Chapter 2

DUNLOP HYDRAULIC BRAKE UNITS (Copper plate type)

Introduction

1. This chapter contains information to guide personnel in the repair of certain hydraulic brakes that have been rendered unserviceable through wear or damage.

2. Each brake repair is given the code letters "RP" followed by the repair number. The repairable brakes are tabulated in the List of Hydraulic Brake Units and Relevant Repair Schemes and the "RP" and relevant Volume 1 appendix numbers are given in the adjoining columns. Details of special tools and repair parts which are fundamentally similar are given in Tables that follow the latest repair scheme issued.

3. The repairs generally are confined to the reclamation of friction plates which have been badly scored, blistered or distorted during service. The basic scheme is detailed in RP6 which is supplemented by Appendix 1 giving a general description of the process for stripping and replating and by a series of data sheets giving the checking dimensions and relevant information applicable to individual brakes.

4. Other repairs may involve the restoration of damaged cylinder bolt attachment holes by plugging, the bushing of worn or damaged torque plate bolt holes, and the repolishing of worn or scored cylinder walls.

5. It should be noted that where no tolerances are given for certain dimensions shown on the repair drawings, the following limits will apply; $\pm 0{\cdot}005$ in. for dimensions shown in decimal figures, $\pm 0{\cdot}015$ in. for dimensions shown in fractional figures.

Fitting of pre-scorched pads

6. Certain brake units can have new friction pads fitted to existing carrier plates and backing plates. Instructions for fitting the pads, and a list of the brake units to which this scheme applies, is given in Appendix 1.

LIST OF BRAKE UNITS AND RELEVANT REPAIR SCHEMES

Brake unit Part No.	Vol. 1 Ref. Sect. 3, Chap. 2 Appendix	Repair scheme RP No.	Brake unit Part No.	Vol. 1 Ref. Sect. 3, Chap. 2, Appendix	Repair scheme RP No.
AH.8189	1	35	AH.50359	19	35
AH.8027	2	35	AH.50490	20	35
AH.9220	3	50, 35	AH.50396, 50397	21	6, 35
AH.9517, 9518	4	6, 35	AH.50124, 50125	22	35
AH.9521, 9522	5	6, 35	AH.50126, 50127	23	35
AH.9597, 9598	6	6, 35	AH.9855	24	35
AH.9575, 9576	7	6, 35	AH.50479, 50480	25	35
AH.9730, 9731	8	6, 35	AH.9983, 9984 9985, 9986	26	35
AH.50247, 50248	9	6, 35	AH.50436, 50437	27	35
AH.9549	10	35	AH.50083, 50084, 50085, 50086	28	35
AH.9812, 9813	11	35	AH.51002, 51003	29	35
AH.9615	12	35	AH.51004, 51005	30	35
AH.9780, 9781	13	6, 35	AH.50577	31	35
AH.9899	14	35	AH.50932, 50933, 50934, 50935	32	35
AH.50286, 50287	15	35	AH.50743	33	35, 136, 198
AH.50298, 50297	16	6, 35			
AH.50357	17	6, 35			
AH.50033	18	35			

Note . . .

Details of tools and repair parts which are fundamentally similar, are given in Tables following the latest repair scheme issued.

Appendix 1

THE FITTING OF PRE-SCORCHED PADS TO PLATE BRAKE BACKING AND CARRIER PLATES

Introduction

1. This appendix details the examination of used backing and carrier plates to ensure that they are serviceable before new pads are fitted.

2. The procedure for fitting the new pads can be applied to existing assemblies on which pads have not previously been regarded as renewable. A list of brakes to which the scheme is applicable is given in Table 1.

3. The replacement pads will carry a new part number with a corresponding change in the plate/pad assembly numbers. When this procedure is applied to existing assemblies for the first time, the plate should be vibro-etched with the new assembly number detailed in Table 1.

Method of repair

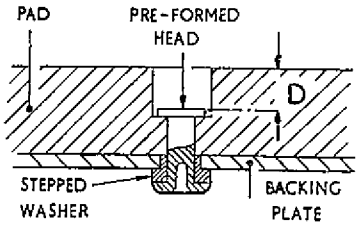
4. (1) Remove the old pads by drilling out the existing rivets.

(2) Degrease the carrier and backing plates and lightly file them to remove any burrs. With a polishing hone, clean out any score marks within the torque pin slots of the carrier plates.

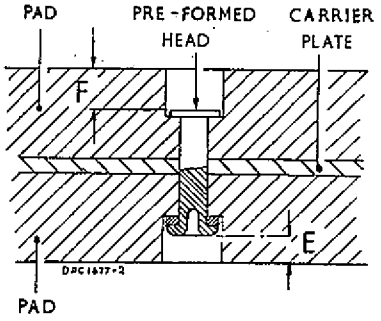
(3) Flatten the backing plates, if necessary, by planishing them with a flat-headed hammer. Check the backing and carrier plates for distortion by placing them on a surface plate and testing with a 0·005 in. feeler gauge. The feeler must not pass under the plate at any point around its periphery.

(4) Examine all plates for evidence of fractures and cracks by using a crack detector machine. Particular attention must be paid to the area around the edges of the torque plate slots and particularly in the corners. Cracks however minute are not permitted and a plate defective in this respect must be scrapped.

(5) Place the new pads in position and secure them with the relevant rivets and washers, using the tool, hand riveting (*brake pads — Dunlop*), Part No. AO.102448. During riveting care must be taken not to compress the pad material, and it is advisable for the pad to be slightly loose after riveting. Where the type of fitting permits, this can be checked with a feeler gauge applied between the pad and plate; 0·002/0·005 in. is recommended.



BACKING PLATE ASSEMBLY



CARRIER PLATE ASSEMBLY

Fig. 1. Details of checking dimensions

(6) After riveting, examine each assembly to check that no damage has occurred to the pad. Examine the pad for small cracks radiating from the rivet holes, if these are present the pad must be renewed.

(7) Examine each assembly for satisfactory riveting and check minimum dimensions (*D*), (*E*), and (*F*) where applicable (*refer to Table* 1).

TABLE I

Relevant Data and New Parts Required for the fitting of Pre-Scorched Pads

Brake Unit Part No.	Backing Plate Assembly Part No.	Carrier Plate Assembly Part No.	Inner Pad Part No.	Outer Pad Part No.	Rivet Part No.	Washer Part No.	Checking Dimensions Backing Plate Assembly D (in.)	Checking Dimensions Carrier Plate Assembly E (in.)	Checking Dimensions Carrier Plate Assembly F (in.)
AH.9983 AH.9984 AH.9985 AH.9986	AHM.4342	AHM.4341	AHO.36881	AHO.36882 L.H. AHO.36883 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·1	0·08	—
AH.50124 AH.50125	AHM.4326	AHM.4327	AHO.36857 L.H. AHO.36858 R.H.	AHO.36859 L.H. AHO.36860 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·25	0·23	—
AH.50126 AH.50127	AHM.4326	AHM.4327	AHO.36857 L.H. AHO.36858 R.H.	AHO.36859 L.H. AHO.36860 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·25	0·23	—
AH.50286 AH.50287	AHM.4335	AHM.4336	AHO.36868	AHO.36867 L.H. AHO.36866 R.H.	DAS.1474/21 DAS.1474/27	AHO.37543 AHO.26125	0·20	0·18	0·20
AH.50296	AHM.4344	AHM.4343	AHO.36885	AHO.36884	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26126	0·132	0·112	0·132
AH.50479 AH.50480	AHM.4345	—	AHO.36888	AHO.36886 L.H. AHO.36887 R.H.	DAS.1474/19	AHO.26127	0·25	—	—
AH.9517 AH.9518	AHM.4350	AHM.4349	AHO.36894 AHO.36893	AHO.36892	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26126	0·115	0·135	0·135
AH.50436 AH.50437	AHM.4352	AHM.4351	AHO.36897 L.H. AHO.36898 R.H.	AHO.36895 L.H. AHO.36896 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26126	0·10	0·080	0·100
AH.50396 AH.50397	AHO.36813	—	AHO.36816	AHO.36814 L.H. AHO.36815 R.H.	DAS.1474/19	AHO.26127	0·165	—	—
AH.50490	AHM.4314	AHM.4317	AHO.36820	AHO.36821	DAS.1474/19 DAS.1474/29	AHO.37543 AHO.26127	0·130	0·110	0·130
AH.50171 AH.50172	AHM.4322	AHM.4323	AHO.36834	AHO.36833 L.H. AHO.36832 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·375	0·355	0·379
AH.9597 AH.9598	AHM.4333	AHM.4334	AHO.36864 L.H. AHO.36865 R.H.	AHO.36861 L.H. AHO.36863 R.H.	DAS.1474/19 DAS.1474/29	AHO.37543 AHO.26126	0·100	0·100	0·080

