MINOLTA®

2.7K QUAD HD
MND20

44.0
MEGAPIXELS

MINOLTA

2K HD

MND20

MND20 User Manual

About this Manual
Congratulations on purchasing the Minolta MND20 Digital Camera!
The contents of this manual are subject to change without notice. Note that the
example screens and product illustrations shown in this User's Guide may differ
somewhat from the screens and configuration of the actual camera.

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT
This equipment has been tested and found to comply with the limits for a Class B
digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to
provide reasonable protection against harmful interference in a residential
installation. This equipment generates, uses and can radiate radio frequency
energy and, if not installed and used in accordance with the instructions, may
cause harmful interference to radio communications. However, there is no
guarantee that interference will not occur in a particular installation. If this
equipment does cause harmful interference to radio or television reception, which
can be determined by turning the equipment off and on, the user is encouraged
to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the
  receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

CAUTION:
Any changes or modifications not expressly approved by the party responsible
for compliance could void the user's authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the
following two conditions:
(1)   This device may not cause harmful interference and
(2)   This device must accept any interference received, including interference
that may cause undesired operation.

RF Exposure Warning
This equipment complies with FCC RF radiation exposure limits set forth for an
uncontrolled environment. This equipment must be installed and operated in
accordance with provided instructions and must not be co-located or operating in
conjunction with any other antenna or transmitter. End-users and installers must
be provided with antenna installation instructions and transmitter operating
conditions for satisfying RF exposure compliance.

FCC: SAR standard Value: 1.6 W/Kg, Maximal Measure: 0.4 W/kg

CE Mark Warning
This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Safety and Handling Precautions

Camera Information
- Do not disassemble or attempt to service the camera yourself.
- Do not expose the camera to moisture, or extreme temperatures.
- Allow the camera to warm up when moving from cold to warm temperatures.
- Do not touch and put pressure on the camera lens.
- Do not expose the lens to direct sunlight for extended periods.
- Do not use abrasive chemicals, cleaning solvents or strong detergents to clean the product. Wipe the product with a slightly damp soft cloth.
- Do not use the flash or LED Light near a person's eyes to prevent possible eye injury.
- To prevent you from falling over or resulting in traffic accident, please do not use the camera while you are walking, driving or extreme riding a vehicle.
- Please handle the camera strap with care, and never place the strap around the neck of an infant or child. Wrapping the strap around a neck may cause suffocation.
- Do not subject the LCD screen to impact.
- To prevent the risk of fire or electric shock, do not expose the inside of this product to rain or moisture.

Battery Information
- Turn off the camera before installing or removing the battery.
- Use only the provided batteries or type of battery and charger that came with your camera. Using other types of battery or charger may damage the device and invalidate the warranty.
- Inserting the battery upside down can cause damage to the product and possibly cause an explosion.
- When the camera is used for an extended period of time, it is normal for the camera body to feel warm.
- Download all pictures and remove the battery from the camera if you are going to store the camera for a long period of time.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Please keep the batteries out of the reach of children to prevent from swallowing the batteries, which might cause poisoning.
- If the battery's color or shape changes in any way, stop using the battery immediately.

USB Adaptor Information
- Do not expose the adapter to high temperatures or moisture places. Otherwise, it may cause fire or electric shock.
- Do not attempt to repair, disassemble, change or transform the adapter.
- Avoid sudden changes in temperature, which may cause condensation on the adapter's internal surfaces. Please do not use it immediately in this situation.
- Do not touch the plug with wet hands. Otherwise, it may cause electric shock.
- Do not use the travel voltage converter or AC/DC power inverter. Otherwise, it may cause damage, overheating, malfunction or fire to the camera.

Notes about Opening and Closing the Battery Door
- Make sure the camera and your hands are not wet.
- Make sure that there are no debris inside the battery-chamber or memory card slot.
- Make sure that the battery cover is firmly closed and the security lock is in the lock position.

Precautions When Cleaning
- Do not puncture the microphone or speaker openings with a sharp implement.
- If the inside of the camera is damaged, the waterproof performance will deteriorate.
- Do not use soap, natural detergents, or chemicals such as benzene for cleaning.

