


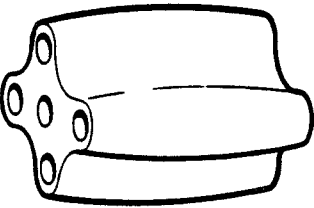


## SNAP-IN CONNECTORS AND TERMINALS

	Description	Packets of	Lucas Part No.
	2-way snap-in (may be used with 9/32" single cable clip)	10	900288
	4-way. (Double)	1	850641
	6-way. (Three 2-way)	1	850344
	10-way. (Five 2-way)	1	850832

SNAP-IN (BULLET) TERMINAL ENDS  
(For use with the above connectors)



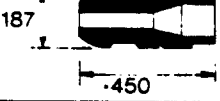



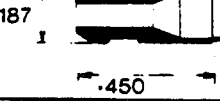

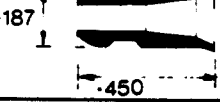


	Description	Packets of	Lucas Part No.
	 Solder type. For cable size 28/0-30mm (28/-012") P.T. and S.P.T.	10	900269
	 Hexagonal crimp type. For cable size 14/0-25mm (14/-010") P.T. and S.P.T.	10	54941384
	 Hexagonal crimp type. For cable size 14/0-30mm (14/-012") P.T.	10	54944088
	 Hexagonal crimp type. For cable size 28/0-30mm (28/-012") P.T.	10	54944095
	 Hexagonal crimp type. For cable sizes 44/0-30mm (44/-012") or 65/0-30mm (65/-012") P.T.	10	54946098
	3/16" (0.188") diameter ferrule	10	188818

Figure H120  
SNAP-IN CONNECTORS

9-37222

H82

**HAZARD WARNING SWITCHES**

Two different types of hazard warning switches were installed up to the following serial numbers.

885/633680  
990/862037  
995/930639

996/985304  
1210/727072  
1212/1003291

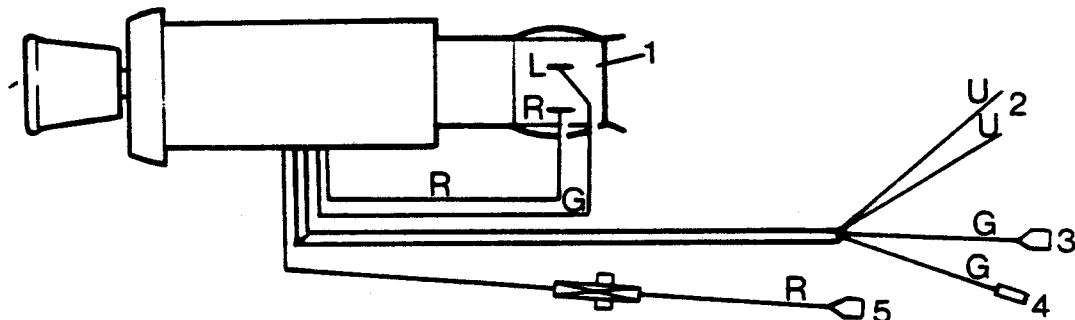


Figure H121  
EARLY TYPE  
Part Number K9446644

- |                                                                        |                                                       |
|------------------------------------------------------------------------|-------------------------------------------------------|
| 1. Hazard flasher unit.                                                | 4. To green wire in the harness next to flasher unit. |
| 2. Connections to L and R terminals of the direction indicator switch. | 5. Connection to terminal 1 of the starter switch.    |
| 3. Connection to 49 + terminal of the direction flasher unit.          |                                                       |

R78159

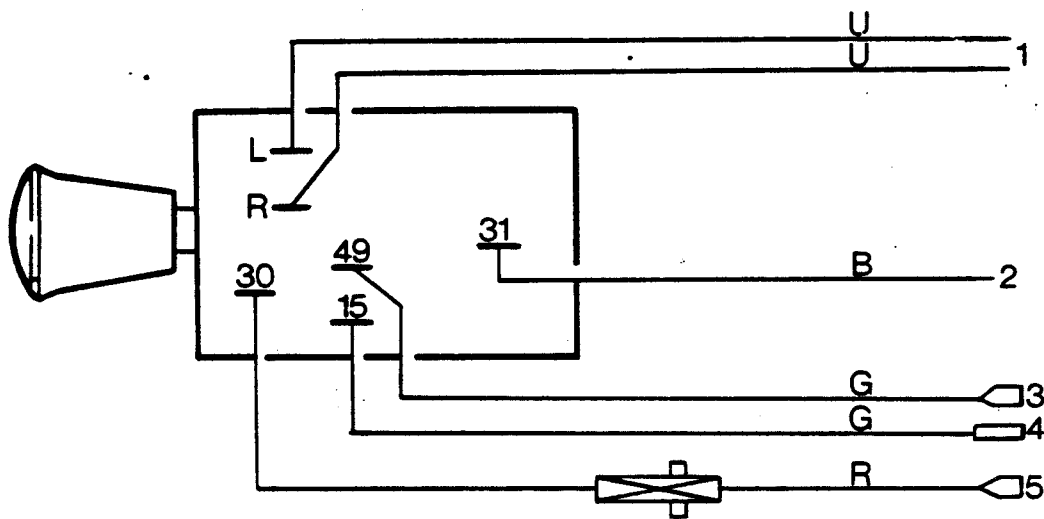
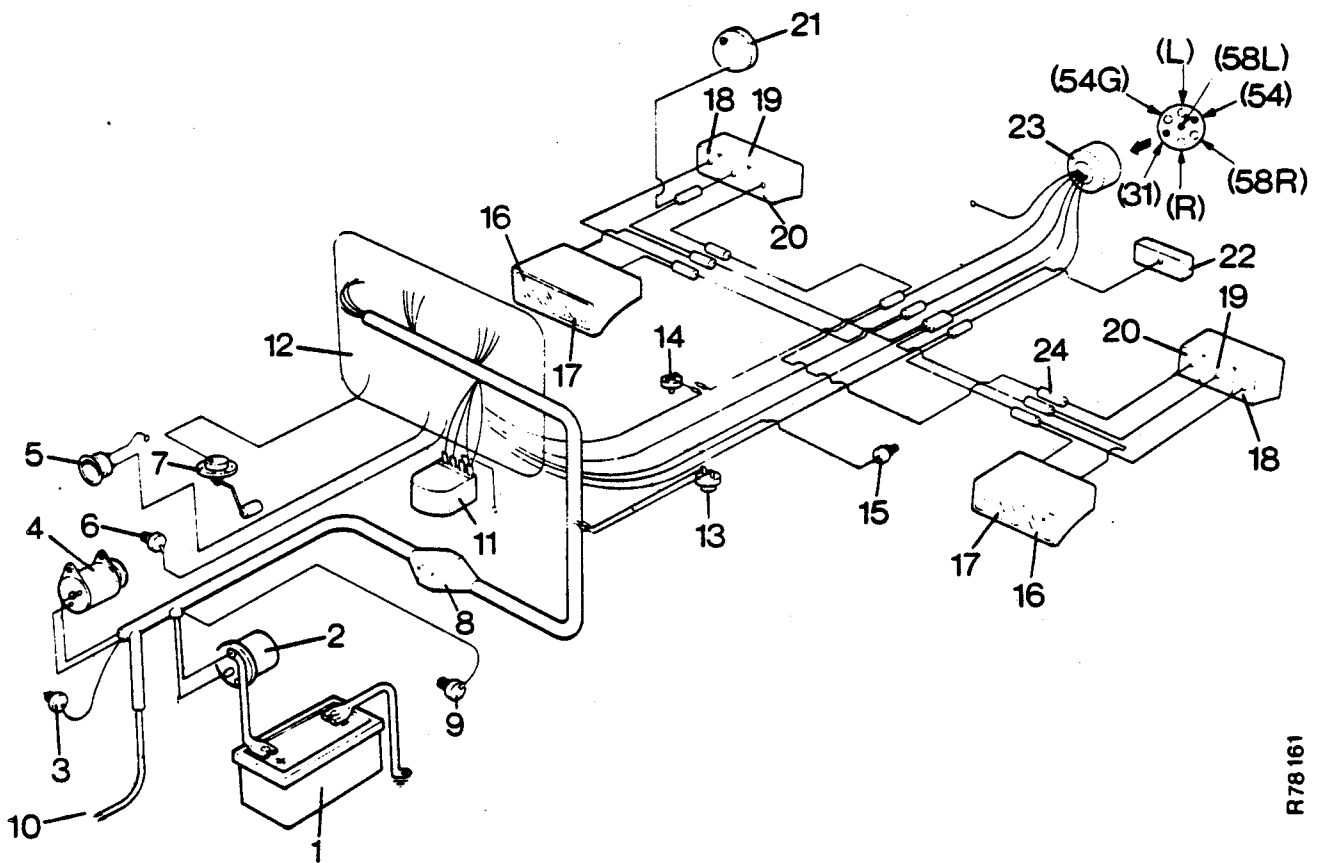


Figure H122  
LATER TYPE  
Part Number K950431

- |                                                                        |                                                       |
|------------------------------------------------------------------------|-------------------------------------------------------|
| 1. Connections to L and R terminals of the direction indicator switch. | flasher unit.                                         |
| 2. Connection to ground.                                               | 4. To green wire in the harness next to flasher unit. |
| 3. Connection to 49 + terminal of direction                            | 5. To number 1 terminal of the starter switch.        |

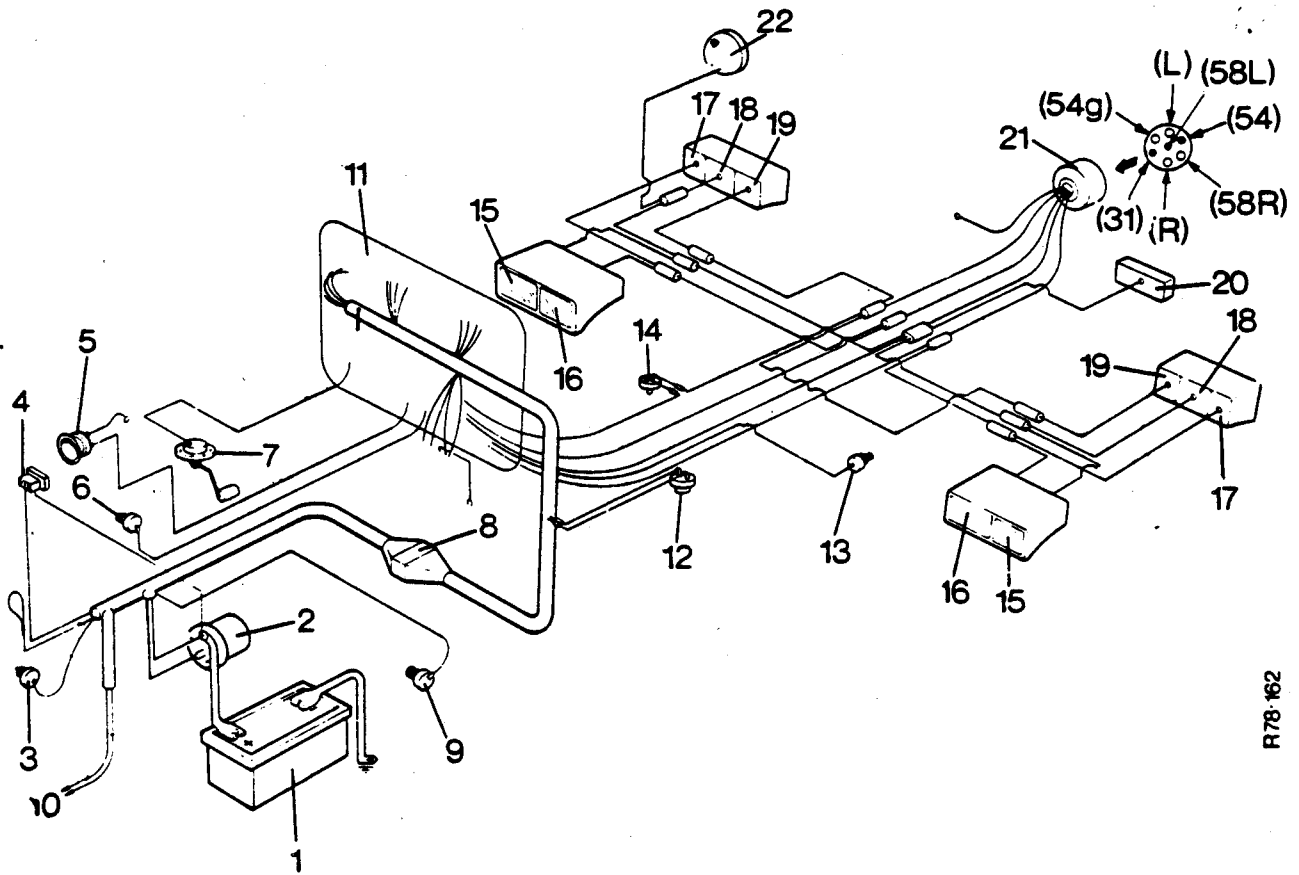
R78160



R78161

Figure H123  
ARRANGEMENT OF WIRING  
Tractors with full fenders, dynamo and early type wiring harness.

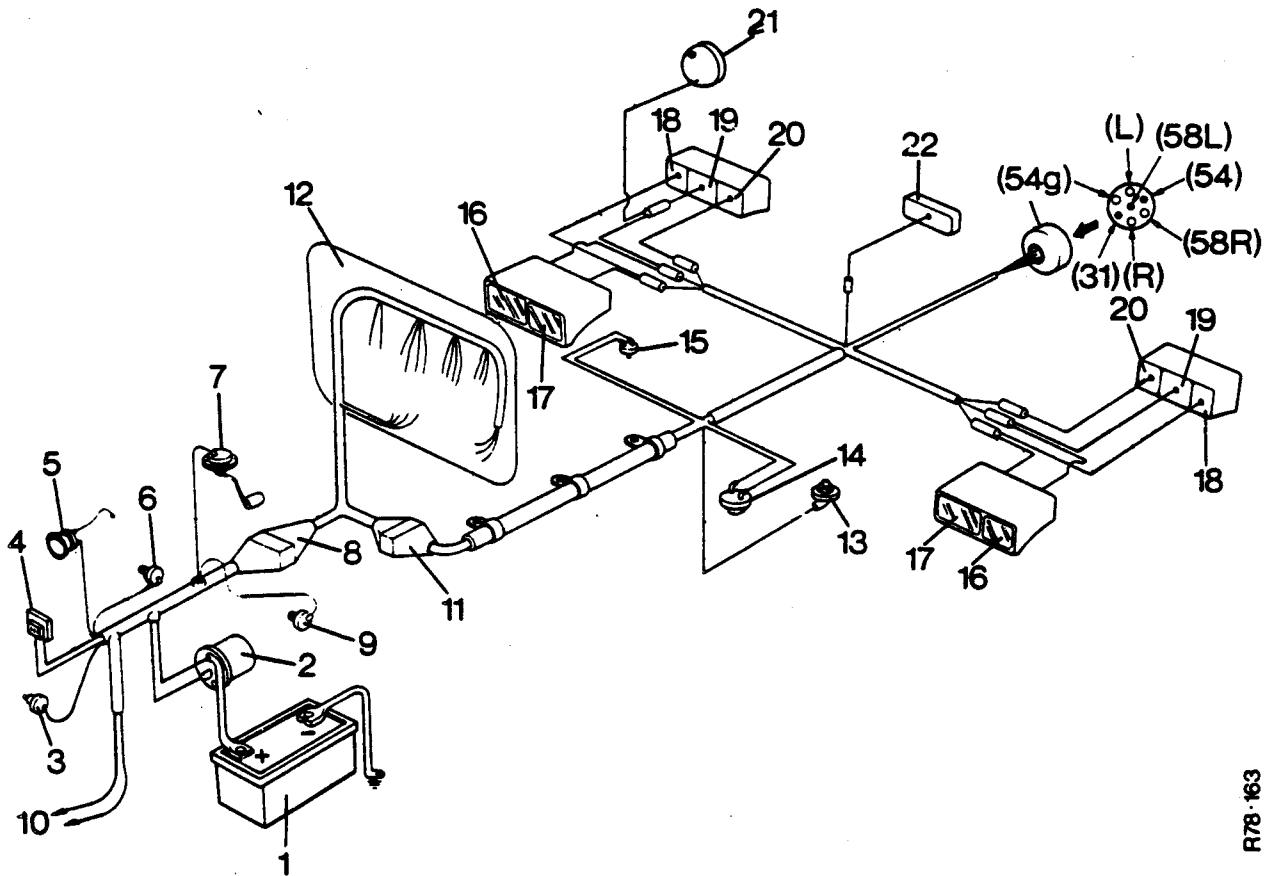
- |                              |                                       |
|------------------------------|---------------------------------------|
| 1. Battery.                  | 17. Front direction indicators.       |
| 2. Starter Solenoid.         | 18. Rear direction indicators.        |
| 3. Temperature sender unit.  | 19. Rear lamps.                       |
| 4. Dynamo.                   | 20. Stop lamps.                       |
| 5. Horn.                     | 21. Flood lamp.                       |
| 6. Thermostart.              | 22. Number plate lamp.                |
| 7. Fuel tank unit.           | 23. Trailer socket.                   |
| 8. 10-way connector.         |                                       |
| 9. Oil pressure switch.      | <b>TRAILER SOCKET</b>                 |
| 10. To headlamps.            | 54G. Extra position.                  |
| 11. Regulator.               | 58L. Left-hand, side and rear lamps.  |
| 12. Instrument panel.        | 58R. Right-hand, side and rear lamps. |
| 13. Starter safety switch.   | 54. Stop lamps.                       |
| 14. Stop lamp switch.        | 31. Ground                            |
| 15. Hydraulic filter switch. | R. Right hand indicators.             |
| 16. Side lamps.              | L. Left hand indicators.              |



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Figure H124  
**ARRANGEMENT OF WIRING**  
 Tractors with full fenders, alternator and early type of wiring harness.

- |                                 |                                       |
|---------------------------------|---------------------------------------|
| 1. Battery.                     | 17. Rear direction indicators.        |
| 2. Starter solenoid.            | 18. Rear lamps.                       |
| 3. Temperature sender unit.     | 19. Stop lamps.                       |
| 4. Alternator socket.           | 20. Number plate lamp.                |
| 5. Horn.                        | 21. Trailer socket.                   |
| 6. Thermostat.                  | 22. Flood lamp.                       |
| 7. Fuel tank unit.              | <b>TRAILER SOCKET</b>                 |
| 8. 10-way connector.            | 54g. Extra position.                  |
| 9. Oil pressure switch.         | 58L. Left-hand, side and rear lamps.  |
| 10. To headlamps.               | 58R. Right-hand, side and rear lamps. |
| 11. Instrument panel.           | 54. Stop lamps.                       |
| 12. Starter safety switch.      | 31. Ground.                           |
| 13. Hydraulic filter switch.    | R. Right hand indicators.             |
| 14. Stop lamp switch.           | L. Left hand indicators.              |
| 15. Side lamps.                 |                                       |
| 16. Front direction indicators. |                                       |



R78-163

Figure H125  
ARRANGEMENT OF WIRING  
Tractors with full fenders, alternator and later type wiring harness.

