

Category 1 Standard

S1187 Index of Components for Rolling Stock

Issue No.: A3

Issue date: January 2012
Review date: January 2017

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1 Purpose

- 1.1 The purpose of this Standard is to define the system for referencing and indexing physical parts of Rolling Stock

2 Scope

- 2.1 This Standard may also be used to reference rolling stock systems.
- 2.2 Attachments to this standard define the accepted methods of recording the position of vehicle components within the vehicle envelope, and distinguishing different types of vehicle.
- 2.4 This issue of the standard replaces 1-187 A2

3 Requirements

3.1 Index of components for rolling stock

3.1.1 Aims

- 3.1.1.1 The aims of this standard are:
- a) to assure consistency of approach when referencing rolling stock physical parts and systems;
 - b) to detail the preferred method of referencing the positions of components.
 - c) To ensure consistency of approach when numbering documentation by detailing the conventions used for the following:
 - I) illustrated parts lists;
 - II) Minimum Acceptable Condition Standards;
 - III) Process instructions for train maintenance;
 - IV) Drawings (the application of zone references to);
 - V) General documents;
 - VI) Other data about rolling stock such as the recording of defects.
 - d) To list preferred abbreviations for specialised rolling stock components which are not in S1622.

3.1.2 Arrangement of index

- 3.1.2.1 Each area of a train has been given a zone number. The index (section 3.1.3) is listed in zone order.
- 3.1.2.2 The principle of zoning a train and its equipment is a two level system. A zone depicts a prime 'system' while 'equipment' (or 'component') defines prime equipment within each zone. It is not intended to go to the lowest level to define each nut, bolt or equipment within an item of equipment. It is for the relevant documents or systems (tagged with a zone and equipment reference) produced downstream to provide this lowest level.
- 3.1.2.3 For example, in an Illustrated Parts list, a bolt for a tripcock can be found on an exploded view of a tripcock carrying the number 10.01. The parts list of the 10.01 exploded view then provides the detail for each part.



- 3.1.2.4 Additional detail are shown for which specific components fall in particular zones
Where two levels of information are insufficient to achieve consistency, the application will assist in cataloguing data.
- 3.1.2.5 It is necessary to know the location of some components within the vehicle envelope, for example saloon sliding doors when recording defects. Attachment 1 details the preferred method of referencing these.

Notes: A different system for referencing train maintenance information was used for the 1992 tube stock maintenance manuals. Attachment 4 contains a chart cross-referencing the zone codes to layout of these maintenance manuals.

- 3.1.2.6 Four new Zones have been included: - 110, 120, 130 and 140. These zones are Assured Improvement for the Continual Improvement Plan (CIP) for Rolling Stock Maintenance processes. CIP is a robust, risk-based tool that has been developed based on industry best practice. The four zones have their own 'chapters' (components) and then sections within each chapter. This is used as a point of reference with the intention is that it will be used to 'accredit' a maintenance entity with its ability to effectively manage maintenance of LUL rolling stock.



3.1.3 Index of components for rolling stock

Zones – first level	
00	General
10	Braking
11	Traction/Propulsion
12	Doors
13	Carbody
14	Bogie/Suspension
15	Couplings
16	Underframe
17	Auxiliaries
18	Heating/Ventilation
19	Air Supply
20	Cleaning
21	Electrical Distribution
22	Emergency Equipment
23	Fault Recording Equipment
24	Automatic Train Control
25	Communications
26	Paint
27	Labels And Notices
28	Shoegear
29	Certification
30	Not used
31	Miscellaneous depot activities including Safety Instructions (General)
32	Depot Plant and Equipment
110	CIP Strategic
120	CIP Performance of Assets
130	CIP Resources
140	CIP Standards

Notes:

- a) zones 01 to 09 and 33 to 59 not used.
- b) zones 60 to 79 inclusive reserved for future use structuring for track maintenance plant information.
- c) zones 80 to 109 not used.
- d) zones 110, 120, 130 and 140 used for Continual Improvement Plan (CIP)



3.1.4 Zones - full listing

Notes:

- a) Letters in brackets following an equipment name are the accepted abbreviation for the equipment.

3.1.4.1 Zone 00, General.

Note: This zone is to be used for indexing drawings only.