Do Not Apply Strong Impact to the Camera
The product may malfunction if subjected to strong shock or vibration. In addition, do not touch or apply force to the lens.

Avoid Sudden Changes in Temperature
Sudden changes in temperature, such as when entering or leaving a heated building on a cold day, can cause condensation to form inside the device. To prevent condensation, place the device in a carrying case or a plastic bag before exposing it to sudden changes in temperature.

Keep Away from Strong Magnetic Fields
Do not use or store this device in the vicinity of equipment that generates strong electromagnetic radiation or magnetic fields. Doing so could result in loss of data or camera malfunction.

Do Not Point the Lens at Strong Light Sources for Extended Periods
Avoid pointing the lens at the sun or other strong light source light sources for extended periods when using or storing the camera. Intense light may cause the image sensor to deteriorate or produce a white blur effect in photographs.

Turn the Product Off before Removing or Disconnecting the Power

Source or Memory Card

Do not remove the battery while the product is on, or while images are being saved or deleted. Forcibly cutting power in these circumstances could result in loss of data or cause damage to the memory card or internal circuitry.

Notes about the LCD Screen

- The LCD Screen is constructed with extremely high precision; At least 99.99% of pixels are effective, with no more than 0.01% being missing or defective. Hence, while these displays may contain pixels that are always lit (white, red, blue or green) or always off (black), this is not a malfunction and has no effect on images recorded with the device.
- Images viewed on the LCD screen may be difficult to see under certain lighting.
- Do not apply pressure to the LCD screen, as this could cause damage or malfunction.

The Battery

Precautions for Use

- Note that the battery may become hot after use.
- Do not use the battery at ambient temperatures below 0°C (32°F) or above 40°C (104°F) as this could cause damage or malfunction.
- If you notice any abnormalities such as excessive heat, smoke, or an unusual smell coming from the battery, immediately discontinue use and consult your retailer.
- After removing the battery from the camera or optional battery charger, put the battery in a plastic bag, etc. in order to insulate it.

Charging the Battery

Check the battery level before using the camera and replace or charge the battery if necessary.

- Charge the battery indoors with an ambient temperature of 5°C (41°F) to 35°C (95°F) before use.
- A high battery temperature may prevent the battery from charging properly or completely, and may reduce battery performance. Note that the battery may become hot after use; wait for the battery to cool before charging. When charging the battery inserted into this camera using the Charging AC Adapter or a computer, the battery is not charged at battery temperature below 5°C (41°F) or above 55°C (131°F).
- When the battery is between 45°C (113°F) - 55°C (131°F), the chargeable capacity may decrease.
- Do not continue charging once the battery is fully charged as this will result in reduce battery performance.
- The battery temperature may increase during charging. However, this is not a malfunction.

Using the Battery When Cold

On cold days, the capacity of batteries tends to decrease. If an exhausted battery is used at a low temperature, the camera may not turn on. Keep spare batteries in a warm place and exchange as necessary. Once warmed, a cold battery may recover some of its charge.

Recycling Used Batteries

Replace the battery when it no longer holds a charge. Used batteries are a valuable resource. Please recycle used batteries in accordance with local regulations.

Cleaning After Using the Camera

Use a blower to remove any dust or lint that adheres to the lens, monitor or camera body. To remove fingerprints or other stains that cannot be removed with a blower, gently wipe the parts with a soft dry cloth. If you wipe with too much pressure or with a rough cloth, it may damage the camera or cause a malfunction.

Storage

If you do not intend to use the camera for an extended period, remove the battery and avoid storing the camera in any of the following types of locations:
- Places that are poorly ventilated or subject to humidity of over 60%
- Place exposed to temperatures above 50°C (122°F) or below -10°C (14°F).
- Place next to equipment that produces strong electromagnetic field, such as television or radios.

To prevent mold or mildew, take the camera out of storage at least once a month, and turn it on and release the shutter a few times before putting it away again.