- |                                 |                                       |
|---------------------------------|---------------------------------------|
| 1. Battery.                     | 18. Rear direction indicators.        |
| 2. Starter solenoid.            | 19. Rear lamps.                       |
| 3. Temperature sender unit.     | 20. Stop lamps.                       |
| 4. Alternator socket.           | 21. Flood lamp.                       |
| 5. Horn.                        | 22. Number plate lamp.                |
| 6. Thermostart.                 | 23. Trailer socket.                   |
| 7. Fuel tank unit.              | TRAILER SOCKET                        |
| 8. 10-way connector.            | 54g. Extra position.                  |
| 9. Oil pressure switch.         | 58L. Left-hand, side and rear lamps.  |
| 10. To headlamps.               | 58R. Right-hand, side and rear lamps. |
| 11. 7-way socket.               | 54. Stop lights.                      |
| 12. Instrument panel.           | 31. Ground.                           |
| 13. Hydraulic filter switch.    | R. Right hand indicators.             |
| 14. Starter safety switch.      | L. Left hand indicators.              |
| 15. Stop lamp switch.           |                                       |
| 16. Side lamps.                 |                                       |
| 17. Front direction indicators. |                                       |

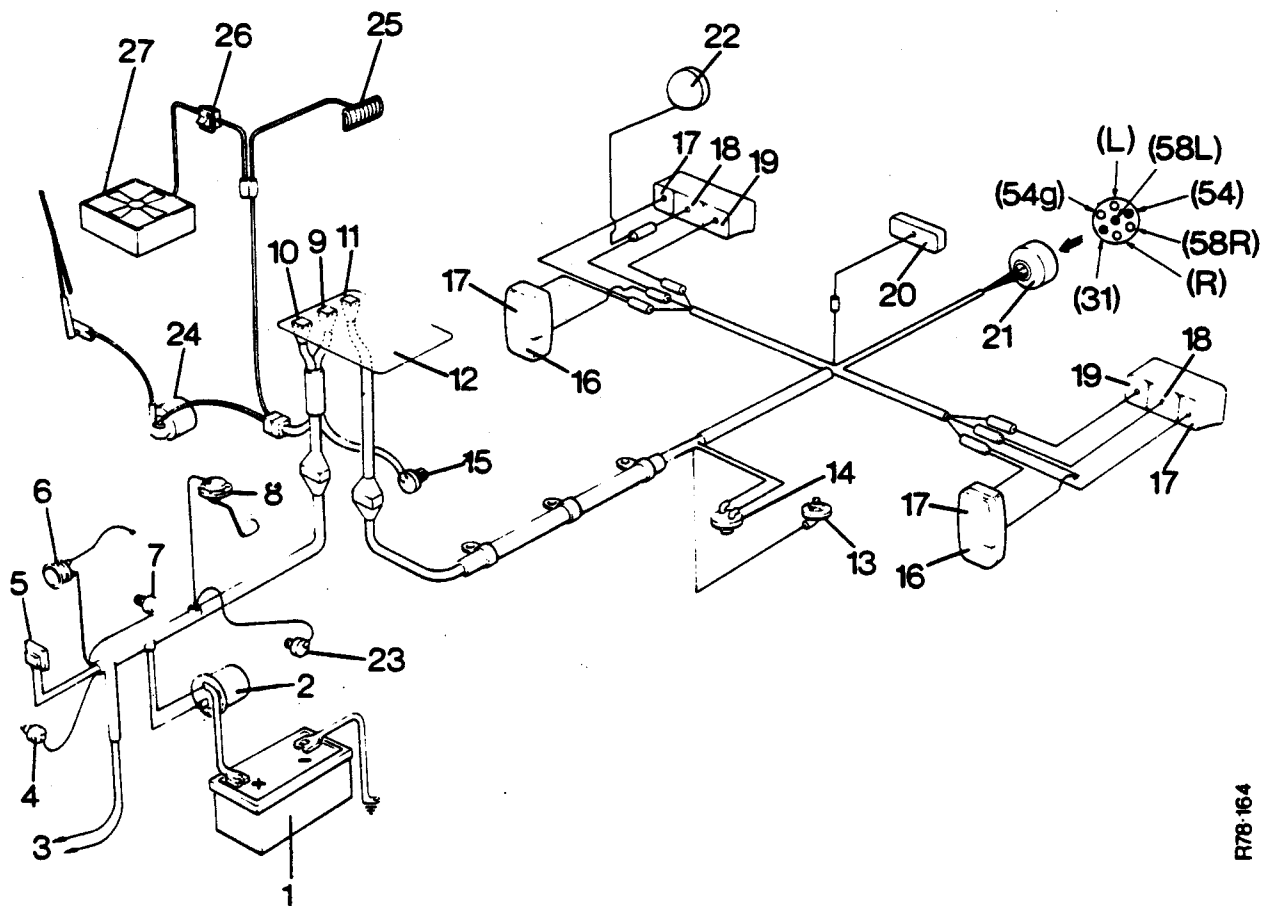
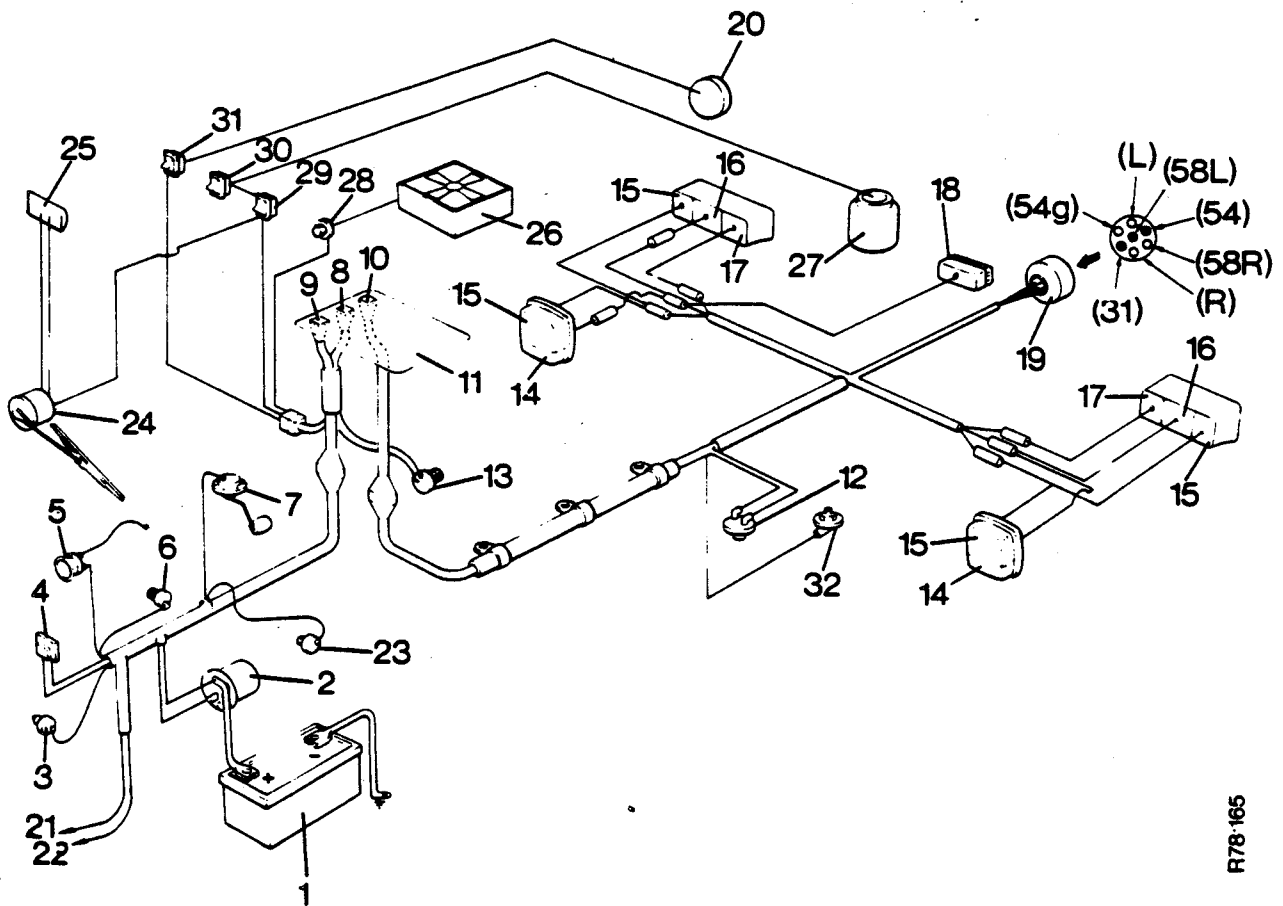


Figure H126  
ARRANGEMENT OF WIRING  
For tractors with Q-Cab.

- |                              |                                       |
|------------------------------|---------------------------------------|
| 1. Battery.                  | 20. Number plate lamp.                |
| 2. Starter solenoid.         | 21. Trailer socket.                   |
| 3. To headlamps.             | 22. Flood lamp.                       |
| 4. Temperature sender unit.  | 23. Oil pressure switch.              |
| 5. Alternator socket.        | 24. Wiper motor.                      |
| 6. Horn.                     | 25. Interior lamp.                    |
| 7. Thormostart.              | 26. Fan switch.                       |
| 8. Fuel tank unit.           | 27. Heater unit.                      |
| 9. 11-way connector.         | TRAILER SOCKET                        |
| 10. 2-way connector.         | 54g. Extra position.                  |
| 11. 7-way connector.         | 58L Left-hand, side and rear lamps.   |
| 12. Instrument panel.        | 58R. Right-hand, side and rear lamps. |
| 13. Hydraulic filter switch. | 54. Stop lamps.                       |
| 14. Starter safety switch.   | 31. Ground.                           |
| 15. Stop lamp switch.        | R. Right hand indicators.             |
| 16. Side lamps.              | L. Left hand indicators.              |
| 17. Direction indicators.    |                                       |
| 18. Rear lamps.              |                                       |
| 19. Stop lamps.              |                                       |

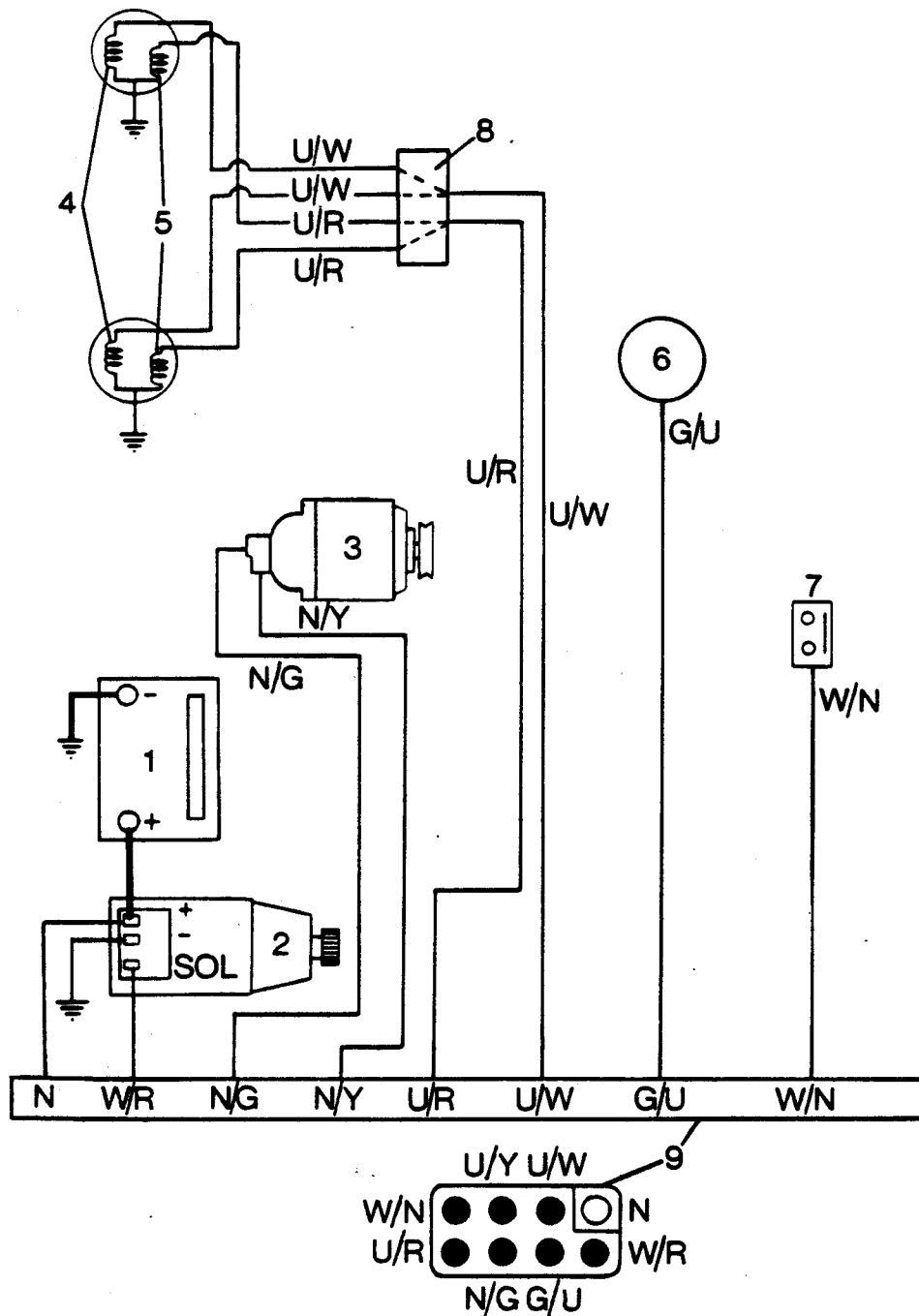
R78-164



R78-165

Figure H127  
**ARRANGEMENT OF WIRING**  
 Tractors with de-luxe cab and Sekura cab.

- |                               |                                                                             |
|-------------------------------|-----------------------------------------------------------------------------|
| 1. Battery.                   | 18. Number plate lamp.                                                      |
| 2. Starter solenoid.          | 19. 7-point trailer socket.                                                 |
| 3. Temperature sender.        | 20. Rear flood lamp.                                                        |
| 4. Alternator socket.         | 21. Dip beam.                                                               |
| 5. Horn.                      | 22. Main beam.                                                              |
| 6. Thermostart.               | 23. Oil pressure switch.                                                    |
| 7. Fuel tank unit.            | 24. Windshield wiper motor.                                                 |
| 8. 11-way connector.          | 25. Cab interior lamp.                                                      |
| 9. 2-way connector.           | 26. Fan unit.                                                               |
| 10. 7-way connector.          | 27. Washer motor.                                                           |
| 11. Instrument panel.         | 28. Fan switch.                                                             |
| 12. Starter safety switch.    | 29. Wiper switch.                                                           |
| 13. Stop lamp switch.         | 30. Washer switch.                                                          |
| 14. Side lamp.                | 31. Floodlamp switch.                                                       |
| 15. Direction indicator lamp. | 32. Hydraulic filter switch, installed on 8, 9 and 12 series tractors only. |
| 16. Rear lamp.                |                                                                             |
| 17. Stop lamp.                |                                                                             |



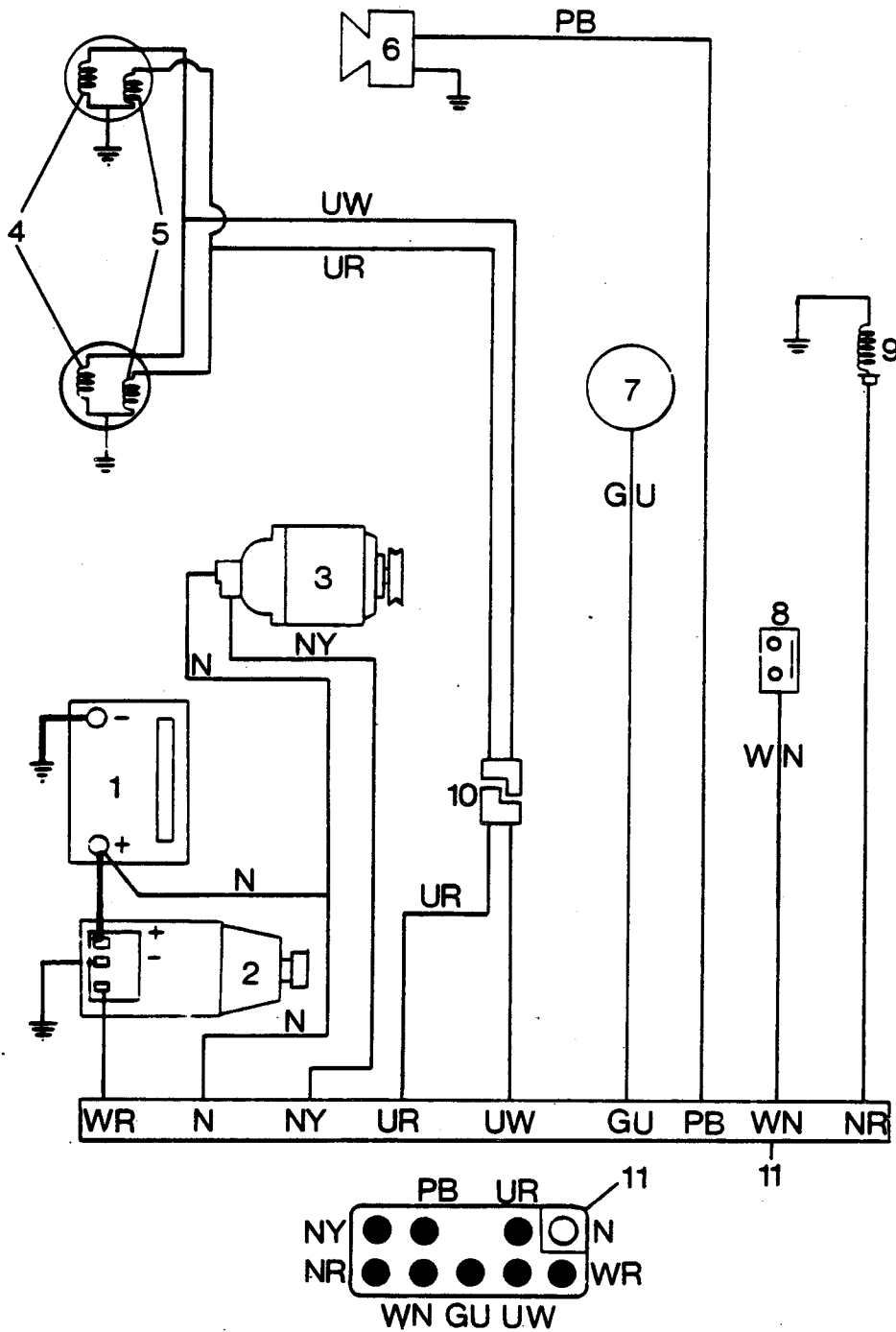
R78-166

Figure H128  
ENGINE HARNESS  
For tractors with a dynamo, up to the following serial numbers:

- |             |               |
|-------------|---------------|
| 885: 633680 | 996: 985304   |
| 990: 862037 | 1210: 727072  |
| 995: 930639 | 1212: 1003291 |
1. Battery.
  2. Starter.
  3. Dynamo.
  4. Headlamp, main.
  5. Headlamp, dip.
  6. Temperature sender unit.
  7. Oil pressure switch.
  8. Headlamp connector, 4-way.
  9. 8-way connector to instrument panel.