Zone number	Item	Application
00.00	block plans of cars and or their equipment	-
00.01	lubrication charts	-
00.02	nuts, bolts, rivets, bushes, gaskets (unspecified)	-
00.03	gauges	-
00.04	train/equipment weight charts	-
00.05	non-specific drawing indices)	-

3.1.4.2 Zone 10, Braking.

Note: This structure is only appropriate for components, not for considering the system as a whole. For all current designs of passenger rolling stock a description of braking system is available from the APE Brakes section.

Zone number	Item	Application
10.00	brake system	Safely stops the train in normal and emergency conditions and to hold a stationary train
10.01	tripcock	To stop train on passing a raised train stop
10.02	tread brake unit also referred to as a 'brake cylinder'	Apply brake block to wheel
10.03	Parking brake.	To prevent movement of train when parked SAPB is accepted abbreviation for a spring applied parking brake
10.04	slack adjuster	Brake adjusting mechanism (Note: this is generally an integral part of the tread brake unit)
10.05	rigging	Brake linkage.
10.06	combined traction and brake controller (CT/BC)	Acceleration and deceleration controller for deadman on 1959/62 tube and A stock see 11.12
10.07	dynamic braking	To retard train using traction system
10.08	pressure switches	Air operated switch (not tripcock pressure switches)
10.09	brake block	Brake friction device



Zone number	Item	Application
10.10	brake control circuit	Means of conveying braking commands to brake equipment
10.11	drivers brake valve (DBV)	Deceleration controller
10.12	load weigh	Varies brake effort in proportion to load Also used if VLCV varies tractive effort in proportion to load, and/or controls air suspension
10.13	relays	Electro magnetic multi pole switch for maintenance instructions for groups of interchangeable relays and their bases see zone 17.27
10.14	valves	for remote brake release valves use 10.17
10.15	shunting control panel	Depot shunting operations.
10.16	check valve	Prevent loss of air pressure. Used for: brake supply reservoir check valve (ECEB stocks); positive acting check valve (Westinghouse stocks).
10.17	remote brake release valve	One car only brake release.
10.18	retarder	Mercury switch, deceleration controllers.
10.19	brake system gauges	To indicate pressure (Used for saloon brake cylinder pressure gauge) All air gauges which show pressures in brake system should be located in this zone, not zone 19.
10.20	EP converter	Electronic to pneumatic converter Used for the brake control unit on 1983 tube stock
10.21	triple valve	Westinghouse automatic brake control valve
10.22	jerk rate limit valve	Controls the rate of application of the service air brake only
10.23	7 step valve	Electro pneumatic valve giving seven graduated output pressures
10.24	equipment case	Housing for apparatus
10.25	brake circuit switches	-
10.26	code + vigilance trip valve	To apply emergency braking when no safety track code is present
10.27	distributor valve	Brake control
10.28	isolating cock	To isolate air supply -. Use for Brake Isolating Cock (BIC); On IPLs these should be cross-referenced to zone 19.12.
10.29	not used	-
10.30	traction and brake encoding system	To convey acceleration and retardation commands from head end controls to each vehicle



Zone number	Item	Application
10.31	wheelslide protection system	To prevent wheels from locking during braking
10.32	Smart Valve	Air distribution to braking system (S Stock)
10.33	Gateway Valve	Air distribution to braking system (S Stock)
10.34	Overheight valve	Air distribution, suspension system (S Stock)
10.35	Overheight valve (type 6)	Maintains height of bogie by regulating air in bags
10.36	Tripcock Module	Used to prevent train conflict
10.37	Tread Brake Unit (Trailer)	
10.38	Upper Valve Chest	72ts
10.39	Lower Chest Valve	72ts
10.40	Bogie Brake Control Panel	S Stock
10.41	Bogie Brake Control Panel Type 6821	S Stock
10.42	Bogie Brake Control Panel Type 6822	S Stock
10.43	Bogie Brake Control Panel Type 6823	S Stock
10.44	Bogie Brake Control Panel Type 6824	S Stock
10.45	Bogie Brake Control Panel Type 6825	S Stock
10.46	Bogie Brake Control Panel Type 6826	S Stock
10.47	Bogie Brake Control Panel Type 6827	S Stock
10.48	Horizontal Levelling Valve (LH)	Air distribution for suspension system on 09TS and some S Stock.
10.49	Horizontal Levelling Valve (RH)	
10.50	Compensating Valve	
10.51	EP Valve	

3.1.4.3 Zone 11, Traction.

Zone number	Item	Application
11.00	traction/propulsion system	Equipment used to propel train
11.01	traction motors	Train propulsion device
11.02	rotary pneumatic accelerator (RPA)	Controls the amount of resistance in series with the traction motor - (in 1938 to D78 designs of stock) sometimes called 'PCM' (pneumatic camshaft mechanism); Data on the electrically powered camshaft fitted to 1983 tube stock should also be referenced to this zone.