1.1 Camera Interface
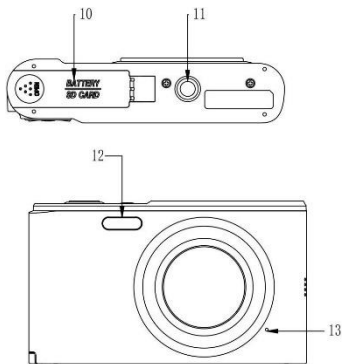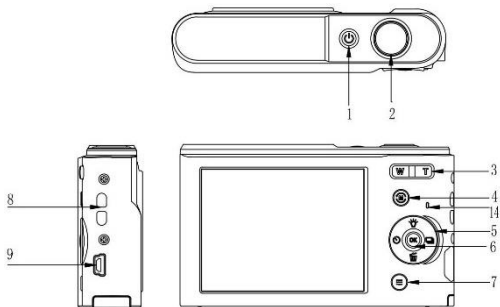
| 1. Power |
| 2. Shutter |
| 3. Zoom In/Out |
| 4. Mode |
| 5. Up/Down/Left/Right |
| 6. OK |
| 7. Menu |
| 8. Carry Strap Slot |
| 9. USB Port |
| 10. Battery and Memory Card Door |
| 11. Tripod Mount |
| 12. LED Light |
| 13. Microphone |
| 14. LED Status Light |

1.2 Button Function Description

| Function	Description
Power	Press and hold to power on or off.
Shutter	**In Photo:** Tap to capture a photo. **In Video:** Tap to start and stop recording. **In Playback:** Tap to play and stop recorded videos.
Zoom Out	**In Video or Photo:** Tap to zoom-out. **In Playback:** Tap to view multiple images on the screen.
Zoom In	**In Video or Photo:** Tap to zoom-in.
Mode	Tap to switch modes.
Up | LED Light	**In Video or Photo:** Tap to turn the LED Light on and off. **In Playback:** While playing a video, tap to fast forward. **In Settings:** Tap to change the submenu.
Down | Delete	**In Video or Photo:** Tap to delete the last image or video. **In Playback:** Tap to delete the current image or video. **In Settings:** Tap to change the submenu.
Left | Self Timer	**In Photo:** Tap to change the self timer settings. **In Playback:** Tap to view the previous image or video. **In Settings:** Tap to change the submenu.
Right | Photo Burst	**In Photo:** Tap to turn on and off photo burst. **In Playback:** Tap to view the next image or video. **In Settings:** Tap to change the submenu.
Ok	**In Playback:** Tap to pause a playing video. **In Settings:** Tap to enter the selected submenu.
Menu	Tap to show the settings available in each mode.
Carry Strap Slot	The carry strap is connected in this slot.
USB Port	The port where the USB cable is connected.
Battery & Memory Card Door	Door to cover the battery compartment and memory card slot.
Tripod Mount	Mount port for attaching to a tripod nut.
LED Light	Used to illuminate dark scenes.
Microphone	Used to capture audio during video recording.

2. First Use

2.1 To Open the Battery Door
Unlock the battery door by sliding the battery door away from the center of the camera. The battery door will then flip open.
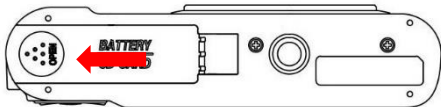
2.2 Installing the Battery
Insert the lithium-ion battery into the battery compartment with the metal contacts facing the inside of the camera. The battery can only be inserted one way.
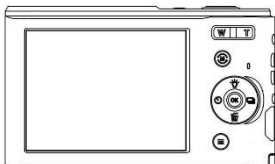

2.3 Installing the Memory Card
Insert the included SD memory card to record and store your videos and photos. When the battery is low, media stored on the memory card will not be erased. Please insert the SD memory card by following the steps below:
1. Open the battery door by following the diagram above.
2. Insert the memory card. Ensure that the metal contacts are inserted first. Push the memory card down until you hear an audible click.
   The memory card can only be inserted in one way. Do not force the card in if it will not go in smoothly.
3. Close the battery door by pushing it down and sliding the lock back into place.