ELECTRICAL EQUIPMENT



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Figure H129  
ENGINE HARNESS  
For tractors with an alternator, from the following serial numbers:

- |              |                  |
|--------------|------------------|
| 885:629959   | 996:983735       |
| 885Q:1100001 | 996Q:1107001     |
| 990:558824   | 1210Q } 11150001 |
| 990Q:1107001 | 1212Q }          |
| 995:927997   | 1410Q } 11200001 |
| 995Q:1107001 | 1412Q }          |

- |                    |                                          |
|--------------------|------------------------------------------|
| 1. Battery.        | 7. Temperature sender unit.              |
| 2. Starter.        | 8. Oil pressure switch.                  |
| 3. Alternator.     | 9. Thermostat.                           |
| 4. Headlamp, main. | 10. Headlamp connector, 2-way.           |
| 5. Headlamp, dip.  | 11. 9-way connector to instrument panel. |
| 6. Horn.           |                                          |

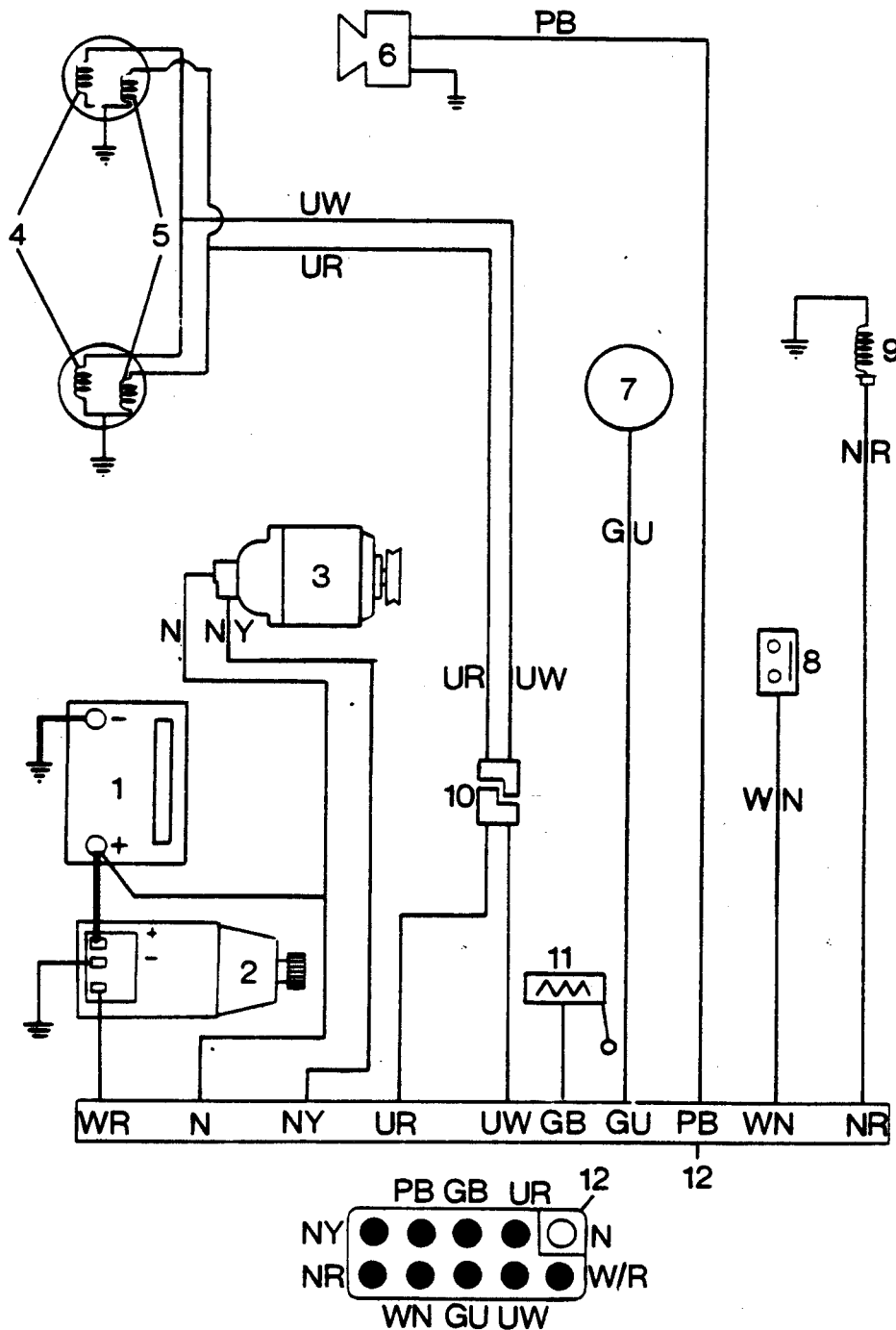


Figure H130  
ENGINE HARNESS

For 12 and 14 series tractors without cab only, from the following serial numbers:

1210:727072  
1212:1003291

1410  
1412 1050001

- |                    |                                           |
|--------------------|-------------------------------------------|
| 1. Battery.        | 7. Temperature sender unit.               |
| 2. Starter.        | 8. Oil pressure switch.                   |
| 3. Alternator.     | 9. Thermostart.                           |
| 4. Headlamp, main. | 10. Headlamp connector, 2-way.            |
| 5. Headlamp, dip.  | 11. Fuel tank unit.                       |
| 6. Horn.           | 12. 10-way connector to instrument panel. |

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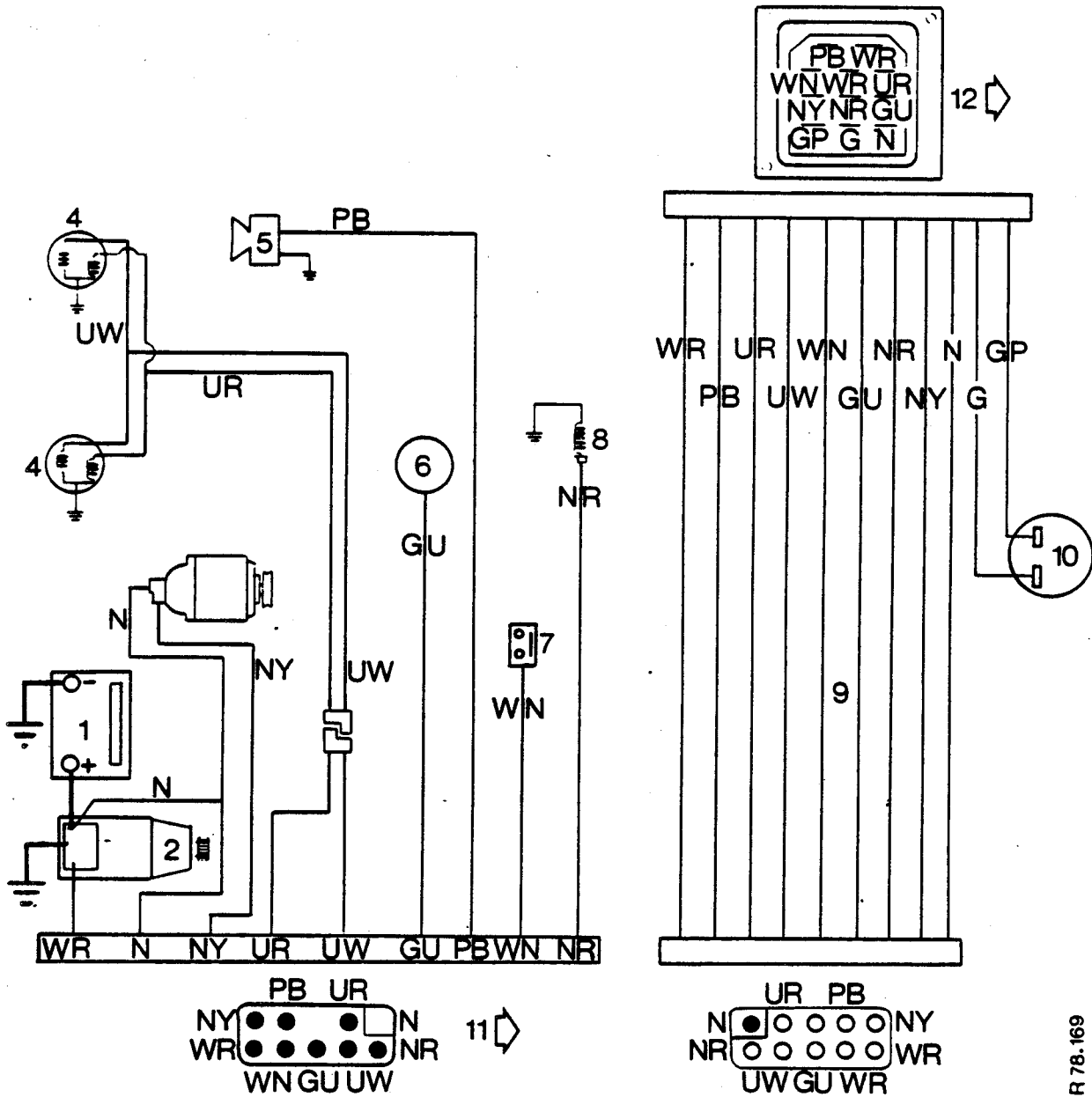


Figure H131  
ENGINE HARNESS

For tractors with Q-cab, de-luxe cab, and Sekura cab, from the following serial numbers:

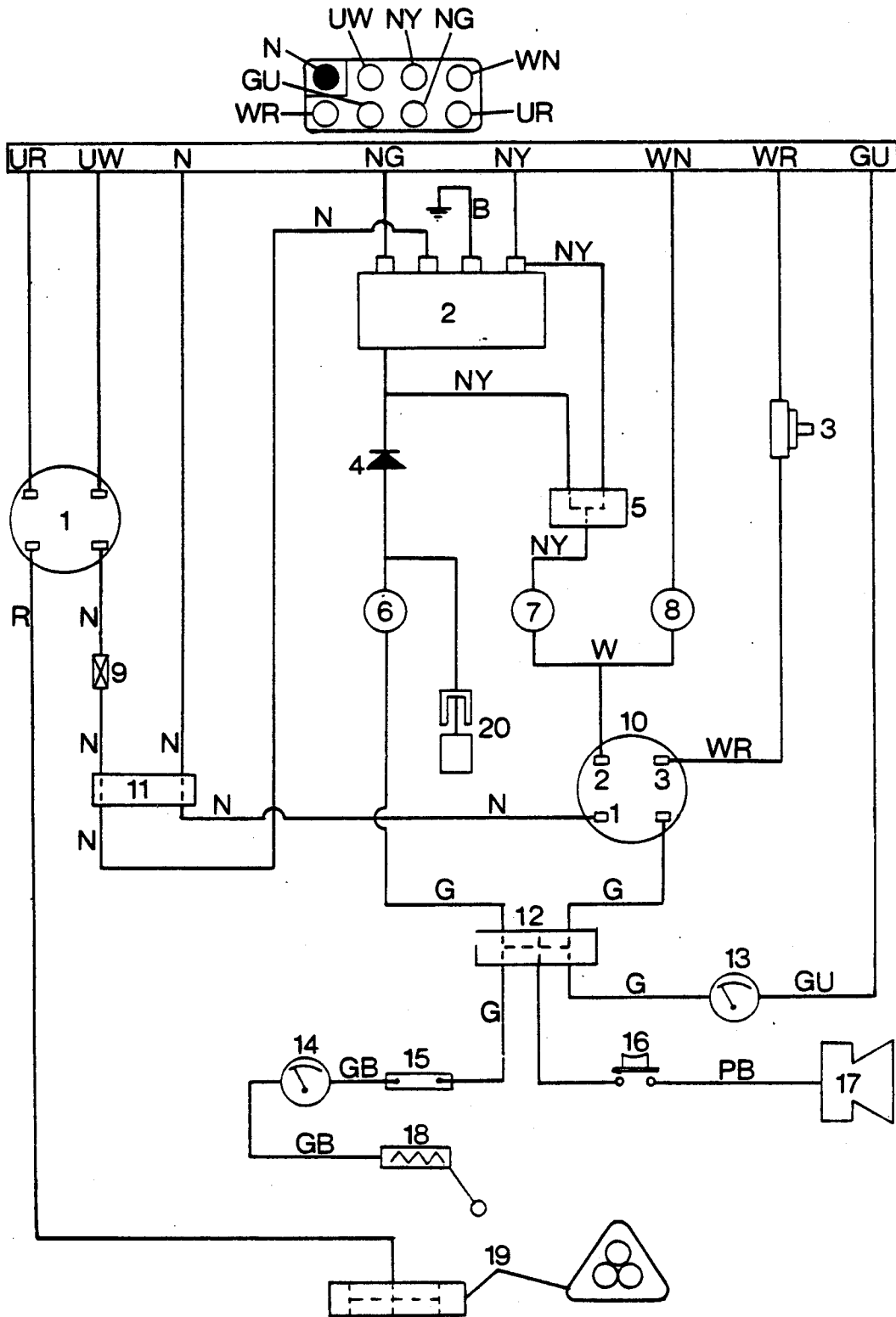
885:1100001  
990 }  
995 } 1107001  
996 }

1210 }  
1212 } 11150001  
1410 }  
1412 } 11200001

- 1. Battery.
- 2. Starter.
- 3. Alternator.
- 4. Headlamp.
- 5. Horn.
- 6. Temperature sender unit.

- 7. Oil pressure switch.
- 8. Thermostart.
- 9. Console harness.
- 10. Stop lamp switch.
- 11. 9-way connector, to console harness.
- 12. 11-way connector, to instrument panel.

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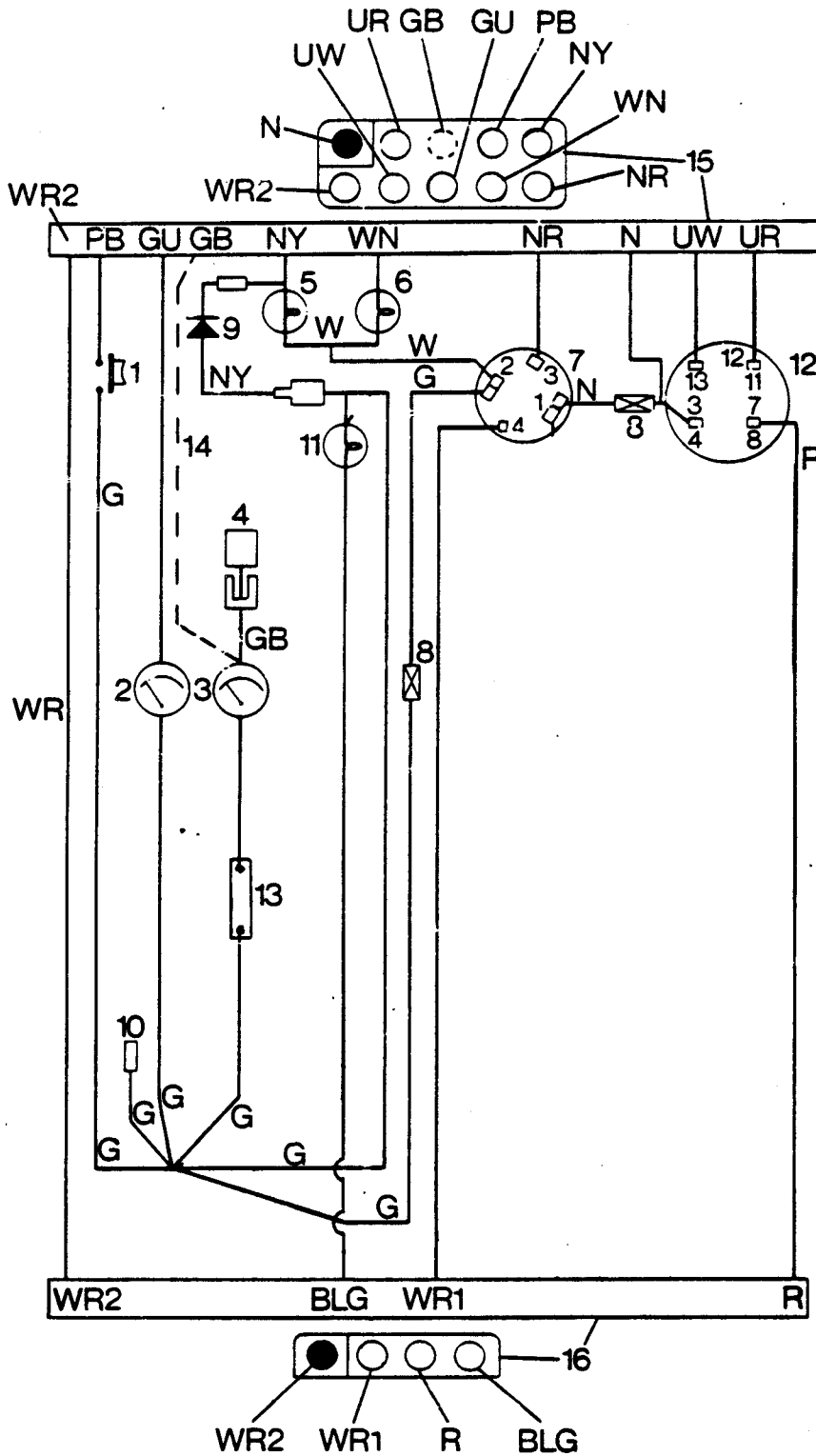


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Figure H132  
INSTRUMENT PANEL HARNESS

For tractors with shell fenders, up to the following serial numbers:

- |            |              |
|------------|--------------|
| 885:633680 | 996:985304   |
| 990:860237 | 1210:727072  |
| 995:930639 | 1212:1003291 |
1. Lighting switch.
  2. Regulator.
  3. Starter safety switch.
  4. Diode.
  5. Double connector.
  6. Hydraulic filter lamp, yellow.
  7. Charge warning lamp, red.
  8. Oil pressure warning lamp, green.
  9. Fuse.
  10. Starter/Isolating switch.
  11. Double connector.
  12. Connector 3-way.
  13. Temperature gauge.
  14. Fuel gauge.
  15. Voltage stabiliser, 885 only.
  16. Horn button.
  17. Horn.
  18. Fuel tank unit.
  19. Connector 3-way to rear harness.
  20. Hydraulic filter switch.



