Canon
Data Memory Back 90

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INSTRUCTIONS

The Data Memory Back 90 is an interchangeable camera back designed for exclusive use with the Canon T90. Simple operations allow you not only to imprint certain types of data automatically on the film, but also to store the various data of your picture and, more, you can check the data after shooting, on the LCD panel.

It's a good idea to acquaint yourself with the Data Memory Back 90 by first taking some pictures with test film. Load the camera with film once you feel comfortable with all operations. In case you take some pictures with no film loaded, the data of the previous exposure are displayed on the Data Memory Back's LCD panel, but they are not stored in the memory.

Features:

1. Memory Function
   1) Stores 13 types of exposure data in standard capacity mode (for 156 exposures, or four rolls of 36-exposure film), or 6 types of exposure data in reduced capacity mode (for 338 exposures, or nine rolls of 36-exposure film).
   2) Displays the shutter speed and aperture value of the previous exposure on the LCD panel.
   3) Stored data can be checked on the LCD panel.

2. Data Function
   1) Prints the auto date up through the year 2099.
      - Leap years and long and short months are automatically compensated for.
      - Any of three sequences (month/day/year, day/month/year, or year/month/day) may be selected.
   2) Prints the day/hour/minute in a 24-hour format.
   3) Prints a frame number (4-digit number from 0001 to 9999).

- LCD panel
- Battery Chamber Cover (BATT-1)
- Battery Chamber Cover Release Button
- Safety Cover (opened)
- Interface Unit D.M.B. Connection Terminal (capped in the figure)

1 Function Selector
2 Mode Selector
3 Select Button
4 Up Button
5 Down Button
6 Clear/Reset Button
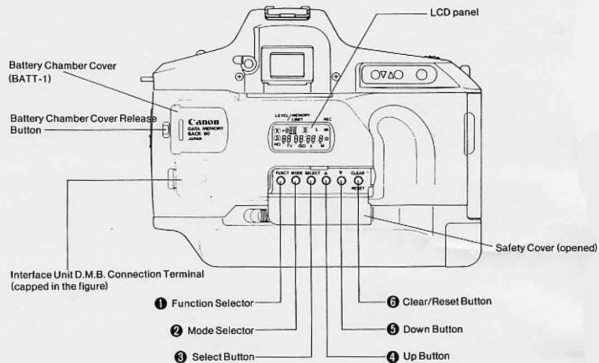
The basic functions of the Data Memory Back's various controls buttons are as follows:

1 Function Selector — selects the memory function or data function.

2 Mode Selector — selects the mode in either memory function or data function.

3 Select Button — checks the stored data, sets the lens data, selects the memory capacity, or makes the data ready to clear in the memory function.
— marks the correction position in the data function.

4 Up Button — searches the stored data in the memory function.

5 Down Button — sets the desired numbers or compensates the exposure level of data imprinting in the data function.

6 Clear/Reset Button — clears the stored data in the memory function.
— resets the number to 00 in the data function.
— checks Battery-1.

Note:
Pressing four or more buttons at once will cause a malfunction or clear the data.
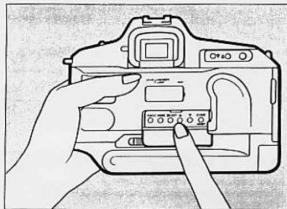
3. Function Displays

* All displays are shown below but normally only the information needed at the time is displayed.

Exposure Counter Function Indicator

Metering Mode Indicator

Flash Mark

Data Imprinting Confirmation Mark

Data Exposure Level Adjustment Indicator (+1, +2, +3)
Remaining Memory Capacity (338~000)
Exposure Count (1 to 36)

BATT-1 Battery Replacement Warning Mark

Memory Function Indicator

Data Function Indicator

7-digit indicator
(7-segments/digit).
- Shutter speed display (32 ~ 10000)(b. 1. b)
- Aperture value display (1.1 to 32)
- Film speed indicator (6 to 6400)
- 4-digit frame number display (0001 to 9999)
- Auto date (year/month/day etc.) display
- Auto date (day/hour/minute) display
- Exposure data storage/data imprinting OFF display (0FF)
- Memory limit display (FULL)
- Data-clear mode display (CLr)
- Battery check indicator (bc)
- Memory data transfer display (IFU)
- Trouble/malfunction display (HELP)

BATT-2 Battery Replacement Warning Mark
4-digit Frame Number Indicator
Year Indicator (auto date, with year/month/-day display)

