



# American Autowire

We Make Wiring Easy!



## 1970-81 Firebird

### Gauge Cluster Kit Installation Instructions (510079)

#### Important facts about this kit.

1. The dash panel used in this picture is used by permission of Covan's Classic.
2. This kit requires some modification to your original under dash wiring harness. It is not intended to be a complete plug and play interface. We strive to make the integration of this product as easy as possible. However, in many cases there are no mating connectors due to obsolescence of original factory connectors. This requires substitution of components that will require modifications on the part of the installer.
3. As mentioned throughout the documentation included here, it is important to read the instructions that come with the gauges. This is important to identify the type of gauge used and any special requirements the manufacturer may have for installation.
4. This harness is designed to be used for Autometer Series I and Series II short sweep gauges. The harness is not compatible with Autometer full sweep gauges as they include their own sender harness assemblies. This harness assembly addresses connection of the water temperature, oil pressure, fuel, voltmeter, speedometer, and tachometer gauges, as well as indicator lights for turn signals, high beam lights, and emergency brake (if originally equipped).
5. Vehicle grounding and specifically instrument panel grounding are extremely important to the operation of you gauges. Check your grounds as this is the most common problem concerning proper operation of your gauges.

#### STEP 1:

Install the blade terminals to the back of each of the 4 small gauges. Secure the terminal with a lock washer and nut. There are specific left, center, and right hand terminals. Install as shown in the photo.

NOTE: Voltmeters use the 'GND' and 'I' terminals only.



#### STEP 2:

Plug the appropriate lamp socket pigtails into the 4 smaller gauges. This picture shows the lamp socket on a Series I gauge. Series II gauges have an integral blade terminal for the lamp power and ground connection.



STEP 3: Insert the gauges into the housing in the locations shown.

volt fuel temp oil tach speedo



STEP 4:

Drill 4 mounting holes for LED's, using a 5/32" drill bit, at the desired locations. Insert LED's in the hole from the front of the panel.

NOTE: The LED housings are a taper fit into the hole. Press the LED housing all the way in to tighten against the instrument panel.



STEP 5:

Connect the black ground wires from the lamp pigtails to the center ground studs of the smaller gauges as shown.

NOTE 1: This picture shows connection of individual light sockets as would appear on Series I gauges. The speedometer and tachometer have separate twist-in light sockets.



NOTE 2: This picture shows connection of lighting as would appear on Series II gauges. A separate blade terminal for power and ground exists for the internal lighting. The speedometer and tachometer have a specific lamp terminal within the 8 cavity plug.



STEP 6:

Install the mounting brackets on all the 6 gauges. The completed assembly is now ready for the connection of the wiring harness. Note that this assembly shows Series I gauges.



STEP 7:

Plug in gauge connections using the supplied connectors. Plug in the connectors in the order shown below. A typical plug-in is shown in this picture.

- |           |                           |
|-----------|---------------------------|
| 1. FUEL   | pink / black / tan        |
| 2. TACH   | pink / black / white      |
| 3. TEMP   | pink / black / dark green |
| 4. OIL    | pink / black / dark blue  |
| 5. VOLT   | orange / black            |
| 6. SPEEDO | pink / black / purple     |



STEP 8:

Plug each lamp power wire (white) into the mating connectors on each gray wire (DASH LIGHTS) on the new harness.

NOTE:

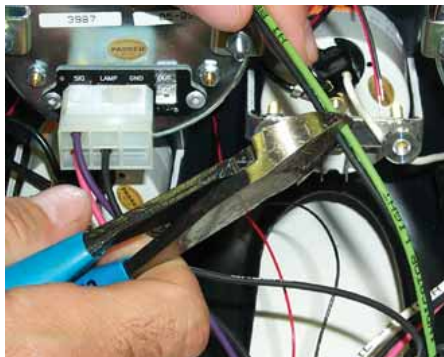
The supplied wiring harness comes with plug-in female terminals for the power and ground terminals of the Series II type 2 1/16 inch and 2 5/8 inch gauges. This is a direct plug into the terminals on the gauge. If you are using Series I gauges, you will have to remove these terminals and connectors and install the male and female disconnect terminals supplied in the kit to connect the individual light sockets. This picture shows this connection type. Please refer to the instruction sheet in the 510080 Gauge Side Wiring sub-kit for a more detailed explanation of the differences in the gauges.