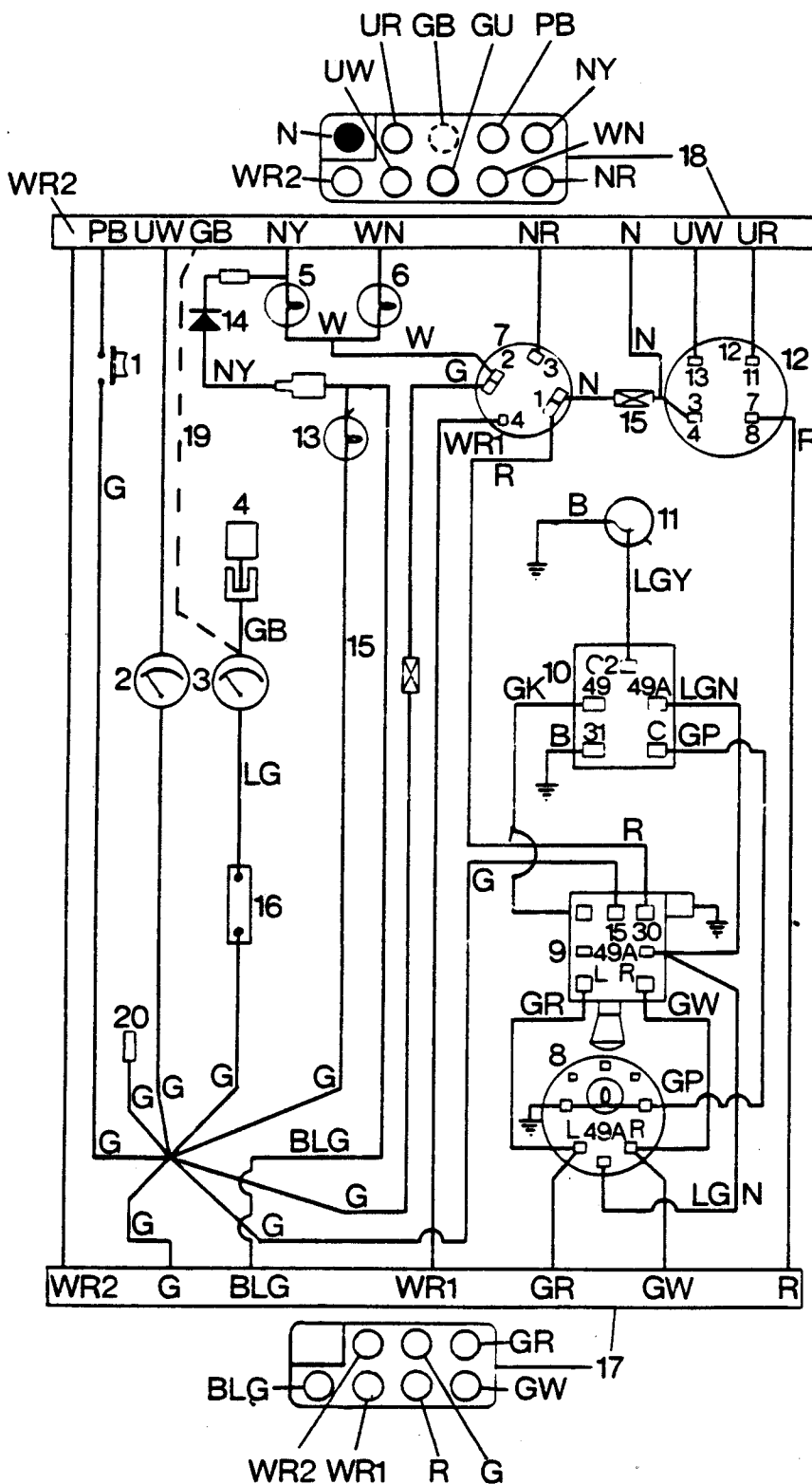
R78 171

Figure H133  
**INSTRUMENT PANEL HARNESS**  
 For tractors with shell fenders, from the following serial numbers:

885:633680  
 990:862037  
 995:930639

996:985304  
 1210:727072  
 1212:1003291

- |                                      |                                                                        |
|--------------------------------------|------------------------------------------------------------------------|
| 1. Horn button.                      | 10. Connection for extra equipment.                                    |
| 2. Temperature gauge.                | 11. Hydraulic filter lamp, yellow.                                     |
| 3. Fuel gauge.                       | 12. Lighting switch.                                                   |
| 4. Fuel tank unit.                   | 13. Voltage stabiliser, 885 only.                                      |
| 5. Charge warning lamp, red.         | 14. Connection to fuel tank unit in engine harness, 12 series tractor. |
| 6. Oil pressure warning lamp, green. | 15. 10-way connector, to engine harness.                               |
| 7. Isolating/Starter switch.         | 16. 4-way connector to rear harness.                                   |
| 8. Fuses.                            |                                                                        |
| 9. Diode.                            |                                                                        |

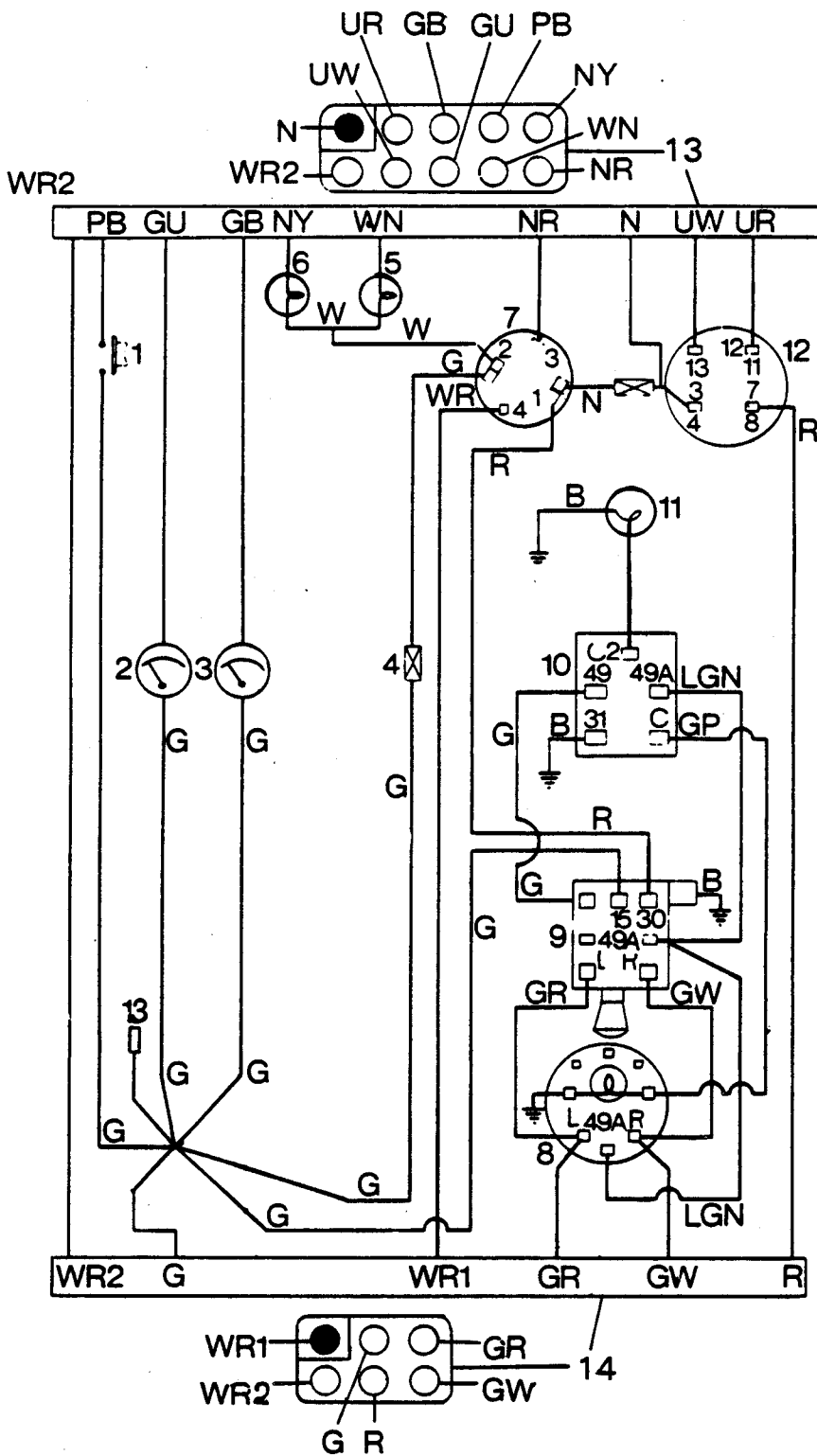


R78172

Figure H134  
**INSTRUMENT PANEL HARNESS**  
 For tractors with full fenders, from the following serial numbers:

- |            |                |
|------------|----------------|
| 885:633680 | 1210:727072    |
| 990:862037 | 1212:1003291   |
| 995:930639 | 1410 }         |
| 996:985304 | 1412 } 1050001 |

- |                                      |                                                 |                                                          |
|--------------------------------------|-------------------------------------------------|----------------------------------------------------------|
| 1. Horn button.                      | 8. Direction indicator switch.                  | 15. Fuses.                                               |
| 2. Temperature gauge.                | 9. Hazard warning switch.                       | 16. Voltage stabiliser, 885 only.                        |
| 3. Fuel gauge.                       | 10. Flasher unit.                               | 17. 7-way connector, to rear harness.                    |
| 4. Fuel tank sender unit.            | 11. Warning lamp, trailer direction indicators. | 18. 9-way connector, to engine harness.                  |
| 5. Charge warning lamp, red.         | 12. Lighting switch.                            | 19. Connection to fuel tank unit, 12 and 14 series only. |
| 6. Oil pressure warning lamp, green. | 13. Hydraulic filter warning lamp, yellow.      | 20. Connection for extra equipment.                      |
| 7. Isolating/Starter switch.         | 14. Diode.                                      |                                                          |



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Figure H136  
INSTRUMENT PANEL HARNESS

For 12 and 14 series tractors, with full fenders, from the following serial numbers:

1210 } 11152567  
1212 }

1410 11200752  
1412

- |                                      |                                                 |
|--------------------------------------|-------------------------------------------------|
| 1. Horn button.                      | 8. Direction indicator switch.                  |
| 2. Temperature gauge.                | 9. Hazard warning switch.                       |
| 3. Fuel contents gauge.              | 10. Flasher unit.                               |
| 4. Fuses.                            | 11. Warning lamp, trailer direction indicators. |
| 5. Charge warning lamp, red.         | 12. Lighting switch.                            |
| 6. Oil pressure warning lamp, green. | 13. 10-way connector, to engine harness.        |
| 7. Isolating/starter switch.         | 14. 6-way connector, to rear harness.           |





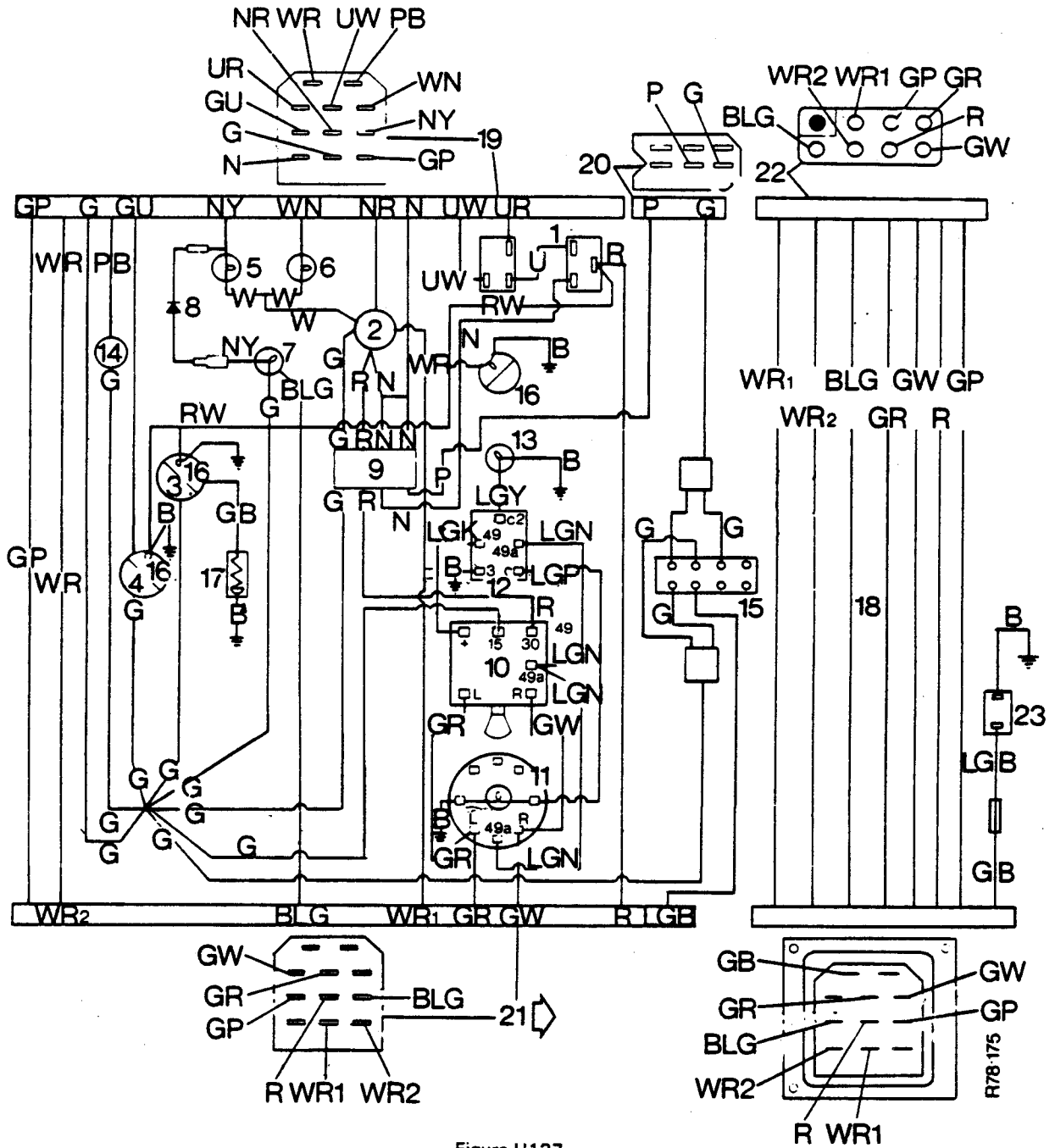
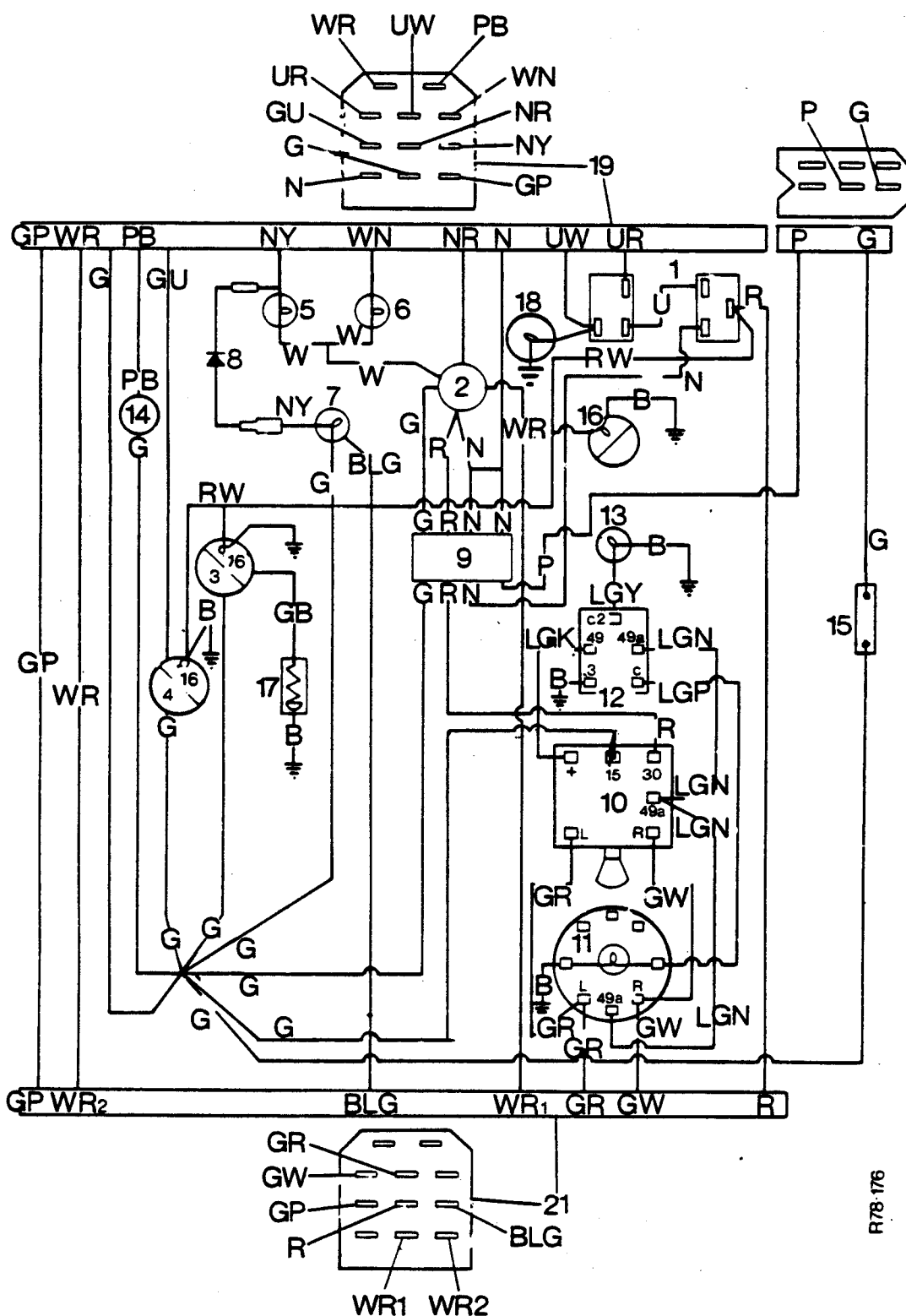


Figure H137  
INSTRUMENT PANEL HARNESS

For tractors with Q-cab from the following serial numbers:

885Q: 11010300	1210	} 111558600
990	1212	
995	1410	} 11203600
996	1412	

- |                                      |                                                  |
|--------------------------------------|--------------------------------------------------|
| 1. Lighting switches.                | 13. Warning lamp, trailer direction indicators.  |
| 2. Isolating/starter switch.         | 14. Horn button.                                 |
| 3. Fuel gauge.                       | 15. Wiper/Washer switch.                         |
| 4. Temperature gauge.                | 16. Panel lamps.                                 |
| 5. Charge warning lamp, red.         | 17. Fuel tank unit.                              |
| 6. Oil pressure warning lamp, green. | 18. Console harness.                             |
| 7. Hydraulic filter lamp, yellow.    | 19. 11-way connector, to engine console harness. |
| 8. Diode.                            | 20. 2-way connector, to cab harness.             |
| 9. Fuses.                            | 21. 7-way connector, to console harness.         |
| 10. Hazard warning switch.           | 22. 7-way connector, to rear harness.            |
| 11. Direction indicator switch.      | 23. Windshield washer motor.                     |
| 12. Flasher unit.                    |                                                  |