Year Indicator (appears with auto-date display) month/day/year or day/month/year format)

Aperture Stopped-down Indicator

Manual Mode Indicator

Decimal Point (for aperture value display)

Exposure Compensation Mark

Colon between hour and minute

ISO Indicator

Tv (shutter speed) Indicator

Data Correction Position Indicator
Shooting Mode Indicator
- - - Shutter-priority AE
- - - - Aperture-priority AE
- - - - - Program AE

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4. Battery Loading

The Data Memory Back 90 uses two CR2025 lithium batteries:
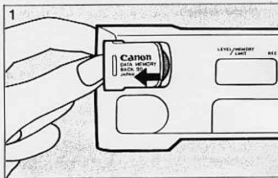
BATT-1 — The battery in the external battery chamber is the main power source providing power to operate the electronic circuits.

BATT-2 — The battery inside supplies power for imprinting data on the film and for memory back-up.

The batteries are loaded into the battery chamber with insulating sheets when purchased. Before using the Data Memory Back 90 for the first time, remove these sheets and reload the batteries as follows.

A) Loading the main power source battery (BATT-1) in the external chamber.

1. While pressing the battery chamber cover release button, slide the battery chamber cover to the left and remove it (illus. 1).
2. After taking the insulating sheet off, reload the battery in the battery chamber so that its terminals face in the directions indicated in the chamber.
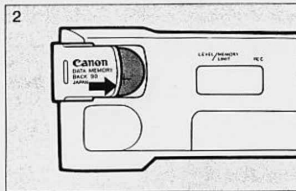
3. Replace the battery chamber cover (illus. 2).
4. Press the clear/reset button ⑥ and check that "bc" appears on the LCD panel and immediately after that the date display appears.

Upon completion of these procedures the Data Memory Back 90's settings will be as follows.

Function: Memory Function and Data Function ("R, D" is displayed)
Storage capacity: Standard capacity mode
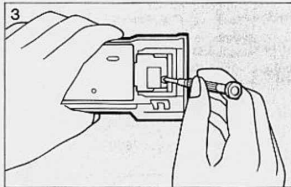Memory: Cleared
Date: January 1, 1985
Time: 00 00:00
4-digit frame number: 0001

Notes:
- The Data Memory Back 90 will not function and nothing will appear on the LCD panel if the batteries are loaded incorrectly.
- If a faulty display appears after loading the battery, remove and reload it once. After removing the battery and before reloading it, wait <u>at least one minute.</u>

There is no button for checking BATT-2. If the "🔋" mark around the "D" on the LCD panel disappears when the shutter button is released for imprinting data for the first time, battery power is sufficient.

If the "🔋" mark does not disappear, battery power is low or the battery is incorrectly loaded.

B) Loading the battery (BATT-2) for data imprinting and memory back-up in the inside chamber.

1. Using a philips-head screwdriver, unscrew the retaining screw to remove the battery chamber cover (illus. 3).
2. Insert the tip of the screwdriver into the chamber and then push the battery to the left. The battery will pop up.
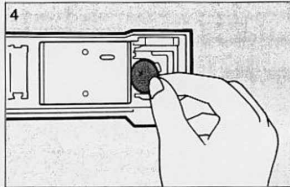
3. After removing the insulating sheet, load the battery with the "+" side facing out.
4. To load the battery, first insert one side into the chamber and then press it to the left with your finger until it will go no further (illus. 4).
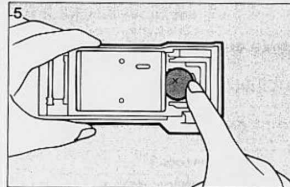
5. Finally, slide the battery slightly to the right and lock it into place (illus. 5).
6. Retighten the retaining screw.

Replacing the Battery

The battery life of BATT-1 is approximately one year, and for BATT-2, approximately 4 years (approx. 3 months without BATT-1 loaded).

When the " ☐ " mark appears around the "R" or "D" on the LCD panel, battery power has become low. At this time, replace the battery promptly as instructed below.

	BATT-1	BATT-2	Instructions
Battery Power	insufficient	insufficient	after replacing BATT-1 replace BATT-2; all data is cleared
	insufficient	sufficient	replace BATT-1 only
	sufficient	insufficient	replace BATT-2 only

- When replacing both BATT-1 and BATT-2 at the same time, all set data is cleared. In this case set the date and time again. (Refer to page 20.)

