



PROVISIONAL

SPECIFICATION FOR ELECTRO-HYDRAULIC POWER UNIT FOR BARRIER OPERATION

British Railways Board



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AMENDMENTS

AMD.NO.	DATE	TEXT AFFECTED

British Railways Board

BRITISH RAILWAYS BOARD

SPECIFICATION NO. 985

ELECTRO-HYDRAULIC POWER UNIT FOR BARRIER OPERATION

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Foreward

This specification supersedes all previous issues and is issued by:-

British Railways Board	from whom further copies may be obtained
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1. REFERENCE

Reference is made in this specification to:-

British Railways Specification No. 843	Lifting Barrier Machines for use at level crossings
British Standards	BS 4800 Paint colours
	BS 5000 pts 11 & 99 Rotating Electrical Machines
IEE Regulations for the Electrical Equipment of Buildings.	

Where this specification requires reference to British Standards, British Railways specification, etc. the latest issue shall apply unless specially stated.

2. SCOPE

This Specification is for an electro-hydraulic power unit for use in operating lifting barriers at railway level crossings by oil hydraulics.

3. GENERAL

- 3.1 A power unit will be located in a barrier machine housing to BR Specification No. 843 and shall be required to drive the lifting barrier via suitable electrical and mechanical connections, in an arc from the horizontal to the raised position of 80° to 85° towards the vertical and to maintain the lifting barrier in the raised position until the lifting barrier is required to lower. A normally open solenoid operated valve shall, when energised, maintain the lifting barrier in the raised position. The lifting barrier will be biased to return to the horizontal position under the influence of gravity.
- 3.2 The power unit shall provide an electro motorised pump for the delivery of oil under pressure to a hydraulic linear actuator.
- 3.3 The solenoid operated valve shall prevent the flow of oil from the hydraulic linear actuator.
- 3.4 Means shall be provided to control the descent of the barrier.
- 3.5 Provision shall be made to allow selection of either "AUTO" or "MANUAL" mode of operation and to lock and seal the unit in the selected mode. This mode to be capable of being altered.
- 3.6 The barrier machine will be capable of maintaining the barrier in the horizontal position and to prevent the barrier travelling beyond 85°.
- 3.7 Suitable means for local operation to be incorporated in the unit.
- 3.8 The equipment shall be of robust construction and shall be thoroughly reliable in operation with a minimum of maintenance attention.
- 3.9 The power unit shall have a service life of at least 1 million operations of raising the barrier over a period of 20 years.
- 3.10 The power unit shall be considered as having a possible period of up to 3 years in reasonable storage conditions prior to being brought into use without verification or examination and without any adverse effect on its rated life.
- 3.11 The power unit shall satisfy the performance limits set out in Appendix A.

4. HYDRAULICS

- 4.1 Components and connections shall where practicable be contained within the oil reservoir (to avoid external spillage in the event of an oil leakage). The reservoir and linear actuator are to form an integrated assembly.
- 4.2 The design shall use a minimum of hydraulic inter connections to minimise the risk of oil leakage.

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