

JANUARY 1993

EXPORT No.

Subject:

RETROFITTING A SPEEDOMETER

Model: Iveco Daily (1990 Model Year Onwards)

Introduction:

Vehicles operating at a maximum GVW of 3,500kg may be fitted with a speedometer in lieu of a tachograph (eg. a 49.10 downplated to 3500kg GVW).

An additional wiring harness is required to retrofit a speedometer in lieu of the tachograph.

Service Action:

Any subject vehicle requiring fitment of a speedometer in lieu of a tachograph must be reworked as detailed in Service Instructions.

Service Instructions:

1. Observe all standard safe working procedures.
2. Raise and support the hood.
3. Locate the black connector with orange wires, located close to the windscreen wiper motor (see Fig.1).

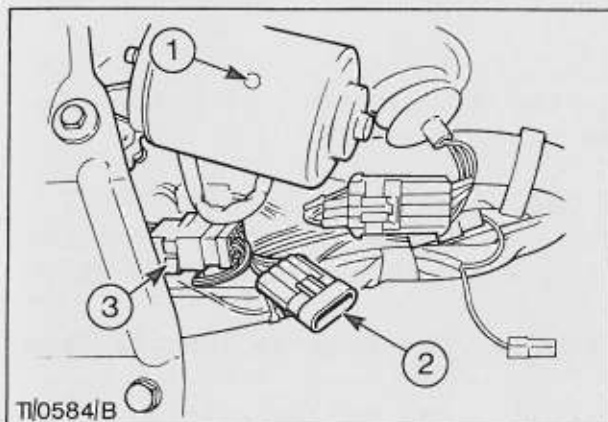


Fig.1. Black Connector with Orange Wires

1. Windscreen wiper motor.
2. Black female connector with orange wires.
3. Red multiplug.

Continued Overleaf

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Serial number.

4. Identify the tachograph harness which passes through the bulkhead (see Fig. 2). Disconnect the tachograph connector and connect the male part to the female connector with orange wires identified in operation 3. This connects the gearbox sensor to the vehicle harness.

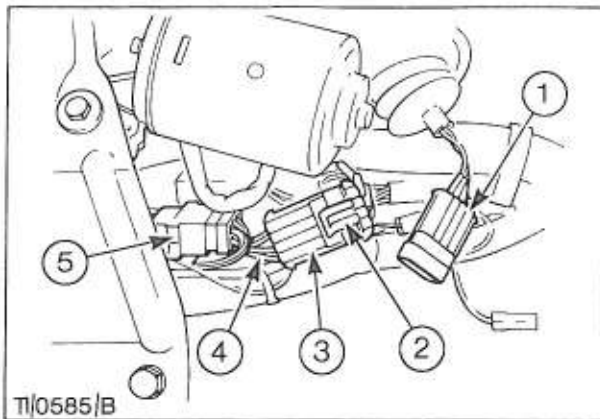


Fig. 2. Connecting Gearbox Sensor To Vehicle Harness

1. Female tachograph connector
2. Black connector
3. Gearbox harness connector
4. Orange wires
5. Red multiplug

5. Remove the tachograph and gauges from the instrument panel, as detailed in the relevant section of the Workshop Manual.
6. Disconnect the white and yellow connectors from the rear of the tachograph and remove it from the vehicle (see Fig. 3.).

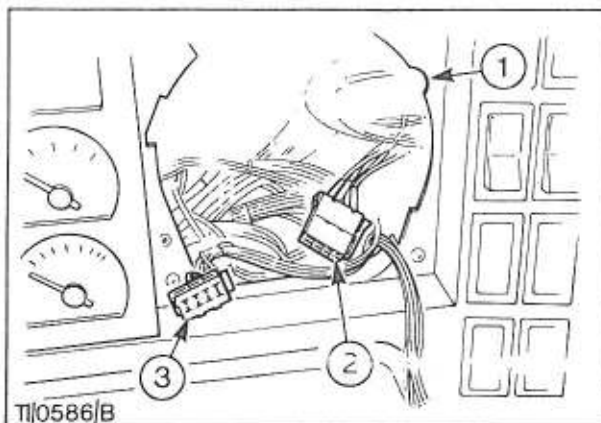


Fig. 3. Tachograph Removed

1. Tachograph location
2. Yellow connector
3. White connector

7. Locate the white 6-way connector in the vehicle harness behind the fascia (see Fig. 4.) and disconnect it.
8. Connect the new harness (see Parts Required) to this connector, noting that the speedometer uses the new yellow connector from the new harness and the white connector from the tachograph (see Fig. 4).