Precautions:
- At low temperatures (less than −10°C, or 22°F), data imprinting may not function properly.
- Battery power is reduced at low temperatures (0°C, or 32°F), but don't throw away batteries that have become temporarily unusable because of cold weather. Once they have been restored to room temperature, you may be able to use them again.
- Do not remove the battery chamber cover except when replacing the battery.
- Keep the batteries away from children. If swallowed, contact a physician immediately.
- Replacement batteries must be new.
- Wipe dirt and fingerprints off the battery to prevent corrosion.
- Life of the BATT-1 is about one year, and BATT-2 about four years. When replacing both at the same time, please load BATT-1 first.

5. Attaching the Data Memory Back 90 to the Camera
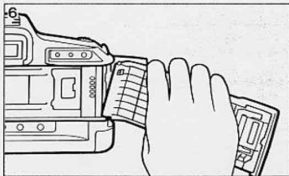
Be sure that there is no film in the camera before attaching the Data Memory Back 90. Otherwise, the film will be exposed when the regular camera back is opened.

1. Open the back cover of the camera and push the hinge release pin down to remove it.
2. To attach the Data Memory Back, insert its lower hinge into the lower socket first while opening the palm wing of the T90 (illus. 6). Then depress the hinge release pin, align it with the upper socket and let go to lock it on (illus. 7).
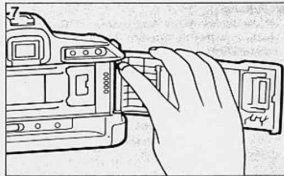
Note:
• If the contacts of the camera and the Data Memory Back are dirty, the data may not be properly imprinted or stored. If this is the case "HELP" will appear on the LCD panel when the shutter button is pressed. Then wipe the contacts with a clean, dry cloth to ensure proper connection.

HE LP

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6. Liquid Crystal Display

Liquid crystal is used in the display, and in other places for data imprinting. There is a possibility that a lack of contrast or blur in the digital display may occur after about five years of normal use. If this should occur, please contact an authorized Canon service facility for replacement. (Replacement will be at the owner's expense.)

Note:
• All displays flashing on the LCD panel indicates a malfunction. Please contact a Canon Service Facility.
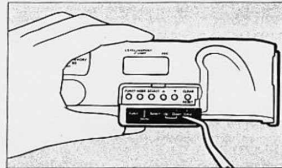
Labels in five languages are provided. Please attach the one in your language to the inside of the safety cover.

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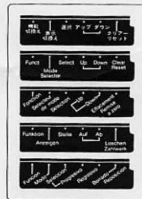
7. Basic Operation for Making Mode Settings

1) Selecting a Function

You can control both the memory function and the data function at the same time. Selecting one or neither of them is also possible. You can confirm which function the camera is in on the LCD panel.

the function is displayed on the LCD panel in the rotating sequence:

$$\rightarrow R, D \rightarrow OFF \rightarrow D \rightarrow R \rightarrow$$

- "R" indicates the memory function, "D" the data function, and "R, D" both functions.

Control Buttons

1. Memory Function and Data Function Display (R, D)

   ● ○ ○ ○ ○ ○   [⊡]

2. Both Functions OFF (OFF)

   ● ○ ○ ○ ○ ○   [OFF]

3. Data Function Display (D)

   ● ○ ○ ○ ○ ○   [⊡]
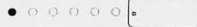
4. Memory Function Display (R)

   ● ○ ○ ○ ○ ○   [⊡]

● indicates button is pressed

2) Mode Settings in Data Function

You can select each of the three data modes of the data function: (1) Date Mode, (2) Time Mode, and (3) 4-Digit Frame Number Mode. Mode settings in data function are possible when "R, D" or "D" is displayed on the LCD panel.

Each time the mode selector ❷ is pressed, the mode display of the data function changes in the following sequence.

Control Buttons

1. Date Mode Display (year/month/day)

   ○ ● ○ ○ ○ ○   [● 86 1 5]

2. Time Mode Display (hour/minute/second)

   ○ ● ○ ○ ○ ○   [● 5 20:35]

3. 4-Digit Frame Number Mode Display

   ○ ● ○ ○ ○ ○   [● 26 36]

3) Mode Settings in Memory Function

You can select one of the four modes of the memory function: (1) Data Checking Mode, (2) Lens Data Set Mode, (3) Data-Clear Mode, and (4) Memory Capacity Select Mode. Mode setting with this function is possible only when "R" is displayed on the LCD panel.