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TABLE I—*continued*

Relevant data and new parts required for the fitting of pre-scorched pads

Brake Unit Part No.	Backing Plate Assembly Part No.	Carrier Plate Assembly Part No.	Inner Pad Part No.	Outer Pad Part No.	Rivet Part No.	Washer Part No.	Checking Dimensions Backing Plate Assembly D (in.)	Carrier Plate Assembly E (in.)	F (in.)
AH.50359	AHM.4337	—	AHO.36871	AHO.36869 L.H. AHO.36870 R.H.	DAS.1474/19	AHO.26127	0·200	—	—
AH.50932 AH.50933 AH.50934 AH.50935	AHM.4572	AHM.4573	AHO.37474	AHO.37475 L.H. AHO.37476 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·100	0·080	0·1
AH.9780 AH.9781	AHM.4316	AHM.4315	AHO.36823	AHO.36822	DAS.1474/19 DAS.1474/27	AHO.37543 AHO.26127	0·2	0·180	0·200
AH.9730 AH.9731	AHM.4348	—	AHO.36891	AHO.36890 L.H. AHO.36889 R.H.	DAS.1474/19	AHO.26127	0·2	—	—
AH.50247	AHM.4330	AHM.4331 (pressure plate)	AHO.36856	AHO.36855	DAS.1474/15 DAS.1474/29	AHO.37543	0·235	0·235	—
AH.50248	AHM.4330	AHM.4332 (pressure plate)	AHO.36856	AHO.36855	DAS.1474/15 DAS.1474/29	AHO.37543	0·235	0·235	—
*AH.9597 *AH.9598	AHM.4772	AHM.4771	AHO.36864 L.H. AHO.36865 R.H.	AHO.36861 L.H. AHO.36863 R.H.	DAS.1474/19 DAS.1474/27	AHO.37543	0·100	0·080	0·100

(*Repair to Pad Assemblies introduced by Dunlop Mod.2139 Part B)

RP 6

REPAIR SCHEME FOR BRAKE FRICTION PLATES

Introduction

1. Friction plates which have been badly scored, blistered, or distorted during service may be repaired using one or more of the processes detailed in this repair scheme. The scheme detailed in the following paragraphs is a basic scheme; it is supplemented by Appendix 1 which gives a general description of the process for stripping and replating, Appendix 2 which details the preliminary treatment for the nickel plating of some friction plates before they are chromium plated, and by a series of data sheets which give the checking dimensions, etc, applicable to individual brakes. Figures given on the applicable data sheet should be substituted for the code letters quoted in the basic scheme.

2. At all stages of repair, care must be taken to protect the ground faces of the plates from damage, as a high grade finish is required. When stacking, a layer of suitable protective material, for example, corrugated cardboard is to be placed between each pair of plates.

3. Generally examine the plates for excessive scoring on the friction faces or damage to the tenons, and decide whether the damage is likely to be within the limits of repair.

4. If the plate is repairable within the given limits, chemically strip the chromium plating as detailed in Appendix 2.

DEFECTS AND REMEDIES

Departure from true circular shape

Examination

5. (1) Ascertain the maximum external diameter of the inner friction plate; if this dimension exceeds "*AA*" in. diameter, the plate is to be discarded. If the dimension does not exceed "*AB*" in. diameter, the plate is still serviceable, as the diametral distortion is insufficient to warrant the truing up operation; this is necessary only when the maximum diameter exceeds "*AB*" in. and is not greater than "*AA*" inches. The inner plate is unserviceable if the minimum permitted internal diameter between the tenons of the inner plate is less than "*AC*" inches.

(2) Examine the outer friction plate and ascertain the maximum external diameter between the tenons and the minimum internal diameter. If these dimensions exceed "*BA*" in. diameter or fall below "*BB*" in. diameter respectively, the plate is to be discarded. When the internal diameter is not less than "*BC*" in., the plate is still serviceable as the diametral distortion is insufficient to warrant the truing up operation; this operation is necessary only if the minimum internal diameter is less than "*BC*" in., but not less than "*BB*" inches.

(2a) This paragraph applies to those data sheets which contain the code letters BD, BE, and BF and should be substituted for sub-para. (2) in such instances. Examine the outer friction plate and ascertain the maximum external diameter between the tenons. If the dimension exceeds BA in. dia. the dimension over the tenons must be machined and reduced to the nominal dimension BD in. and the dimension BA must be machined and reduced to the nominal dimension BE in. After this operation dress the corner radii to dimension J in. When the internal diameter of the outer plate is not less than BC in. nor greater than BF in. the plate is still serviceable, the diametral distortion being insufficient to warrant the truing up operation which is necessary only if the minimum internal diameter is less than BC in. but not smaller than BB in. If the internal diameter is less than BB in. or greater than BF in. the plate must be discarded.

Method of rectification

6. (1) Set up the inner plate in a lathe so that the chuck-jaws locate on the inside diameter between the tenons. Apply a dial test indicator to the outer periphery

of the plate and adjust the jaws until the lowest possible dial gauge variation is obtained. Machine the peripheral "high spots" until the greatest diameter is reduced to "*C*" in. The maximum thickness of material to be removed during this operation must not exceed "*EA*" inches.

(2) Set up the outer plate in a lathe so that the chuck-jaws locate on the outside diameter between the tenons. Apply a dial test indicator to the bore of the plate and adjust the jaws until the lowest possible dial gauge variations is obtained. Remove the "high spots" within the bore until the smallest diameter is increased to "*D*" inches. The maximum thickness of metal to be removed during this operation must not exceed "*EB*" inches. Refer to the data sheet for dimensions relative to the code letters.

Departure from flat plane

Method of rectification

7. (1) From the side faces of the tenons carefully remove the burrs caused by loading impact against the wheel drive blocks; refer to para. 8 for complete details of this operation.

(2) Place the friction plate flat on a surface plate, and using a 0·005 in. feeler gauge, test for distortion. If the gauge can be inserted completely under any section of the friction plate, the distortion must be corrected by any suitable method which will not result in damage to the friction surfaces.

Note . . .

Distortion may be removed by the use of a hide-faced hammer when the friction plate is placed on a flat bed.

Bruised or "Brinelled" tenons

Method of rectification

8. Using a smooth file, remove the burrs formed on the tenon side surfaces. This operation must be restricted to the removal of surplus material and must not reduce the thickness or width of the tenons. No attempt must be made to remove or blend the steps which, due to loading impact against the wheel drive blocks, may have formed near the roots of the tenons. Check the tenons for wear; the width must be not less than the respective dimensions "*L*" and "*M*" measured across the tenons, nor greater than the dimension "*L*" when "*L*" is the maximum permitted width measured between the tenons of the inner plate. The part number of the tenon wear gauge is referred to in the relevant data sheet.

Extensive lifting or flaking and blistering of chrome deposit on friction surfaces of a plate

Method of rectification

9. (1) Examine for defects classified in para. 5, 7, and 8 and rectify if necessary by the methods detailed in these instructions.

(2) To restore the essential smooth finish required for re-plating; both friction surfaces of the plate must be reground. The plate thickness reduction from the nominal dimension of "*F*" in. is permitted in one, two, or three stages dependent upon the characteristics of each individual plate and is referred to in the appropriate data sheet as follows:—

First stage reduction:—"*G*" in.

Second stage reduction:—"*H*" in.

Third stage reduction:—"*I*" in.

The data sheet also states whether a first stage reduction only is permitted or whether a plate can have a second or third stage reduction.

(3) Grind the less damaged surface of the plate to remove no more material than is necessary to present a surface suitable for plating, free from score marks and other surface irregularities liable to have an abrasive effect on friction pads. Providing the plate so ground meets the micro-finish requirement given in operation (4) it is not necessary to remove all surface indentations if to do so will necessitate grinding to the next repair stage or carries the plate beyond the final repair limit. In judging this, the amount of damage on the other faces must be taken into consideration. As a guide, the finished surface must be at least 90 per cent reground providing the 10 per cent unground area is distributed over the whole surface of the plate.

(4) Remove the plate and check the surface finish; this should not exceed 15 micro in. (*height average*). Measure the plate thickness, and determine approximately the amount of material to be removed from the second friction face to establish whether the first, second, or third stage final thickness reduction can be achieved.

