

MODULAR ABS SERIES

**MODULAR 1 UPGRADE
MODULAR 1 PLUS
MODULAR 2**



OPERATOR'S GUIDE



000 700 063 / 10.01. / Redditch

Contents

System Description	Page 2
System Layout	Page 4
System Diagnostics	Page 6
Warning lamp and System Check Procedure	Page 7
Diagnostic System Codes	Page 9
Power Supply Wiring Diagrams	Page 12
Multimeter readings	Page 14
Recommended Maintenance Schedules	Page 15
Service Parts	Page 16

MODULAR ABS Operator's Guide

Your trailer has been fitted with the latest technology Haldex anti-lock braking system. This system has been specifically designed to be effective, reliable and easy to service.

The purpose of this booklet is to describe the components involved and give you sufficient information to make your use of the system easy.

The use of the diagnostic system is described but when overhaul of the components is required, we advise you to refer to the full **SERVICE MANUAL** which describes replacement procedures fully.

System Description

The MODULAR Series ABS contains the Valve(s), mounting bracket and a Electronic Control unit (ECU).

For general purpose trailers:-

MODULAR 1 Upgrade features 2S/1M

2 Sensors and 1 Modulator (ABS valve)
Odometer facility
'End-of-Line' Test

MODULAR 1 Plus features 2S/1M

Odometer facility
Reset-to-Ride Height
Vehicle Data System
'End-of-Line' Test

MODULAR 2 features 2S/2M or 4S/2M

Odometer facility
Reset-to-Ride Height
Vehicle Data System
'End-of-Line' Test

For dangerous load carrying trailers:-

MODULAR 2 ADR features 2S/2M or 4S/2M

Reset-to-Ride Height
Vehicle Data System
'End-of-Line' Test

The position of the various components is shown in Tri-axle layout, Fig 1. The system is equally compatible with single and tandem axles. The exciter turns with the wheel and its teeth break the magnetic field of the sensor 80 or 100 times per revolution. This generates a wheel speed signal which is sent to the electronic control unit (ECU) via the sensor extension cable. The ECU detects locking of the wheels and controls the air brakes via the modulator. The MODULAR 1 PLUS or 2, ECU passes an electrical signal to Haldex COLAS® (also a manual raise/lower valve) which automatically resets the trailer to the correct ride height after it has been raised/lowered when docking. MODULAR ABS series incorporate an odometer facility (except for MODULAR 2 ADR) which measures total mileage of the trailer and its read-out is shown on a optional INFO-CENTRE unit. The **INFO CENTRE** is a side of trailer mounted unit used also for read-out of diagnostic codes and other information as available from the ABS ECU.

The MODULAR ABS series also incorporates a enhanced information storage and retrieval facility.

For the fleet operator, a Vehicle Data System (**VDS**) allowing the compilation of a full history of each trailer or long term monitoring. For the trailer manufacturer, a 'End-of-line' Testing (**EOLT**) to confirm correct performance of the ABS system.

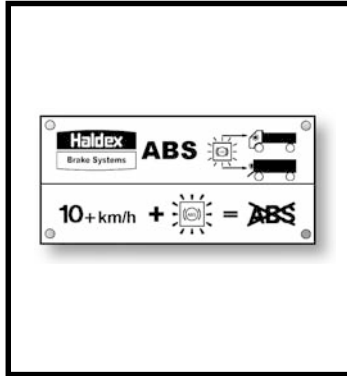
BRAKING WITH ABS

In an emergency apply full force on the brake pedal. The ABS will be activated immediately you fully apply the brakes and will assist you to retain steering control of your vehicle according to the road surface conditions. DO NOT apply and release the brakes by pumping the brake. This is known as 'Cadence braking' and can have a detrimental effect on vehicle braking.

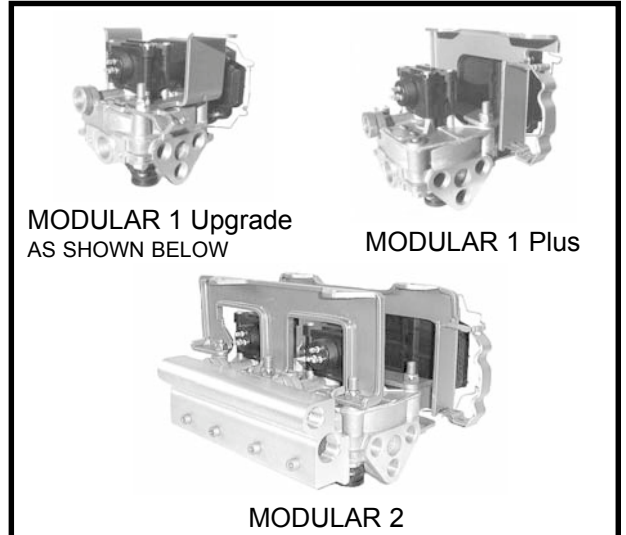
General Components Guide



The Warning lamp



The Driver's information plate

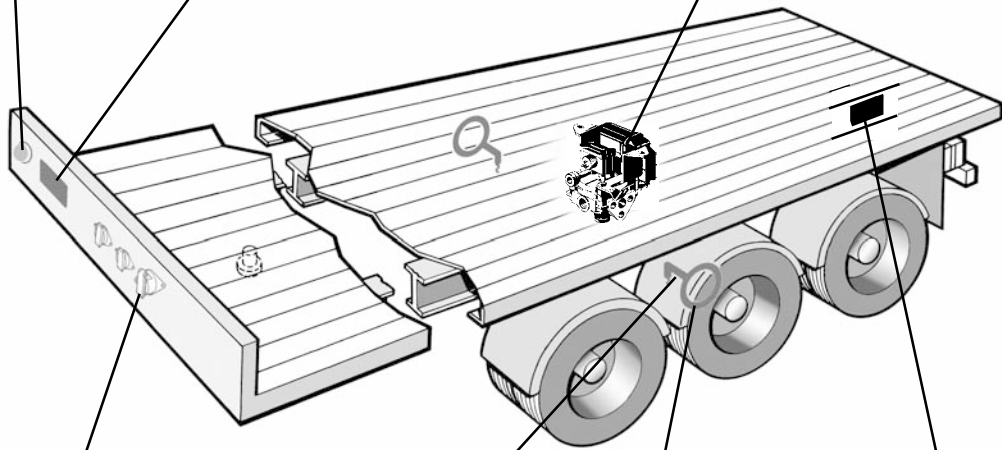


MODULAR 1 Upgrade
AS SHOWN BELOW

MODULAR 1 Plus

MODULAR 2

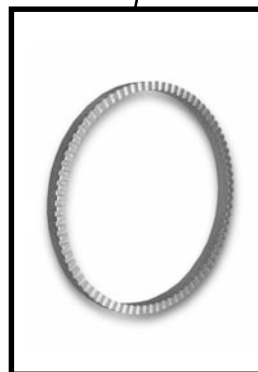
ECU and Modulator assembly



ISO 7638 Connector
assembly



The Sensor



The Exciter



INFO CENTRE -
Vehicle Mounted Display

Fig 1

System Layout

The system fitted to your trailer may have 2 or 4 sensors (**S**) and 1 or 2 modulators (**M**). The variants available being **2S/1M**, **2S/2M** and **4S/2M**.

The layout of the chassis components are shown in Fig 2. The ECU and Modulator(s) are mounted together on a single bracket for ease of installation and maintenance.