### STEP 9:

Select an LED lamp from the panel, and attach the appropriate signal lead wire from the harness, as noted below. Each signal wire will attach to the red LED lead wire from the panel. Trim the wires from the harness to the desired length before crimping.

LED color	function	power wire color
blue	high beam	light green
green	left hand turn	light blue
green	right hand turn	dark blue
red	brake	pink

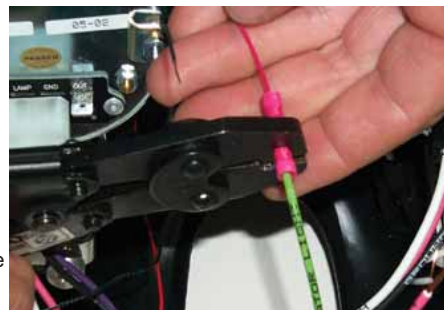


### STEP 10:

Install butt connectors, as shown, matching the wire functions noted above with the proper LED. Trim wires from the harness to the desired length before crimping.

Match the black wire from each LED panel lamp with a black ground wire from the harness for all LED lamps except the red brake warning LED.

If you are using the red brake warning LED lamp, remove the factory lamp socket and attach the black lead wire from this LED lamp to the factory brown wire. As noted above, the red will connect to the factory pink wire.



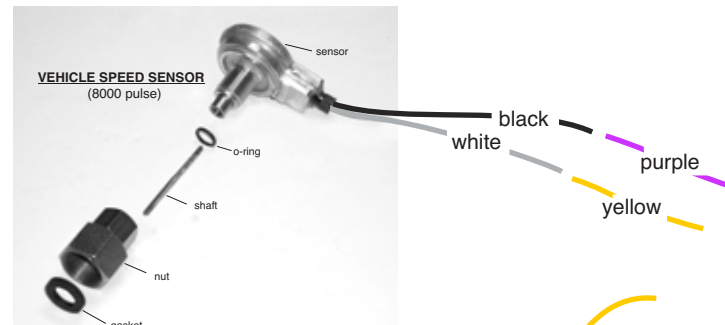
LED color	function	signal ground wire color
red	brake	tan

### STEP 11:

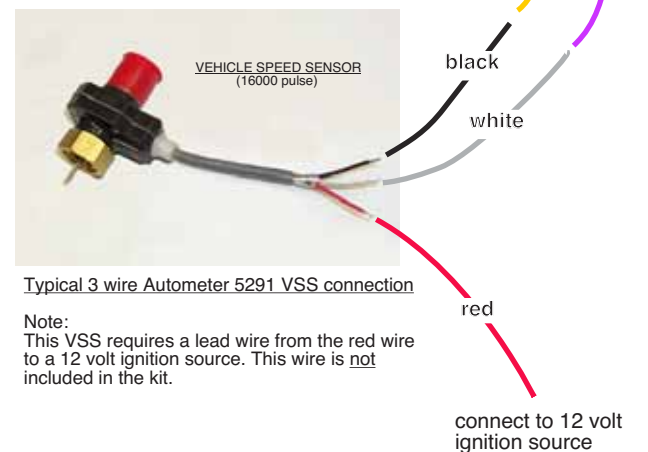
The speedometer connection has a separate long yellow wire with a ring terminal on the end. This wire is twisted around the purple vehicle speed sensor lead that is plugged into the speedometer connector. The purpose of this wire is to cancel out any signal interference to the speedometer and must be grounded to a good chassis ground after the instrument cluster is finally installed.