(5) Grind the second surface of the friction plate and reduce the thickness to the predetermined figure. Failure to clean up the friction plate at an intended first stage thickness reduction "*G*" will necessitate continued grinding until the second stage reduction "*H*" has been completed.

(6) Remove the plate and check the final thickness against the tolerance quoted. There must be no variation of thickness; the maximum permissible out of flatness after grinding and when checked with a surface plate is 0·0005 in., and the surface finish must conform to the requirements detailed in operations (3) and (4).

(7) Using a smooth file, carefully restore the corner radii at the internal and external peripheries on each side of the plate. Blend the radii cleanly into the friction surfaces of the plate by polishing with fine grade emery cloth. The radii must be within the tolerance "J" in. (refer to data sheet) and the polishing operation must be restricted entirely to the radii and must not extend any further across the friction surface than is necessary to effect a clean blending.

(8) Identify the plate with the new code details in accordance with the data sheet and the instructions given in para. 11.

Extensive scoring which has broken surface of chrome deposit and penetrated copper

Method of rectification

10. When it is established that the plate is suitable for grinding, proceed in accordance with the instructions in para. 9.

Identification after reduction of plate thickness

11. Before chrome plating, the original code marking must be obliterated from the diametrically opposed points on each plate. The new code marking (refer to data sheet) to indicate the first, second, or third stage reduced thickness, whichever applies, must be made with $\frac{3}{16}$ in. high metal stamps at two diametrically opposed points on each plate. The new identification code should be arranged on the internal periphery of the outer plate and on the external periphery of the inner plate.

Replating

12. Replate the friction plates in accordance with the instructions in Appendix 1 and Appendix 2 where applicable, and the relevant data sheet.

Code markings

13. The following are typical examples of code markings:—

Code	Meaning of code
1062	Indicates a standard plate 1·062 in. thick.
RP.1031/1	Indicates a repaired plate after a first stage reduction in thickness of 0·030 in. (1·032 in. thick)
RP.1002/2	Indicates a repaired plate after a second stage reduction in thickness of 0·060 in. (1·002 in. thick)
RP.0972/3	Indicates a repaired plate after a third stage reduction in thickness of 0·090 in. (0·972 in. thick)

Colour identification

14. In addition to the relevant code letters and numbers, repaired plates must be identified by a coloured band, $\frac{1}{4}$ in. minimum width, painted around the inner circumference of the outer plate and the outer circumference of the inner plate. Standard plates of original thickness are left unpainted. The colour scheme facilitates storage identification of repaired plates. The type of paint used is Dockers Quick Drying paint. The colour is as follows:—

Code	Meaning of Code	Paint Spec.
Yellow	Indicates a repaired plate after first stage reduction in thickness	BS.381/309
Green	Indicates a repaired plate after a second stage reduction in thickness	BS.381/218
Red	Indicates a repaired plate after a third stage reduction in thickness	BS.381/538

Assembly numbers for paired plates

15. Plates are allocated assembly numbers in mated pairs (a pair consisting of one inner and one outer plate) which are at the same

repair stage. The assembly number is retained for each individual plate of the matched pair but is prefixed by 1 for the outer plate and 2 for the inner plate e.g., Brake unit AH.9730 or AH.9731 has an outer plate 1/AHO.36426 and an inner plate 2/AHO. 36426 and the assembly number for the pair of mating plates is AHO.36426. This method of identification ensures that a pair of reclaimed plates always have the same thickness. They must be fitted as mated pairs even though only one of the rejected plates is unserviceable. All rejected plates are to be returned to stores as mated pairs.

RP 6

DATA SHEET No. 1

(Dunlop Ref. No. 6)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.
Brake Unit Part No. AH.9597, AH.9598, AH.9521, AH.9522 incorporating plates with the following numbers:—

Sub-assembly Part No. AHO.35239
Inner friction plate Part No. 2/AHO.35239
Outer friction plate Part No. 1/AHO.35239

Code	Applicable Dimension	Remarks
AA	11·070 in.	Maximum permitted external diameter of inner plate
AB	11·030 in.	Permitted serviceable external diameter of inner plate
AC	8·215 in.	Minimum permitted internal diameter between tenons of inner plate
BA	16·100 in.	Maximum permitted external diameter between tenons of outer plate
BB	13·025 in.	Minimum permitted internal diameter of outer plate
BC	13·095 in.	Permitted serviceable internal diameter of outer plate
C	11·000 in.	Nominal external diameter of inner plate
D	$\frac{13·130}{13·125}$ in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA—C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate $\frac{1}{2}$ (D—smallest dia. below BC but not less than BB)
F	$\frac{1·0584}{1·0564}$ in.	Plate thickness (*nominal*)
G	$\frac{1·0284}{1·0264}$ in.	First stage reduction (*plate thickness*)
H	$\frac{0·9984}{0·9964}$ in.	Second stage reduction (*plate thickness*)
I	Not permissible	Third stage reduction (*plate thickness*)
J	0·085 in./0·070 in.	Corner radii
L	2·075 in.	Minimum permitted inner plate tenon width (*measured over rollers of $\frac{1}{2}$ in. dia.*) using gauge No. AO.45750
L	Not applicable	Maximum permitted width measured between tenons of inner plate using gauge No. AO.45750
M	1·158 in.	Minimum permitted outer plate tenon width using gauge No. AO.45750

Code	Remarks
RP.1032/1	Code indicating plate thickness after chrome plating—first stage reduction
RP.1002/2	Code indicating plate thickness after chrome plating—second stage reduction.

PLATING DETAILS

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
1/AHO.35239	400	0·0003 in.
2/AHO.35239	600	

Notes . . .

*Brake assemblies, Part No. AH.*9521 *and AH.*9522 *must incorporate Modification No.* 2000 *before assembly with sets of friction plates which have been reduced in thickness.*

*Brake assemblies, Part No. AH.*9597 *and AH.*9598 *must incorporate Modification No.* 2001 *before assembly with sets of friction plates which have been reduced in thickness.*

*The above modifications constitute the fitting of new piston rod nuts, Part No. AHO.*28696.

Where nickel plating details are given, plates are to be nickel plated as detailed in App. 2 *before being chromium plated as detailed in App.* 1.

RP 6

Data Sheet No. 2

(Dunlop Ref. No. 10)

(This data sheet supersedes that issued with A.L.24)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.9517, AH.9518 incorporating plates with the following numbers:—
Sub-assembly, Part No. AHO.35568
Inner friction plate, Part No. 2/AHO.35568
Outer friction plate, Part No. 1/AHO.35568

Code	Applicable Dimension	Remarks
AA	9·475 in.	Maximum permitted external diameter of inner plate
AB	9·405 in.	Permitted serviceable external diameter of inner plate
AC	7·010 in.	Minimum permitted internal diameter between tenons of inner plate
BA	13·600 in.	Maximum permitted external diameter between tenons of outer plate
BB	11·090 in.	Minimum permitted internal diameter of outer plate
BC	11·160 in.	Permitted serviceable internal diameter of outer plate
C	9·375 in. / 9·370 in.	Nominal external diameter of inner plate
D	11·195 in. / 11·190 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate $\frac{1}{2}$ (D—smallest dia. below BC but not less than BB)
F	0·6814 in. / 0·6794 in.	Plate thickness (nominal)
G	0·6514 in. / 0·6494 in.	First stage reduction (plate thickness)
H	0·6214 in. / 0·6194 in.	Second stage reduction (plate thickness)
I	*Not applicable*	
J	·085 in. max. / ·070 in. min.	Corner radii
L	*Not applicable*	
L	0·840 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.47972
M	0·910 in.	Minimum permitted outer plate tenon width using gauge No. AO.47972

Code	Remarks
RP.0655/1	Code indicating plate thickness after chrome plating—first stage reduction
RP.0625/2	Code indicating plate thickness after chrome plating—second stage reduction
RP.——/3 (*Not applicable*)	

PLATING DETAILS

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
2/AHO.35568	250	0·0003 *in.*
1/AHO.35568	350	

Note . . .

Brake assemblies, Part No. AH.9517, AH.9518 must incorporate Modification No. 2031 before assembly with sets of friction plates which have been reduced in thickness. The modification constitutes the fitting of new piston-rod nuts, Part No. AHO.28877 and new return springs, Part No. AHO. 29536, where nickel plating details are given, friction plates are to be nickel plated as detailed in App. 2 before they are chromium plated as detailed in App. 1.