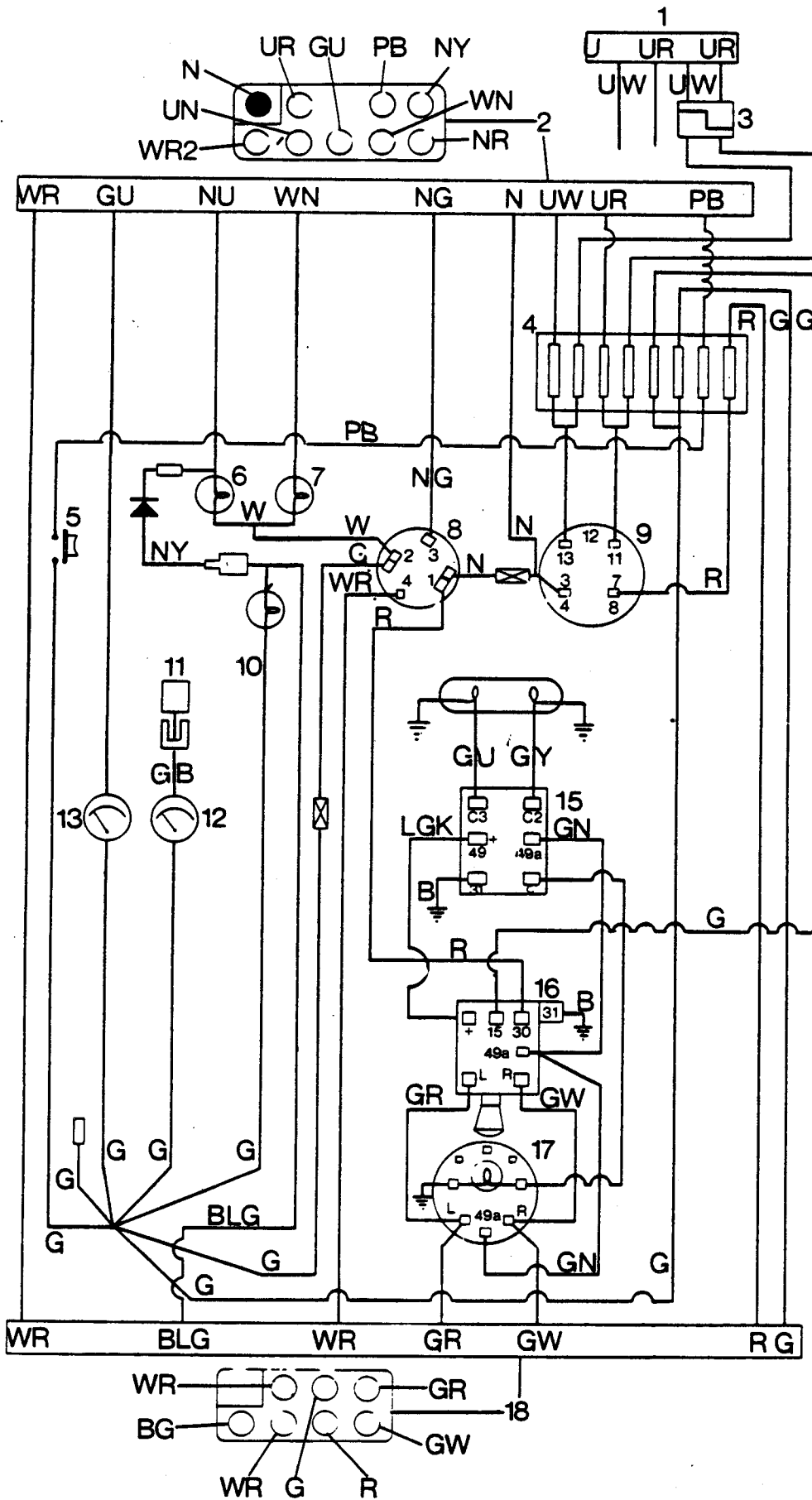


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Figure H138  
INSTRUMENT PANEL HARNESS  
For tractors with a de-luxe cab and Sekura cab, from the following serial numbers:

885	11010509	1210	} 11158982
990	} 11088651	1212	
995		} 11203600	1410
996			1412

- |                                      |                                                 |                                                  |
|--------------------------------------|-------------------------------------------------|--------------------------------------------------|
| 1. Lighting switches.                | 9. Fuses.                                       | 17. Fuel tank unit.                              |
| 2. Isolating/Starter switch.         | 10. Hazard warning switch.                      | 18. Main headlamp warning, blue.                 |
| 3. Fuel gauge.                       | 11. Direction indicator switch.                 | 19. 11-way connector, to engine console harness. |
| 4. Temperature gauge.                | 12. Flasher unit.                               | 20. 2-way connector, to cab harness.             |
| 5. Charge warning lamp, red.         | 13. Warning lamp, trailer direction indicators. | 21. 7-way connector, to rear harness.            |
| 6. Oil pressure warning lamp, green. | 14. Horn button.                                |                                                  |
| 7. Hydraulic filter lamp, yellow.    | 15. Single connector.                           |                                                  |
| 8. Diode.                            | 16. Panel lamps.                                |                                                  |



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Figure H139  
INSTRUMENT PANEL HARNESS  
For tractor without cab, Germany.

1. 4-way connector to headlamps.
2. 9-way connector to engine harness.
3. 2-way connector to headlamps.
4. Fuse box, 8 fuses.
5. Horn button.
6. Temperature gauge.
7. Fuel gauge.
8. Fuel tank unit.
9. Charge warning lamp, red.
10. Oil pressure warning lamp, green.
11. Isolation/Starter switch.
12. Direction indicators switch.
13. Hazard warning switch.
14. Flasher unit.
15. Warning lamp, trailer direction indicators.
16. Light switch.
17. Hydraulic filter warning, yellow.
18. 7-way connector to rear harness.

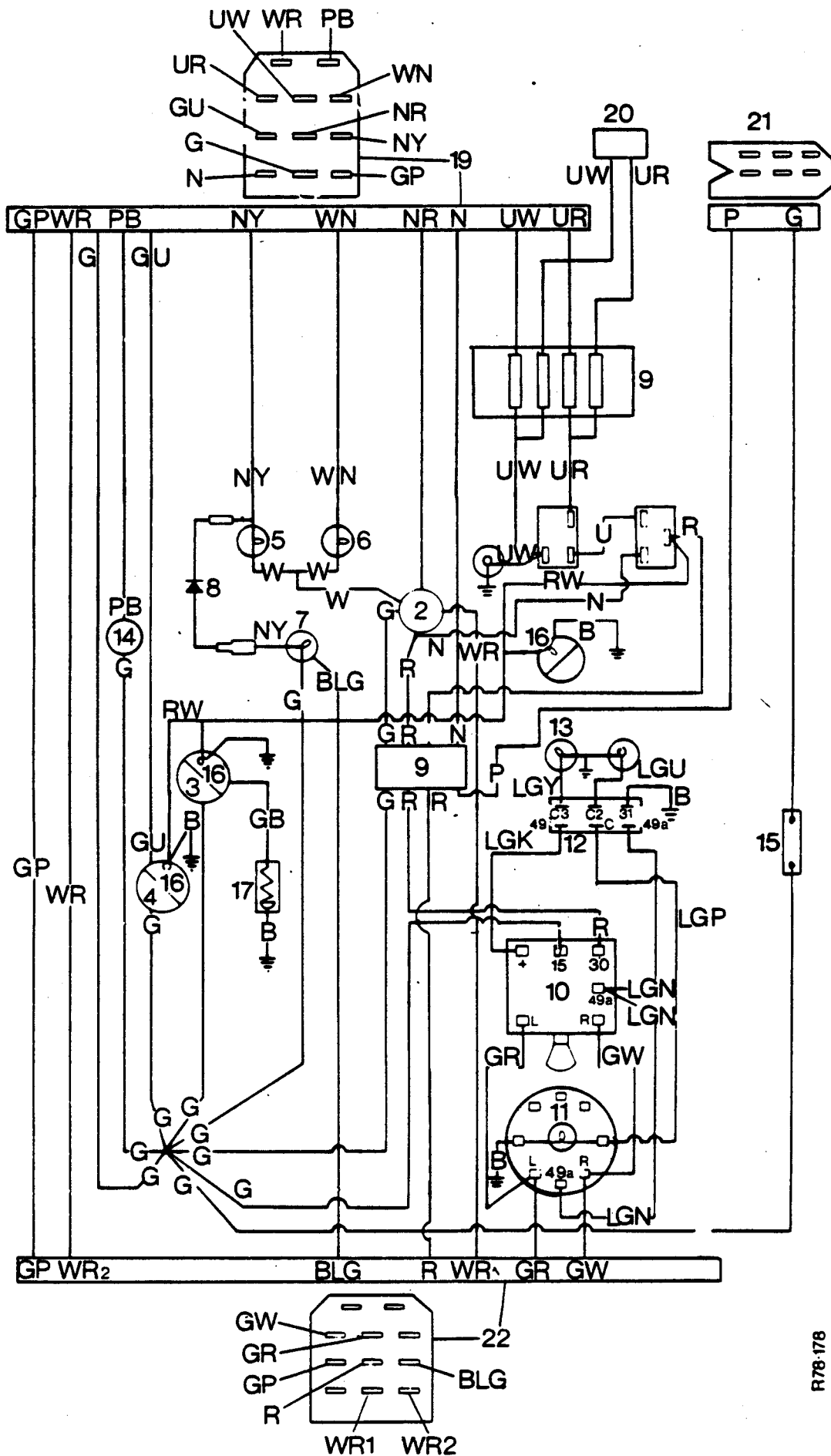
Figure H140  
INSTRUMENT PANEL HARNESS

For tractors for Germany with de-luxe cab (Sekura), from the following serial numbers:

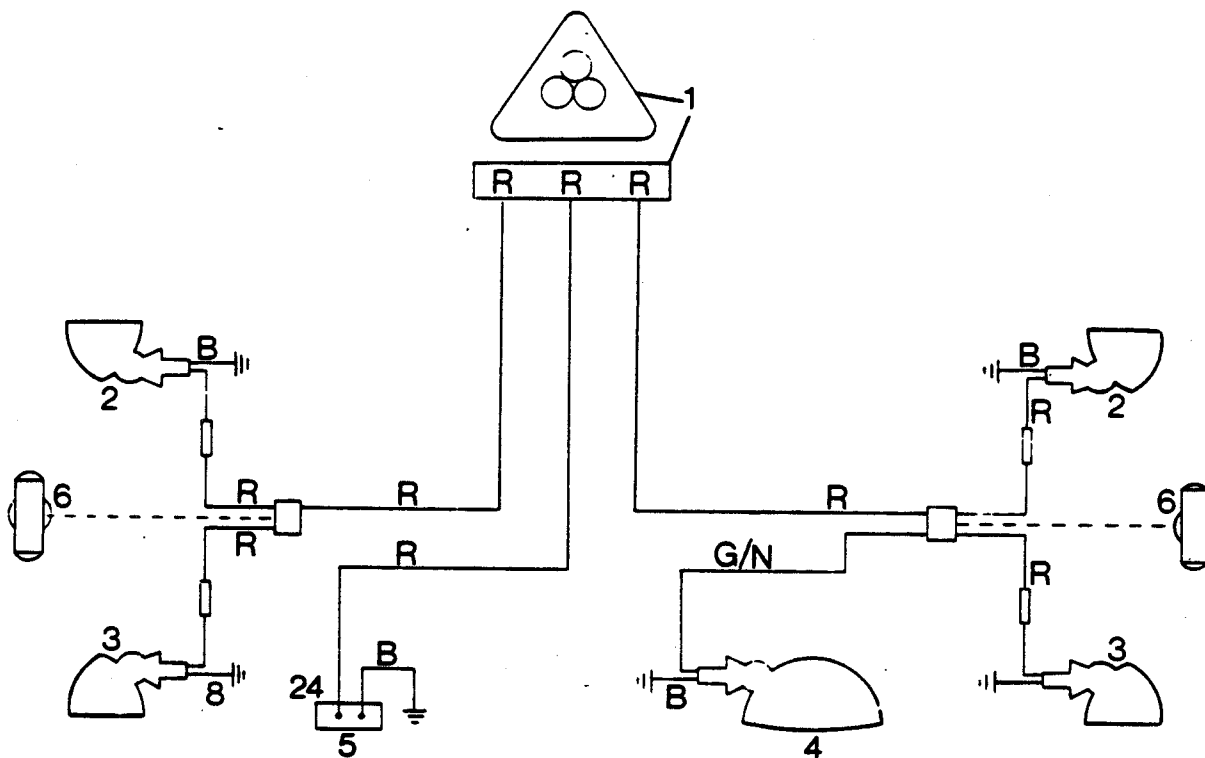
990 }  
995 } 11087366  
996 }

1210 }  
1212 } 11158779  
1410 }  
1412 } 11203833

- |                                      |                                                  |
|--------------------------------------|--------------------------------------------------|
| 1. Lighting switches.                | 12. Flasher unit.                                |
| 2. Isolating/Starter switch.         | 13. Warning lamps, trailer direction indicators. |
| 3. Fuel gauge.                       | 14. Horn button.                                 |
| 4. Temperature gauge.                | 15. Single connector.                            |
| 5. Charge warning lamp, red.         | 16. Panel.                                       |
| 6. Oil pressure warning lamp, green. | 17. Fuel tank unit.                              |
| 7. Hydraulic filter lamp, yellow.    | 18. Main headlamp warning, blue.                 |
| 8. Diode.                            | 19. 11-way connector to engine harness.          |
| 9. Fuses.                            | 20. Connection to console harness.               |
| 10. Hazard warning switch.           | 21. Connection to cab harness.                   |
| 11. Direction indicator switch.      | 22. 7-way connector to rear harness.             |



R78-178



R 78.179

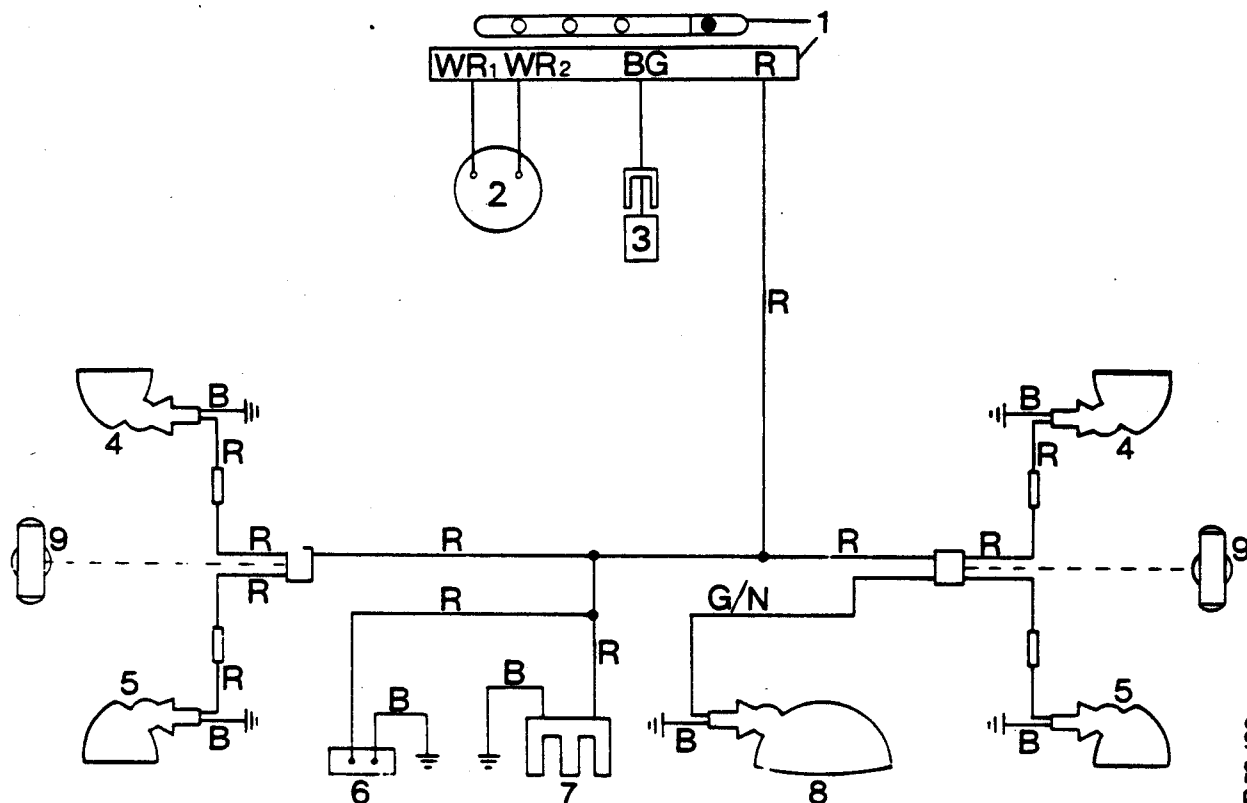
Figure H141  
REAR HARNESS

For tractors with shell fenders up to the following serial numbers:

885:633680  
990:862037  
995:930639

996:985304  
1210:727072  
1212:1003291

- 1. 3-way connector.
- 2. Side lamps.
- 3. Rear lamps.
- 4. Flood lamp.
- 5. Number plate lamp.
- 6. Single side/rear lamp as installed on some tractor models.



R 78.180

Figure H142  
REAR HARNESS

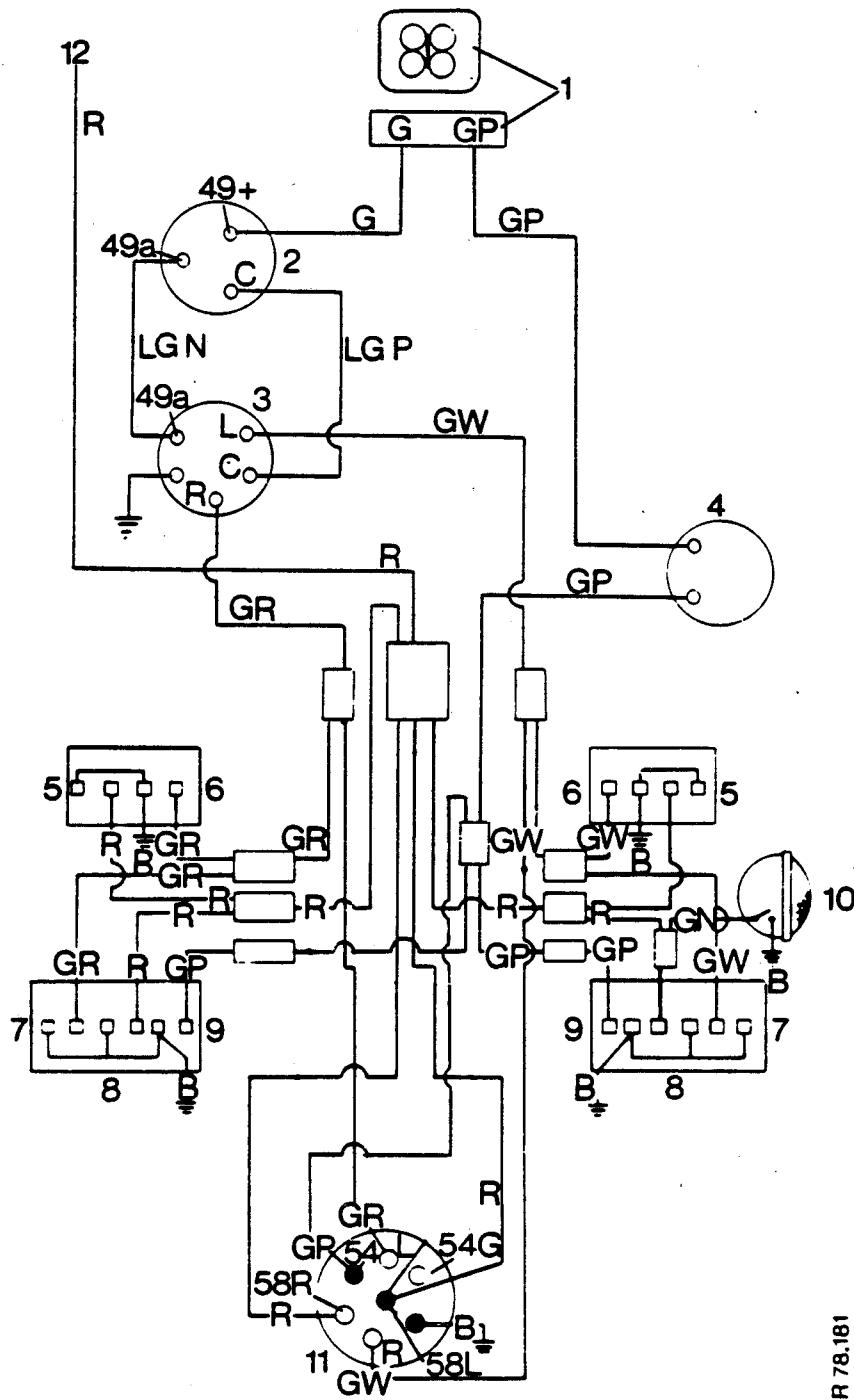
For tractors with shell fenders, from the following serial numbers:

885:633680  
990:862037  
995:930639

996:985304  
1210:727072  
1212:1003291

- |                             |                                                             |
|-----------------------------|-------------------------------------------------------------|
| 1. 4-way connector.         | 6. Number plate lamp.                                       |
| 2. Starter safety switch.   | 7. 2-pin trailer socket.                                    |
| 3. Hydraulic filter switch. | 8. Flood lamp.                                              |
| 4. Side lamps.              | 9. Single side/rear lamp, installed on some tractor models. |
| 5. Rear lamps.              |                                                             |





R 78.181

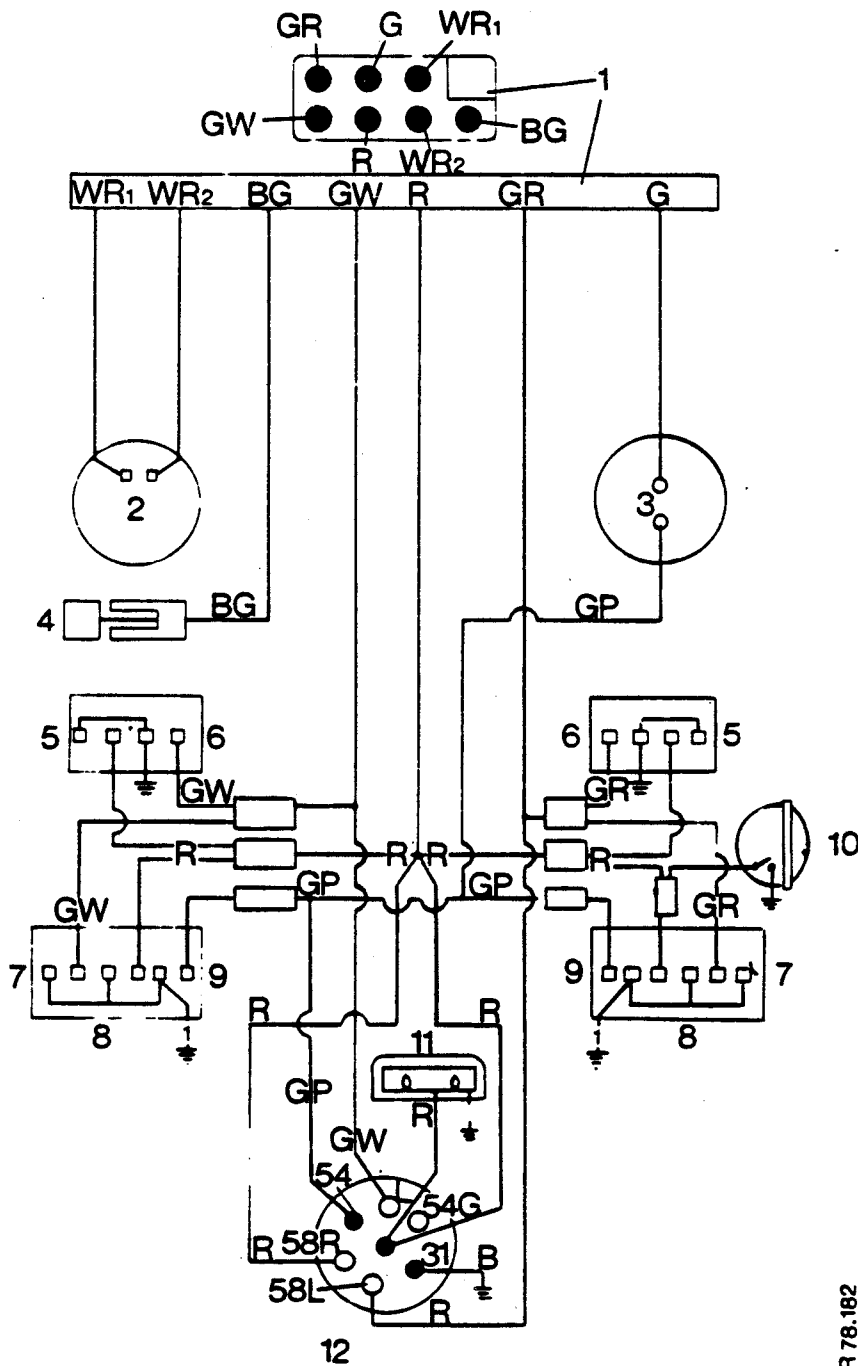
Figure H143  
REAR HARNESS

For tractors with light duty type full fenders, from the following serial numbers:

885:630292  
990:859162  
995:928254

996:985304  
1210:723842  
1212:1002144

- |                               |                              |
|-------------------------------|------------------------------|
| 1. 4-way connector.           | 7. Rear direction indicator. |
| 2. Flasher unit.              | 8. Rear lamps.               |
| 3. Indicator switch.          | 9. Stop lamps.               |
| 4. Starter safety switch.     | 10. Flood lamp.              |
| 5. Side lamps.                | 11. Trailer socket.          |
| 6. Front direction indicator. | 12. Wire to lighting switch. |



R 78.182

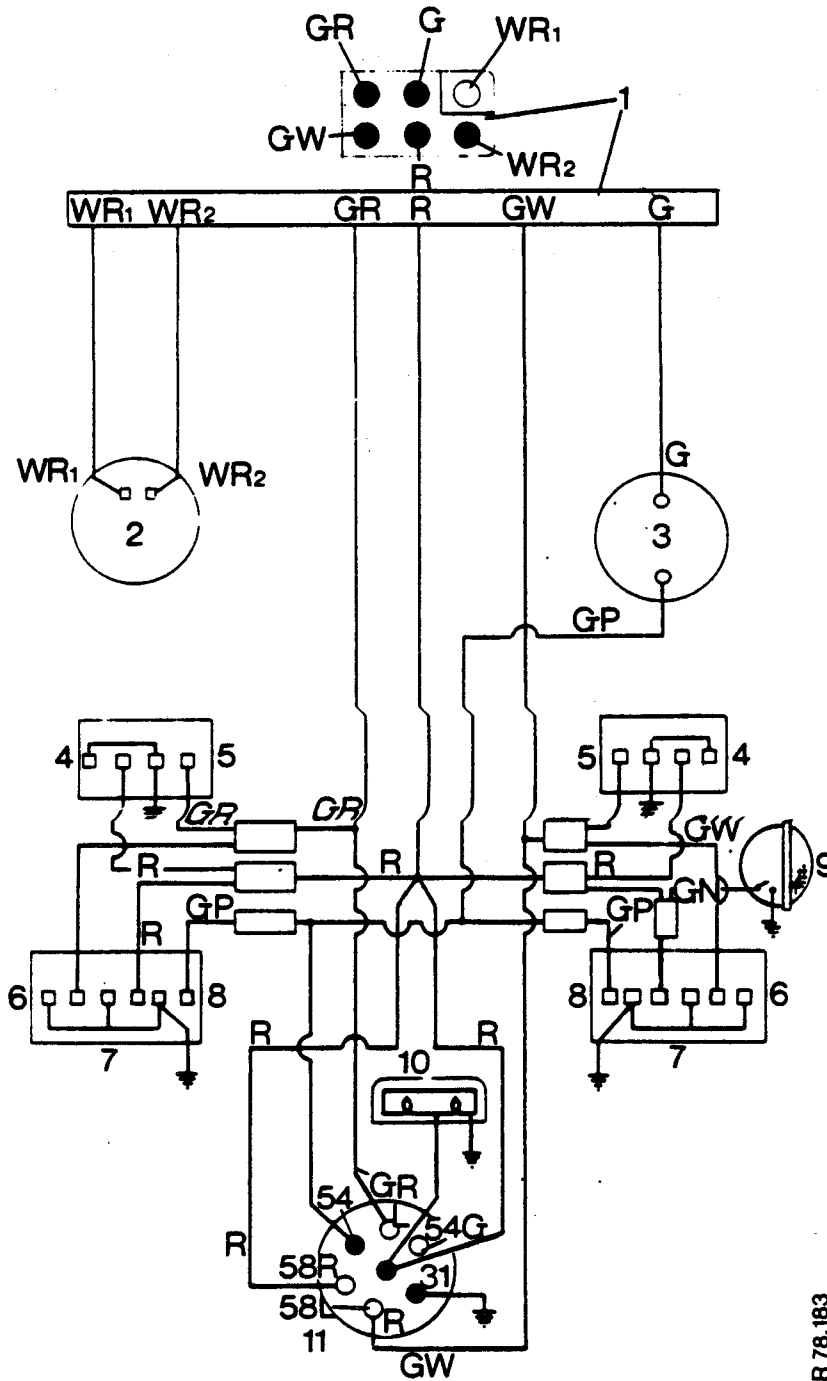
Figure H144  
REAR HARNESS

For tractors with reinforced full fenders, from the following serial numbers:

885:633680  
990:862037  
995:930639  
996:985304

1210:727072  
1212:1003291  
1410 } up to  
1412 } 11200752

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. 7-way connector.            | 7. Rear direction indicators. |
| 2. Starter safety switch.      | 8. Rear lamps.                |
| 3. Stop lamps switch.          | 9. Stop lamps.                |
| 4. Hydraulic filter switch.    | 10. Flood lamp.               |
| 5. Side lamps.                 | 11. Number plate lamp.        |
| 6. Front direction indicators. | 12. Trailer socket.           |



R 78.183

Figure H145  
REAR HARNESS

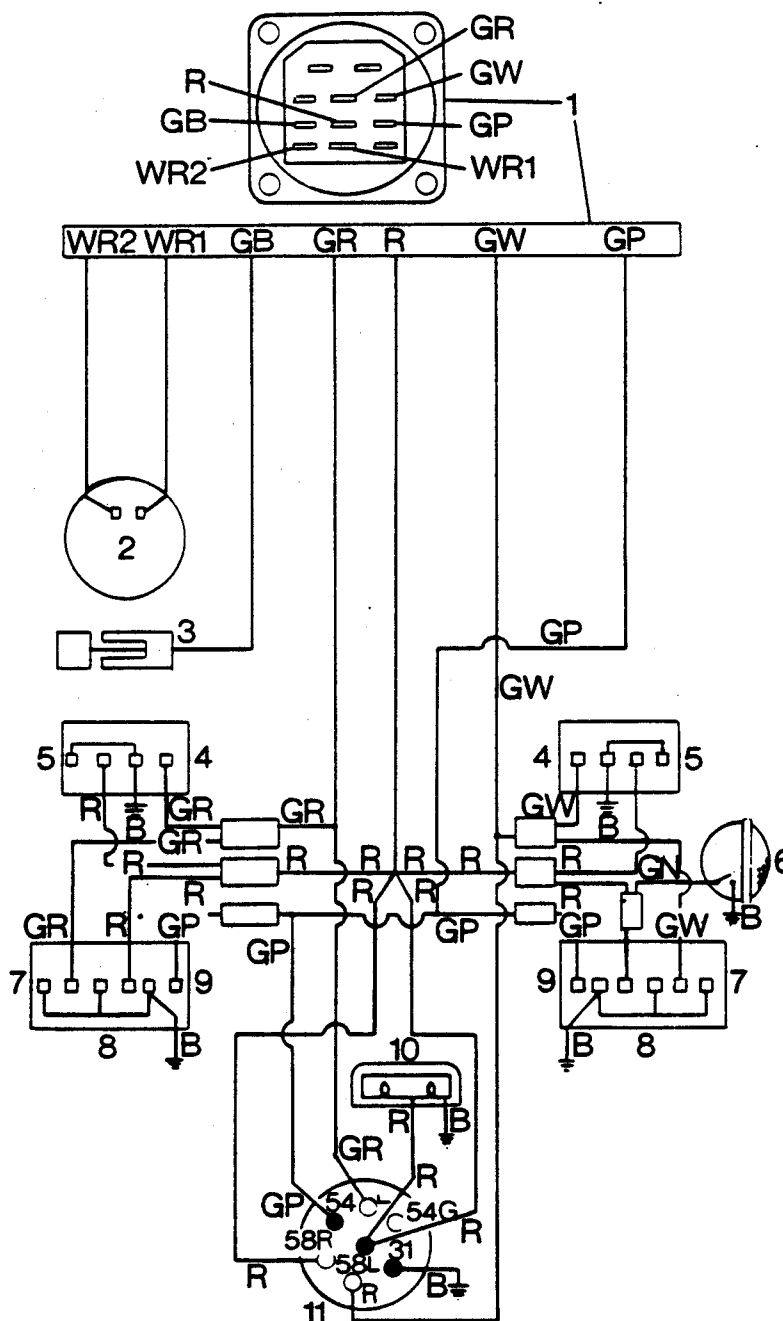
For 12 and 14 series tractors with full fenders, from the following serial numbers:

1210, 1212:11152567

1410, 1412:11200752

- 1. 6-way connector.
- 2. Starter safety switch.
- 3. Stop lamp switch.
- 4. Side lamps.
- 5. Front direction indicator.
- 6. Rear direction indicator.

- 7. Rear lamps.
- 8. Stop lamps.
- 9. Flood lamp.
- 10. Number plate lamps.
- 11. Trailer socket.



R 78.184

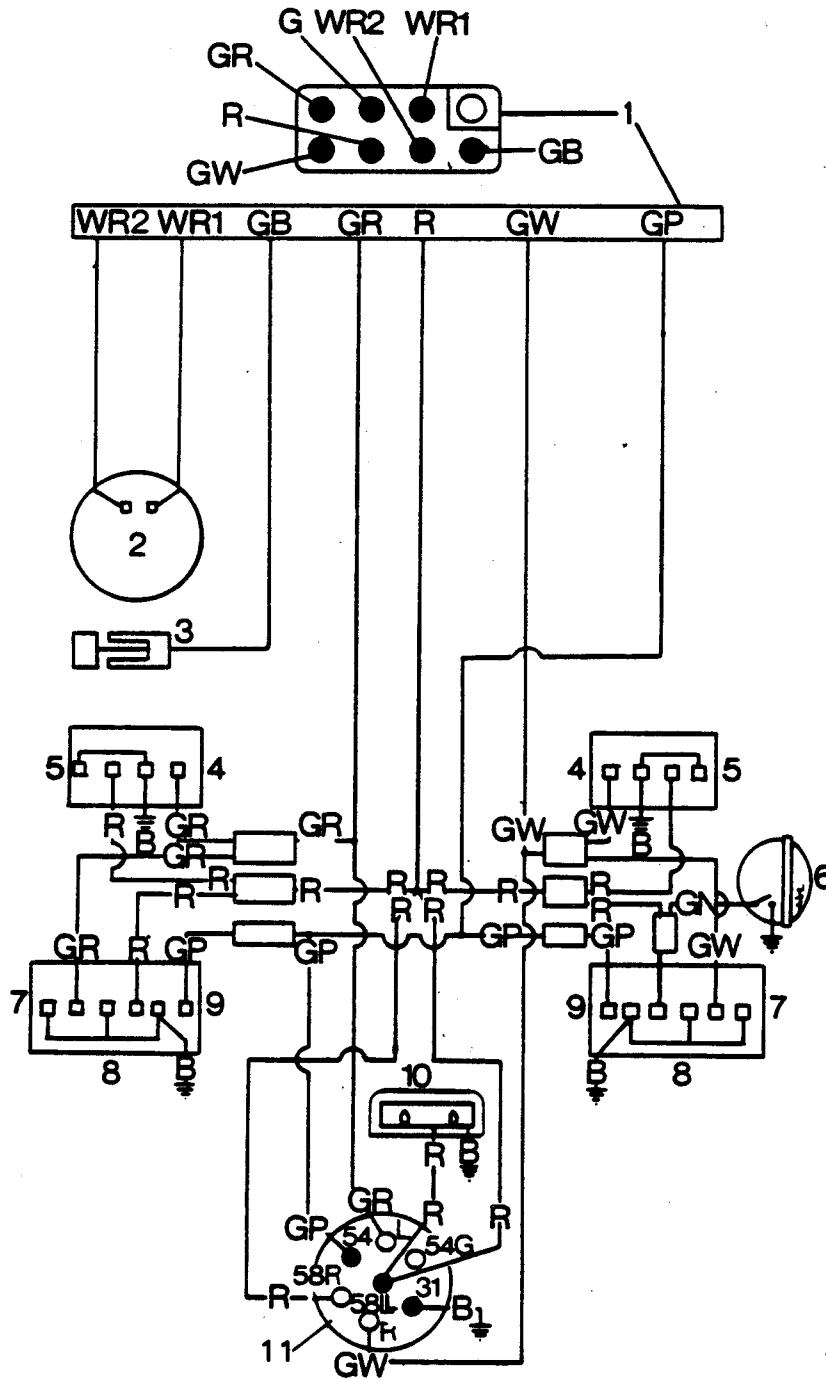
Figure H146 .  
REAR HARNESS

For tractors with Q-cab up to the following serial numbers:

885:11006680	1210	} 11156513
990	1212	
995 } 11083020	1410	} 11202423
996	1412	

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. 11-way connector.           | 7. Rear direction indicators. |
| 2. Starter safety switch.      | 8. Rear lamps.                |
| 3. Hydraulic filter switch.    | 9. Stop lamps.                |
| 4. Front direction indicators. | 10. Number plate lamp.        |
| 5. Side lamps.                 | 11. Trailer socket.           |
| 6. Flood lamp.                 |                               |