Each time the mode selector ❷ is pressed, the mode display of the, memory function changes in the following sequence:

Control Buttons

1. Data Checking Mode Display

   ○ ● ○ ○ ○ ○   [● 155 ⊡ / 40 00 F2.8]
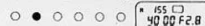
2. Lens Data Set Mode Display

   ○ ● ○ ○ ○ ○   [● 155 / 35 - 70]

3. Data-Clear Mode Display

   ○ ● ○ ○ ○ ○   [● 155 / CLr]

4. Memory Capacity Select Mode

   ○ ● ○ ○ ○ ○   [● 155 ⊡ / F]

General Information and Notes

1. The data are automatically imprinted upon shutter release when the data function ("D") or both the memory and data functions ("R, D") are selected.
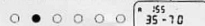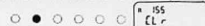2. The data are imprinted in the lower right-hand corner of the picture.
3. If the data have been imprinted correctly, a " ● " mark will appear in the upper right-hand corner of the LCD panel and light up for about 1.5 – 2 secs. In the viewfinder the T90, the shutter speed and the aperture value displayed under the viewfinder will change into LED bars.
4. When you do not want to imprint anything, be sure to set the display to "OFF" with the function selector.
5. It is impossible to imprint more than one mode at a time. (For example, the date and time.)
6. It is impossible to imprint data while the correction position indicator (bar) appears.
7. If the background of the data imprinting area is bright, the data may not appear clearly on the picture. Be sure that a dark part of the subject lies within the data imprinting area.

8. When using color film, if the background of the data imprinting area is orange, the data may not appear clearly, as the data are printed in orange.
9. In continuous shooting with the T90, the frame advancing rate may be slowed by data imprinting.
10. Auto calendar starts from 00 hour, 00 minute 00 seconds on January 1, 1985 at the same time that the main power source battery is loaded. (Refer to page 8.)
The auto calendar is programmed from 1985 to 2099.

85 05 24
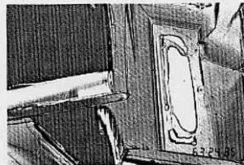
1. To set the number you wish, press the select button ❸. The bars appear under the number you can change and each time the button is pressed, the bars move, indicating the correction position.
2. When the bars come to the position you wish to change, press the up button ❹ or down button ❺ until the desired number appears.
3. Press the select button once more to make the bars disappear.
   - Each depression of the up button or down button increments or decrements the numeral by one. If the button is held down in step 2, the number will advance rapidly.
   - If the clear/reset button ❻ is pressed while the bars appear, the number will be cleared in the following way:

year	→ '85
month and day	→ 1
hour	→ 0
minute, second, and other numerals	→ 00

(2) Setting the Date

Any of three formats (year/month/day, day/-month/year, and month/day/year) may be selected in the date mode. The year/month/day display is initially set. If you want to change that order, follow these steps:
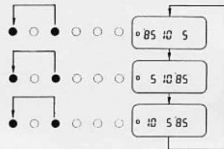
Control Buttons

1. Select the data function ("D" or "R, D") by pressing the function selector ❶.

● ○ ○ ○ ○ ○ | ° |

2. Select the date mode displayed in year/month/day by pressing and releasing the mode selector ❷.

○ ● ○ ○ ○ ○ | ° 85 1 1 |

3. Each time the function selector ❶ is pressed while pressing the select button ❸, the display play rotates in the sequence: year/month/day → day/month/year → month/day/year. Select one of those three displays.

● ○ ● ○ ○ ○ | ° 85 10 5 |

● ○ ● ○ ○ ○ | ° 5 10 85 |

● ○ ● ○ ○ ○ | ° 10 5 85 |

● indicates button is pressed

EXAMPLE

You want to change the date from January 1, 1985 to December 14, 1988. (The display has already been changed to month/day/ year.)

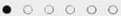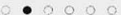| 1. Select the data function ("D" or "R, D") by pressing the function selector ❶.	● ○ ○ ○ ○ ○	°
2. Select the date mode (month/day/year) by pressing and releasing the mode selector ❷.	○ ● ○ ○ ○ ○	° 1 1 85
3. When the select button ❸ is pressed, the bars appear under the year '85.	○ ○ ● ○ ○ ○	° 1 1 85
4. Press the up or down button, ❹ or ❺, until '88 appears.	○ ○ ○ ● ○ ○	° 1 1 88
5. Correct 2 (month) to 12 and then 1 (day) to 14 following the same procedure as in steps 3 and 4.	○ ○ ● ○ ○ ○ ° 1 1 88 ° 12 1 88 ○ ○ ○ ● ○ ○ ° 12 1 88 ° 12 14 88	
6. Press the select button ❸ again to make the bars disappear.	○ ○ ● ○ ○ ○	° 12 14 88