RP6

Data Sheet No. 3

(Dunlop Ref. No. 25)

(This data sheet supersedes that issued with A.L.25)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake unit, Part No. AH.50490 incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.35375

Inner friction plate, Part No. 2/AHO.35375

Outer friction plate, Part No. 1/AHO.35375

Code	Applicable dimension	Remarks
AA	7·912 in.	Maximum permitted external diameter of inner plate
AB	7·842 in.	Permitted serviceable external diameter of inner plate
AC	5·789 in.	Minimum permitted internal diameter between tenons of inner plate
AD	5·900 in.	Maximum permitted internal diameter between tenons of inner plate
BA	11·475 in.	Maximum permitted external diameter between tenons of outer plate
BB	9·337 in.	Minimum permitted internal diameter of outer plate
BC	9·407 in.	Permitted serviceable internal diameter of outer plate
BD	12·187 in.	Nominal diameter over tenons of outer plate
BE	11·375 in.	Nominal external diameter between tenons of outer plate
BF	9·570 in.	Maximum permitted internal diameter of outer plate
C	7·812 in.	Nominal external diameter of inner plate
D	9·437 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA-C}{2}$

Code	Applicable dimension	Remarks
EB	—	Maximum thickness of material to be removed from outer plate ½ (D-smallest dia. below BC but not less than BB)
F	$\frac{0{\cdot}7054}{0{\cdot}7034}$ in.	Plate thickness (nominal)
G	$\frac{0{\cdot}6754}{0{\cdot}6734}$ in.	First stage reduction (plate thickness)
H	$\frac{0{\cdot}6454}{0{\cdot}6434}$ in.	Second stage reduction (plate thickness)
I	Not applicable	
J	0·085/0·070 in.	Corner radii
L	0·715 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.50139
M	0·687 in.	Minimum permitted outer plate tenon width using gauge No. AO.50139

Code	Remarks
RP.0679/1	Code indicating plate thickness after chrome plating—first stage reduction
RP.0649/2	Code indicating plate thickness after chrome plating—second stage reduction

PLATING DETAILS

Plate Part No.	*Chrome amp.*	*Nickel thickness*
2/AHO.35375	200	0·0003 in.
1/AHO.35375	300	

Note . . .

(1) These brake plates are common to brake AH.9549, but reclaimed plates cannot be fitted in brake AH.9549.

(2) Where nickel plating details are given, plates are to be nickel plated as detailed in App. 2 before being chromium plated as detailed in App. 1.

P27189 173601/1103 4/57 1750 C.&P. Gp. 1

RP 6

Data Sheet No. 4

(Dunlop Ref. No. 35)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.50247, AH.50248 incorporating plates with the following numbers:

Sub-assembly Part No. AHO.35571
Inner friction plate Part No. 2/AHO.35571
Outer friction plate Part No. 1/AHO.35571

CODE	APPLICABLE DIMENSION	REMARKS
AA	9·225 in.	Maximum permitted external diameter of inner plate
AB	9·155 in.	Permitted serviceable external diameter of inner plate
AC	6·830 in.	Minimum permitted internal diameter between tenons of inner plate
BA	13·455 in.	Maximum permitted external diameter between tenons of outer plate
BB	10·712 in.	Minimum permitted internal diameter of outer plate
BC	10·782 in.	Permitted serviceable internal diameter of outer plate
C	9·125 in.	Nominal external diameter of inner plate
D	10·812 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate ½ (D—smallest dia. below BC but not less than BB)
F	$\frac{1·4364}{1·4344}$ in.	Plate thickness (nominal)
G	$\frac{1·4064}{1·4044}$ in.	First stage reduction (plate thickness)
H	$\frac{1·3764}{1·3744}$ in.	Second stage reduction (plate thickness)
I	$\frac{1·3464}{1·3444}$ in.	Third stage reduction (plate thickness)
J	$\frac{0·085 \text{ in. max.}}{0·070 \text{ in. min.}}$	Corner radii
L	0·841 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.49285
M	0·790 in.	Minimum permitted outer plate tenon width using gauge No. AO.49285

CODE	REMARKS
RP 141/1	Code indicating plate thickness after chrome plating—first stage reduction
RP 138/2	Code indicating plate thickness after chrome plating—second stage reduction
RP 135/3	Code indicating plate thickness after chrome plating—third stage reduction

PLATING DETAILS

Plate	*Chrome*	*Nickel thickness*
Part No.	Amp.	
1/AHO.35571	450	0·0003 in.
2/AHO.35571	300	

Note . . .

Where nickel plating details are given plates are to be nickel plated as detailed in App. 2 before being chromium plated as detailed in App. 1.

RP 6

DATA SHEET No. 6

(Dunlop Ref. No. 38)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake unit, Part No. AH.9780, AH.9781 incorporating plates with the following numbers:—
Sub-assembly, Part No. AHO.35569
Inner friction plate, Part No. 2/AHO.35569
Outer friction plate, Part No. 1/AHO.35569

Code	Applicable Dimension	Remarks
AA	12·225 in.	Maximum permitted external diameter of inner plate
AB	12·155 in.	Permitted serviceable external diameter of inner plate
AC	8·856 in.	Minimum permitted internal diameter between tenons of inner plate
BA	17·725 in.	Maximum permitted external diameter between tenons of outer plate
BB	13·964 in.	Minimum permitted internal diameter of outer plate
BC	14·034 in.	Permitted serviceable internal diameter of outer plate
C	12·125 in.	Nominal external diameter of inner plate
D	14·064 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate $\frac{1}{2}$ (*D — smallest dia. below BC but not less than BB*)
F	$\frac{0·9764}{0·9744}$ in.	Plate thickness (*nominal*)
G	$\frac{0·9464}{0·9444}$ in.	First stage reduction (*plate thickness*)
H	*Not applicable*	
I	*Not applicable*	
J	$\frac{0·070}{0·085}$ in.	Corner radii
L	1·092 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.100070
M	1·096 in.	Minimum permitted outer plate tenon width using gauge No. AO.100070

Code	Remarks
RP/095/1	Code indicating plate thickness after chrome plating — first stage reduction
RP/2 (*Not applicable*)	
RP/3 (*Not applicable*)	

PLATING DETAILS

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
1/AHO.35569	600	0·0003 in.
2/AHO.35569	350	0·0003 in.

Note . . .

*Brake assemblies, Part No. AH.*9780 *and AH.*9781 *must embody Modification* 2045 *before assembly with sets of friction plates which have been reduced in thickness. The modification constitutes the fitting of new piston rod nuts, Part No. AHO.*29002 *and new piston rods, Part No. AHM.*2950.

Where nickel plating details are given, plates are to be nickel plated in accordance with Appendix 2 *before being chrome plated as described in Appendix* 1.

RP 6

Data Sheet No. 7

(Dunlop Ref. No. 14)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.50296, AH.50297, AH.9576, AH.9575 incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.35574

Inner friction plate, Part No. 2/AHO.35574

Outer friction plate, Part No. 1/AHO.35574

CODE	APPLICABLE DIMENSION	REMARKS
AA	8·160 in.	Maximum permitted external diameter of inner plate
AB	8·090 in.	Permitted serviceable external diameter of inner plate
AC	5·582 in.	Minimum permitted internal diameter between tenons of inner plate
BA	12·350 in.	Maximum permitted external diameter between tenons of outer plate
BB	9·712 in.	Minimum permitted internal diameter of outer plate
BC	9·782 in.	Permitted serviceable internal diameter of outer plate
C	$\frac{8·060}{8·055}$ in.	Nominal external diameter of inner plate
D	9·812 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate. $\frac{1}{2}$ (D — smallest dia. below BC but not less than BB)
F	$\frac{0·9964}{0·9944}$ in.	Plate thickness (nominal)
G	$\frac{0·9664}{0·9644}$ in.	First stage reduction (plate thickness)
H	$\frac{0·9364}{0·9344}$ in.	Second stage reduction (plate thickness)
I	*Not applicable*	
J	0·085/0·070 in.	Corner radii
L	1·138 in.	Minimum permitted inner plate tenon width using gauge No. AO.49654
L	*Not applicable*	
M	0·690 in.	Minimum permitted outer plate tenon width using gauge No. AO.49654

CODE	REMARKS
RP0970/1	Code indicating plate thickness after chrome plating—first stage reduction
RP0940/2	Code indicating plate thickness after chrome plating—second stage reduction

PLATING DETAILS

Plate Part No.	*Chrome Amp.*	*Nickel Thickness*
1/AHO.35574	350	0·0003 in.
2/AHO.35574	250	0·0003 in.

