

WIRING DIAGRAMS MANUAL DEVELOPMENT PROCESS

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CHAPTER 1: WIRING DIAGRAMS OVERVIEW

A. PURPOSE AND OBJECTIVE

The Wiring Diagrams Manuals provide Ford, Lincoln-Mercury and Ford Truck dealership technicians with unique information to facilitate the efficient diagnosis and repair of electrical and electronic system concerns on Ford Motor Company products. Ford Dealerships require technically accurate service information to efficiently resolve electrical problems on customer vehicles. The effectiveness of the Wiring Diagrams in the dealership service bay reduces warranty costs and contributes to Ford Motor Company's reputation for high quality service. Independent Service Stations will use the Wiring Diagrams to service Ford vehicles. Insuring a high quality manual for use in this application will result in cost savings for the customer and the development of a growing respect from the automotive technicians for Ford service publications. Ford Customer Service Division's Hot-Line Group uses the Wiring Diagrams when responding to the automotive technician during the servicing of Ford vehicles. The Retail Market will use the Wiring Diagrams to perform his/her own vehicle troubleshooting. Assembly Plants will use the Wiring Diagrams during production to effect maintenance during assembly.

B. SUMMARY OF WIRING DIAGRAMS FEATURES

- 1) One manual is produced for each vehicle platform each model year.
- 2) The manual displays electrical/electronic information in a "system" format. (Example: All components and wiring schematics for the engine control system would appear in one section, with off-page references to other sections when necessary.)
- 3) A section entitled, "Table of Contents" **Cell 1**, offers all " cell " page references and is shared between all Wiring Diagrams for continuity.
- 4) A section entitled, "Index" **Cell 2**, lists all components, grounds, and splices and the page on which the best view is shown, and it is shared between all Wiring Diagrams for continuity.
- 5) A section entitled, "Introduction" **Cell 3**, offers helpful information on how to use the Wiring Diagrams; it is shared between all Wiring Diagrams for continuity.
- 6) A section entitled, "Symbols" **Cell 4**, illustrates all symbols used in WD with their descriptions. It is shared between all Wiring Diagrams for continuity.
- 7) A section entitled, "Connector Repair Procedures" **Cell 5**, offers helpful information on troubleshooting wiring harness and connector hidden concerns; it is shared between all Wiring Diagrams for continuity.
- 8) Notes, cautions and warnings, which contain important safety and component function information, are also included.
- 9) A section entitled, "Wiring Harness Overview" **Cell 9**, offers a vehicle bird's eye view with all wiring harnesses routing and its part number with description. It is shared between all Wiring Diagrams for continuity.
- 10) Component testing procedures are included to advise technicians how to perform diagnostic tests on various components, **Cell 149**. This section is shared between all Wiring Diagrams for continuity.

11) Connector face views are shown with pin and circuit numbers and wire colors and circuit function, **Cell 150**. (Refer to ES-FOTB-1274-AA file for the North American circuit numbering and color code specifications @ http://www_eese.ford.com/~edgs/edgs_generic/e_master/ccolor.html.)

12) Full-view (vehicle and vehicle section) illustrations direct the technician to the locations of components, connectors, grounds, harnesses, and splices on the vehicle, **Cell 151**.

13) Component, Connector, Splice, Ground, and Wiring Harness Locations are documented in Component Location Charts, **Cell 152**. This location information enables the technician to quickly locate the electrical component referenced in the schematic; and it is shared between all Wiring Diagrams for continuity.

14) A section entitled, "Vehicle Repair Location Charts" **Cell 160**, illustrates all vehicle repair location codes. This location information enables the technician to quickly identify the location of the repair. It consists of one page and is shared between all Wiring Diagrams for continuity.

CHAPTER 2: DEVELOPMENT SPECIFICATIONS

A. Development Guidelines

1. Header/Footer Information

Page layout

- Page Orientation: All Wiring Diagrams will be 8.5" x 11", landscape.
- *Margins*: For detailed measurements for margins, headers, footers, etc., refer to page 31. This page represents an odd page. The margins are based on the "inside-outside" system, which allows space for binding. Thus, the measurements should be mirrored horizontally for even pages.
- *Header*
 - The Header text is Helvetica 13pt. Bold
 - The header text is underlined by a .5 pt. bar.
- *Footer*
 - The footer will include the Model Year (**XXXX**), Model **Name**, and publication to print month (**XX**), current calendar Year (**XXXX**)
 - The footer is over-lined by a .5 pt bar.
 - The footer text will be Helvetica 11 pt. Normal

Cells and Page Numbering

Each section in the Wiring Diagrams will be assigned a specific cell number prefix. Each page number will contain the cell number prefix and page number suffix; for example, "3-1," "3" is the cell number prefix and "1" is the page number suffix.