The powering of the system can be via either of these two groups:

ISO 7638-Dedicated ABS power cable.
ISO 1185 (24N)-Stop Light powering.

or

ISO 3731 (24S)-Supplementary power cable.
ISO 1185 (24N)-Stop Light powering.

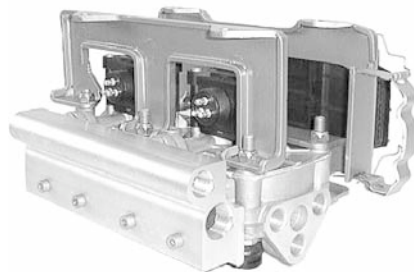
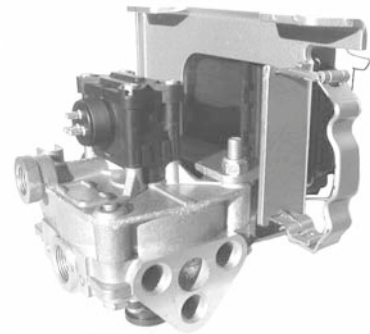
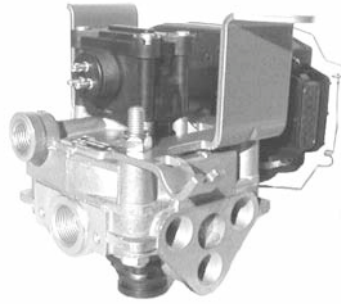
A green warning lamp will also have been fitted to the headboard of the trailer, in a position visible to the driver through the driving mirror. This lamp will have been connected to the ABS via a junction box into which the ISO 1185 (24N) cable would also be connected.

When an ISO 7638 is fitted, or powering is through the ISO 3731 (24S), it will normally control a red warning lamp in the driver's console (ABS 2).

Both warning lamps have two functions:

-To indicate system integrity via the correct lamp sequence (see Fig 4, Fig 5 on page 7 and step 1- Fig 7 on page 8) every time the ABS ECU is electrically powered up.

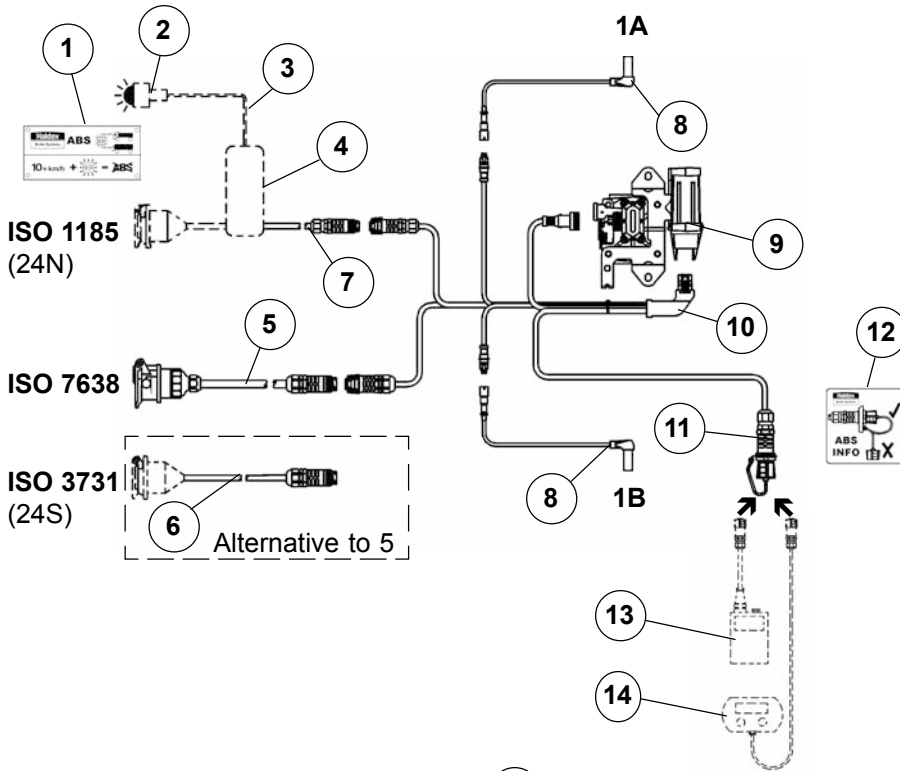
-To indicate by permanent illumination, when the vehicle is moving, if a fault has been detected.



ABS Chassis Components

MODULAR 1 Upgrade

Item	Description
1	ABS Label
2	Green Warning lamp Bulb (24v-5w Double pole)
3	2 core cable
4	Junction box
5	ISO 7638 Socket assembly - PVC
6	ISO 3731 (24S) Cable assembly - PVC
7	ISO 1185 (24N) Cable assembly - PVC
8	Sensor assembly
9	ECU and Modulator assembly
10	Loom assembly
11	Diagnostic Connector
12	Diagnostic Label
13	Diagnostic Display Unit
14	INFO CENTRE



MODULAR 2

Item	Description
1	ABS Label
2	Green Warning lamp Bulb (24v-5w Double pole)
3	2 core cable
4	Junction box
5	ISO 7638 Socket assembly - PUR
6	ISO 3731 (24S) Cable assembly - PUR
7	ISO 1185 (24N) Cable assembly - PUR
8	Sensor assembly
9	ECU and Modulator assembly
10	Loom assembly
11	Diagnostic Connector
12	Diagnostic Label
13	Diagnostic Display Unit
14	INFO CENTRE
15	COLAS®
16	PC Interface