### STEP 12:

This kit uses an electronic programmable speedometer which requires a vehicle speed sensor that replaces the original speedometer cable at the transmission. On the next page are the connections for the various vehicle speed sensors that may be supplied in your kit.



Typical 2 wire VSS connection



Typical 3 wire Autometer 5291 VSS connection

Note:  
This VSS requires a lead wire from the red wire to a 12 volt ignition source. This wire is not included in the kit.

### STEP 13:

This completes the wiring of the gauge cluster. The next steps involve the preparation of the under dash harness to incorporate the mating plug connection for the gauge harness disconnect. There are two different instrument cluster designs for the 1970-81 Firebird. The first design is the warning light dash design that was only available with warning lights for oil pressure, water temp., and generator. The second design is the optional factory gauge design that was available with factory gauges for tachometer, oil pressure, water temp., and ammeter. Under dash connections differ for each type of dash design. The following pages will identify the connections for each dash design.

Firebirds equipped with factory gauges used a separate connector for the voltmeter and the fuel gauge. Pigtail assemblies are provided in this kit to plug into the dash connectors for these gauges to carry the signal leads into the cluster disconnect. This protects the wiring in the dash and makes a smooth transition from the existing dash harness to the cluster disconnect. The pigtail is terminated with the correct terminal for plugging into the disconnect.

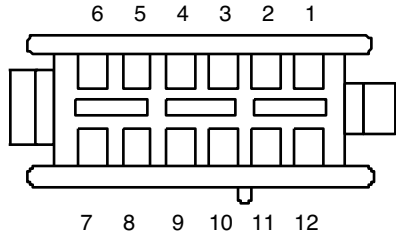
Firebirds equipped with factory gauges used a separate tachometer harness from 1970-79 that plugged directly into the tachometer. This harness can be eliminated when using this kit. In 1980-81 the under dash harness was wired with a tachometer connection. A pigtail assemblies is provided in this kit to plug into the dash connector for the tachometer to carry the signal lead into the cluster disconnect. This protects the wiring in the dash and makes a smooth transition from the existing dash harness to the cluster disconnect. The pigtail is terminated with the correct terminal for plugging into the disconnect.



# 1970-71 Firebird Dash Printed Circuit Connector Pin Locations

## Printed Circuit Cluster Connector Pin Locations

### 1970-71 Firebird



This view is looking into the connector, opposite the wire entry.

Circuit No	Function	Wire Color	1970-1971 factory gauge pin location	1970-1971 Warning light pin location	
8	Instrument Lights	Gray	1	2	
11	High Beam Indicator	Light Green	5	4	
14	Left Turn Indicator	Light Blue	11	6	
15	Right Turn Indicator	Dark Blue	4	5	
25	Alternator Light	Brown	N/A	11	see note 1
30	Fuel Tank Sender	Tan	separate connector	9	see note 2
31	Oil Pressure Sender	Dark Blue	6	7	
33	Brake Warning	Tan	2	1	
35	Coolant Temp Sender	Dark Green	10	10	
39	12 volt fused power	Pink, or Pink w/black stripe	3	12	
300	Voltmeter	Orange	separate connector	N/A	see note 3
121	Tachometer	Brown or White	separate harness	N/A	see note 4
150	Ground	Black	7	3	
140	Courtesy Lamp	Orange w/black stripe	12	8	

#### Notes:

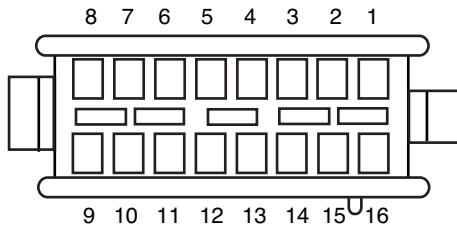
1. Factory rally pack gauge cars were not equipped with an alternator charge light.
2. 1970-71 factory rally pack gauge cars used a fuel gauge employing a separate 2 position connector.
3. 1970-71 factory rally pack gauge cars used a voltmeter employing a separate 2 position connector. The signal is a wire directly from the fuse box to the 2 position connector.
4. 1970-71 factory rally pack gauge cars wired the tachometer with a separate tachometer harness.
5. 1970-71 cars use a wiper switch employing an integral ground connection on the switch.
6. 1970-71 cars use a headlight switch that requires a separate ground connection.