- *Frame*: The pages are broken up into three frames: Header, Main and Footer. Each frame is used to supply different information.
- *Header Frame*: The header frame provides the cell number, page number and cell name. The header will change from left to right based on the page number. Odd numbered pages (with the exception of the Table of contents) are flush left, while even numbered pages are flush right.

Page number Left:

Font: Helvetica

Text: 13pt., Bold

Format: Flush Left

Position: Precedes the Cell Name by .4 inches

Page number Right:

Font: Helvetica

Text: 13pt., Bold

Format: Flush Right

Position: Follows the Cell Name by .4 inches

Cell name Left:

Font: Helvetica

Text: 13pt., Bold

Format: Flush Left,

Position: Follows the Page Number by .4 inches

Cell name Right:

Font: Helvetica

Text: 13pt., Bold

Format: Flush Right,

Position: Precedes Cell Number by .4 inches

Cell number, page number and cell name will be underlined with .5 pt. Bar.

Footer Frame: The footer frame provides the Model Year and Model Name, which are placed directly underneath "Page End" bar .5 pt. The footer will change from left to right consistently with the page number. Odd numbered pages are flush left, while even numbered pages are flush right.

Model Year name Left:

Font: Helvetica

Text: 11pt.

Format: Flush Left

Model Year name Right:

Font: Helvetica

Text: 11pt.

Format: Flush Right

Main Frame: The main frame of the page holds a variety of information. Depending on the cell, it will house a wiring schematic, connector faces, a vehicle component location view and/or an index.

All of the components involved in producing the items listed above will be covered throughout this chapter. The frame width should be fixed at 9.75 inches and the height fixed at 6.78 inches.

Refer to page 31 for for Header, Frame and Footer frame settings.

2. Cell Layout

Table of Contents - Cell 1: This cell will be in two-column format. The page will conform to "even page" specifications but receive the number 1-1. In upper left of the main frame the model name followed by the text "Wiring Diagrams" (e-g. Ranger Wiring Diagrams) will appear. This text will be 30 pt. Helvetica Bold. Beneath this text will be a 1pt line extending the entire width of the frame. The font for the Table of Contents list is 10 or 11 pt. Times (or equivalent). The cell will be headed with the vehicle name followed by "Wiring Diagrams" and will be in 30 pt. Modern Bold left justified and underlined with 1pt.(i.e. Ranger Wiring Diagrams) The entire Table of Contents will be in Swiss font and in 11 pt. Modern Bold (or equivalent) and will be arranged in order of cell appearance. The cell name will be separated from the cell number and page number by leader dot tab. The cell number and page number will be right aligned with the column. This section will consist of one page. The ordering information and accuracy disclaimer will appear at the bottom of the main frame. Refer to page 14 for actual example settings/layout.

Index – Cell 2: This cell begins on a left-hand page (the reverse side of the Table of Contents). This section will be in a two-column format. Each entry will consist of an item, followed by a leader dot tab, again followed by a cell/page reference. The items should be left aligned with the column format, and in 11pt Times. The entries should be sorted in alphabetical order by item. Listing the electrical components shown in the publication and the page on which the best view can be located. Capitalization of entry will mirror components name text within the wiring diagrams. This cell contains the best view – shown complete - of each component, splice, ground, and fuse – qualifier might be needed. Refer to page 15 for actual example settings/layout.

Introduction - Cell 3 This cell will contain information about how to use the publication. This section will be common in all Wiring Diagrams. This cell will be identical in all wiring diagrams that utilize the same format and circuit numbering. This section will be formatted into two columns; Left column will contain text information whereas right column will be used for graphical aid display. This section will be consisted of the following subtitles, their descriptions, and graphical aid templates: 1) Current-Flow, 2) Switch Positions, 3) Splices, 4) Component Referencing, 5) Component Names, Notes, and Base Part Numbers, 6) Component Identifications, 7) Fuse and Relay Information, 8) Power Distribution, 9) Ground distribution, 10) Component and Connector Information, 11) Note, 12) Complete Circuit Operation. An Information Safety Notice will be placed after the last item in the cell. All subtitles will be assigned a reference number in corresponding to its graphical aid information. The graphical aid templates and Safety Warning Notice will be edged Bold. The subtitles will be in Times, Bold, and 11 pt. The Text will be in times, 11 pt. Refer to page 17 for actual example settings/layout.

Symbols- Cell 4 This section will contain all symbols and its conventional names used in all electrical subsystems. This section will be in three-column-format and, in some cases, two-