Note . . .

Where nickel plating details are given, plates are to be nickel plated in accordance with Appendix 2 before being chrome plated as described in Appendix 1.

Brake assemblies, Part No. AH.9575 and AH.9576 must embody modification No. 2194 before assembly with sets of friction plates which have been reduced in thickness.

P24745 541931/2878 8/55 1750 C & P Gp. 1

RP 6

Data Sheet No. 8

(Dunlop Ref. No. 45)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake unit, Part No. AH.50396, A.H.50397, incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.35022

Inner friction plate, Part No. 2/AHO.35022

Outer friction plate, Part No. 1/AHO.35022

CODE	DIMENSION APPLICABLE	REMARKS
AA	8·560 in.	Maximum permitted external diameter of inner plate
AB	8·530 in.	Permitted serviceable external diameter of inner plate
AC	6·072 in.	Minimum permitted internal diameter between tenons of inner plate
BA	12·925 in.	Maximum permitted external diameter between tenons of outer plate
BB	10·025 in.	Minimum permitted internal diameter of outer plate
BC	10·093 in.	Permitted serviceable internal diameter of outer plate
BD	14·450 in.	Nominal diameter over tenons of outer plate
BE	13·680 in.	Nominal external diameter between tenons of outer plate
BF	11·156 in.	Maximum permitted internal diameter of outer plate
C	8·500 in.	Nominal external diameter of inner plate
D	10·125 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$

EB	—	Maximum thickness of material to be removed from outer plate ½ (D — smallest dia. below BC but not less than BB)
F	$\frac{\cdot 8964}{\cdot 8944}$ in.	Plate thickness (nominal)
G	$\frac{\cdot 8664}{\cdot 8644}$ in.	First stage reduction (plate thickness)
H	$\frac{0 \cdot 8364}{0 \cdot 8344}$ in.	Second stage reduction (plate thickness)
I	Not applicable	Third stage reduction (plate thickness)
J	$\frac{0 \cdot 085}{0 \cdot 070}$ in.	Corner radii
L	0·591 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.101096
M	0·690 in.	Minimum permitted outer plate tenon width using gauge No. AO.101096

CODE	REMARKS
RP087/1	Code indicating plate thickness after chrome plating—first stage reduction
RP084/2	Code indicating plate thickness after chrome plating—second stage reduction

PLATING CURRENT

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
2/AHO.35022	350	0·0003 in.
1/AHO.35022	500	0·0003 in.

Note . . .

The plates are to be nickel plated in accordance with Appendix 2 *before chrome plating as described in Appendix* 1.

RP 6

Data Sheet No. 8

(Dunlop Ref. No. 45)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake unit, Part No. AH.50396, A.H.50397, incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.35022

Inner friction plate, Part No. 2/AHO.35022

Outer friction plate, Part No. 1/AHO.35022

CODE	DIMENSION APPLICABLE	REMARKS
AA	8·560 in.	Maximum permitted external diameter of inner plate
AB	8·530 in.	Permitted serviceable external diameter of inner plate
AC	6·072 in.	Minimum permitted internal diameter between tenons of inner plate
BA	12·925 in.	Maximum permitted external diameter between tenons of outer plate
BB	10·025 in.	Minimum permitted internal diameter of outer plate
BC	10·093 in.	Permitted serviceable internal diameter of outer plate.
C	8·500 in.	Nominal external diameter of inner plate
D	10·125 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate $\frac{1}{2}$ (D — smallest dia. below BC but not less than BB)
F	$\frac{\cdot 8964}{\cdot 8944}$ in.	Plate thickness (nominal)
G	$\frac{\cdot 8664}{\cdot 8644}$ in.	First stage reduction (plate thickness)

(A.L.31, July 55)

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H	$\frac{0{\cdot}8364}{0{\cdot}8344}$ in.	Second stage reduction (plate thickness)
I	Not applicable	Third stage reduction (plate thickness)
J	$\frac{0{\cdot}085}{0{\cdot}070}$ in.	Corner radii
L	0·591 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.101096
M	0·690 in.	Minimum permitted outer plate tenon width using gauge No. AO.101096

CODE	REMARKS
RP087/1	Code indicating plate thickness after chrome plating—first stage reduction
RP084/2	Code indicating plate thickness after chrome plating—second stage reduction

PLATING CURRENT

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
2/AHO.35022	350	0·0003 in.
1/AHO.35022	500	0·0003 in.

Note . . .

The plates are to be nickel plated in accordance with Appendix 2 *before chrome plating as described in Appendix* 1.

P24951 548174/3844 10/55 1750 C & P Gp. 1

RP 6

Data Sheet No. 9

(Dunlop Ref. No. 49)

Dimensions given in the following table should be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.9730, AH.9731 incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.36426

Inner friction plate, Part No. 2/AHO.36426

Outer friction plate, Part No. 1/AHO.36426

Code	Applicable Dimension	Remarks
AA	9·28 in.	Maximum permitted external diameter of inner plate
AB	9·21 in.	Permitted serviceable external diameter of inner plate
AC	6·875 in.	Minimum permitted internal diameter between tenons of inner plate
AD	7·037 in.	Maximum permitted internal diameter between tenons of inner plate
BA	13.78 in.	Maximum permitted external diameter between tenons of outer plate
BB	10.9 in.	Minimum permitted internal diameter of outer plate
BC	10.97 in	Permitted serviceable internal diameter of outer plate
BD	14·450 in.	Nominal diameter over tenons of outer plate
BE	13·680 in.	Nominal external diameter between tenons of outer plate
BF	11·156 in.	Maximum permitted internal diameter of outer plate
C	$\frac{9{\cdot}180 \text{ in.}}{9{\cdot}175 \text{ in.}}$	Nominal external diameter of inner plate
D	$\frac{11{\cdot}005 \text{ in.}}{11{\cdot}000 \text{ in.}}$	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$

(A.L.69, May 58)

EB	—	Maximum thickness of material to be removed from outer plate. ½ (D—smallest dia. below BC but not less than BB)
F	0·6834 in. 0·6814 in.	Plate thickness (nominal)
G	0·6534 in. 0·6514 in.	First stage reduction (plate thickness)
H	Not applicable	Second stage reduction (plate thickness)
I	Not applicable	Third stage reduction (plate thickness)
J	0·085 in. 0·070 in.	Corner radii
L	0·841 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.50377
M	0·94 in.	Minimum permitted outer plate tenon width using gauge No. AO.50377

Code	Remarks
RP 0657/1	Code indicating plate thickness after chrome plating-first stage reduction

Plating Current

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
2/AHO.36426	250	0·0003 in.
1/AHO.36426	350	0·0003 in.

Note . . .

The plates are to be nickel plated in accordance with Appendix 2 *before chrome plating as described in Appendix* 1.

RP 6

Data Sheet No. 9

(Dunlop Ref. No. 49)

Dimensions given in the following table should be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.9730, AH.9731 incorporating plates with the following numbers:—
Sub-assembly, Part No. AHO.36426
Inner friction plate, Part No. 2/AHO.36426
Outer friction plate, Part No. 1/AHO.36426

CODE	APPLICABLE DIMENSION	REMARKS
AA	9·28 in.	Maximum permitted external diameter of inner plate
AB	9·21 in.	Permitted serviceable external diameter of inner plate
AC	6·76 in.	Minimum permitted internal diameter between tenons of inner plate
BA	13·78 in.	Maximum permitted external diameter between tenons of outer plate
BB	10·9 in.	Minimum permitted internal diameter of outer plate
BC	10·97 in.	Permitted serviceable internal diameter of outer plate
C	9·180 in. / 9·175 in.	Nominal external diameter of inner plate
D	11·005 in. / 11·000 in.	Nominal internal diameter of outer plate
EA	—	Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB	—	Maximum thickness of material to be removed from outer plate. $\frac{1}{2}$ (D—smallest dia. below BC but not less than BB)
F	0·6834 in. / 0·6814 in.	Plate thickness (nominal)
G	0·6534 in. / 0·6514 in.	First stage reduction (plate thickness)
H	Not applicable	Second stage reduction (plate thickness)
I	Not applicable	Third stage reduction (plate thickness)
J	0·085 in. / 0·070 in.	Corner radii
L	0·841 in.	Maximum permitted width measured between tenons of inner plate using gauge No. AO.50377
M	0·94 in.	Minimum permitted outer plate tenon width using gauge No. AO.50377

(A.L.43, May 56)

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CODE	REMARKS
RP 0657/1	Code indicating plate thickness after chrome plating–first stage reduction

PLATING CURRENT

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
2/AHO.36426	250	0·0003 in.
1/AHO.36426	350	0·0003 in.