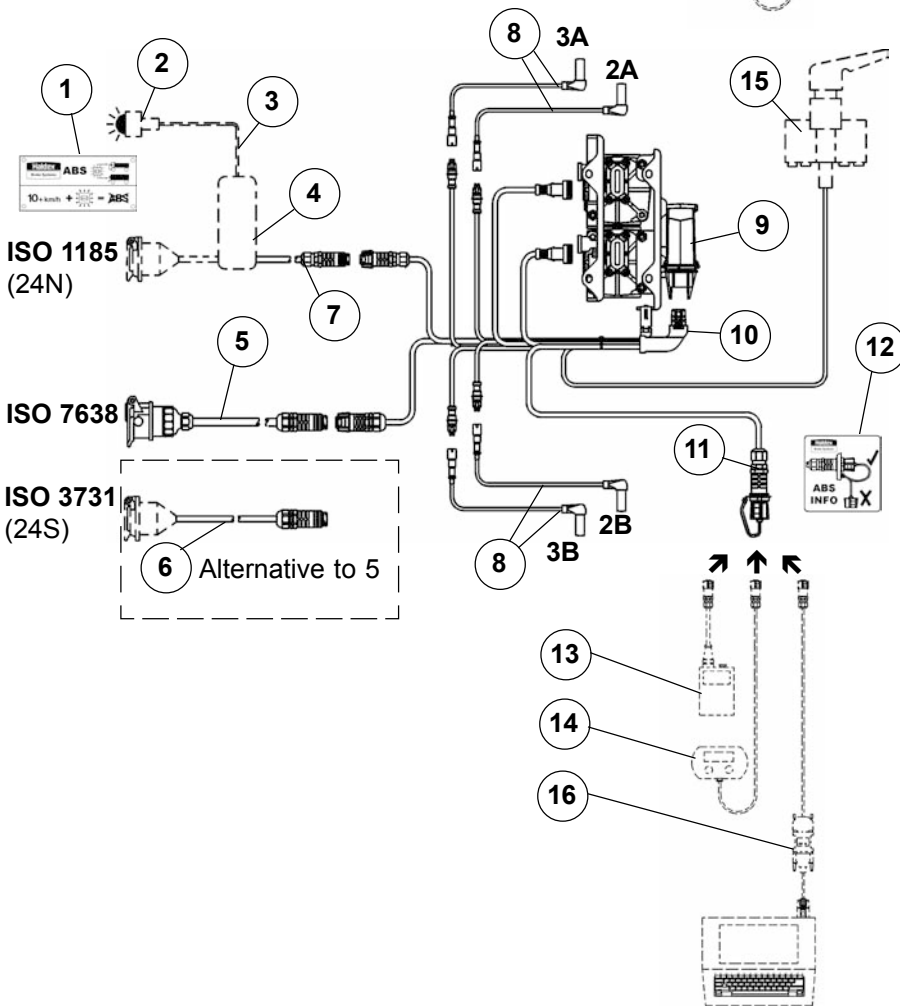


Fig 2

System Diagnostics

An important feature of the **MODULAR** system is that it provides external diagnostics. The system displays a range of codes, which allow rapid diagnosis of the problem should one occur.

The diagnostic codes can be read from a portable Diagnostic Display Unit (DDU) or a fixed Diagnostic Unit (INFO CENTRE).

The DDU can be connected remotely via the loom assembly diagnostic connector socket mounted in an appropriate position on the trailer chassis indicated in Fig 3. The INFO CENTRE is a vehicle mounted display permanently connected to the trailer ABS ECU. Typical locations of the diagnostic connector are shown in Fig 3.

The **DDU** gives two types of display:

-Horizontal bars indicate the position of effective speed sensors when the wheels are rotated.

-A two digit display can be interpreted from the list of codes shown on pages 9, 10 and 11.

The **INFO CENTRE** provides a multi-digit display of:

-Odometer indicates total, trip, service interval kilometres or miles defined by the ECU and Tyre scale setting.

-Fault codes as to the list of codes shown on pages 9, 10 and 11.

-ABS ECU Information - Serial number, Product code and Configuration code.

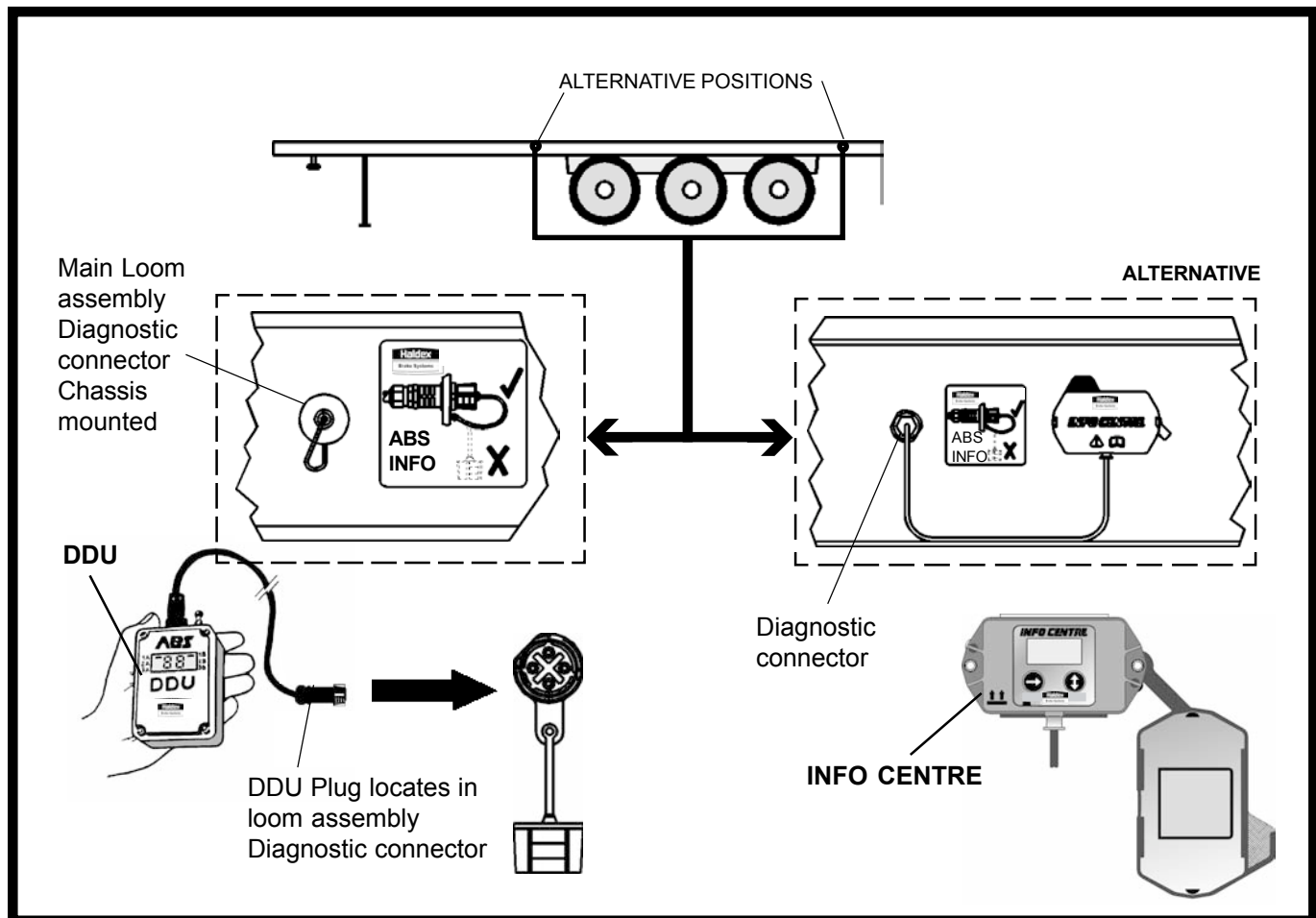


Fig 3

Warning Lamp & System Check Procedure

- 1 The warning lamp(s) function depends on which power supply is used:

RED warning lamp located on the driver's console of the towing vehicle is operated from the **ISO 7638** (or **ISO 3731 - 24S**) power cable **only** when the ABS is powered by the ignition switch. Fig 4.

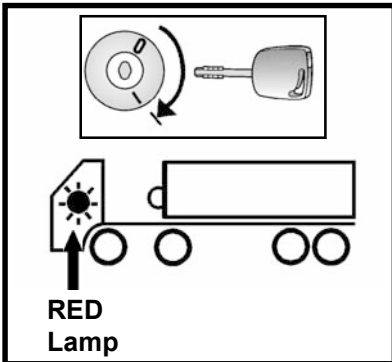


Fig 4

GREEN warning lamp mounted on the headboard of the trailer and is operated from the **ISO 1185 (24N)** connector when the ABS is powered **only** from the stop lamp power supply i.e. when the brake pedal is depressed. Fig 5.