4. To remove the memory card, simply push in and the card will eject back out.
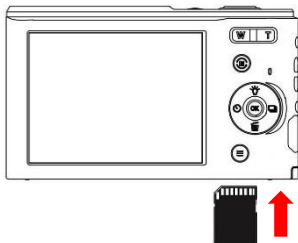
NOTE:
- Please format the memory card before using the camera (Caution, this will erase all data on the card).

- Do not remove or insert the memory card when recording. It may damage the card or cause data loss.

- Memory card rating must be Class 6 or above.

2.4 Charging the Battery

Connect your camera to the included AC adaptor with the USB cable provided for charging. Insert the small end of the USB plug into the camera's port under the battery door, and the larger end in to the included AC adaptor. While charging the LED indicator light will light up solid red, when finished charging the light will turn off.
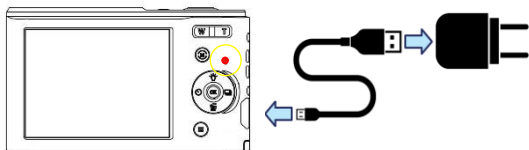
2.5 Powering the Camera On/Off

Press and hold the POWER button for 3 seconds to power the camera on. To power the camera off, press and hold the POWER button for 3 seconds again.

If the camera's battery is low, a "Low Battery" message will display on the screen and it will automatically shut down within a few seconds to prevent memory corruption or loss.

2.6 Switching Modes

Press the MODE button to cycle between Photo, Video, Playback and Setup Modes. The corresponding mode will be displayed in the top left corner of the screen.

2.7 Connecting to a Computer

Your camera can connect to a computer to transfer photo and video files for viewing and editing, you can also use the camera as a webcam. Once connected and powered on, the camera's screen will show "MSDC and "PC Camera". Use the UP or DOWN buttons to select your desired mode. Press the OK to select your desired mode.

2.8 Using the Zoom Function

Your camera has a digital zoom function. To operate the zoom function, press the ZOOM IN button to zoom in closer to the subject, and press the ZOOM OUT button zoom away from the subject.

2.9 LED Light

Your camera is equipped with a white LED light to help illuminate dark environments. To activate the LED light, press the UP button in Photo or Video mode. Press the UP button again to turn off the light.

2.10 Photo Mode

Press the MODE button to switch to Photo Mode. The meaning of each icon within Photo Mode is explained in the table below:

1) Photo Mode	7) Pictures Remaining	13) Exposure
2) Image Size (Resolution)	8) Memory Card Inserted	14) ISO
3) Scene	9) Battery Level	15) Image Sharpness
4) Anti-Shake	10) Menu	16) Color Effect
5) Face Detection	11) White Balance	
6) Smile Capture	12) Image Quality	
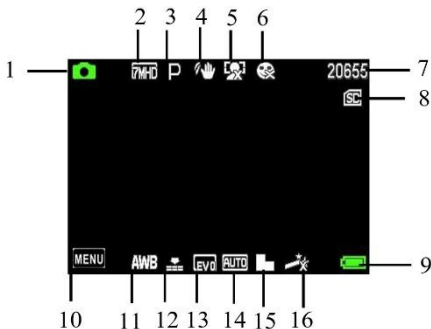
2.11 Video Mode

Press the MODE button to switch to Video Mode. The meaning of each icon within Video Mode is explained in the table below:

1) Video Mode	7) Menu
2) Video Size (Resolution)	8) White Balance
3) Scene	9) Exposure
4) Video Time Remaining	10) ISO
5) Memory Card Inserted	11) Video Sharpness
6) Battery Level	12) Color Effect
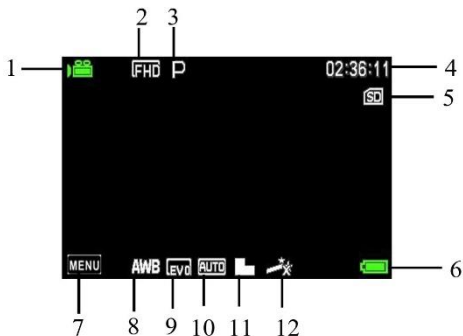
3. Using the Camera

3.1 Photo Shooting

Power the camera on and it will be ready to take pictures right away. You may press the MODE button to switch to another mode.