Note . . .

The plates are to be nickel plated in accordance with Appendix 2 before chrome plating as described in Appendix 1.

P26041 590289/6536 7/56 1750 C & P Gp. 1

RP 6

Data Sheet No. 10

(Dunlop Ref. No. 32)

Dimensions given in the following table are to be substituted for the applicable code letters quoted in the basic scheme.

Brake Unit Part No. AH.50479, AH.50480 incorporating plates with the following numbers:—

Sub-assembly, Part No. AHO.29954

Inner friction plate, Part No. 2/AHO.29954

Outer friction plate, Part No. 1/AHO.29954

Code	Applicable dimension (in.)	Remarks
AA	8·225	Maximum permitted external diameter of inner plate
AB	8·155	Permitted serviceable external diameter of inner plate
AC	5·135	Minimum permitted internal diameter between tenons of inner plate
BA	13·100	Maximum permitted external diameter between tenons of outer plate
BB	9·900	Minimum permitted internal diameter of outer plate
BC	9·970	Permitted serviceable internal diameter of outer plate
C	8·125	Nominal external diameter of inner plate
D	10·000	Nominal internal diamter of outer plate
EA		Maximum thickness of material to be removed from inner plate. Greatest diameter above AB and not exceeding $\frac{AA - C}{2}$
EB		Maximum thickness of material to be removed from outer plate $\frac{1}{2}$ (D — smallest dia. below BC but not less than BB)
F	$\frac{0·9064}{0·9044}$	Plate thickness (nominal)
G	$\frac{0·8764}{0·8744}$	First stage reduction (plate thickness)
H	$\frac{0·8464}{0·8444}$	Second stage reduction (plate thickness)
J	$\frac{0·085 \text{ max.}}{0·070 \text{ min.}}$	Corner radii
L	0·560	Maximum permitted width measured between tenons of inner plate using gauge No. AO.100988.
M	0·690	Minimum permitted outer plate tenon width using gauge No. AO.100988

Code	Remarks
RP.088/1	Code indictaing plate thickness after chrome plating—first stage reduction.
RP.085/2	Code indicating plate thickness after chrome plating—second stage reduction.

PLATING DETAILS

Plate Part No.	*Chrome Amp.*	*Nickel thickness*
1/AHO.29954	350	0·0003 in.
2/AHO.29954	250	0·0003 in.

Note . . .

The plates are to be nickel plated in accordance with Appendix 2 before chrome plating as described in Appendix 1.

RP35

REPAIR TO PLATE BRAKE OPERATING CYLINDERS

1. Slight scores on the inside cylinder wall or on the outside wall of the piston locating boss may be polished out providing that:—

(1) The internal cylinder diameter is not increased by more than 0·002 in.

(2) The boss diameter is not decreased by more than 0·002 in.

This scheme does not apply to cylinder walls and bosses which have been hard anodised, because the protective film would be removed. If a hard anodised cylinder is scored it must be re-machined and re-hard anodised.

2. The new diameter must be concentric within a 0·0005 in. maximum dial indicator reading, and the finish must not exceed 8 micro-inches.

3. The repair must be to the satisfaction of the supervisory inspector A.I.D., C.I.O./N.A.I., or C.I.O./A.I.S.

4. After satisfactory completion of the repair, use $\frac{1}{16}$ in. metal stamps to mark "RP35" on one of the cylinder lugs. The letter must not be stamped on the cylinder wall. If the lug is not made of stainless steel, paint the indentations with seaplane varnish (*Stores Ref. 33B/107 or 550*).

5. The cylinder is to be re-anodised in accordance with D.T.D.910, but if the cylinder is made of stainless steel, the re-anodising process does not apply.

F.S./1
P27497 184976/2306 8/57 1750 C & P Gp. 1

RP50

PERMISSIBLE WEAR LIMIT TO PLATE BRAKE CYLINDER BORE

1. Due to the wear of the cylinder bore being greater on the side where the friction pad abuts, the ovality caused may render the torque plate unserviceable.

2. To ensure that torque plates are not rejected when the wear is slight, a maximum permissible wear-limit of 0·030 in. is allowed on the diameter (*fig.* 1). Where the total ovality of the cylinder exceeds by 0·030 in. the nominal diameter, the torque plate must be rejected.

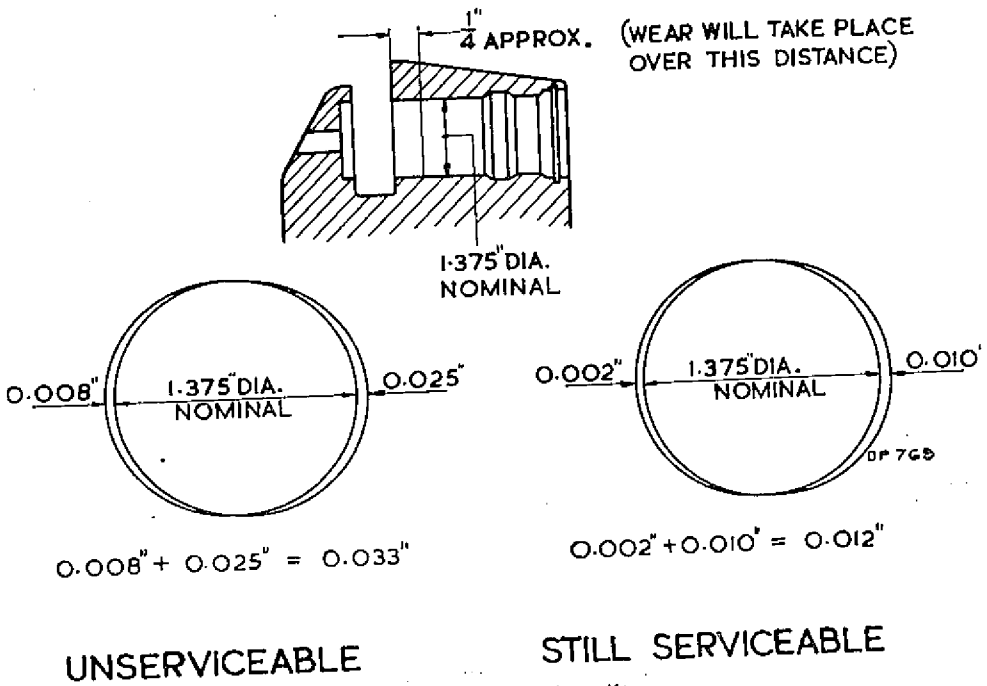

Fig. 1. Limits of ovality

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P23929 459323/6872 11/54 1750 C & P Gp. 1

Appendix 1
(Repair scheme RP 6)

CHROME PLATING RECLAIMED COPPER FRICTION PLATES AFTER NICKEL PLATING

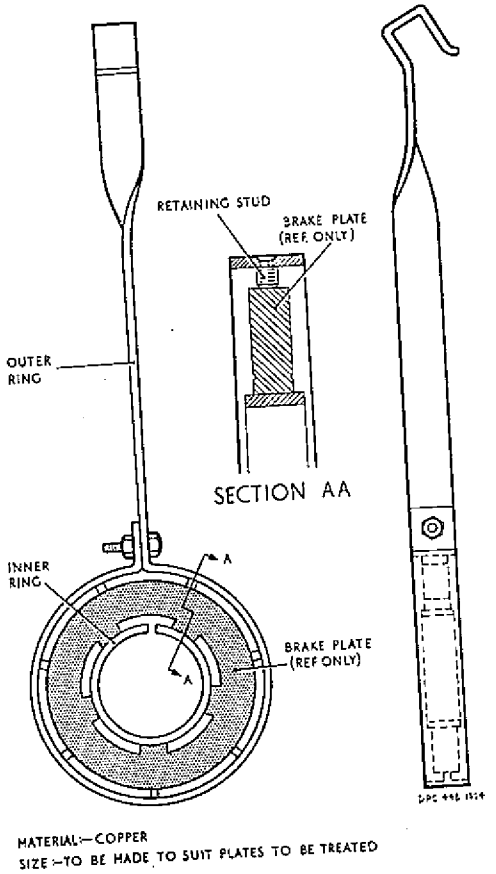

Fig. 1. Jig for inner brake plates

Replating

1. After a reclaimed friction plate has been nickel plated as detailed in Appendix 2, it must be chrome plated as follows:—

(1) Mount the plate in a jig.