# 1972-74 Firebird Dash Printed Circuit Connector Pin Locations

## Printed Circuit Cluster Connector Pin Locations

### 1972-74 Firebird

Circuit No	Function	Wire Color	1972-73 factory gauge pin location	1972-73 warning light pin location	1974 factory gauge pin location	1974 warning light pin location
8	Instrument Lights	Gray	1	5	1	5
11	High Beam Indicator	Light Green	7	7	7	7
14	Left Turn Indicator	Light Blue	14	9	14	9
15	Right Turn Indicator	Dark Blue	6	6	6	6
25	Alternator Light	Brown	see note 1	14	see note 1	14
30	Fuel Tank Sender	Pink, Tan or Tan/black stripe, or	see note 2	12	see note 2	12
31	Oil Pressure Sender	Dark Blue/white stripe, or tan	8	10	8	10
33	Brake Warning	Tan, or Tan w/white stripe	3	3	4	3
35	Coolant Temp Sender	Dark Green, or Dark green w/white stripe	13	13	13	13
39	12 volt fused power	Pink, or Pink w/black stripe	5	16	5	2,16
300	Voltmeter	Orange	see note 3	N/A	see note 3	N/A
121	Tachometer	Brown or White	see note 4	N/A	see note 4	N/A
150	Ground	Black	9	8	9	8
140	Courtesy Lamp	Orange w/black stripe	15	11	15	11
206	Seat Belt Warning (if equipped)	Black	2	4	N/A	N/A
207	Seat belt warning	Yellow w/ black stripe	--	--	2	4
220	Seat belt warning	Yellow	--	--	3	1



This view is looking into the connector, opposite the wire entry.

#### Notes:

1. Factory rally pack gauge cars were not equipped with an alternator charge light.
2. 1972-74 factory rally pack gauge cars used a fuel gauge employing a separate 2 position connector.
3. 1972-74 factory rally pack gauge cars used a voltmeter employing a separate 2 position connector. The signal is a wire directly from the fuse box to the 2 position connector.
4. 1972-74 factory rally pack gauge cars wired the tachometer with a separate tachometer harness.
5. 1972-74 cars use a wiper switch employing an integral ground connection on the switch.
6. 1972-74 cars use a headlight switch that requires a separate ground connection.

# 1975-76 Firebird Dash Printed Circuit Connector Pin Locations

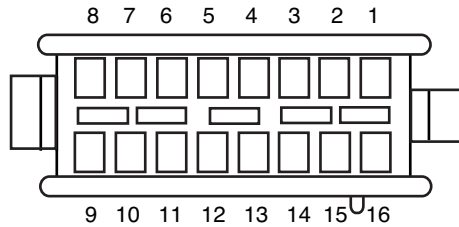
## Printed Circuit Cluster Connector Pin Locations