Zone number	Item	Application
11.03	line breaker	Power operated main traction control switch - This zone also used for battery locomotive Main Contactors
11.04	contactors	Power operated current switch
11.05	power semiconductors	High current control device
11.06	power switches	Power operated switch for reconfiguration of traction circuits - use for reverser on pre-1983 designs of trains
11.07	relays	Electro magnetic multi pole switch - (note in past some current monitoring devices have been incorrectly placed in this zone)
11.08	current monitoring devices	Equipment to monitor current levels
11.09	traction electronic units	Electronic logic and control module
11.10	instruments	Devices displaying results of measurement
11.11	resistances	Provides graduated traction current
11.12	traction controller	Drivers acceleration controller
11.13	hand operated switches	Control equipment or isolate parts of circuits - Used for traction control isolating switches, such as Traction control cut-out switch (TCCOS), also 'Fault Isolating Switch' (FIS) on 1959 to 1972 tube and C69/77 stocks
11.14	motor transmission	Transmits rotation of traction motor to axle - Simple pinion 1959 to 1983 stocks, gearbox on 1992 tube stock
11.15	reverser selector switch	To change direction of rotation of traction motor
11.16	weak field	Reduced field current
11.17	equipment cases 1 and 2	Traction control equipment housing
11.18	interlocks	Monitoring switches that control other equipment
11.19	motor leads	Traction motor cables
11.20	gear case	Encloses gear wheel and pinion
11.21	over temperature protection	Provides overheating protection to resistance grids
11.22	hydraulic drive	Working drive (on site operation)
11.23	speed probe	To determine rotational speed - 95ts Propulsion system
11.24	traction inductor	Part of solid state traction control - includes any mounting arrangement
11.25	traction capacitor	Part of solid state traction control - including frame
11.26	Brake Resistor Fan	Fan to dissipate heat on braking
11.27	Motor Converter Module (MCM)	Traction system, 09TS and S Stock
11.28	Drive Control Unit (DCU)	Traction System 09TS and S Stock



Zone number	Item	Application
11.29	Motor Convertor Module external fan.	Traction System 09TS and S Stock
11.30	Control Electronics	
11.31	Traction Motor Pinion	Motor drive to the gearbox/axle
11.32	Motor Convertor Module (MCM) Gate Drive Unit	Traction System S Stock
11.33	Motor Convertor Module (MCM) Power Supply Unit	Traction System 09TS and S Stock
11.34	Auxiliary Convertor Module (ACM)	Traction System 09TS and S Stock
11.35	Drive Control Unit (DCU)	Traction System 09TS and S Stock
11.36	Auxiliary Convertor Module (ACM) external fan.	Traction System 09TS and S Stock
11.37	Auxiliary Convertor Module (ACM) Gate Drive Unit	Traction System S Stock
11.38	Auxiliary Convertor Module Power Supply Unit	Traction System 09TS and S Stock
11.39	MCM Unit (Heavy)	Traction System S Stock
11.40	MCM Unit (Light)	Traction System S Stock
11.41	Drive Control Unit DCC 2580A	Traction System S Stock
11.42	Drive Control Unit DCC2480B	09ts & S Stock Supervises and controls MCM functions

3.1.4.4 Zone 12, Doors.

Zone number	Item	Application
12.00	door system	All train doors and controls
12.01	saloon sliding door	Passenger entry and exit to vehicle - Individual doors are referred to as a 'door leaf'
12.02	saloon communicating	Vehicle to vehicle door - (these are generally referred to as 'R' and 'S' doors)
12.03	cab sliding	Drivers side entry and exit to cab - (see 12.12 for inflatable seals)
12.04	cab hinged	Drivers side or front entry and exit to cab
12.05	'J' door	Cab to saloon door
12.06	door cocks	Three or four way hand operated door cock
12.07	door valves (DV)	Pneumatic door control valves
12.08	door operator	Engine used to open and shut a powered door
12.09	platform close switch	To allow the saloon sliding doors on just one side of one car to be closed
12.10	door control switches	Electrical switches to control doors
12.11	door edge rubber	Door edge rubbers - also know as 'sensitive edge' or 'nosing rubber'
12.12	seals	Door to carbody draft excluder