(2) Scour the plate with sulphuric acid (25 per cent strength). Thoroughly rinse the plate in cold running water.

(3) To prevent their being plated, stop-off the tenons as detailed in A.P.880B, Vol. 1, Sect. 2, Chap. 1.

(4) Load the jig in the chromium bath, keep the voltage constant at 3 volts. When the vat is fully loaded, allow the current to remain at 3 volts for 5 minutes, then increase the current to that quoted on the relevant data sheet.

Notes . . .

(1) *The current quoted is the approximate current per plate and jig and should be multiplied by the number of plates loaded into the bath; it may be necessary to vary these figures to suit the type of cathode jig used and the efficiency of the bath.*

(2) *The plating solution must be maintained at* 290 *to* 320 *grams per litre chromium trioxide, and the ratio of free sulphuric acid to chromium trioxide between* 1:100/120. *The working temperature is to be between* 115 *to* 125 *deg. F, preferably* 120 *deg. F.*

(5) Chrome plate 0·002 in. thick on each face of the friction plate. The normal plating time to give the thickness of 0·002 in. per face is 5 to 5½ hours. The tenons must not be plated and there must be no build-up of chrome in the corners.

(6) Rinse the plate in cold running water then remove it from the jig and dry it with a clean rag. Where sleeves are riveted to tenons, ensure that no plating chemicals are trapped between sleeves and tenons.

(7) Make a visual examination of the plated surface for blisters where the chrome has not adhered. A plate which has such blisters must be discarded.

(8) Smooth the chrome deposit with grade No. 1 emery cloth. If chrome build-up occurs around the permitted dents (refer to para. 9 (3) of the Chapter), remove it with a smooth stone.

2. After plating, the maximum error for out-of-flat, i.e., bowing, including out-of-parallelism, is 0·003 in. Brake plates which have been re-chromed may show signs of crazing. Such crazing is permissible to the extent shown in fig. 3.

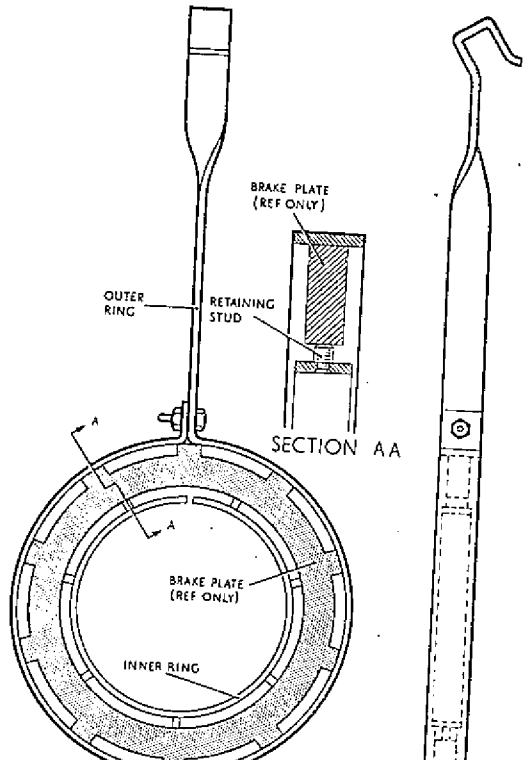

Fig. 2. Jig for outer brake plates

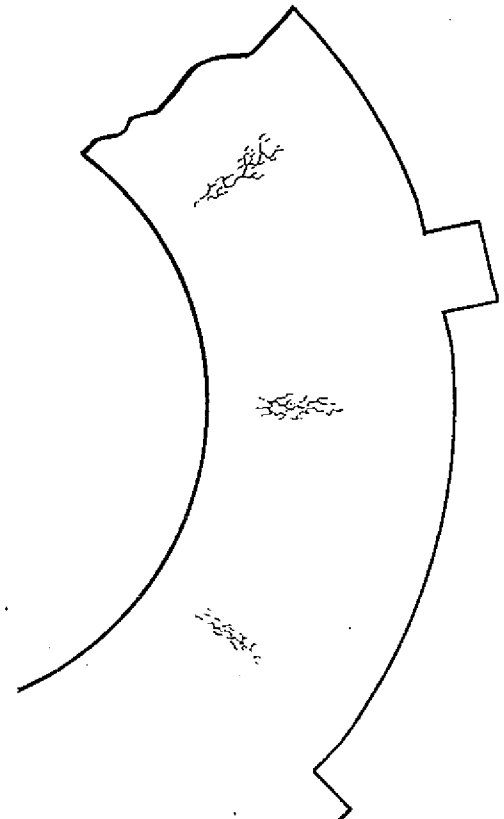

Fig. 3. Crazing on brake plate

Appendix 2
(Repair Scheme RP 6)

NICKEL PLATING OF COPPER FRICTION PLATES

Handling and storage

1. To avoid damage, it is essential that copper plates are handled with care. When storing, stack carefully using a suitable protecting medium such as corrugated cardboard between each plate. Do not hang in racks in such a manner that the plates can bang against each other.

Stripping

2. Immerse each friction plate in a hot hydrochloric acid solution; strength 1:1 approx. and at a temp. between 160 deg. F and 180 deg. F. Leave until all chrome deposit has disappeared, then wash in clean cold running water.

Preparation for plating (after faces have been re-ground)

3. Vapour degrease the friction plates in trichlorethylene as detailed in A.P.1464B, Vol. 1, Part 2, Sect. 4, Chap. 10; allow the plates to cool.

4. Mount each plate in a jig and cathodic clean the plate for three to five minutes in an alkali cleaning solution of 10 per cent sodium cyanide and 10 per cent sodium hydroxide at room temperature, then rinse the plate in cold running water.

5. Scour each plate with pumice powder and sulphuric acid (25 per cent strength). Thoroughly rinse the plate in cold running water.

6. Repeat operation (4)

Replating

7. Nickel plate to the thickness stated in the relevant data sheet. The nickel plating vat is to be maintained as follows:—

	Grams per litre
Nickel sulphate	290 to 330
Boric acid	20 to 25
Sodium chloride	20 to 25

The pH value for the solution must be between 5 and 5·5. The solution must be agitated and the temperature must be 110 to 115 deg. F. When sleeves are riveted to tenons, ensure that no plating chemicals are trapped between the two parts.

8. Rinse the plate thoroughly in cold running water, then remove from the jig and allow it to dry.

9. Follow up with the chrome-plating operations as soon as possible.

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RP 136

(Completely revised)

REPAIR TO PLATE BRAKE OPERATING CYLINDERS

Introduction

1. Piston bores in the torque plate, Part No. AH.40943 of brake unit, Part No. AH.50743 which have become oversize, may be enlarged and fitted with oversize pistons, sealing rings and end plates. It is not permissible to repair one or two piston bores only. If the scheme is applicable, all three piston bores must be repaired.

Method of repair

2. (1) Dismantle and degrease the plate brake as detailed in A.P.2337, Vol. 1, Book 2, Sect. 3, Chap. 2, App. 33.

(2) Hone the piston bores in the torque plate to the dimensions given in RP.136/1 (*fig.* 1). The finish after honing must not exceed 8 micro inches. Do not apply selenious acid solution to the machined bores.

(3) Fit new sealing rings to the oversize pistons, assemble the pistons to the brake unit, and use new end plates complete with new sealing rings.

Inspection

3. The repair must be to the satisfaction of the supervising inspector A.I.D., C.I.O./N.A.I., or C.I.O./A.I.S.

Identification

4. After satisfactory completion of the repair, use $\frac{1}{16}$ in. metal stamps to mark "RP136" adjacent to the Assembly Issue No. on the torque plate. Paint the indentations with selenious acid solution made from 2 oz. of selenious acid crystals dissolved in one pint of water.