1. Line up your shot by looking at the LCD screen to see what is in the shot.
2. Hold the camera steady and press the SHUTTER button to capture a photo.
3. The number of photos that can be captured at a particular resolution will be displayed in the top right corner of the screen.
4. A "MEMORY FULL" message will be displayed on the screen if there is no SD card inserted in the camera's memory card slot. A "MEMORY FULL" message will be shown on the screen when the SD card is full.
5. The number of remaining photos is determined by the selected photo resolution. The higher the photo resolution, the lower the number of photos you are able to be save to the memory card. Before capturing any photos, you can select a preferred photo resolution.

3.1.1 Scene

This function adjusts the camera's settings to predetermined values that will produce the best image for that selected scene.

1. In Photo Mode press the MENU button.
2. Select *'Scene'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Scene'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Auto, Night, Portrait, Landscape, Backlight, Sport, Party, Beach, High Sensitivity)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.2 Image Size (Resolution)

This function sets the photo resolution. The higher the resolution, the greater the photo quality and the larger the file size of the photo.

1. In Photo Mode press the MENU button.
2. Select *'Image Size'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Image Size'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected resolution *(44MP, 36MP, 24MP, 20MP, 16MP, 12MP, 10MP, 7MP-Wide, 5MP, 3MP, 2MP-Wide)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.3 Beauty Filter
This feature applies a filter effect on the people in the scene.
1. In Photo Mode press the MENU button.
2. Select *'Beauty Filter'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Beauty Filter'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.4 Capture Mode
This function allows to you capture 3 consecutive photos with one click of the SHUTTER button.
1. In Photo Mode press the MENU button.
2. Select *'Capture Mode'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Capture Mode'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Single, 3-Photo Burst)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.5 Self Timer
This function determines the time delay before a photograph is captured. This setting can be used by photographers to take photographs of themselves.
1. In Photo Mode press the MENU button.
2. Select *'Self Timer'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Self Timer'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Off, 2 Seconds, 5 Seconds, 10 Seconds)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.6 Exposure
This function adjusts the frame brightness in your photograph.
1. In Photo Mode press the MENU button.
2. Select *'Exposure'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Exposure'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(+3, +2, +1, 0, -1, -2, -3)*.

4. Press the MENU button to exit the settings menu without making a selection.

3.1.7 White Balance

White Balance changes the color of light in your pictures, making it seem warmer or cooler depending on how the light you're shooting in affects the frame.

1. In Photo Mode press the MENU button.
2. Select *'White Balance'* using the LEFT or RIGHT buttons and press the OK button to enter the *'White Balance'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Auto, Daylight, Cloudy, Florescent, Tungsten)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.8 Image Quality

The Photo Quality function determines the level of compression the camera uses when saving photos to a memory card.

1. In Photo Mode press the MENU button.
2. Select *'Quality'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Quality'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your required quality option *(Super Fine, Fine, Normal)*, Super Fine uses the least amount of compression for saving, and as a result produces a higher photo quality.
4. Press the MENU button to exit the settings menu without making a selection.

3.1.9 Image Sharpness

This function adjusts the visible detail of a photograph.

1. In Photo Mode press the MENU button.
1. Select *'Sharpness'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Sharpness'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Sharp, Normal, Soft)*.
3. Press the MENU button to exit the settings menu without making a selection.

3.1.10 Color Effect

This function sets the color filter effect of a photograph.

1. In Photo Mode press the MENU button.
2. Select *'Color Effect'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Color Effect'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Normal, B & W (Black and White), Sepia, Red, Green, Blue, Sunset, Warm, Cool, Over Exposure, IR, Binary, Vivid, Undertone, Dog Eye, Aibao, Gothic, Japan Style, LOMO, Negative).*
4. Press the MENU button to exit the settings menu without making a selection.

3.1.11 ISO
This function adjusts the light sensitivity in your photograph.
1. In Photo Mode press the MENU button.
2. Select *'ISO'* using the LEFT or RIGHT buttons and press the OK button to enter the *'ISO'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Auto, 100, 200, 400).*
4. Press the MENU button to exit the settings menu without making a selection.