### 1975-76 Firebird

Circuit No	Function	Wire Color	1975 factory gauge pin location	1975 warning light pin location	1976 factory gauge pin location	1976 warning light pin location
8	Instrument Lights	Gray	1	5	1	5
11	High Beam Indicator	Light Green	7	7	7	7
14	Left Turn Indicator	Light Blue	14	9	14	9
15	Right Turn Indicator	Dark Blue	6	6	6	6
25	Alternator Light	Brown	see note 1	14	see note 1	14
30	Fuel Tank Sender	Pink, Tan or Tan/black stripe, or	see note 2	12	see note 2	12
31	Oil Pressure Sender	Dark Blue / white stripe, or tan	8	10	8	10
33	Brake Warning	Tan, or Tan / white stripe	4	3	4	3
35	Coolant Temp Sender	Dark Green, or Dark green / white stripe	13	13	13	13
39	12 volt fused power	Pink, or Pink / black stripe	5	2,16	5	2,16
300	Voltmeter	Orange	see note 3	N/A	see note 3	N/A
121	Tachometer	Brown or White	see note 4	N/A	see note 4	N/A
150	Ground	Black	2,9	8	2,9	8
140	Courtesy Lamp	Orange /black stripe	15	11	15	11
207	Seat belt warning	Yellow / black stripe	2	4	--	--
220	Seat belt warning	Yellow	3	1	--	--
237	Seat belt warning	pink / white stripe	--	--	--	1

#### Notes:

1. Factory rally pack gauge cars were not equipped with an alternator charge light.
2. 1975-76 factory rally pack gauge cars used a fuel gauge employing a separate 2 position connector.
3. 1975-76 factory rally pack gauge cars used a voltmeter employing a separate 2 position connector. The signal is a wire directly from the fuse box to the 2 position connector.
4. 1975-76 factory rally pack gauge cars wired the tachometer with a separate tachometer harness.
5. 1975-76 cars use a wiper switch employing an integral ground connection on the switch.
6. 1975-76 cars use a headlight switch that requires a separate ground connection.
7. On 1975 vehicles without rally gauges, depending on the seat belt interlock system, cavity 4 can be either a black ground wire or a Yellow w / black stripe seat belt wire.  
On 1975 vehicles with rally gauges, depending on the seat belt interlock system, cavity 2 can be either a black ground wire or a Yellow w / black stripe seat belt wire.

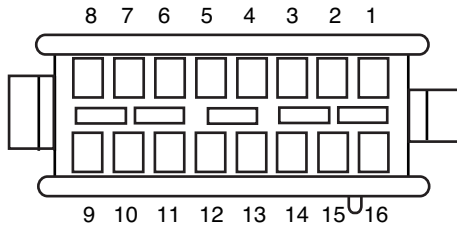


This view is looking into the connector, opposite the wire entry.

# 1977-80 Firebird Dash Printed Circuit Connector Pin Locations

## Printed Circuit Cluster Connector Pin Locations

### 1977-80 Firebird



This view is looking into the connector, opposite the wire entry.

Circuit No	Function	Wire Color	1977-79 factory gauge pin location	1977-79 warning light pin location	1980 factory gauge pin location	1980 warning light pin location
8	Instrument Lights	Gray	1	16	1	16
11	High Beam Indicator	Light Green	7	7	7	7
14	Left Turn Indicator	Light Blue	14	10	14	10
15	Right Turn Indicator	Dark Blue	6	6	6	6
25	Alternator Light	Brown	see note 1	14	see note 1	14
30	Fuel Tank Sender	Tan	see note 2	19		
30	Fuel Tank Sender	Pink	--	--	see note 2	19
31	Oil Pressure Sender	Dark Blue	8	11	--	--
31	Oil Pressure Sender	Tan	--	--	9	11
33	Brake Warning	Tan	4	4	--	--
33	Brake Warning	Tan / white stripe	--	--	4	4
35	Coolant Temp Sender	Dark Green	13	12	13	12
39	12 volt fused power	Pink	5	5,15	--	--
139	12 volt fused power	Pink / black stripe	--	--	5	5,15
300	Voltmeter	Orange	see note 3	N/A	see note 3	N/A
121	Tachometer	Brown or White	see note 4	N/A	see note 4	N/A
121	Tachometer	White	--	--	see note 7	N/A
150	Ground	Black	2,9	3,8	3,10	3,8
140	Courtesy Lamp	Orange	--	--	15	13
140	Courtesy Lamp	Orange /black stripe	15	13	--	--
237	Seat belt warning	pink / white stripe	3	2	--	--
237	Seat belt warning	yellow	--	--	1	2