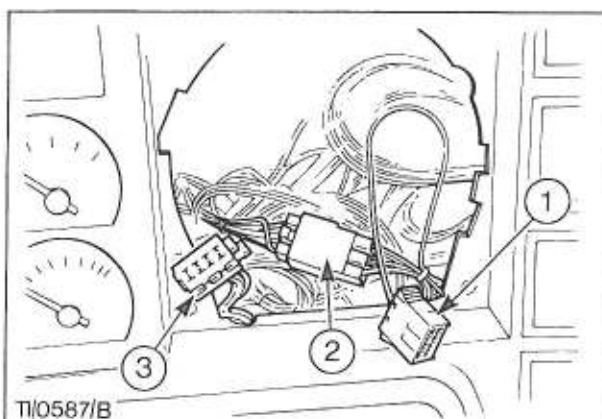


Fig. 4. New Harness Installation

1. New yellow connector
2. White 6-way connector
3. White tachograph connector

9. Set the eight switches in the adaptor box (see Fig. 5) by using the following formula, together with the tables in Attachment 'A':-

$$D = \frac{1000}{A} \times B \times C$$

- Where: A = Rolling circumference of the rear road wheel (in metres) *
 B = Rear axle ratio
 C = Impulses from gearbox sender = constant 6
 D = Impulses per kilometre shown in tables in Attachment 'A'

$$\begin{aligned} \text{Circumference} &= \Pi \times d \\ &= 3.142 \times d \end{aligned}$$

- * Tyres to inflated to specified pressures.

Example: Model 49.10 with 185/75 R 16C tyres and 4.18 rear axle ratio.

$$D = \frac{1000}{2.12} \times 4.18 \times 6 \quad \text{therefore } D = 11830.188$$

10. Refer to the tables in Attachment 'A' and locate the figure in the left hand column which is nearest to the calculated 'D' result. Set the eight adaptor switches accordingly (see Fig. 5.).

Note: In the tables the nearest figure quoted to the above example is 11812.5.

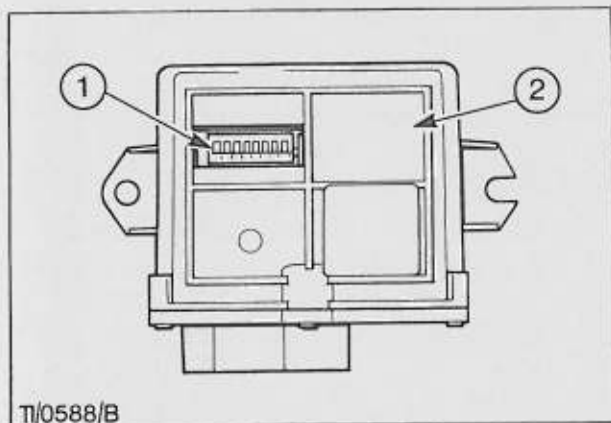


Fig. 5. Adaptor Box Switches

1. Switches
2. Adaptor box

11. Pass the new harness behind the dash and to a position at the side of the steering column. Fit the adaptor box to the outer face of the fuse board compartment using two self-tapping screws and connect up the new harness to the adaptor box. (See Fig. 6.).

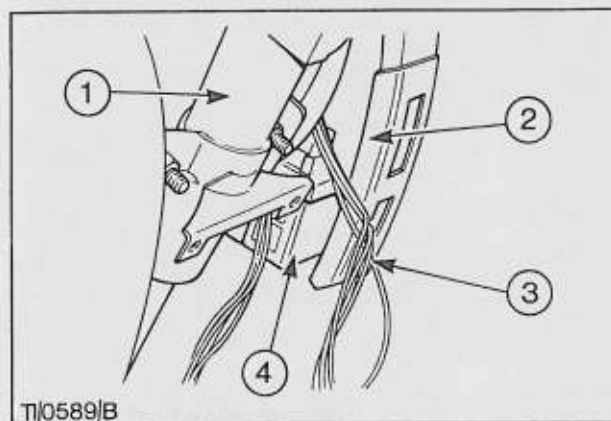


Fig. 6. Adaptor Box Installation

1. Steering column
2. Fuseboard compartment
3. New harness
4. Adaptor box

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12. Fit the speedometer into the instrument panel in the position previously occupied by the tachograph and refit the gauges to the instrument panel, as described in the relevant section of the Workshop Manual.
13. Lower and close the hood.
14. Road test the vehicle to ensure correct operation of the speedometer and gauges.