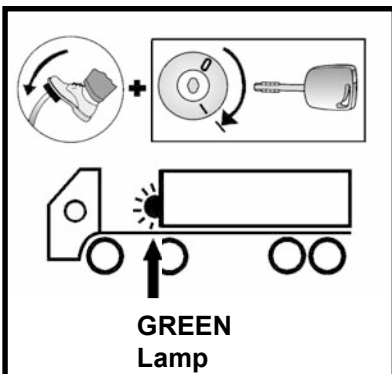


Fig 5

Note: If a dedicated power source is available to the ABS from the ISO 7638 connector, or to the ISO 3731 (24S), then system integrity will be indicated by the RED cab mounted warning lamp which becomes the primary ABS status indicator, the GREEN trailer lamp becomes the secondary indicator and duplicates the RED cab mounted lamp function when the stop lamp circuit is operated. Fig 6.

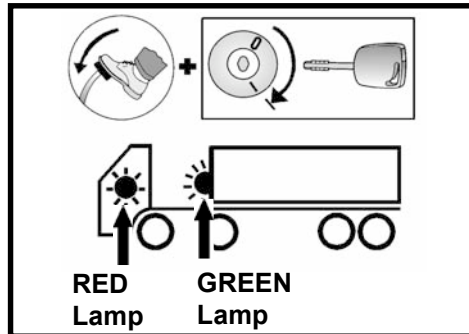


Fig 6

On power up of the system, the warning lamp(s) must illuminate in the following sequence in order to show a fault-free system:

- ON** for 2.5 seconds = Bulb OK and system self-checking.
- OFF** for 1 second = System self-checked and preparing to check sensors.
- ON** until moving = System waiting for vehicle to move above 10 km/h in order to check that the sensors are working.
- OFF** = Once the vehicle is moving above 10 km/h and the lamp(s) goes (go) out, the electronic system is fully checked.

- 2 During the self-check procedure, the system operates the modulator/s solenoid once. On MODULAR 1 this operation will be audible as one exhaust of air from the modulator (RED channel). **On MODULAR 2 one exhaust of air from each modulator in sequence will be audible (BLUE channel then YELLOW channel).**

Once these two checks are made with correct results, no further checks are required.

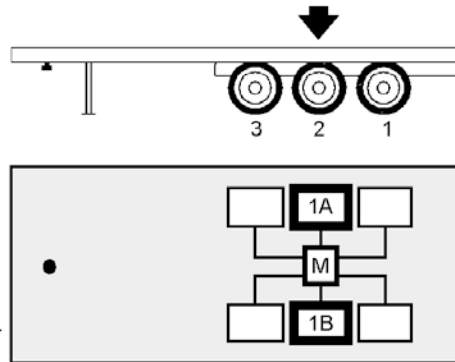
- 3 If the results are not satisfactory, the DDU or INFO Centre should be used to establish the diagnosis.

This information is described visually in Fig 7 on page 8. (MODULAR 1 system shown only)

System Check Out - Summary

- STEP **1** Apply foot brake and Power up :
WATCH RED and GREEN WARNING LAMP.
- STEP **2** Listen for **BLOW DOWN.**
- STEP **3** **REFER TO DIAGNOSTIC DISPLAY CODE** on DDU or INFO CENTRE,
 Release foot brake (Ignition switch on required for Info Centre mode)
SPIN EACH SENSED WHEEL IN TURN,
REFER TO DIAGNOSTIC DISPLAY CODE INDICATION.

Example :
MODULAR 1



Key	
	Modulator Blowdown
	Modulator
	O.K.
	NOT O.K.

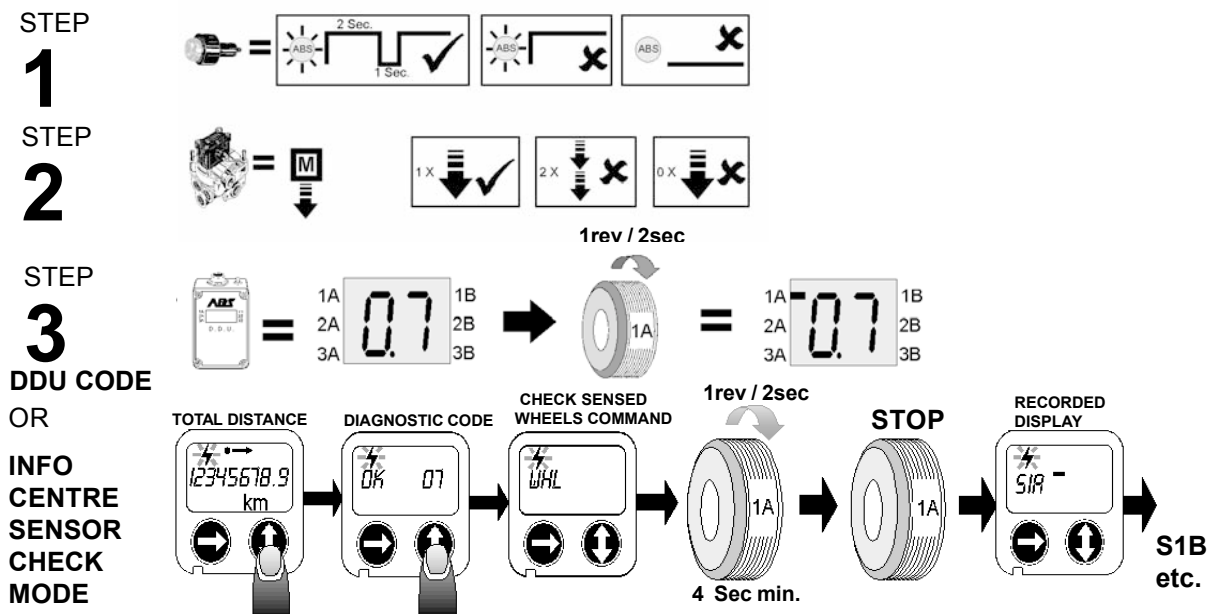


Fig 7

4 MULTIPLE LAMP SEQUENCE (GREEN and/or RED)

The Modular ABS series incorporates a modified lamp flash of three flashes. The lamp will flash when the system is powered up when at rest. This lamp sequence relates to :-

- Service due** - indicates that trailer or system service distance is due. After servicing the trailer or system the next service distance must be reset by using the Info Centre or EOLT program.
- NON ABS fault** - A fault with a device connected to the ABS but not directly affecting the ABS, for example : Reset-to-Ride valve (COLAS®).
- Odometer scaling factor units mismatch** - Where the odometer units (miles or km) do not match between service interval and current recording.
- Code 37** - A diagnostic code sent to the ABS ECU to activate the multiple light sequence.

Diagnostic Codes

If a diagnostic code not listed below is displayed check for intermittent sensor and wiring faults. Refer to Service Manual for detailed diagnostic testing procedures.

CODE DISPLAYED

DDU

INFO CENTRE

BLANK DISPLAY

BLANK DISPLAY

No supply on ignition switched line.

Possible causes:

Fuse blown.

DDU / INFO CENTRE or cable fault.

Open circuit B -

SENSOR BAR

SENSOR BAR

Bar displayed = Sensor output O.K.

Bar not displayed = Sensor output too low

00

OK 00

System is O.K. vehicle is moving

01

S1A 01

1A Sensor/wiring open or short circuit

02

S1B 02

1B Sensor/wiring open or short circuit

03

S2A 03

2A Sensor/wiring open or short circuit

04

S2B 04

2B Sensor/wiring open or short circuit

05

S3A 05

3A Sensor/wiring open or short circuit

06

S3B 06

3B Sensor/wiring open or short circuit

07

OK 07

System is O.K. vehicle is stationary

08

RET 08

Retarder / Wiring open circuit

09

RET 09

Retarder / Wiring short circuit

OA

RIDE OA

Reset to ride / Wiring open circuit

OC

RIDE OC

Reset to ride / Wiring short circuit

OE

LAMP OE

Warning lamp circuit fault

LOW SENSOR OUTPUT GROUP

11

S1A 11

1A Sensor system fault

12

S1B 12

1B Sensor system fault

13

S2A 13

2A Sensor system fault

14

S2B 14

2B Sensor system fault

15

S3A 15

3A Sensor system fault

16

S3B 16

3B Sensor system fault

Possible causes:

Sensor worn, maladjusted sensor, wiring open or short circuit.