#### Notes:

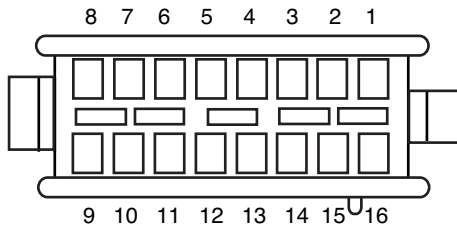
1. Factory rally pack gauge cars were not equipped with an alternator charge light.
2. 1977-80 factory rally pack gauge cars used a fuel gauge employing a separate 2 position connector.
3. 1977-80 factory rally pack gauge cars used a voltmeter employing a separate 2 position connector. The signal is a wire directly from the fuse box to the 2 position connector.
4. 1977-80 factory rally pack gauge cars wired the tachometer with a separate tachometer harness.
5. 1977-80 cars use a wiper switch employing an integral ground connection on the switch.
6. 1977-80 cars use a headlight switch that requires a separate ground connection.
7. 1980 factory rally pack gauge cars wired the tachometer with a separate tachometer connector.



# 1981 Firebird Dash Printed Circuit Connector Pin Locations

## Printed Circuit Cluster Connector Pin Locations

### 1981 Firebird



This view is looking into the connector, opposite the wire entry.

Circuit No	Function	Wire Color	1981 factory gauge pin location	1981 warning light pin location
8	Instrument Lights	Gray	9	9
11	High Beam Indicator	Light Green	16	15
14	Left Turn Indicator	Light Blue	6	3
15	Right Turn Indicator	Dark Blue	15	1
25	Alternator Light	Brown	see note 1	7
30	Fuel Tank Sender	Pink	see note 2	2
31	Oil Pressure Sender	Tan	2	4
33	Brake Warning	Tan / white stripe	12	11
35	Coolant Temp Sender	Dark Green	5	5
139	12 volt fused power	Pink / black stripe	13	8,12
300	Voltmeter	Orange	see note 3	N/A
121	Tachometer	White	see note 4	N/A
150	Ground	Black	3,11	16
140	Courtesy Lamp	Orange	7	6
237	Seat belt warning	yellow	10	10

#### Notes:

1. Factory rally pack gauge cars were not equipped with an alternator charge light.
2. 1981 factory rally pack gauge cars used a fuel gauge employing a separate 2 position connector.
3. 1981 factory rally pack gauge cars used a voltmeter employing a separate 2 position connector. The signal is a wire directly from the fuse box to the 2 position connector.
4. 1981 factory rally pack gauge cars wired the tachometer with a separate tachometer connector.
5. 1981 cars use a wiper switch employing an integral ground connection on the switch.
6. 1981 cars use a headlight switch that requires a separate ground connection.