New parts

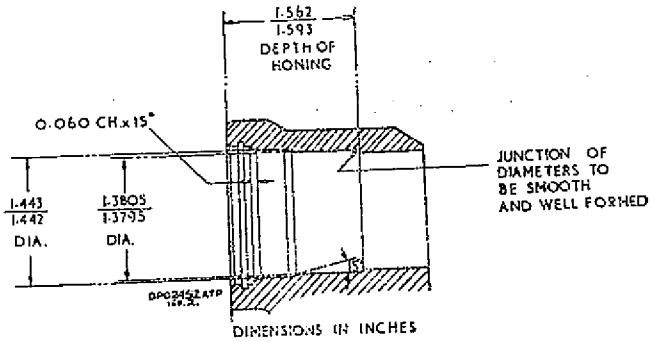
5. The undermentioned new parts are needed to carry out this repair:—

Part No.	Description	No. off
AHO.36949	Piston	3
AHO.36950	End plate	3
AHO.39329	Sealing ring	3
AHO.39330	Sealing ring	3

Redundant parts

6. The undermentioned parts are made redundant by this repair:—

Part No.	Description	No. off
AHO.36635	Piston	3
AHO.36630	End plate	3
AHO.36642	Sealing ring	3
AHO.36643	Sealing ring	3



RP 136/1

Fig. 1. Machining dimensions of cylinder bores

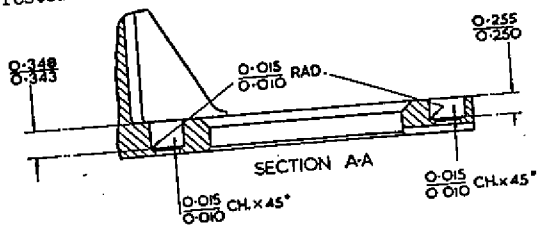
(A.L.72, Nov. 58)

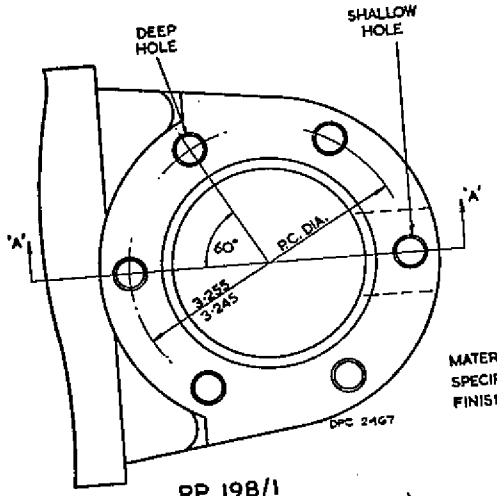
RP 198

REPAIR TO TORQUE PLATE BOLT HOLES, BRAKE UNIT, PART No. AH.50743 TORQUE PLATE, PART No. AH.40943

Nature of repair

1. When the torque plate attachment holes have elongated during service beyond 0·025 in. in either direction, they may be repaired by opening up the holes and fitting bushes to restore the original dimensions.





RP 198/1
(DIMENSIONS SHOWN ARE IN INCHES)

Fig. 1. Drilling dimensions of torque plate

Method of repair

2. (1) Dismantle the brake unit, degrease, and remove the paint.

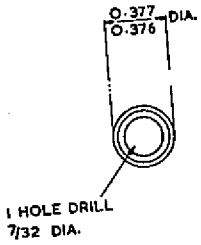
(2) Locate from the 2·25 in. dia. bore and one 0·257 in. dia. hole.

Note . . .
Use a double-diameter plug to locate in one of the 0·257 in. dia. holes away from the 1 in. wide slot.

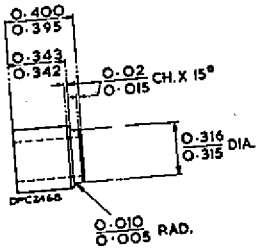
(3) Drill the shallow hole in the 1 in. wide slot to 0·316 in. dia. (letter 0 drill) right through. Ream 0·376/0·375 in. dia. to 0·255/0·250 in. deep with 0·015/0·010 radius in corner.

(4) Form a 0·015/0·010 chamfer × 45 deg. on the mouth of the 0·316 in. dia. bore (refer to RP 198/1) (*fig.* 1).

(5) Remove the plug from the 0·257 in. dia. hole, and insert it in the 0·376/0·375 in. dia. shallow hole in the 1 in. wide slot. Drill the remaining five holes to 0·316 in. dia. right through. Ream them 0·376/0·375 in. dia. to 0·348/0·343 in. deep with a 0·015/0·010 in. radius in the corner (refer to RP.198/1) (*fig.* 1).



MATERIAL :- STEEL
SPECIFICATION :- S1
FINISH :- CADMIUM PLATE TO D.T.D. 904



DIMENSIONS GIVEN ARE FOR MACHINING DEPTH OF CADMIUM PLATE 0·0005

BUSH RP 198/2A
(DIMENSIONS SHOWN ARE IN INCHES)

Fig. 2. Machining dimensions of bush for deep holes

(6) Form a 0·015/0·010 in. chamfer × 45 deg. on the mouth of the 0·316 in. dia. bore (refer to RP.198/1) (*fig.* 1).

(7) Refer to RP 198/3 (*fig.* 4), coat the bushes RP 198/2A (*fig.* 2) and RP 198/2B (*fig.* 3) with a thin coating of Adhesive, synthetic resin (*Ref. No.* 33C/1371) with Hardener 951 (*Ref.*

(A.L.67, Mar. 58)

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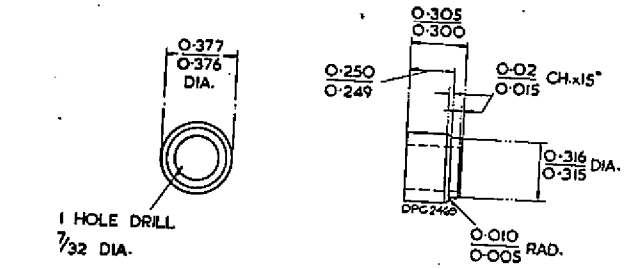


MATERIAL :— STEEL
SPECIFICATION:-S.1
FINISH :— CAD. PLATE TO DTD 904

DIMENSIONS GIVEN ARE FOR MACHINING DEPTH OF CADMIUM PLATE 0·0005

BUSH RP 198/2B
(DIMENSIONS SHOWN ARE IN INCHES)

Fig. 3. Machining dimensions of bush for shallow hole

No. 33C/1372), and press the 6 bushes into the torque plate.

(8) Locate from the 2·25 in. dia. bore and the $\frac{7}{32}$ in. bush dia. using a double dia. location plug in the $\frac{7}{32}$ in. bush dia. Using a letter F drill, drill 5 holes 0·257 in. dia. through the bushes.

(9) Remove the location plug from the $\frac{7}{32}$ in. dia. and insert it in one of the newly-drilled 0·257 in. dia. holes. Drill the remaining hole to 0·257 in. dia. Countersink all holes to 0·025 in. × 90 deg. at each end.

(10) Coat the unprotected holes with sea-plane varnish (*Ref. No.* 33B/107).

Inspection

3. The repair must be to the satisfaction of the supervising inspector A.I.D., C.I.O./N.A.I. or C.I.O./A.I.S.

Identification

4. After satisfactory completion of the repair, use $\frac{1}{8}$ in. metal stamps to mark "RP 198" below the assembly issue number on the torque plate. After marking the torque plate, paint the indentations with selenious acid solution made from 2 oz. selenious acid crystals dissolved in one pint of water.

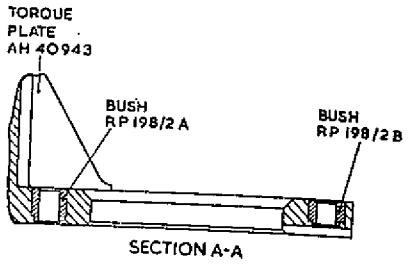
Painting

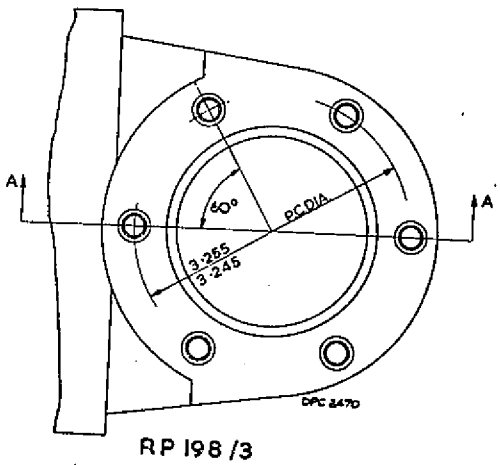
5. Repaint the torque plate as described in Vol. 1, Book 2, Sect. 3, Chap. 2.

New parts

6. The undermentioned new parts are required to embody this repair:—

Part No.	Description	No. off
RP.198/2A	Bush	5
RP.198/2B	Bush	1





RP 198/3
(DIMENSIONS SHOWN ARE IN INCHES)

Fig. 4. Details of repaired torque plate

P28421 261187/5066 5/58 1750 C & P Gp. 1