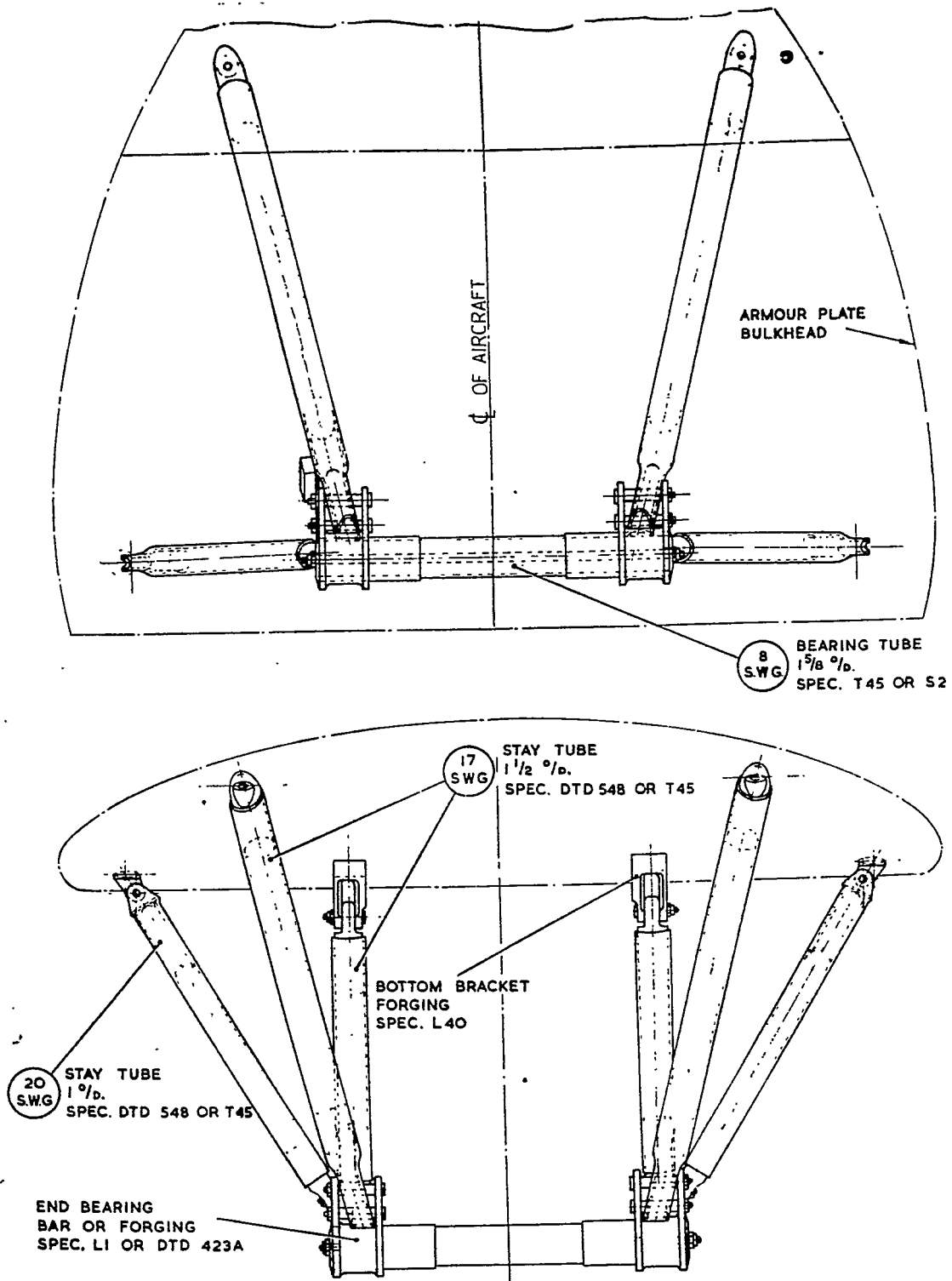


Fig. 5/5. *Nose wheel top structure, Mk. 5 and 9*

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