20

EXC 20

Incorrect exciter type.

Possible causes:

Exciter tooth count different each side of axle.

INTERMITTENT LOW SENSOR OUTPUT GROUP

21

S1A 21

1A Sensor system fault

22

S1B 22

1B Sensor system fault

23

S2A 23

2A Sensor system fault

24

S2B 24

2B Sensor system fault

25

S3A 25

3A Sensor system fault

26

S3B 26

3B Sensor system fault

Possible causes:

Loose sensor, connection, bracket or exciter. Damaged exciter.

Maladjusted sensor or worn sensor cable insulation.

Diagnostic Codes

CODE DISPLAYED

DDU

INFO CENTRE

37

EXT 37

An diagnostic code sent to the ABS ECU to activate the multiple light sequence.

ONE WHEEL WITH SLOW RECOVERY GROUP

40

XSEn 40

Sensor wiring crossed across an axle

41

SLW 41

Slow recovery of one wheel of red channel

42

SLW 42

Slow recovery of one wheel of blue channel

43

SLW 43

Slow recovery of one wheel of yellow channel

Possible causes:

Slow brake release, foundation brake mechanical faults, dry bearings, broken spring, restricted piping
Check for kinks and blockages etc.

Incorrect piping, Wiring

Modulator fault

OPEN CIRCUIT MODULATOR SOLENOID OR SOLENOID WIRING GROUP

61

RDHd61

Hold solenoid circuit fault, red channel

62

BUHd62

Hold solenoid circuit fault, blue channel

63

YEHd63

Hold solenoid circuit fault, yellow channel

67

RDDu67

Dump solenoid circuit fault, red channel

68

BUDu68

Dump solenoid circuit fault, blue channel

69

YEDu69

Dump solenoid circuit fault, yellow channel

SHORT CIRCUIT ACROSS MODULATOR SOLENOID OR SOLENOID WIRING GROUP

71

RDHd71

Hold solenoid circuit fault, red channel

72

BUHd72

Hold solenoid circuit fault, blue channel

73

YEHd73

Hold solenoid circuit fault, yellow channel

77

RDDu77

Dump solenoid circuit fault, red channel

78

BUDu78

Dump solenoid circuit fault, blue channel

79

YEDu79

Dump solenoid circuit fault, yellow channel

MODULATOR SOLENOID WIRING OR SOLENOID SHORT TO B+ GROUP

80

SOL 80

Poor insulation in the modulator solenoid or wiring fault

81

RDHd81

Hold solenoid circuit fault, red channel.

82

BUHd82

Hold solenoid circuit fault, blue channel

83

YEHd83

Hold solenoid circuit fault, yellow channel

87

RDDu87

Dump solenoid circuit fault, red channel

88

BUDu88

Dump solenoid circuit fault, blue channel

89

YEDu89

Dump solenoid circuit fault, yellow channel

SUPPLY VOLTAGE GROUP

90

B+LO 90

Supply voltage at ECU less than 18v when a solenoid is energised

91

ISOI 91

Faulty supply from ISO 7638 Pin 1 or fuse blown

92

B+HI 92

Supply voltage at the ECU greater than 32v

93

ECU 93

Internal ECU fault

Diagnostic Codes

CODE DISPLAYED

DDU
99

INFO CENTRE
ECU 99

Internal ECU fault

SYSTEM FUNCTION GROUP

A1
A2

AUX A1
AUX A2

Reset to ride height
Retarder

CONFIGURATION CODES

Figures in brackets indicate sensing is disabled when the axle is lifted.

C0
C1
C2
C3

2S1C C0
2S2C C1
4S2C C2
4S2C C3

Function	Axle Lifted	Sensors Used	Modulators Used
2S/1M		1A, 1B	Red
2S/2M		2A, 2B	Blue, Yellow
4S/2M		2A, 2B, 3A, 3B	Blue, Yellow
4S/2M	2 or 3	2A, 2B, (3A), (3B)	Blue, Yellow

SUNDRY ADDITIONAL CODES

CA
CC
CF

CLR CA
CLR CC
CF

Erase stored fault
Clear Configuration
Sensors and Solenoid not connected
Alternating with code 90 (incomplete solenoid function)
Communication failure between ECU, INFO CENTRE or DDU
open or short circuit wiring

LO or HI

COM FAIL

Note: If a code is displayed and after following recommended procedure, as detailed in the Service Manual, no fault is found, the ABS ECU should be replaced.