● indicates button is pressed.
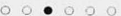
(3) Setting the Time

To set the precise time, for example to 12:00 noon, 00 seconds, follow these steps:

1. Select the data function ("D" or "R, D") by pressing the function selector ❶ .
2. Select the time mode by pressing and releasing the mode selector ❷ .
3. When the select button ❸ is pressed once, the "day" display changes to "seconds", with two bars underneath.
4. Press the clear/reset button ❻ once at the time of the tone given on the radio, telephone or television. The "seconds" display is restored to 00, then the "seconds" counter begins counting up again.

EXAMPLE
You want to change the time from 10:30 to 17:45.

Steps	Buttons	Display
1. Select the data function ("D" or "R, D") by pressing the function selector ❶ .	● ○ ○ ○ ○ ○	`□`
2. Select the time mode (day/hour/minute) by pressing and releasing the mode selector ❷ .	○ ● ○ ○ ○ ○	`□ 14 10:30`
3. When the select button ❸ is pressed once, 14 (day) changes to "seconds" display with two bars underneath. When pressed again, the bars move under 30 (min).	○ ○ ● ○ ○ ○ / ○ ○ ● ○ ○ ○	`□ 23 10:30` / `□ 24 10:30`
4. Press the up ❹ or down ❺ button until 45 appears.	○ ○ ○ ● ○ ○	`□ 28 10:45`
5. Correct 10 (hour) to 17 following the same procedures as in steps 3 and 4.	○ ○ ● ○ ○ ○ / ○ ○ ○ ● ○ ○	`□ 29 10:45` / `□ 33 17:45`
6. Press the select button ❸ to erase the bars, and "seconds" display changes back to 14 (day).	○ ○ ● ○ ○ ○	`□ 14 17:45`

Notes:
• Changing the day is possible only when in the date mode.
• The "seconds" display can be restored to 00, but the number you wish cannot be set.
• The "seconds" display is neither imprinted nor stored.

● indicates button is pressed.
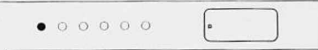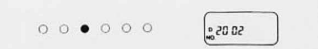
(4) Setting the 4-Digit Frame Number

You can imprint the frame number on the film in sequence from 0001 to 9999.

At the same time you load the batteries, the 4-digit frame number is automatically set to 0001, and it automatically counts to 9999 regardless of the function or mode set at the Data Memory Back 90. But if you want to change the frame number, follow these steps:

EXAMPLE

You want to change the frame number from 0001 to 2.

1. Select the data function ("D" or "R, D") by pressing the function selector **❶** .	● ○ ○ ○ ○ ○	
2. Select the 4-digit frame number mode by pressing and releasing the mode selector **❷** .	○ ● ○ ○ ○ ○	00 01
3. When the select button **❸** is pressed, the bar appears under 0 .	○ ○ ● ○ ○ ○	00 01
4. Press the up **❹** or down **❺** button to set 2.	○ ○ ○ ● ○ ○	20 01
5. Correct 1 to 2 following the procedure in steps 3 and 4.	○ ○ ● ○ ○ ○	20 01
	○ ○ ○ ● ○ ○	20 02
6. Press the select button **❸** again to erase the bar. The frame number reading automatically advances with the frame counter of the camera, as each exposure is made.	○ ○ ● ○ ○ ○	20 02

Notes:
- If you want to continue the sequential numbering after your first roll of film has been finished, there is no need to reset the frame number reading on the second roll of film. The sequential number is set automatically since the frame number reading on the LCD panel does not advance during automatic film loading. The frame number reading from 0001 to 9999 can be automatically set and imprinted in this manner.
- If you want to start the frame number reading from 0001 again on the second roll of film, reset to 0001 again.
- Imprinting of the frame number cannot follow continuous shooting with the T90. Single exposure mode must be set with the frame number mode.

● indicates button is pressed.

(5) Compensating Light Intensity of Data Imprinting

It is unnecessary to set the film speed on the Data Memory Back 90 since the DX data of the film is automatically transmitted from the T90. The light intensity is varied automatically according to the film speed. But if light intensity compensation is necessary, operate as follows:

Control Buttons
1. Select the data function ("D" or "R, D") by pressing the function selector **①** .