Parts Required:

Description	Part Number	Qty.
Speedometer	9843 0447	1
Adaptor Box	9841 8150	1
Harness	0896 8764	1
Self-Tapping Screws	-	2

Calculated impulses per km (D)	Adaptor box switch positions							
	1	2	3	4	5	6	7	8
8000	0	0	0	0	0	0	0	0
8062.5	0	0	0	0	0	0	0	1
8125	0	0	0	0	0	0	1	0
8187.5	0	0	0	0	0	0	1	1
8250	0	0	0	0	0	1	0	0
8312.5	0	0	0	0	0	1	0	1
8375	0	0	0	0	0	1	1	0
8437.5	0	0	0	0	0	1	1	1
8500	0	0	0	0	1	0	0	0
8562.5	0	0	0	0	1	0	0	1
8625	0	0	0	0	1	0	1	0
8687.5	0	0	0	0	1	0	1	1
8750	0	0	0	0	1	1	0	0
8812.5	0	0	0	0	1	1	0	1
8875	0	0	0	0	1	1	1	0
8937.5	0	0	0	0	1	1	1	1
9000	0	0	0	1	0	0	0	0
9062.5	0	0	0	1	0	0	0	1
9125	0	0	0	1	0	0	1	0
9187.5	0	0	0	1	0	0	1	1
9250	0	0	0	1	0	1	0	0
9312.5	0	0	0	1	0	1	0	1
9375	0	0	0	1	0	1	1	0
9437.5	0	0	0	1	0	1	1	1
9500	0	0	0	1	1	0	0	0
9562.5	0	0	0	1	1	0	0	1
9625	0	0	0	1	1	0	1	0
9687.5	0	0	0	1	1	0	1	1
9750	0	0	0	1	1	1	0	0
9812.5	0	0	0	1	1	1	0	1
9875	0	0	0	1	1	1	1	0
9937.5	0	0	0	1	1	1	1	1
10000	0	0	1	0	0	0	0	0
10062.5	0	0	1	0	0	0	0	1
10125	0	0	1	0	0	0	1	0
10187.5	0	0	1	0	0	0	1	1
10250	0	0	1	0	0	1	0	0
10312.5	0	0	1	0	0	1	0	1
10375	0	0	1	0	0	1	1	0
10437.5	0	0	1	0	0	1	1	1
10500	0	0	1	0	1	0	0	0
10562.5	0	0	1	0	1	0	0	1
10625	0	0	1	0	1	0	1	0
10687.5	0	0	1	0	1	0	1	1
10750	0	0	1	0	1	1	0	0
10812.5	0	0	1	0	1	1	0	1
10875	0	0	1	0	1	1	1	0
10937.5	0	0	1	0	1	1	1	1
11000	0	0	1	1	0	0	0	0
11062.5	0	0	1	1	0	0	0	1
11125	0	0	1	1	0	0	1	0

Calculated impulses per km (D)	Adaptor box switch positions							
	1	2	3	4	5	6	7	8
11187.5	0	0	1	1	0	0	1	1
11250	0	0	1	1	0	1	0	0
11312.5	0	0	1	1	0	1	0	1
11375	0	0	1	1	0	1	1	0
11437.5	0	0	1	1	0	1	1	1
11500	0	0	1	1	1	0	0	0
11562.5	0	0	1	1	1	0	0	1
11625	0	0	1	1	1	0	1	0
11687.5	0	0	1	1	1	0	1	1
11750	0	0	1	1	1	1	0	0
11812.5	0	0	1	1	1	1	0	1
11875	0	0	1	1	1	1	1	0
11937.5	0	0	1	1	1	1	1	1
12000	0	1	0	0	0	0	0	0
12062.5	0	1	0	0	0	0	0	1
12125	0	1	0	0	0	0	1	0
12187.5	0	1	0	0	0	0	1	1
12250	0	1	0	0	0	1	0	0
12312.5	0	1	0	0	0	1	0	1
12375	0	1	0	0	0	1	1	0
12437.5	0	1	0	0	0	1	1	1
12500	0	1	0	0	1	0	0	0
12562.5	0	1	0	0	1	0	0	1
12625	0	1	0	0	1	0	1	0
12687.5	0	1	0	0	1	0	1	1
12750	0	1	0	0	1	1	0	0
12812.5	0	1	0	0	1	1	0	1
12875	0	1	0	0	1	1	1	0
12937.5	0	1	0	0	1	1	1	1
13000	0	1	0	1	0	0	0	0
13062.5	0	1	0	1	0	0	0	1
13125	0	1	0	1	0	0	1	0
13187.5	0	1	0	1	0	0	1	1
13250	0	1	0	1	0	1	0	0
13312.5	0	1	0	1	0	1	0	1
13375	0	1	0	1	0	1	1	0
13437.5	0	1	0	1	0	1	1	1
13500	0	1	0	1	1	0	0	0
13562.5	0	1	0	1	1	0	0	1
13625	0	1	0	1	1	0	1	0
13687.5	0	1	0	1	1	0	1	1
13750	0	1	0	1	1	1	0	0
13812.5	0	1	0	1	1	1	0	1
13875	0	1	0	1	1	1	1	0
13937.5	0	1	0	1	1	1	1	1
14000	0	1	1	0	0	0	0	0
14062.5	0	1	1	0	0	0	0	1
14125	0	1	1	0	0	0	1	0
14187.5	0	1	1	0	0	0	1	1
14250	0	1	1	0	0	1	0	0
14312.5	0	1	1	0	0	1	0	1