Power Supply Wiring - MODULAR 1 Upgrade

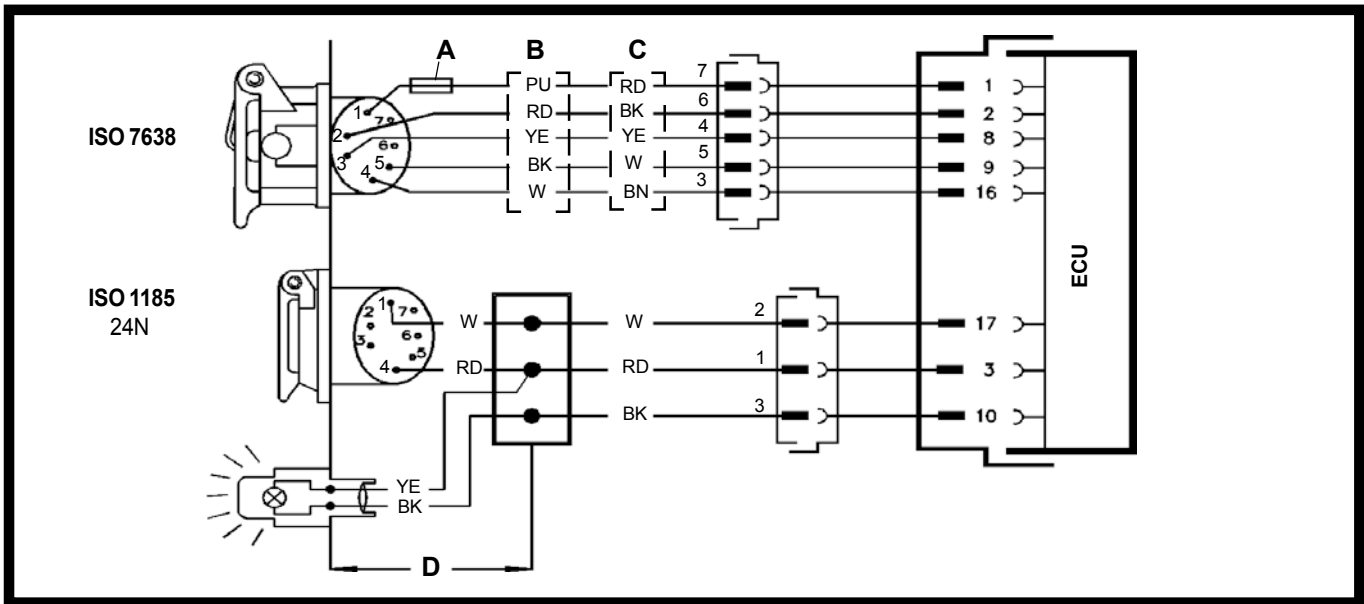


Fig 8

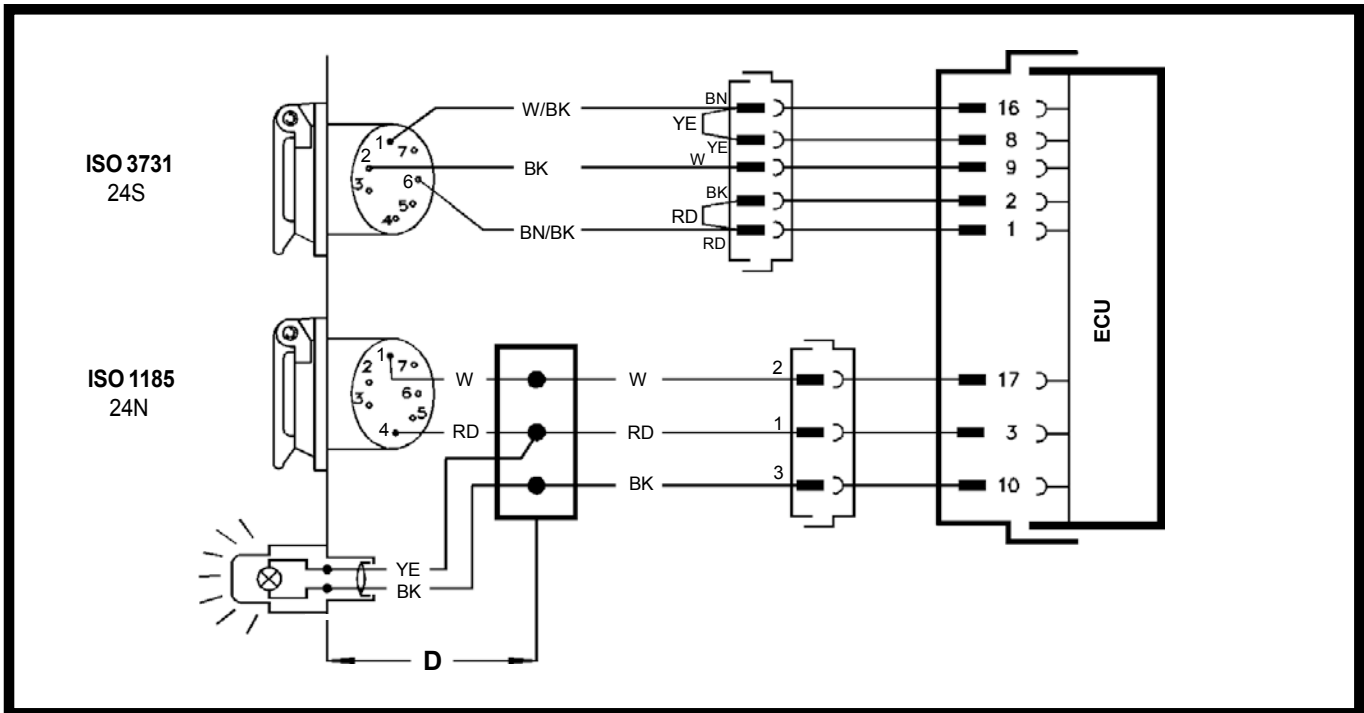


Fig 9

KEY:

Colour code

W= White
 BK= Black
 RD= Red
 YE= Yellow
 BN= Brown
 PU= Purple

A = Fuse position (PIN 1 Assembly)

B = Fused ISO7638

Alt. C = Un-Fused ISO7638 (PIN positions on interface (9-way) connector are numbered)

Alt. C = Un-Fused ISO7638

(PIN positions on interface (9-way) connector are colour coded)

D = 1m Max. (Applies to ISO3731 - 24S and ISO1185 - 24N, Headboard to Junction box)

9-way connector (5 positions used) for ISO7638 and ISO3731 (24S).

4-way connector (3 positions used) for ISO1185 (24N).