● ○ ○ ○ ○ ○ [D]

2. Press and release the up button **④** . The amount of compensation is displayed in the following sequence:

$$+1 \rightarrow +2 \rightarrow +3$$

○ ○ ○ ● ○ ○ [D +1]

[D +2]

[D +3]
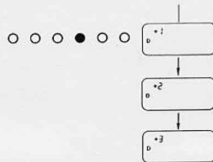
Press the down button **⑤** to return.

● indicates button is pressed.

● When only the data function ("D") is selected, the light intensity compensation value is displayed constantly, while when both the memory function and data function ("R, D") are selected, the light intensity compensation value appears alternately with memory capacity remaining display.

[D +2 2 25 86] ⟷ [D 156 2 25 86]

Notes:
● The light intensity compensation value is displayed on the LCD panel, but it is neither imprinted on the film nor stored in the Data Memory Back.
● Exposure compensation is necessary for data imprinting on the films below:
  Sakura Film SR-series ⎤
  AGFA Film XR-series ⎦ +1 step brighter
● The data is imprinted through the back of the film. The light intensity required varies according to the thickness of the film base and the characteristics of the film's anti-halation backing.
  For optimum light intensity adjustment, taking a few trial shots is recommended.

General Information and Notes

1. The exposure data are automatically stored in the Data Memory Back's memory upon shutter release when the memory function ("R") is selected.

2. Before storing the exposure data by releasing the shutter, select the memory capacity and set the lens data in use.

3. When both memory and data functions ("R, D") are selected, data of the data function is displayed on the LCD panel. If you want to operate both functions, therefore, first select the memory function ("R") to set the memory capacity and lens data, and then set the Data Memory Back to both functions ("R, D").

4. If there is no film in the camera, exposure data cannot be stored, so it is impossible to check the exposure data.

To acquaint yourself with the memory function of the Data Memory Back 90, we strongly recommend loading practice film before reading this section.

(1) Selecting the Memory Capacity

The Data Memory Back 90 has the following two data storage modes:

- In the standard capacity mode, the following 13 types of data can be stored for 156 exposures (about four rolls of 36-exposure film):
  1. shutter speed
  2. aperture value
  3. metering mode
  4. shooting mode
  5. use flash or not
  6. aperture stopped-down or not
  7. use exposure compensation or not
  8. number of exposures made
  9. ISO film speed
  10. use manual exposure or not
  11. 4-digit frame number
  12. auto calendar (date and time of exposure)
  13. lens data in use

- In the reduced capacity mode, the following 6 types of data can be stored for 338 exposures (about nine rolls of 36-exposure film).
  1. shutter speed
  2. aperture value
  3. aperture stopped-down or not
  4. number of exposures made
  5. use manual exposure or not
  6. 4-digit frame number.

Control Buttons
1. To select the memory function ("R") press the function selector ❶.

● ○ ○ ○ ○ ○ [   ]

2. To enter the memory capacity select mode press the mode selector ❷.

○ ● ○ ○ ○ ○ [55 (8) ↑]

3. Each time the select button ❸ is pressed, the memory capacity alternates between standard capacity mode and reduced capacity mode. Select each capacity mode you wish.

[55 (8) ↑] ⟶ [333]

Notes:
- If the memory capacity becomes full, "FULL" appears on the LCD panel and no more exposure data can be stored. However, as long as only "D" appears on the display panel, the data function will still be usable.

- The memory capacity can also be changed during shooting. If you find the memory capacity near full when using the standard capacity mode, switch to the reduced mode, and you will have more space to store the exposure data.

- Remaining storage capacity is only approximate. When shooting with spot metering remaining storage capacity may decrement by two frames.

- When the batteries are loaded for the first time, the memory capacity is automatically set to the standard capacity mode.

(2) Setting the Lens Data

You can store up to eight pieces of lens data information in the Data Memory Back 90. If you select the lens data that matches the lens you are using before shooting, the data will be stored together with other exposure data.

Lens Data:
1. __ (blank)
2. 28 (mm)
3. 50 (mm)
4. 135 (mm)
5. 35—70 (mm)
6. 35—105 (mm)
7. 75—200 (mm)
8. 100—300 (mm)

Note:
- Lens data can be set only when the memory capacity is in standard mode.

Control Buttons
1. To select the memory function ("R") press the function selector ❶.

● ○ ○ ○ ○ ○ [*]

2. To enter the memory capacity select mode press the mode selector ❷. To select the standard capacity mode press the select button ❸.