**NOTE:** Item 3 is not installed on 12 series tractors from 11152617 and 14 series from 11200752.



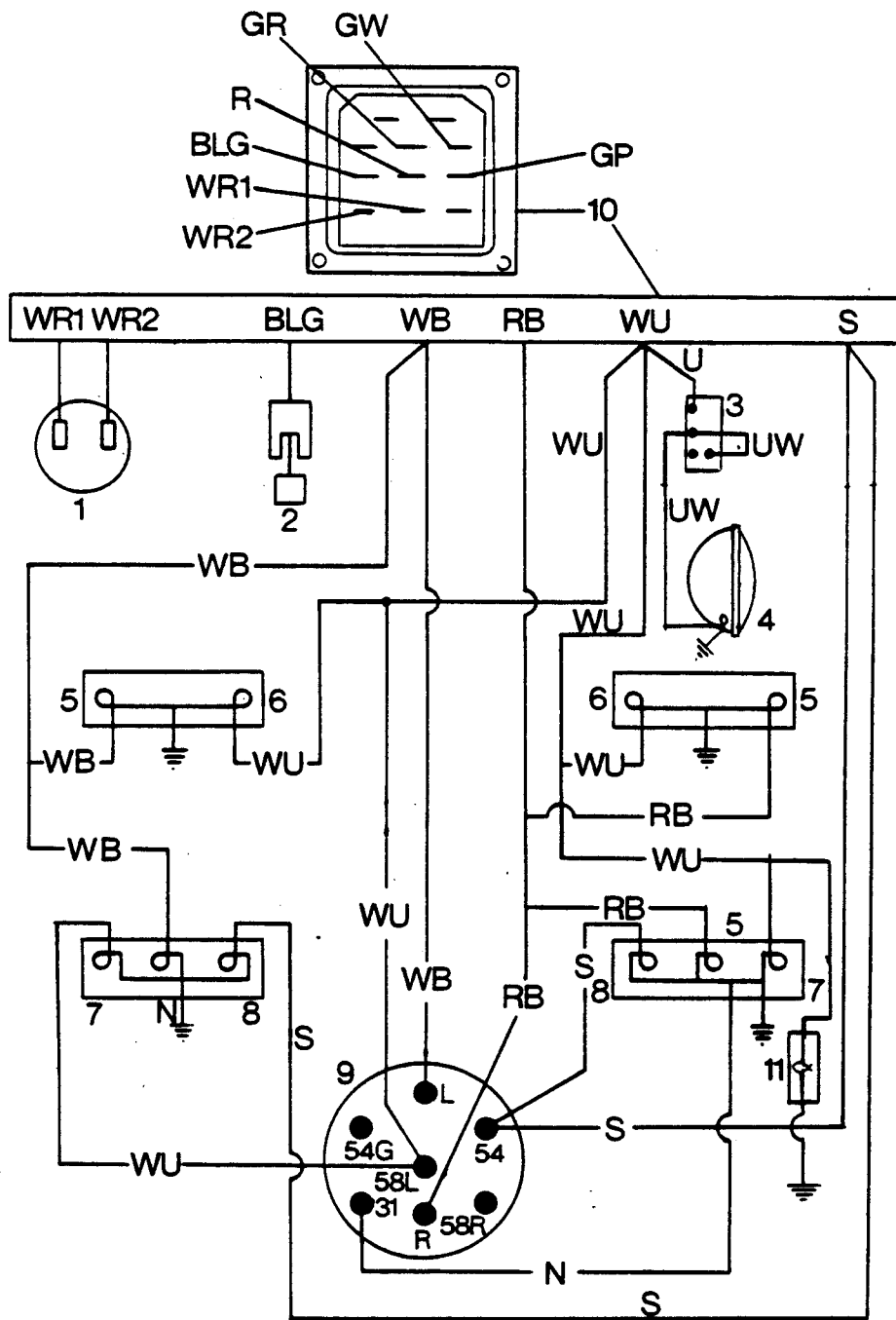
R78.185

Figure H147  
REAR HARNESS

For tractors with Q-cab from the following serial numbers:

885:11006680	1210	} 11156513
990	1212	
995 } 11083020	1410	} 11202423
996	1412	

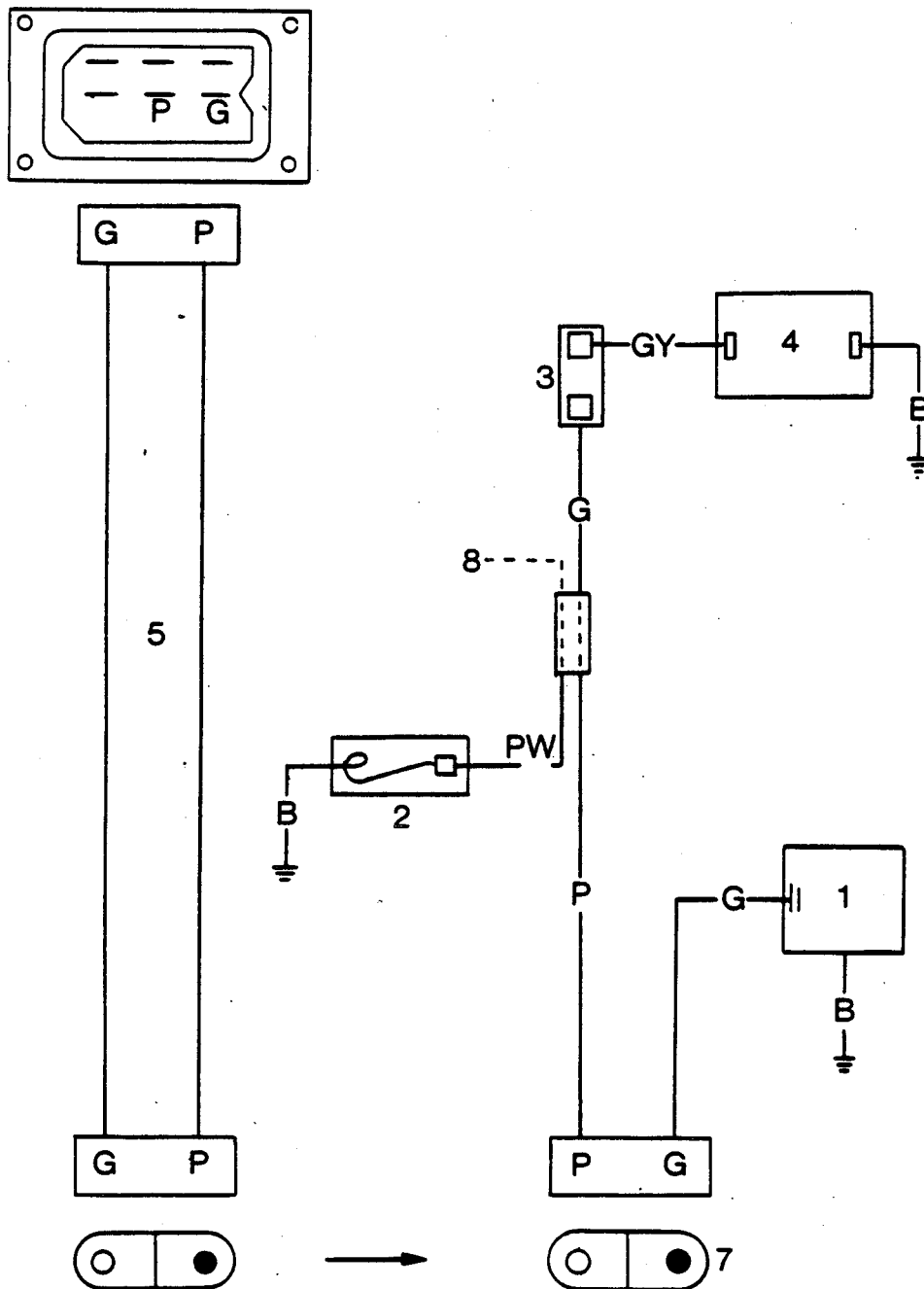
- |                                |                               |
|--------------------------------|-------------------------------|
| 1. 8-way connector.            | 7. Rear direction indicators. |
| 2. Starter safety switch.      | 8. Rear lamps.                |
| 3. Hydraulic filter switch.    | 9. Stop lamps.                |
| 4. Front direction indicators. | 10. Number plate lamp.        |
| 5. Side lamps.                 | 11. Trailer socket.           |
| 6. Flood lamp.                 |                               |



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Figure H148  
 REAR HARNESS  
 For tractors with de-luxe cab and Sekura cab.

- |                             |                                             |
|-----------------------------|---------------------------------------------|
| 1. Starter safety switch.   | 7. Tail lamps.                              |
| 2. Hydraulic filter switch. | 8. Stop lamps.                              |
| 3. Flood lamp switch.       | 9. Trailer socket.                          |
| 4. Flood lamp.              | 10. Connector, 11-way, to instrument panel. |
| 5. Direction indicators.    | 11. Number plate lamp.                      |
| 6. Side lamps.              |                                             |

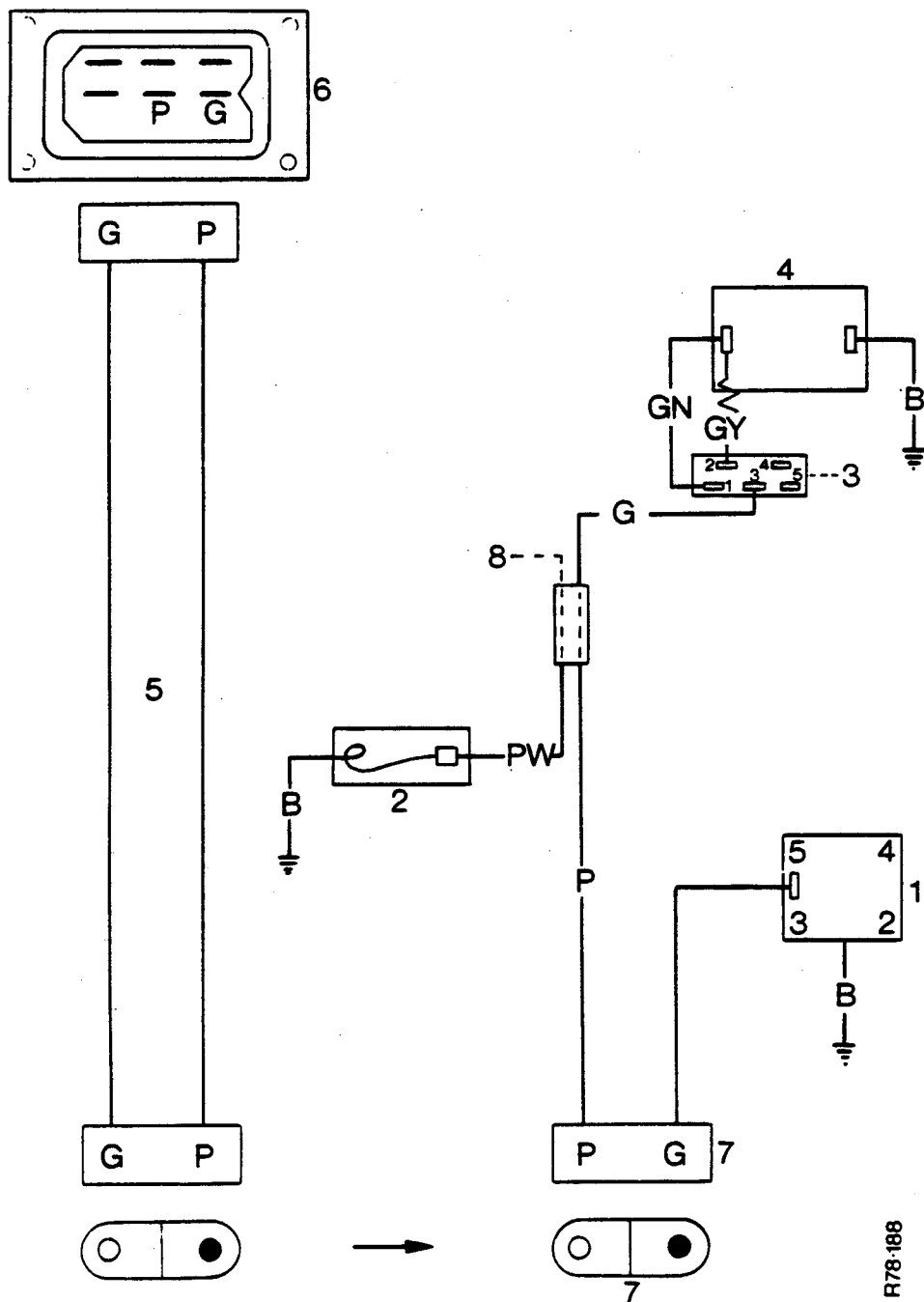


R78.187

Figure H149  
**CAB HARNESS**  
 For tractors with Q-cab, from the following serial numbers:

- |                |      |            |
|----------------|------|------------|
| 885: 11000001  | 1210 | } 11150001 |
| 990            | 1212 |            |
| 995 } 11070001 | 1410 | } 11200001 |
| 996            | 1412 |            |

1. Wiper motor.
2. Cab light and switch.
3. Heater fan switch.
4. Heater fan unit.
5. Console harness.
6. Connector, 2-way, to instrument panel harness.
7. Connector, 2-way, cab to console harness.
8. Use for radio connection with inline fuse.



R78-188

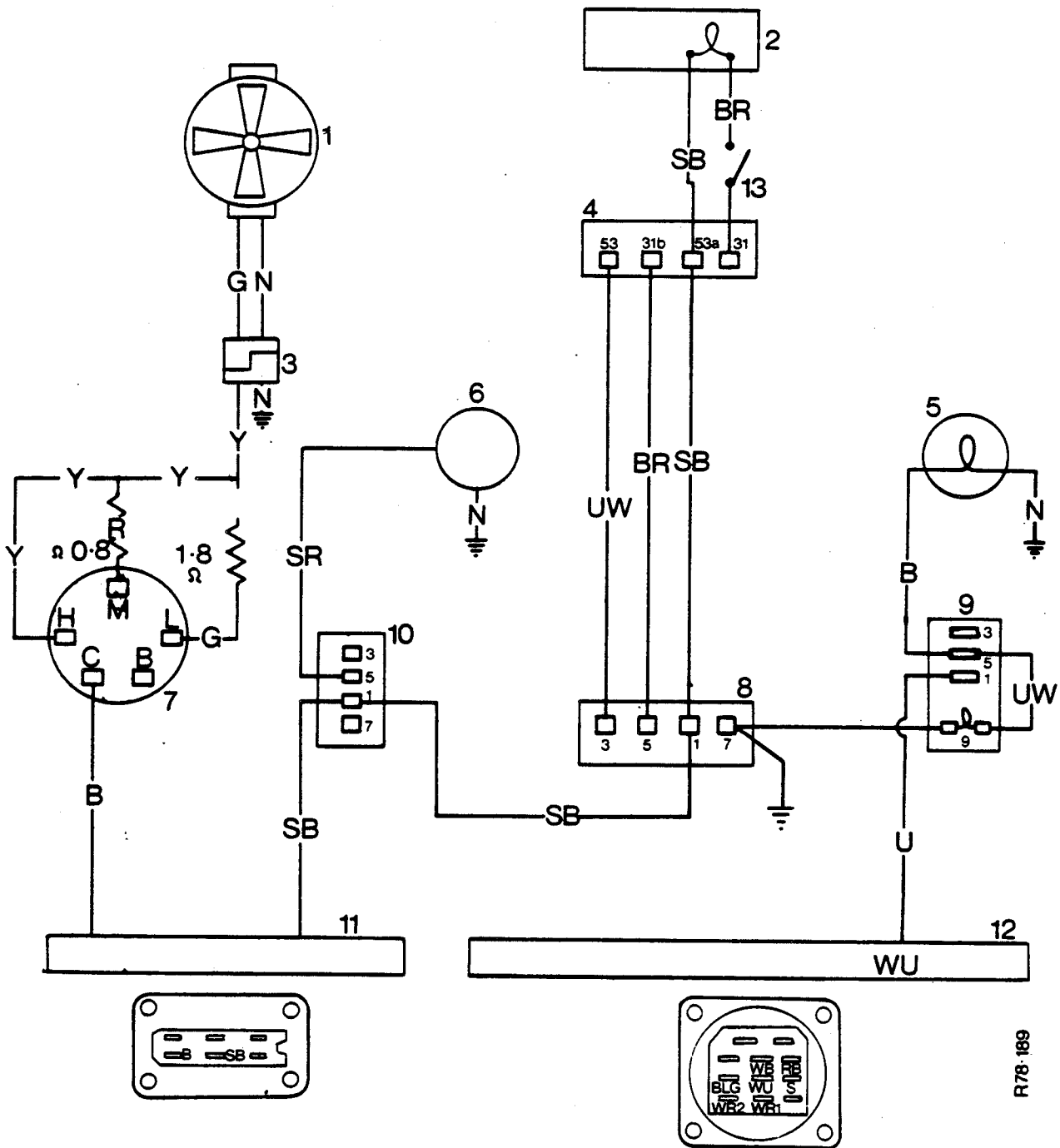
Figure H150  
CAB HARNESS

For tractors with Q-cab, from the following serial numbers:

- |     |            |      |            |
|-----|------------|------|------------|
| 885 | 11010300   | 1210 | } 11158600 |
| 990 | } 11088300 | 1212 |            |
| 995 |            | 1410 | } 11203600 |
| 996 |            | 1412 |            |

- |                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| 1. Wiper motor, 2 speed.           | 6. 2-way connector, to instrument panel harness.     |
| 2. Cab light and switch.           | 7. Connector, 2-way, cab harness to console harness. |
| 3. Heater fan switch, 3 positions. | 8. Use for radio connection with inline fuse.        |
| 4. Heater fan unit.                |                                                      |
| 5. Console harness.                |                                                      |





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Figure H151  
**CAB HARNESS**  
 De-luxe cab and Sekura cab.

- |                      |                                    |
|----------------------|------------------------------------|
| 1. Heater motor.     | 8. Wiper switch.                   |
| 2. Interior lamp.    | 9. Flood lamp switch.              |
| 3. Connector, 2-way. | 10. Washer switch.                 |
| 4. Wiper motor.      | 11. Connector to instrument panel. |
| 5. Flood lamp.       | 12. Rear harness connector.        |
| 6. Washer motor.     | 13. Interior lamp switch.          |
| 7. Heater switch.    |                                    |



ELECTRICAL EQUIPMENT

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# SPECIFICATION AND DATA

## BATTERY

K929951 (Exide 6/RHAZ 17R) standard duty	...	...	...	...	...	1412, 1410
K929951 (Exide 6/RHAZ 17R) heavy duty	...	...	...	...	...	1212, 1210
K918881 (Exide 6/TXAZ 15R) standard duty	...	...	...	...	...	{ 996, 995 990, 885 885 gasoline
K907789 (Exide 6/TXMZ 15L) standard duty	...	...	...	...	...	
K929951 (Exide 6/RHAZ 17R) heavy duty	...	...	...	...	...	
K923878 (Exide 6/TXAZ 11L) heavy duty	...	...	...	...	...	

Capacities at 25° Celcius (77° Fahrenheit)

K918881	—	96 amp hours at 20 hour rate
K929951	—	128 amp hours at 20 hour rate
K907789	—	96 amp hours at 20 hour rate
K923878	—	71 amp hours at 20 hour rate

Specific Gravity of electrolyte—initial filling

dry) (below 25° Celcius (77° Fahrenheit)	...	1.270 to 1.260
uncharged) (above 25° Celcius (77° Fahrenheit)	...	1.240 to 1.230
dry) (below 25° Celcius (77° Fahrenheit)	...	1.260
charged) (above 25° Celcius (77° Fahrenheit)	...	1.210

Specific Gravity of electrolyte—corrected to 15°C (60°F)

S.G. of filling	fully	70%	
acid	charged	charged	discharged
1.260	1.290—1.270	1.250—1.230	1.130—1.110
1.250	1.270—1.250	1.230—1.210	1.110—1.090
1.210	1.230—1.210	1.190—1.170	1.070—1.050

Electrolyte temperature correction—Celcius scale

For every 10° Celcius below 15° subtract 0.007 from the hydrometer reading.  
 For every 10° Celcius above 15° add 0.007 to the hydrometer reading.

Electrolyte temperature correction—Fahrenheit scale

For every 10° Fahrenheit below 60° Fahrenheit subtract 0.004 from the hydrometer reading.  
 For every 10° Fahrenheit above 60° Fahrenheit add 0.004 to the hydrometer reading.