**Printed Circuit Board Connector Pin Locations for Original Warning Light Instrument Clusters**

Circuit No	Wire Color	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
8	Gray	3	3	4,8	2	2	5	5	5	5	5	16	16	16	16	9
11	Light Green	--	--	1	4	4	7	7	7	7	7	7	7	7	7	15
14	Light blue	9	9	9	6	6	9	9	9	9	9	10	10	10	10	3
15	Dark Blue	12	12	2	5	5	6	6	6	6	6	6	6	6	6	1
25	Brown	11	11	7	11	11	14	14	14	14	14	14	14	14	14	7
30	Pink	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--
30	Tan	1	1	5	9	9	12	12	12	12	12	9	9	9	--	--
31	Dark Blue	--	--	--	7	7	10	10	10	10	10	11	11	11	--	--
31	Dark Blue /white stripe	8	8	10	--	--	--	--	--	--	--	--	--	--	--	--
31	Tan	--	--	--	--	--	--	--	--	--	--	--	--	--	11	4
33	Tan	10	10	12	1	1	3	3	3	3	3	4	4	4	--	--
33	Tan / white stripe	--	--	--	--	--	--	--	--	--	--	--	--	--	4	11
35	Dark Green	2	2	6	10	10	13	13	13	13	13	12	12	12	12	5
39	Pink	7	7	--	12	12	16	16	2,16	2,16	2,16	5,15	5,15	5,15	--	--
139	Pink / black stripe	--	--	11	--	--	--	--	--	--	--	--	--	--	5,15	8,12
150	Black	--	--	--	3	3	8	8	8	4,8	4,8	3,8	3,8	3,8	3,8	16
140	Orange	---	---	---	--	--	--	--	--	--	--	--	--	--	13	6
140	Orange / black stripe	---	---	---	8	8	11	11	11	11	11	13	13	13	--	--
206	Black	--	--	--	--	--	4	4	--	--	--	--	--	--	--	--
207	Yellow /black stripe	--	--	--	--	--	--	--	4	4	--	--	--	--	--	--
220	Yellow	--	--	--	--	--	--	--	1	1	--	--	--	--	--	--
237	Pink / white stripe	--	--	--	--	--	--	--	--	--	1	2	2	2	--	--
237	Yellow	--	--	--	--	--	--	--	--	--	--	--	--	--	2	10

**Printed Circuit Board Connector Pin Locations for Original Rally Pack Gauge Instrument Clusters**

Circuit No	Wire Color	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
8	Gray	4,6	4,6	4,8	1	1	1	1	1	1	1	1	1	1	16	16
11	Light Green	--	--	1	5	5	7	7	7	7	7	7	7	7	7	7
14	Light blue	7	7	9	11	11	14	14	14	14	14	14	14	14	14	14
15	Dark Blue	9	9	2	4	4	6	6	6	6	6	6	6	6	6	6
30	Pink	--	--	--	--	--	--	--	--	--	--	--	--	--	sep	sep
30	Tan	3	3	7	sep	sep	sep	sep	sep	sep	sep	sep	sep	sep	--	--
31	Dark Blue	--	--	--	6	6	8	8	8	8	8	8	8	8	--	--
31	Dark Blue / white stripe	1	1	10	--	--	--	--	--	--	--	--	--	--	--	--
31	Tan	--	--	--	--	--	--	--	--	--	--	--	--	--	9	9
33	Tan	8	8	12	2	2	3	3	4	4	4	4	4	4	--	--
33	Tan / white stripe	--	--	--	--	--	--	--	--	--	--	--	--	--	4	4
35	Dark Green	2	2	6	10	10	13	13	13	13	13	13	13	13	13	13
39	Pink	10	10	--	3	3	5	5	5	5	5	5	5	5	--	--
139	Pink / black stripe	--	--	11	--	--	--	--	--	--	--	--	--	--	5	5
121	Brown	sep	sep	sep	sep	sep	sep	sep	sep	sep	sep	sep	sep	sep	--	--
121	White	--	--	--	--	--	--	--	--	--	--	--	--	--	sep	sep
150	Black	--	--	--	7	7	9	9	9	2,9	2,9	2,9	2,9	2,9	3,10	3,10
140	Orange	---	---	---	--	--	--	--	--	--	--	--	--	--	15	15
140	Orange / black stripe	---	---	---	12	12	15	15	15	15	15	15	15	15	--	--
206	Black	--	--	--	--	--	2	2	--	--	--	--	--	--	--	--
207	Yellow /black stripe	--	--	--	--	--	--	--	2	2	--	--	--	--	--	--
220	Yellow	--	--	--	--	--	--	--	3	3	--	--	--	--	--	--
237	Pink / white stripe	--	--	--	--	--	--	--	--	--	3	3	3	3	--	--
237	Yellow	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1