Calculated impulses per km (D)	Adaptor box switch positions							
	1	2	3	4	5	6	7	8
14375	0	1	1	0	0	1	1	0
14437.5	0	1	1	0	0	1	1	1
14500	0	1	1	0	1	0	0	0
14562.5	0	1	1	0	1	0	0	1
14625	0	1	1	0	1	0	1	0
14687.5	0	1	1	0	1	0	1	1
14750	0	1	1	0	1	1	0	0
14812.5	0	1	1	0	1	1	0	1
14875	0	1	1	0	1	1	1	0
14937.5	0	1	1	0	1	1	1	1
15000	0	1	1	1	0	0	0	0
15062.5	0	1	1	1	0	0	0	1
15125	0	1	1	1	0	0	1	0
15187.5	0	1	1	1	0	0	1	1
15250	0	1	1	1	0	1	0	0
15312.5	0	1	1	1	0	1	0	1
15375	0	1	1	1	0	1	1	0
15437.5	0	1	1	1	0	1	1	1
15500	0	1	1	1	1	0	0	0
15562.5	0	1	1	1	1	0	0	1
15625	0	1	1	1	1	0	1	0
15687.5	0	1	1	1	1	0	1	1
15750	0	1	1	1	1	1	0	0
15812.5	0	1	1	1	1	1	0	1
15875	0	1	1	1	1	1	1	0
15937.5	0	1	1	1	1	1	1	1
16000	1	0	0	0	0	0	0	0
16062.5	1	0	0	0	0	0	0	1
16125	1	0	0	0	0	0	1	0
16187.5	1	0	0	0	0	0	1	1
16250	1	0	0	0	0	1	0	0
16312.5	1	0	0	0	0	1	0	1
16375	1	0	0	0	0	1	1	0
16437.5	1	0	0	0	0	1	1	1
16500	1	0	0	0	1	0	0	0
16562.5	1	0	0	0	1	0	0	1
16625	1	0	0	0	1	0	1	0
16687.5	1	0	0	0	1	0	1	1
16750	1	0	0	0	1	1	0	0
16812.5	1	0	0	0	1	1	0	1
16875	1	0	0	0	1	1	1	0
16937.5	1	0	0	0	1	1	1	1
17000	1	0	0	1	0	0	0	0
17062.5	1	0	0	1	0	0	0	1
17125	1	0	0	1	0	0	1	0
17187.5	1	0	0	1	0	0	1	1
17250	1	0	0	1	0	1	0	0
17312.5	1	0	0	1	0	1	0	1
17375	1	0	0	1	0	1	1	0
17437.5	1	0	0	1	0	1	1	1
17500	1	0	0	1	1	0	0	0

Calculated impulses per km (D)	Adaptor box switch positions							
	1	2	3	4	5	6	7	8
17562.5	1	0	0	1	1	0	0	1
17625	1	0	0	1	1	0	1	0
17687.5	1	0	0	1	1	0	1	1
17750	1	0	0	1	1	1	0	0
17812.5	1	0	0	1	1	1	0	1
17875	1	0	0	1	1	1	1	0
17937.5	1	0	0	1	1	1	1	1
18000	1	0	1	0	0	0	0	0
18062.5	1	0	1	0	0	0	0	1
18125	1	0	1	0	0	0	1	0
18187.5	1	0	1	0	0	0	1	1
18250	1	0	1	0	0	1	0	0
18312.5	1	0	1	0	0	1	0	1
18375	1	0	1	0	0	1	1	0
18437.5	1	0	1	0	0	1	1	1
18500	1	0	1	0	1	0	0	0

$$D = \frac{1000}{A} \times B \times C$$

Where:

Where:

A = Rolling circumference of the rear road wheel (in metres) *

B = Rear axle ratio

C = Impulses from gearbox sender = constant 6

D = Impulses per kilometre shown in tables in Attachment 'A'

$$\begin{aligned} \text{Circumference} &= \pi \times d \\ &= 3.142 \times d \end{aligned}$$

* Tyres to inflated to specified pressures.