Freezing temperature of battery electrolyte

Specific gravity	Freezing point
1.130	— 10° Celcius (–13° Fahrenheit)
1.200	— 30° Celcius (–22° Fahrenheit)
1.280	— 67° Celcius (–90°F)

## ALTERNATOR

Lucas type 15 ACR. Machine sensed unit with European Termination

Alternator (without fan and pulley). Lucas despatch number (23700)	...	...	23774 (parts replacement)
Polarity	...	...	negative earth
Voltage (nominal)	...	...	12.0
Voltage (maximum)	...	...	14.4
Output (at maximum voltage)	...	...	28 amp
Rotor winding resistance (at 20° Celcius)	...	...	4.13–4.53 ohms
Brush spring tension (with brush face flush with brush box housing)	...	...	255–368g (9–13oz)
Brush length (new)	...	...	(12.6mm (½in))
Brush protrusion (minimum when free)	...	...	5mm (0.2in)
Regulator—STRD or 14TR	...	...	Lucas 37565
Rectifier pack	...	...	Lucas 83166
Surge protection diode	...	...	Lucas 54486144

AC-Delco type DN460, 35 amp. Machine sensed

AC-Delco number	...	...	7982952
Polarity	...	...	negative ground
Voltage, nominal	...	...	12 volts
Output, maximum	...	...	35 amp
Rotor winding resistance	...	...	2.6–3.0 ohm
Brush spring tension	...	...	226.8–368.5g (8–13oz)
Brush length, new	...	...	13.2mm (0.5in)
Minimum brush length	...	...	10mm (0.4in)
Rotation	...	...	clockwise from the front

## DYNAMO

Lucas type C40A (non-ventilation) } Alternatives  
 Lucas type C40T (ventilated) } all models

Lucas despatch number C40A (22733)	...	...	22703 (parts replacement)
Lucas despatch number C40T (22758)	...	...	22756 (parts replacement)
Polarity	...	...	negative earth
Voltage (nominal)	...	...	12 volts
Voltage (maximum)	...	...	13.5 volts
Output (at maximum voltage) C40A	...	...	11 amp
Output (at maximum voltage) C40T	...	...	22 amp
Field winding resistance	...	...	6.0 ohms
Brush length (minimum)	...	...	8mm (5/16in)
Brush spring pressure, C40A	...	...	369–850g (13–30oz)
Brush spring pressure, C40T	...	...	567–680g (20–24oz)

Commutator: details—

Minimum diameter (moulded commutator)	...	...	37mm (1 29/64in)
Minimum thickness of segments	} fabricated commutator	...	1.5mm (1/16in)
Depth of undercut		...	0.8mm (1/32in)

# ELECTRICAL EQUIPMENT

## VOLTAGE REGULATOR

Lucas type R.B 108				
Lucas despatch number. When used with C40A dynamo	...	...	...	37408 (parts replacement)
Lucas despatch number. When used with C40T dynamo	...	...	...	37467 (parts replacement)

### Regulator voltage setting

Ambient temperature	open-circuit voltage
10° Celcius (50° Fahrenheit)	16.1 to 16.7
20° Celcius (68° Fahrenheit)	16.0 to 16.6
30° Celcius (86° Fahrenheit)	15.9 to 16.5
40° Celcius (104° Fahrenheit)	15.8 to 16.4

### Cut-out voltage settings

Cut-in voltage	...	...	...	...	...	...	...	12.7 to 13.3 volts
Drop-off voltage	...	...	...	...	...	...	...	8.5 to 10.0 volts
Regulator gap setting	...	...	...	...	...	...	...	0.5mm (0.020in)
Cut-out armature movement	...	...	...	...	...	...	...	0.6-1.0mm (0.025-0.040in)
Cut-out contact blade deflection	...	...	...	...	...	...	...	0.25-0.5mm (0.10-0.20in)
Regulator field resistance:								
Carbon resistance	...	...	...	...	...	...	...	60-75 ohms
Wire wound resistance	...	...	...	...	...	...	...	55-65 ohms
Shunt winding resistance (checked between 'D' and 'E' terminals)	...	...	...	...	...	...	...	50-56 ohms

## STARTER MOTORS

1412, 1410: Part No. K919752 (Lucas M50. No. 26379A)  
 1212, 1210, 1200, 996, 995, 990: Part No. K89772 (Lucas M45G. No. 26278)  
 885 diesel, 880, 780: Part No. K913007 (Lucas M45G. No. 29215)  
 885 gasoline from January 1973: Part No. K944488 (Lucas 3M100. No. 25679A)  
 4600, 3800, 885 gasoline to January 1973: Part No. K922703 (Lucas No. M45G. No. 26277)  
 Alternative starter on:  
 1210, 1212 from Serial No. 11157537 and 1410, 1412, 996, 995, 990, all from August 1977:  
 Part No. K954700 (Bosch No. 00-001-362-060)

Brush length (minimum) M45 and M50	...	...	...	...	...	...	...	14mm (5/16in)
Brush length (minimum) 3M100	...	...	...	...	...	...	...	9.5mm (3/8in)
Brush spring tension:								
M45 and M50 (with new brush)	...	...	...	...	...	...	...	1.47kg (52oz)
3M100 with new brush protruding 0.06in (1.5mm)	...	...	...	...	...	...	...	1.22kg (43oz)
Commutator diameter (minimum) M45 and M50	...	...	...	...	...	...	...	38.1mm (1.50in)
Bearing bush diameters (maximum)								
Commutator end	} M45 and M50	...	...	...	...	...	...	12.83mm (0.505in)
Intermediate		...	...	...	...	...	...	28.63mm (1.127in)
Drive end		...	...	...	...	...	...	17.14mm (0.675in)
Drive end	} 3M100	...	...	...	...	...	...	11.2mm (0.441in)
Commutator end		...	...	...	...	...	...	12.1mm (0.476in)
Armature end-float		...	...	...	...	...	...	0.13 to 0.26mm (0.005 to 0.010in)
Multi-plate clutch slip torque	...	...	...	...	...	...	...	9.25-11kg metres (800-950lb in)
Pinion setting distance (diesel starters)								
M45G roller clutch	...	...	...	...	...	...	...	0.13-0.38mm (0.005-0.015in)
M45G multi-plate clutch	...	...	...	...	...	...	...	0.51-0.76mm (0.020-0.030in)
M50 roller clutch	...	...	...	...	...	...	...	0.13-1.143mm (0.005-0.045in)
Solenoid details								
919752 starter	...	...	...	...	...	...	...	type 18S
26278 starter	...	...	...	...	...	...	...	type 19S
26215 starter	...	...	...	...	...	...	...	type 7S
25679 and 26277 starters	...	...	...	...	...	...	...	type 4ST
Closing (series) winding resistance	...	...	...	...	...	...	...	0.25-0.27 ohms
Hold-on (shunt) winding resistance	...	...	...	...	...	...	...	0.76-0.80 ohms
Both windings in series	...	...	...	...	...	...	...	1.01-1.07 ohms

**FUEL GAUGE**

Tank Unit—1412, 1410, 1212, 1210, 1200—K916755	...	...	...	...	(AC-Delco 7967414)
Tank Unit—996, 995, 990—K946158	...	...	...	...	(AC-Delco E/PG 163902)
Tank Unit—996, 995, 990, 880, 780, 770—K916635	...	...	...	...	(AC-Delco 7967410)
Tank Unit—885, 885G—K946184	...	...	...	...	(Smiths Ex 15601)
Tank Unit—885, 885G—K943347	...	...	...	...	(Smiths TBS 1514/008)
Instrument—all models except 885—K921147	...	...	...	...	(AC-Delco 7974119)
Instrument—885, 885G—K942442	...	...	...	...	(Smiths BR/2100/02)
Voltage Stabiliser—885, 885G—K942740	...	...	...	...	(Smiths BR/1300/01A)

**TEMPERATURE GAUGE**

Sender unit—all models—K921149	...	...	...	...	(AC-Delco 7966281)
Instrument—all models—K921148	...	...	...	...	(AC-Delco 7966282)

**WARNING LAMP SWITCHES**

Oil filter switch—all models—K921317	...	...	...	...	(AC-Delco 7954473)
Operating vacuum oil filter switch	...	...	...	...	19.7–222mm (7 $\frac{1}{2}$ –8 $\frac{1}{2}$ in) Hg.
Oil pressure switch—all models—K903851	...	...	...	...	(AC-Delco 7954181)
Operating pressure, oil pressure switch	...	...	...	...	0.6–0.9kg/sq cm (9–13lb/sq in)

**WIPER MOTOR**

Lucas model 14W, 12 volts	...	...	...	...	Lucas 54071929
Brush length	...	...	...	...	Minimum 4.8mm (3/16in)
Brush spring pressure	...	...	...	...	17Nm, 6ozf or 170gf
Armature end movement	...	...	...	...	0.05–0.25mm (0.002–0.010in)
Yoke bolts, torque	...	...	...	...	1.35–1.80Nm, 0.138–0.184kgm, 12–16ft lb

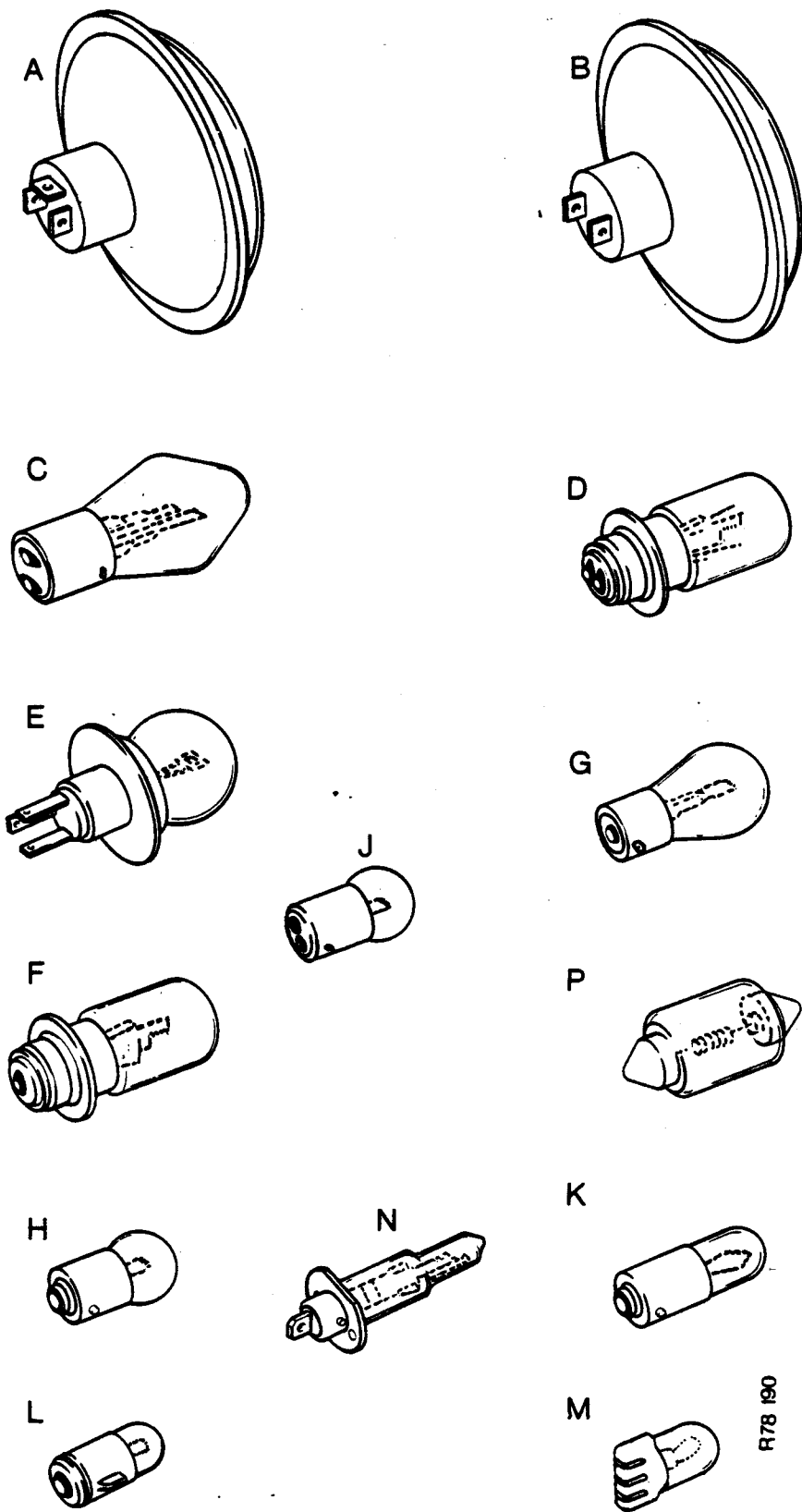


Figure H153  
TYPES OF BULBS

LAMP BULBS

	Description	Qty.	Remarks
A	Sealed Beam 12V-40/40W 3 pin Butler Part No. 1720-40 G.E.C. Part No. GE 4440	2	Headlamp-Inboard K915874
B	Sealed Beam 12V-35W 2 pin Butler Part No. 1720-38 G.E.C. Part No. GE 4411	2	Headlamp-Inboard K915141
C	Double Contact 12V-35/35W Unified European Cap Hella Part No. B 1235/35	2	Headlamp-Inboard European K917233
D	Double Contact 12V-35/35W B.P.F. British Pre-Focus Butler Part No. B 275 Lucas Part No. 350	2	Headlamps-Outboard U.K. K921082 K921083
E	Double Filament 12V-45/40W Duplo 'D' Continental Pre-Focus Butler Part No. B 268 Lucas Part No. 410 Butler Part No. B 295 Lucas Part No. 411	2	Headlamps-Outboard Continental K944729 K944730 K944731 K944723
F	Single Contact 12V-35W B.P.F. British Pre-Focus Butler Part No. B 165 Lucas Part No. 162	1	Rear Flood Lamp K943976 K943977 K921081
G	Single Contact 12V-21W S.C.C. Small Bayonet Cap Butler Part No. B 364 Lucas Part No. 382	6	Combined Lamps Flasher & Stop K948815/6 K929166/7 K929168/9 K929172/3 K948813/4
H	Single Contact 12V/5W S.C.C. Butler Part No. B 370 Lucas Part No. 223 (14V/7W)	4	Side & Tail
J	Double Contact 12V/5W S.B.C. Small Bayonet Cap Butler Part No. B 201 Lucas Part No. 218 (14V/7W)	2 or 4	Side Tail Lamp K921079/80 K921233/4 K921235/6
K	Single Contact 12V/5W M.C.C. Small Bayonet Cap Butler Part No. B 267 Lucas Part No. 989	1 or 2	Rear Number Plate Lamp 943308 K773358 K921076 Hazard Warning Switch K944664
L	Single Contact 12V/2W B.A.7s Miniature Bayonet Cap Lucas Part No. 281 Philips Part No. 12829	5	Warning Lamp & Indicator Switch K917370/1 K921367 K94364 K913565
M	Capless 12V/5W 5mm Panel Double Contact Lucas Part No. 286 Philips Part No. 12516	1	Hazard Warning Switch K947482
N	Halogen, 12V/55W	1	Flood Lamp. De-luxe and Sekura cab
P	Festoon 12V/5W	4	Side and rear lamps later tractors
	Festoon 12V/10W	1	Cab Lamp



## SUMMARY OF DESIGN CHANGES

**Details of Change**

Colour code of wiring changed to conform to British Standard practice.  
Isolating switch changed from K961975 (AC-Delco) to K920923 (Lucas)

Starter safety switch (K918672) changed to plunger operated switch (K916479) operated directly from clutch pedal

Lighting switch (K912388, 5-position) changed to a 4-position switch (K902464).  
Vacuum switch wiring re-routed through conduit on gearbox top

Voltage regulator earth lead (K921174) changed to lead K924142, which has two earthing points. One under regulator mounting bolt and another under fuel tank support

Stop lamp switch (K917301) changed to switch K929737, which is positioned on left-hand brake pedal so that stop lamps do not operate when hand brake is applied

Combined stop/rear/direction indicator lamps fitted to tractors with full fenders instead of the separate lamps fitted previously

Fuse incorporated in accessories lead, to provide protection for equipment which is operative when isolating switch is turned 'on', e.g. windscreen wiper, instruments, etc.

Starter K922703 (Lucas M45G) changed to Lucas 3M100 starter (K944488). The new starter, which has a face type commutator and window-less yoke, is interchangeable with previous starter

Flasher unit (K913564—18 watt rating) changed to a 21 watt unit K945512. Units are interchangeable and later unit should always be used as a replacement

**Models and Serial Numbers**

770/588498  
880/544392  
990/504027  
1200/703305  
(November, 1967)

880/547055  
990/800751  
(March, 1968)

770/589439  
780/601520  
880/547986  
990/802575  
1200/705856  
(May, 1968)

770/590006  
780/602231  
880/549153  
990/804700  
1200/706430  
4800/900196  
(October, 1968)

1200/718062  
(November, 1971)

780/610673  
880/562338  
990/829679  
1200/717256  
(October, 1971)

885/620001  
885G/651001  
885N/646001  
990/850689  
995/920003  
1210/720001  
1212/100049  
(July, 1972)

885G/651141  
(December, 1972)

885/624732  
885G/651239  
990/854925  
995/925509  
996/981938  
1210/722546  
1212/100125  
(March, 1973)

SUMMARY OF DESIGN CHANGES

Details of Change

Isolating switch K920923, changed to switch K945294, which has a larger connector blade on input terminal

Models and Serial Numbers

885/626173  
885G/651239  
885N/646322  
990/855819  
995/926076  
996/982318  
1210/732932  
1212/1001467  
(April, 1973)

Fuel tank unit position changed from front to top of fuel tank. Part number of unit changed from K916635 to K946158

996/983083  
995/926701  
990/856494  
(June, 1973)

Fuel gauge tank unit position changed from front to top of fuel tank. Part number of tank unit changed from K943347 to K946184

885/626877  
885G/651280  
(June, 1973)

Alternator mounting bracket changed from K912758, which was also used for mounting dynamo, to bracket K947375, which can only be used for alternator

All Models  
(June, 1974)

Wiring harness changed to include two multi-pin sockets, to facilitate instrument panel removal. Hazard warning switch K944664 changed to K947482 and flasher unit changed from K945512 to K948611

1212/1002145  
1210/723843  
996/985305  
995/928255  
990/959163  
885/630293  
(February, 1975)

New battery clamp frame K947080 with vertical studs and wing nuts installed

885 } June 1975  
885N }  
990/866452  
995/934315  
996/987778  
1210/730832  
1212/1004792

Latest type wiring with multi-pin sockets installed on German models for easier removal and servicing

885G/638731  
990G/868010  
995G/835195  
996G/988358  
(October, 1975)

Bayonet type bulb holders installed in Butler side and rear lamps

885/11000001  
990 }  
995 } 11070001  
996 }  
1210 } 11150457  
1212 }  
1410 } 11200001  
1412 }  
(January, 1976)

Hazard warning switch installed. 5-way female connector for flasher unit installed

885/11001375  
(April, 1976)

Hydraulic filter warning system removed from 12 and 14 series tractors

1210 } 11152576 Series 1  
1212 } 11152617 Series 2  
1410 } 11200752  
1412 }  
(June, 1976)

Capless type bulbs and holders installed for instrument panel

1210 } 11150721  
1212 }  
1410 } 11200162  
1412 }  
(April, 1976)

AC-Delco Alternator installed on some tractors

(April, 1977)

Front console harnesses added to wiring on tractors with Q-Cabs

8 series/1100680  
9 series/11083020  
12 series/11156513  
14 series/11202423  
(April, 1977)

# ELECTRICAL EQUIPMENT

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## Details of Change

Thermostart installed as normal equipment on tractors with Q-Cabs

Festoon type bulbs installed in Butler side and tail lamps.

Bosch pre-engaged starter installed on some four cylinder engines

Warning lamp for headlamp main beam installed on Sekura cabs for Scandinavia

## Models and Serial Numbers

885/11007594  
990 }  
995 } 11157412  
996 }  
1210 } 11084956  
1212 }  
(June, 1977)

8 series 11007544  
9 series 11084517  
12 series 11157259  
14 series 11202741  
(June, 1977)

(July, 1977)

8 series/11011842  
9 series/11090489  
12 series/11660275  
14 series/11204265  
(March, 1978)