3.1.12 Anti-Shake
This function enables photo capture in high speed and low-light by electronically minimizing motion blur and reducing camera shake.
1. In Photo Mode press the MENU button.
2. Select *'Anti-Shake'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Anti-Shake'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off).*
4. Press the MENU button to exit the settings menu without making a selection.

3.1.13 Face Detection
This function allows you to set your camera to detect faces in a scene and adjust your camera's setting for the most optimal picture. You can also enable your camera to capture a photo once a smile is detected on the faces in a scene.
1. In Photo Mode press the MENU button.
2. Select *'Face Detection'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Face Detection'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the

OK button to confirm your selected option *(On, Off).*
4. Press the MENU button to exit the settings menu without making a selection.

3.1.14 Smile Capture

This function allows you to set your camera to detect smiles in a scene and for it to capture a photo automatically.
1. In Photo Mode press the MENU button.
2. Select *'Smile Capture'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Smile Capture'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2   Video Recording
Power the camera on and press the MODE button to switch to Video mode.
A camcorder icon will appear in the top left hand corner of the screen when
you are in Video mode.

1. Line up your shot by looking at the LCD screen to see what is in view.
2. Hold the camera steady and press the SHUTTER button to begin
   recording.
3. When recording begins, a rolling timer will display in red in the top right
   hand corner of the screen. This indicates the recorded video time elapsed.
4. While recording, you can pause the recording by pressing OK button, press
   the OK button again to resume the recording.
5. Press the SHUTTER button to stop recording.
6. The recorded video files will automatically save onto the inserted memory
   card.

3.2.1 Scene
This function adjusts the camera's settings to predetermined values that will
produce the best image for that selected scene.
1. In Video Mode press the MENU button.
2. Select *'Scene'* using the LEFT or RIGHT buttons and press the OK button to
   enter the *'Scene'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK
   button to confirm your selected option *(Auto, Night, Portrait, Landscape,
   Backlight, Sport, Party, Beach, High Sensitivity)*.
4. Press the MENU button to exit the settings menu without making a
   selection.

3.2.2 Movie Size (Resolution)
This function sets the video resolution. The higher the resolution, the greater
the video quality and the larger the file size of the video.
1. In Video Mode press the MENU button.
2. Select *'Movie Size'* using the LEFT or RIGHT buttons and press the OK
   button to enter the *'Movie Size'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK
   button to confirm your selected resolution *(2.7K, 1080p, 720p,
   480p)*.
4. Press the MENU button to exit the settings menu without making a
   selection.

3.2.3 Beauty Filter
This feature applies a filter effect on the people in the scene.
1. In Video Mode press the MENU button.
2. Select *'Beauty Filter'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Beauty Filter'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2.4 Recording Mode
This feature allows you to select the type of video the camera will record.
1. In Video Mode press the MENU button.
2. Select *'Recording Mode'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Recording Mode'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Normal, Motion Detection, Video Time Lapse, Photo Time Lapse, Slow Motion).*
   Normal – You can record standard videos in this mode.
   Motion Detection – After pressing the SHUTTER button, the camera will automatically start recording when it detects motion.
   Video Time Lapse – The camera will take a single picture at a set interval for a set length of time (follow the directions in section 3.2.5 to set the interval and video length) and combine the images into a single video.
   Photo Time Lapse – The camera will take a single picture at a set interval for a set length of time (follow the directions in section 3.2.5 to set the interval and video length) and save them as individual files.
   Slow Motion – The camera will record at a much higher frame rate so the video is slowed down.
4. Press the MENU button to exit the settings menu without making a selection.

3.2.5 Time Lapse Settings
This feature allows you to capture long sequences of events in a much shorter time period.
1. In Video Mode press the MENU button.
2. Select *'Time Lapse Settings'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Time Lapse Setting'* menu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to enter the selected submenu *(Resolution, Time Lapse*

Schedule, Interval).

Image Size (Resolution) – This function sets the image resolution of each photo taken during the time lapse.

Time Lapse Schedule – This function sets the start and end time of the time lapse. (Example 10:02 to 15:06) The time lapse can only run for a maximum of 24 hours at a time.