Power Supply Wiring - MODULAR 1 Plus & Modular 2

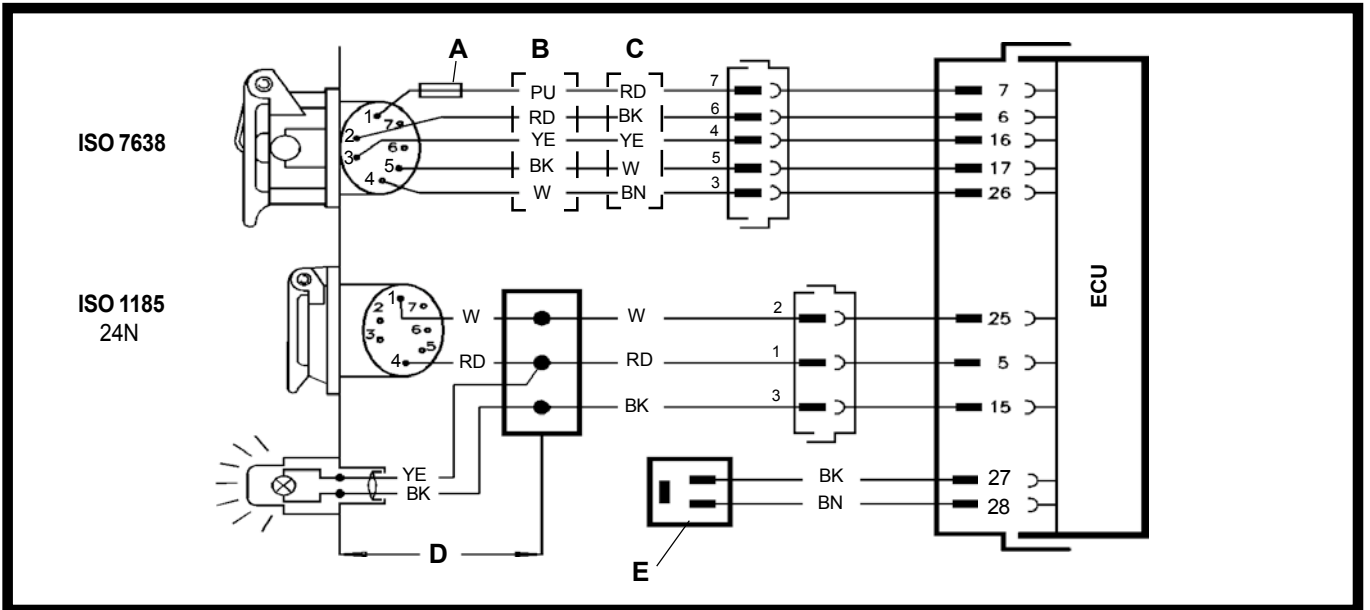


Fig 10

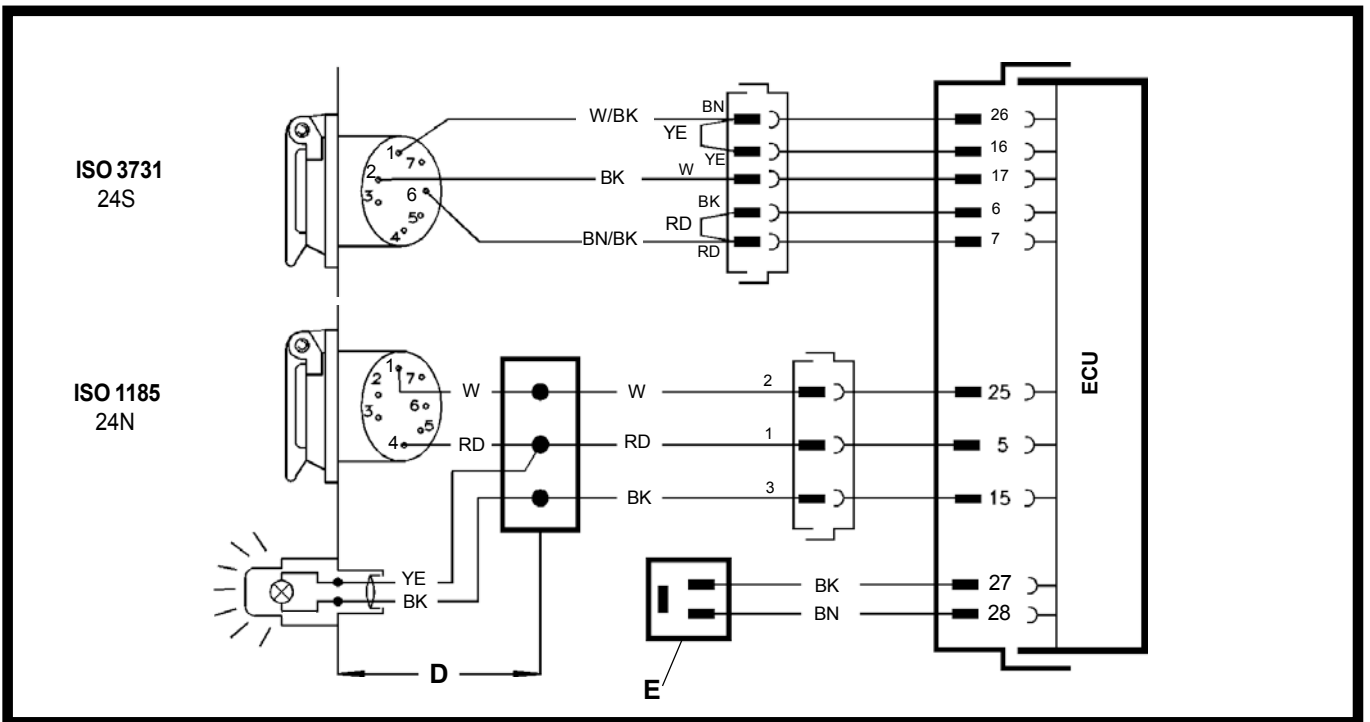


Fig 11

KEY: Colour code

W= White
 BK= Black
 RD= Red
 YE= Yellow
 BN= Brown
 PU= Purple

A = Fuse position (PIN 1 Assembly)
 B = Fused ISO7638
 (PIN positions on interface (9-way) connector are numbered)
 Alt. C = Un-Fused ISO7638
 (PIN positions on interface (9-way) connector are colour coded)
 D = 1m Max. (Applies to ISO3731 - 24S and ISO1185 - 24N,
 Headboard to Junction box)
 E = Suspension Controller (COLAS ®)

9-way connector (5 positions used) for ISO7638 and ISO3731 (24S).
 4-way connector (3 positions used) for ISO1185 (24N).

Multimeter Readings

CHECKING POSITION	MEASURE BETWEEN	CORRECT VALUE	REMARKS	Fig
Sensor output	A B	0.2V AC Min.	Sensor 1A, 1B, 2A, 2B or 3A, 3B Sensor disconnected from ECU. Wheel rotated at 1 rev/2 sec.	12
Sensor resistance	A B	>1.0 <2.4 kohm	Sensor 1A, 1B, 2A, 2B or 3A, 3B Sensor disconnected from ECU.	12
Modulator Solenoid resistance	B - DS	>12 <20 ohm	Modulator cable disconnected . from ECU.	13
Modulator Solenoid resistance	B - HS	>12 <20 ohm	Modulator cable disconnected . from ECU.	13
Supply from ISO 7638	1 4	>18 <32V	Ignition on. Approx. battery voltage	14
Supply from ISO 1185 (24N)	1 4	>18 <32V	Brake applied, Ignition on Approx. battery voltage	14
Earth continuity	ECU/Modulator Bracket and Vehicle chassis	<5 ohms		
COLAS® Solenoid resistance	+ -	>79 <96 ohms	Cable disconnected	15

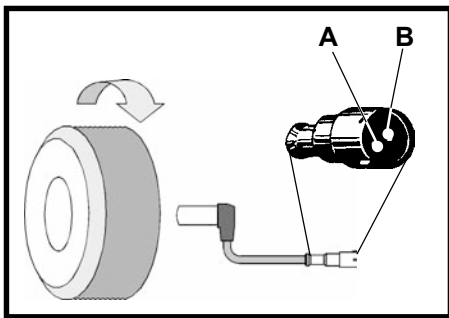


Fig 12 - Sensor Connector

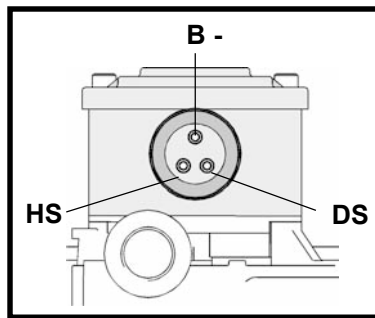


Fig 13 - Solenoid Connector

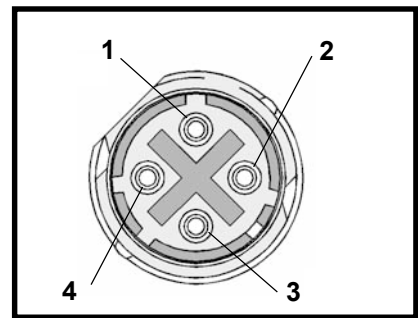


Fig 14 - Diagnostic Connector

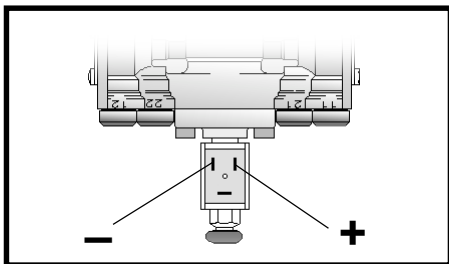


Fig 15 - COLAS® Solenoid Connector

Recommended Maintenance Schedule

TIME OR MILEAGE (whichever occurs first)	COMPONENT	OPERATION
When hubs are removed	Exciter	Check for damage
	Sensor	Check for wear clean and readjust.
Every 3 months or 25,000 miles (40,000 km)	Complete System	Perform system check out and air leakage check.
Annually or every or 100,000 miles (160,000 km)	Complete System	Perform system check out and air leakage check. Check wiring and piping security and integrity.
	Sensor	Check for wear clean and readjust.
Every five years 500,000 miles (800,000 km)	Modulator and Solenoid Assembly	Replace.






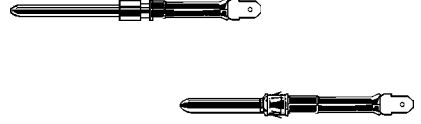
Servicing Parts

The list of available service parts is indicated on page 16 to 18. These can be obtained from Haldex service centres or distributors.