Zone number	Item	Application
12.13	guidance system	Sliding door runners and support systems
12.14	electrical control system	Door control
12.15	contactors	Electro magnetic current switch.
12.16	door interlock	Monitoring switch that detects if door is shut - (this is a mercury tilt switch on 1959 to 1983 designs of train, a magnetic switch on 1992 tube stock)
12.17	not used	-
12.18	relays	Electro magnetic multi pole switch
12.19	door fault indicator lamp (DFIL)	Light on outside of carbody or roof which, when illuminated, indicates door open
12.20	doors closed indicator	Light on driver/guard control panel to indicate, when illuminated all doors closed - Traditionally called a 'pilot light'
12.21	correct side door enable (CSDE)	Track to train data link to allow opening of saloon sliding doors only if whole train is berthed in platform, on the platform side only
12.22	door close warning systems (door chimes)	To warn passengers of imminent closing of doors
12.23	electronic door control module (EDCM)	Door system control
12.24	Door Operator LH Type 300	09ts -Left Hand (External emergency Access device manual release)
12.25	Door Operator LH Type 302	09ts Left Hand (External emergency Access device manual release)
12.26	Door Operator RH Type 303	09ts Left Hand handle. (manual release under seat on operator)
12.27	Door Operator LH Type 304	09ts Right hand handle. (manual release under seat on operator)
12.28	Door Operator RH Type 305	09ts Left Hand standard. (No manual lever)
12.29	Door Operator RH Type 306	09ts Right Hand Push. (push back , Note: not fitted at present, may change with sensitive edge mod)
12.30	Door Operator RH Type 307	09ts Right Hand (External emergency Access device manual release)
12.31	Door Operator LH Type 308	09ts Right Hand standard. (No manual release lever)
12.32	Door Operator LH Type 309	09ts Cab Left (Internal and External manual release)
12.33	Door Motor Gear box L/H	Door System 09TS and S Stock
12.34	Door Motor Gear Box L/H	09ts - Regulates door speed
12.35	Door Motor Gear Box R/H	09ts - Regulates door speed
12.36	Door Motor Gear Box R/H	09ts - Regulates door speed
12.37	Door Motor Gear Box Assy LH Cab	09ts - Regulates door speed



Zone number	Item	Application
12.38	Door Motor Gear Box Assy RH Cab	09ts - Regulates door speed
12.39	Door Motor Saloon	Open/Closes saloon sliding doors Door System 09TS and S Stock
12.40	Door Motor RH Cab	Open / closes cab sliding door
12.41	Door Motor LH Cab	Open / closes cab sliding door
12.42	Door Transceiver	Door System 09TS and S Stock
12.43	Door Interlock Reed Switch	Door System 09TS and S Stock
12.44	Electronic Door Control Unit	Door System 09TS and S Stock
12.45	Door Sensitive Control Unit	Door System 09TS and S Stock
12.46	Door Operator 1200 Saloon	S Stk
12.47	Door Operator 1600 Saloon	S Stk
12.48	Door Op LH Cab Door	S Stk
12.49	Door Op RH Cab Door	S Stk
12.50	Door PIR Transmitter	S stk - detects presence of obstructions in the wheelchair access doorway in addition to obstacle detection

3.1.4.5 Zone 13, Carbody.

Zone number	Item	Application
13.00	carbody system	Complete assembly
13.01	exterior panels	Side, end and roof cladding
13.02	interior panels	Side, end and ceiling cladding
13.03	structure	Frame work - Will include the body bolster
13.04	flooring	Surface walked on
13.05	glazing	Windscreen and windows
13.06	roof panels	Exterior upper panelling
13.07	platform view mirror	Device (attached to train) to enable train operator to view platform
13.08	not used	-
13.09	not used	-
13.10	saloon seating	Passenger comfort
13.11	train operator seating	Driver comfort
13.12	occasional seating	Crew comfort – Use for the instructors seat in cabs
13.13	mouldings	-
13.14	grab handles/poles/hand grips	To assist in boarding and alighting from the train, also to support standing passengers in the train
13.15	saloon interior sill plate	Floor to door trimmer
13.16	saloon exterior sill plate	Floor to door trimmer
13.17	saloon communicating threshold	Floor to door trimmer
13.18	not used	-
13.19	cab door threshold	Floor to door trimmer
13.20	not used	-