Interval – This function sets the time interval in between photos.

NOTE: By selecting '10 Sec' the camera will capture a photo every 10 seconds.

4. To set the Time Lapse Schedule or Interval, press the OK button to enter the selected submenu.
5. Press the UP or DOWN buttons to change the highlighted value.
6. Press the LEFT or RIGHT buttons to move to the next option and press the OK button at any time to save the settings.
7. Press the MENU button to exit the settings menu without making a selection.

NOTE: The Time Lapse Schedule that you set will only work correctly if the time on the camera is set correctly.

3.2.6 Exposure

This function adjusts the frame brightness in your photograph.
1. In Video Mode press the MENU button.
2. Select *'Exposure'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Exposure'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(+3, +2, +1, 0, -1, -2, -3).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2.7 White Balance

White Balance changes the color of light in your pictures, making it seem warmer or cooler depending on how the light you're shooting in affects the frame.
1. In Video Mode press the MENU button.
2. Select *'White Balance'* using the LEFT or RIGHT buttons and press the OK button to enter the *'White Balance'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Auto, Daylight, Cloudy, Florescent, Tungsten).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2.8 Sharpness

This function adjusts the visible detail of a photograph.

1. In Video Mode press the MENU button.
2. Select *'Sharpness'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Sharpness'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Sharp, Normal, Soft).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2.9 Color Effect

This function sets the color filter effect of a video.

1. In Video Mode press the MENU button.
2. Select *'Color Effect'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Color Effect'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Normal, B & W (Black and White), Sepia, Red, Green, Blue, Sunset, Warm, Cool, Over Exposure, IR, Binary, Vivid, Undertone, Dog Eye, Aibao, Gothic, Japan Style, LOMO, Negative).*
4. Press the MENU button to exit the settings menu without making a selection.

3.2.10 ISO

This function adjusts the light sensitivity in your photograph.

1. In Video Mode press the MENU button.
2. Select *'ISO'* using the LEFT or RIGHT buttons and press the OK button to enter the *'ISO'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Auto, 100, 200, 400).*
4. Press the MENU button to exit the settings menu without making a selection.

3.3 Playback Mode
Videos and photos captured on your camera can be easily played back.

1. Press the MODE button to enter Playback mode, a play icon will display in the top left corner of the screen.
2. Press the LEFT or RIGHT buttons to cycle through the captured videos and photos stored on the memory card.
2. When viewing a photo press and hold the ZOOM IN button to zoom in on the picture on the screen, press and hold the ZOOM OUT button to view the entire image. While zoomed in, use the UP, DOWN, LEFT or RIGHT buttons to move the image on the screen.
3. Push the ZOOM OUT button to see 9 images on the screen at once. Use the UP or DOWN buttons to change the page. Press the OK button to view the selected media.
4. While viewing a recorded video, press the SHUTTER button to start the video, press the OK button to pause the video and again to continue playing the video. Press the SHUTTER button to stop the video.

Power the camera on and press the MODE button to switch to Playback Mode. In Playback Mode the following options are available:

3.3.1 Delete
This function is used to delete photos and videos. Photos and videos can be deleted singly or all at once.
1. In Playback Mode press the MENU button.
2. Select *'Delete'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Delete'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(This Image/Video, All)*.
4. Press the MENU button to exit the settings menu without making a selection.

3.3.2 Protect
This function protects the photo/video file. The file will be protected from being deleted accidentally. Files must be unprotected to be deleted.
1. In Playback Mode press the MENU button.
2. Select *'Protect'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Protect'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Lock This, Unlock This, Lock All, Unlock All)*.

4. Press the MENU button to exit the settings menu without making a selection.

3.3.3 Rotate

This function allows you to rotate the currently displayed image. (This function is not available for recorded videos)

1. In Playback Mode press the MENU button.
2. Select *'Rotate'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Rotate'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(90°, 180°, 270°).*
4. Press the MENU button to exit the settings menu without making a selection.

3.3.4 Slideshow

Photographs can be viewed as a slideshow on the camera.