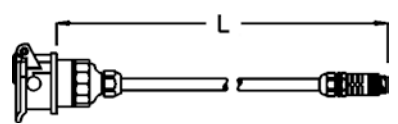
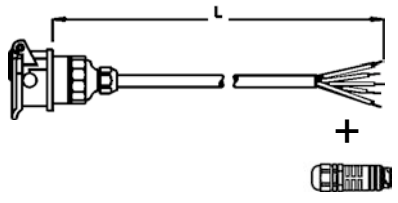
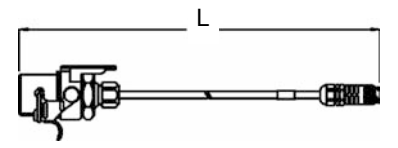
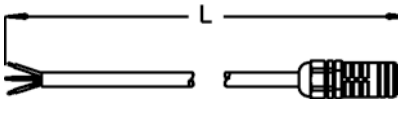
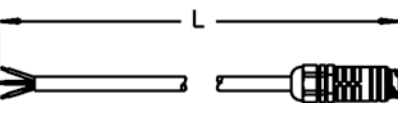


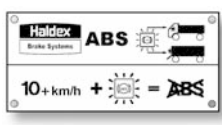

A European Service Guide is available free of charge on application.

The different components are shown in view form in order to allow easy recognition.




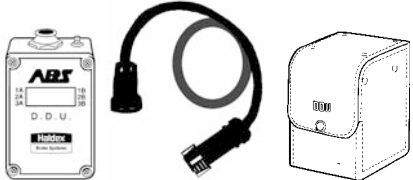
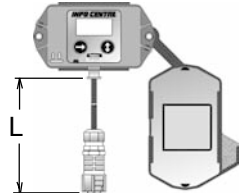


Service Parts

DESCRIPTION	PART NUMBER	VIEW
<p>Electronic Control Unit</p> <p>MODULAR 1 Upgrade ECU- 364 279 002</p> <p>MODULAR 1 Plus ECU - 364 279 101</p> <p>MODULAR 2 ECU - 364 279 201</p> <p>MODULAR 2 ADR ECU - 364 279 202</p>	<p>950 364 801</p> <p>950 364 802</p> <p>950 364 803</p> <p>950 364 804</p>	
<p>Modulator valve Assembly</p> <p>6 Port - 364 115 021</p> <p>3 Port - 364 263 001 - RH</p> <p>3 Port - 364 263 011 - LH</p>	<p>950 364 047</p> <p>950 364 806</p> <p>950 364 807</p>	
<p>Manifold - for 2S-4S/2M systems</p>	<p>950 364 075</p>	
<p>ECU Loom Assembly</p> <p>MODULAR 1 Upgrade - 2S/1M c/w 4m Sensor ext. cables</p> <p>MODULAR 1 Plus - 2S/1M c/w 4m Sensor ext. cables and Reset to Ride</p> <p>MODULAR 2 - 2S/2M or 4S/2M c/w 4m + 6m Sensor ext. cables and Reset to Ride</p>	<p>950 364 417</p> <p>950 364 418</p> <p>950 364 419</p>	
<p>ISO 7638 Socket Kit</p> <p>Green cover - c/w Fuse</p> <p>Black cover - w/o Fuse, crimp pins</p> <p>Red cover - w/o Fuse, screw pins</p>	<p>950 364 072</p> <p>950 364 402</p> <p>950 364 420</p>	
<p>Replacement fuse kit for fused ISO 7638</p>	<p>950 364 401</p>	

Service Parts

DESCRIPTION	PART NUMBER	VIEW
ISO 7638 Socket and cable Assy. Fused - L = 12m - PVC Un-fused - L = 12m - PUR	950 364 421 950 364 422	
ISO 7638 Socket / cable + separate interface connector Fused - L = 12m - PVC Un-fused - L = 12m - PUR	950 364 423 950 364 424	
ISO 7638 Plug and cable Assy. L = 12m - PVC	950 364 429	
ISO 1185 (24N) Cable Assembly For MODULAR 1 Upgrade and Plus L = 12m - PVC For MODULAR 2 L = 12m - PUR	950 364 425 950 364 426	
ISO 3731 (24S) Cable Assembly (All systems) L = 12m - PVC L = 12m - PUR	950 364 427 950 364 428	
Green Warning Lamp	950 364 710	
Bulb - (24v - 5w) Double pole	950 364 711	
ABS Label	950 364 702	
Diagnostic Connector Label	028 5189 09	

Service Parts

DESCRIPTION	PART NUMBER	VIEW
Exciter ROR TM 100 Tooth 80 Tooth ROR TE 100 Tooth BPW-9T 100 Tooth BPW-10T 100 Tooth	018 5003 09 018 5004 09 018 5005 09 950 364 606 950 364 607	
Sensor Kit - Angled (inc. retaining clip) Sensor Kit - Straight (inc. retaining clip)	950 364 503 950 364 506	
Sensor extension cable repair kit (6m cable)	950 364 507	
Diagnostic Display Unit (DDU) c/w case and guide 2m Cable only 24m Cable only Case	905 027 001 003 8467 09 003 8433 09 042 5074 09	
INFO Centre L = 1.2m Cable L = 0.4m Cable L = 1.2m Cable - ADR Version L = 0.4m Cable - ADR Version	364 317 001 364 317 011 364 385 001 364 385 011	
Vehicle Data System Kit (Interface Pod and Software) c/w Instruction Manual w/o Instruction Manual	950 364 812 950 364 814	
'End-of-Line' Test Kit (Interface Pod and Software) c/w Instruction Manual w/o Instruction Manual	950 364 813 950 364 815	

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Company Vision

We use our demonstrated competence to provide innovative components, systems and service for trucks, trailers and buses, that lower life cycle costs and improve vehicle safety. Haldex wants to become the first choice business partner of commercial vehicle manufacturers world wide in the areas of braking and suspension control systems with special emphasis on heavy commercial vehicles.

Total Support

A uniquely wide range of services is available from Haldex. These include expert consultancy for braking and suspension development, brake calculations, type approvals and application engineering. The aim is accurate specification for manufacturers and low cost of ownership for the operator. Full aftermarket support includes a Worldwide parts distribution and service network, on-line technical advice, field visits and installation/maintenance training held on-site or at Haldex facilities.

Research and Development

Continual, heavy investment in Research and Development is carried out in response to ever increasing commercial, legislative, environmental, performance and technological demands.

Quality and Production Standards

The very latest production technology ensures the very highest quality standards. All production sites are ISO 9001 approved.



The Haldex Group is a global supplier of proprietary products for trucks, cars and industrial vehicles, with special emphasis on performance and safety. The Group is organized in Divisions which focus on their respective product niche:

Haldex Brake Systems supplies ABS and brake components for heavy vehicle air brakes.

Haldex Barnes Hydraulics supplies gear pumps and hydraulic systems for power steering and lifting functions on industrial vehicles and trucks.

Haldex Garphyttan Wire supplies specially steel-alloyed wire products mainly for applications in combustion engines.

Haldex Traction Systems supplies 4WD systems for cars and trucks.

Sales companies are established in Europe, North and South America and Asia. Production takes place in 9 factories in USA, 9 factories in Europe and 1 joint venture in India.

The Haldex Group is listed on the Stockholm Stock Exchange.



Innovative Vehicle Technology