○ ● ○ ○ ○ ○ [* 55 00]
○ ○ ● ○ ○ ○ [...]

3. To select the lens data set mode press the mode selector ❷.

○ ● ○ ○ ○ ○ [* 156 --]

4. To select the lens data press the select button ❸.

○ ○ ● ○ ○ ○ [* 156 --]

[* 156 28]

[* 156 50]

[* 156 135]

[* 156 35 - 70]

[* 156 35 - 105]

[* 156 75 - 200]

[* 156 100 - 300]

- If you don't find your own lens in the seven lens data above, select __ (blank), and no lens data will be stored.
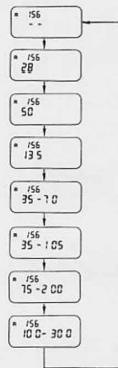
After completing (1) and (2), please take some pictures to practice storing the exposure data.

(3) Checking the Stored Data

When only the memory function ("R") is selected, exposure data stored during the previous exposure is always displayed on the LCD panel. When both the memory function and the data function ("R, D") are selected, imprinted data is constantly displayed, but the stored data is not. However, data stored in memory can be checked as follows:

1. Checking data for the frame currently displayed on the LCD panel (the previous exposure)

The types of the stored data change according to the selected memory capacity. (Refer to page 28.)

Control Buttons

1. Press the function selector **❶** to select the memory function ("R"). In this state, the data checking mode appears; you will find the shutter speed, aperture value and other data of the previous exposure displayed on the LCD panel.

```
  /55 []
40 00 F2.8
```

2. Each time the select button **❸** is pressed, the remaining stored data of the previous exposure is displayed in the following sequence:

- In the standard capacity mode:
  (1) memory capacity remaining
      shutter speed
      aperture value
      metering mode
      shooting mode
      use flash or not
      use manual exposure or not
      aperture stopped-down or not
  (2) numbers of exposures made
  (3) 4-digit frame number
  (4) ISO film speed
      use exposure compensation or not
  (5) date
  (6) time
  (7) lens data
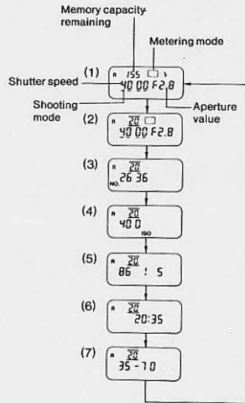
- In the reduced capacity mode:
  (1) memory capacity remaining
      shutter speed
      aperture value
      use manual exposure or not
      aperture stopped-down or not
  (2) numbers of exposures made
  (3) 4-digit frame number

Note:
- You can see all displays on page 6.

2. Searching the exposure data for other than the previous exposure:

When data (2) — (7) is displayed, pressing the up button **❹** or down button **❺** changes the exposure number indicated on the LCD panel and automatically displays the data stored for that exposure. It is thus possible to search the data for any exposure.

Refer to the inserted leaflet about all functions of control buttons.

32   33

(4) Clearing the Stored Data

If the memory capacity becomes full, you can clear all the stored data:

1. To select the memory function ("R") press the function selector ❶ .

○ ● ○ ○ ○ ○ ○ [R]

2. To enter the data-clear mode press the mode selector ❷ .

○ ● ○ ○ ○ ○ [CLr]

3. Press the select button ❸ . Bars appear under the letters, indicating that clearing data can be done.

○ ○ ● ○ ○ ○ [CLr]

4. To clear the data press the clear/reset button ❻ .

○ ○ ○ ○ ○ ● [756 CLr]

Note:
If you want to cancel clearing data after pressing the select button ❸ in step 3, press the select button again.

The Interface Unit D.M.B. (optionally available) is developed for exclusive use with the Data Memory Back 90. It is a device which relays communications between the Data Memory Back and an MSX computer.

1. When used together with the monitor, all exposure data stored in the Data Memory Back 90 can be displayed on the screen.
2. When an MSX printer is connected, all data can be printed out.
3. When an ordinary cassette tape recorder is connected, all data can be recorded on tape.
4. The following data can be manually set into the Data Memory Back by the keyboard.
   1) 6-digit imprinting data
   2) 7-digit lens data (up to 4 lenses)
   3) after setting the imprinting data set in 1), the shutter can be released.

With the tape software (accessory) you can control the camera or input the data in the MSX personal computer.