1. In Playback Mode press the MENU button.
2. Select *'Slideshow'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Slideshow'* submenu.
3. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(3 Seconds, 5 Seconds, 10 Seconds).*
4. Press the UP button to exit the slideshow.
5. Press the MENU button to exit the settings menu without making a selection.

3.4 Setup Mode

Basic settings can be changed in the Setup menu. These include date & time, language and sound options. Power the camera on and press the MODE button to switch to setup mode. A menu will display on the screen.

3.4.1 Language

This function allows you to set the camera's interface language.
1. In Setup Mode select *'Language'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Language'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected language.
3. Press the MENU button to exit the settings menu without making a selection.

3.4.2 Date/Time Set

This function allows you to set the current Date and Time on your recorded video clips and captured photos.
1. In Setup Mode select *'Date/Time Set'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Date/Time Set'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off, Set Date & Time)*.
3. Press the MENU button to exit the settings menu without making a selection.
4. To set the current date and time, use the LEFT or RIGHT buttons to select Set Date & Time, and press the OK button to enter date setup menu.
5. Press the UP or DOWN buttons to change the highlighted field.
6. Press the LEFT or RIGHT buttons to change the selected field.
7. Press the OK button to save the entered date and time and to exit the menu.

3.4.3 Auto Power Off

This function sets the duration of time in which the camcorder will wait with no user input before automatically powering off.
1. In Setup Mode select *'Auto Power Off'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Auto Power Off'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Off, 1 Minute, 3 Minutes, 5 Minutes)*.
3. Press the MENU button to exit the settings menu without making a selection.

3.4.4 Beep
This function allows you to turn off the button sounds of the camera.
1. In Setup Mode select *'Beep'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Beep'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(On, Off).*
3. Press the MENU button to exit the settings menu without making a selection.

3.4.5 Frequency
This function sets the frequency of the camera from 50Hz to 60Hz. Please check the frequency of your location and set accordingly.
1. In Setup Mode select *'Frequency'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Frequency'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(50 Hz, 60 Hz)* the default frequency for the United States is 60Hz.
3. Press the MENU button to exit the settings menu without making a selection.

3.4.6 Format Memory Card
The format setting erases all photos, videos and data stored on your memory card.
1. In Setup Mode select *'Format Memory Card'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Format Memory Card'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Yes, No).*
3. Press the MENU button to exit the settings menu without making a selection.
   NOTE: This will delete all of your media and cannot be undone.

3.4.7 Restore Default Settings
Factory default settings can be restored in this menu. This function will not delete the media stored on the memory card, and will only restore all of the menu's setting back to factory default settings.

1. In Setup Mode select *'Restore Default Settings'* using the LEFT or RIGHT buttons and press the OK button to enter the *'Restore Default Settings'* submenu.
2. Press the LEFT or RIGHT buttons to navigate the menu, and press the OK button to confirm your selected option *(Yes, No).*
3. Press the MENU button to exit the settings menu without making a selection.

4.1 Technical Specifications

Model Number	Minolta MND20
Lens	Fixed Focus • f=7.36mm • F/3.2
Zoom	16X Digital Zoom
Shutter	Electronic • Anti-Shake Image Stabilization
Pixels (photo)	JPG: 44MP • 36MP • 24MP • 20MP • 16MP • 12MP • 10MP • 7MP-Wide • 5MP • 3MP • 2MP-Wide
Pixels (video)	AVI: 2.7K • 1080p • 720p • 480p
ISO Sensitivity	Auto • 100 • 200 • 400
LCD Screen	2.9" IPS LCD
Assistive Light	White LED (Constant on / off)
Power Saving Mode	OFF • 1 Minute • 3 Minutes • 5 Minutes
White Balance Control	Auto • Daylight • Cloudy • Florescent • Tungsten
Scene Modes	Auto • Night • Portrait • Landscape • Backlight • Sport • Party • Beach • High Sensitivity
Recording Media	SD • SDXC; Maximum: 128GB
I/O Ports	Mini USB, USB 2.0 (high speed) • Microphone (built-in MIC) • Speaker
Power	Lithium-Ion 3.7V, 700mAh
Dimensions	3.9 x 0.96 x 2.3 in. • 3.8 oz.

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