Use an MSX personal computer of more than 16 K-bytes with the Interface Unit D.M.B. We recommend the Canon V10 or V20 with the MSX-system, and Canon V25 or V30F with the MSX2-system.
For further information about the MSX personal computer or printer, please contact an authorized Canon service facility.

Used with: Canon T90

Attachment: Exchanges with camera's back cover.

Type: Fully automatic data back with LCD panel, quartz digital auto-calendar and electronic exposure data storage function.

Memory function

Based on exposure control signals from the T90.
(1) Shutter speed, (2) Aperture value, (3) Metering mode, (4) Shooting mode, (5) Use flash or not, (6) Aperture stopped-down or not, (7) Use exposure compensation or not, (8) Number of exposures made, (9) ISO film speed, (10) Use manual exposure or not.

Based on the Data Memory Back 90's built-in functions. (11) Frame number (a 4-digit up-counter coupled to exposure), (12) Auto calendar (Year/month/day, hour/minute), (13) Manually set lens data (8 program settings)

Storage modes and memory capacity (2 K-byte RAM):

(1) Standard capacity mode: Stores data for 156 frames (4 rolls of 36-exposure film). In this mode, all 13 types of data above are stored.

(2) Reduced capacity mode: Stores data for 338 frames (9 rolls of 36-exposure film). In this mode, (1) Shutter speed, (2) Aperture value, (3) Aperture stopped-down or not, (4) Number of exposures made, (5) Use manual exposure or not, (6) Frame number are stored.

(3) Remaining storage capacity can be displayed by a decrementing digital indicator. When memory becomes full, "FULL" is displayed.
- Remaining storage capacity is only approximate. When shooting with spot metering, remaining storage capacity may decrement by two frames.

Storage data display:

After exposure, data for that exposure is displayed on the LCD panel. Data for a specific exposure can also be retrieved and displayed.

Clearing stored data:

Data can also be cleared by pressing the clear button after selecting the Data-clear mode.

Data function

When using together with the T90, any one of the following data can be imprinted on the film.
(1) Year/month/day (switchable to day/month/year or month/hour/minute)
(2) Day/hour/minute
(3) 4-digit frame number (from 0001 to 9999)
(4) OFF (no data imprinted)

External display of data:

Using a 7-segment, 6-digit LCD display that shows what is imprinted on the film. (OFF is displayed on the LCD panel when neither function is selected.)

Position and size of data:

Imprinted in the bottom right corner of horizontal frame and is horizontally placed. Character height on negative is approx. 0.7 mm.

Imprinting system:

Projected onto the film through a transmissive type LCD. It is coupled to the camera's exposure mechanism, thus exposure of characters is made automatically.

Exposure confirmation indicator:

(1) An exposure confirmation mark (an LCD indicator) lights on the monitor panel for 1.5−2 seconds after the exposure has been made.

(2) Seven-segment LED bars light under the viewfinder of the T90.

Adjustment of light intensity:

(1) Automatically switched between four levels according to the speed of the film used (ISO 25−1600, DX code).
(2) Light intensity compensation up to three steps brighter is possible.

Auto-calendar function:

Programmed for all dates from 1985 to 2099. Correction for long and short months and leap years is made automatically.

Digital clock accuracy:

Accurate to within ±15 seconds per month at 10°C−30°C and 60% RH.

Memory and Data functions in combination:

Can be used in combination. (1) Both memory function and data function, (2) Both functions OFF, (3) Data function, and (4) Memory function

Power Supply:

(1) Type — two CR2025 button-type lithium batteries.
- a) BATT-1: Main power supply (supplies power to the electronic circuit)
- b) BATT-2: Power supply for data imprinting on film and memory back-up.

(2) Battery check:
 a) Manual check: BATT-1 can be checked by pressing the battery check button.
 b) Automatic checks: BATT-1 is automatically checked simultaneously with exposure; BATT-2 is automatically checked simultaneously with imprinting of data on the film.

(3) Battery life (at normal temperatures)
 a) BATT-1: about 1 year, for 50,000 exposures.
 b) BATT-2: about 4 years, for 50,000 exposures.

Signal transfer terminals;
Signal exchange with the T90 body takes place through 5 electrical contacts.

Safety mechanisms:
Bad contact/communication error warnings.

Dimensions: 148.4 (W) ×58.4 (H) ×34 (D) mm
 (5-13/16″×2-5/16″×1-5/16″)

Weight: 110 g (3-7/8 ozs) including batteries.

Subject to change without notice.

Data Memory Back 90, Interface Unit D.M.B. and the MSX computer are not available in North America and some other areas.