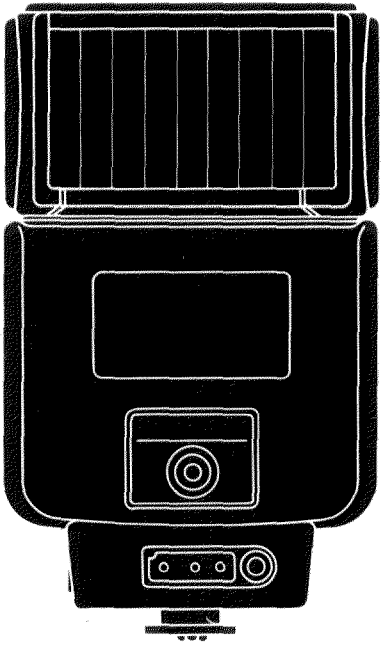
MINOLTA

AUTO ELECTROFLASH 360PX



OWNER'S MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUAL DE INSTRUCCIONES


MINOLTA
AUTO 360PX

IMPORTANT SAFEGUARDS

WHEN USING THIS FLASH AND/OR ITS ACCESSORIES, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING:

- READ AND UNDERSTAND ALL INSTRUCTIONS.
- SUPERVISE CLOSELY WHEN ANY FLASH OR ACCESSORY IS USED BY OR NEAR CHILDREN. DO NOT LEAVE UNITS UNATTENDED WHILE IN USE OR WITHIN REACH OF CHILDREN.
- DO NOT CONNECT EXTERNAL POWER SOURCES OTHER THAN MINOLTA POWER GRIP 2 OR AC ADAPTER 4.
- DO NOT OPERATE FLASH AND/OR ACCESSORIES IF DROPPED OR DAMAGED OR WITH DAMAGED CORD – UNTIL EXAMINED BY AN AUTHORIZED MINOLTA SERVICE FACILITY.
- WHEN USING AC ADAPTER 4, BE SURE TO READ AND FOLLOW IMPORTANT SAFEGUARDS AND OTHER CAUTIONS ON ITS INSTRUCTION SHEET.
- TO AVOID ELECTRIC SHOCK, DO NOT IMMERSE FLASH AND/OR ACCESSORIES IN WATER OR OTHER LIQUIDS.
- TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT DISASSEMBLE FLASH AND/OR ACCESSORIES. TAKE THEM TO AN AUTHORIZED MINOLTA SERVICE FACILITY WHENEVER SERVICE OR REPAIR IS REQUIRED. INCORRECT REASSEMBLY CAN CAUSE ELECTRIC SHOCK WHEN UNIT IS USED SUBSEQUENTLY.

SAVE THESE INSTRUCTIONS

• OPERATION SUMMARY

Steps for taking direct-flash pictures at full power with normal flash coverage are outlined on pages 3 to 7. For best results and safe operation of your 360PX, be sure to read and follow the detailed instructions and cautions on pages 8 to 23.

CAUTION

• If you wish to use Auto Electroflash 360PX with a non-Minolta camera, first take a series of test pictures to check whether it fires and synchronizes correctly.

• KURZANLEITUNG

Hinweise für Aufnahmen mit Direktblitz und voller Leistung bei normalem Leuchtwinkel finden Sie auf den Seiten 3 bis 7. Damit Sie den Auto-Electroflash 360PX richtig handhaben und beste Ergebnisse erzielen, lesen Sie die ausführlichen Anleitungen und Anmerkungen auf den Seiten 24 bis 39 durch.

ACHTUNG

• Soll der 360PX mit Kameras anderen Fabrikats kombiniert werden, ist es ratsam, zuerst einige Testaufnahmen zu machen, um sicherzugehen, daß das Blitzgerät mit der Kamera einwandfrei synchronisiert.

• SOMMAIRE D'UTILISATION

Les étapes pour des prises de vues en éclairage direct, en pleine puissance avec un angle couvert d'un objectif standard sont mentionnées de la page 3 à 7. Pour l'obtention de meilleurs résultats et utiliser l'ensemble des possibilités de votre 360PX, nous vous conseillons de lire et de suivre les instructions et les précautions de la page 40 à 55.

PRECAUTIONS

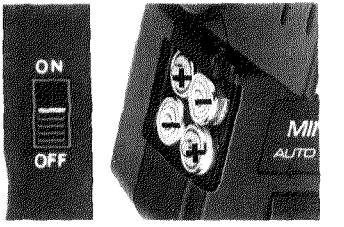
• Si vous souhaitez utiliser l'Auto Electroflash 360PX, avec des appareils autres que Minolta, faites une série préalable de tests pour contrôler la bonne synchronisation avec le boîtier.

• SUMARIO DE OPERACION

Los pasos para la toma de fotografías con flash directo a plena potencia y alcance normal de destello se describen en las páginas 3 a la 7. Para obtener los mejores resultados posibles y una operación segura del 360PX, cerciórese de leer y de seguir las instrucciones detalladas y las precauciones de las páginas 56 a la 71.

PRECAUCION

• Si se utiliza el Auto Electroflash 360PX con cámaras que no son Minolta, tome en primer lugar fotos de prueba para comprobar si se produce el destello y si se sincroniza correctamente con la cámara.



• Install batteries with ends as shown (p. 12).

• Batterien/Akkus polrichtig einsetzen wie abgebildet (S. 28).

• Mise en place des piles selon la polarité à respecter indiquée (p. 44).

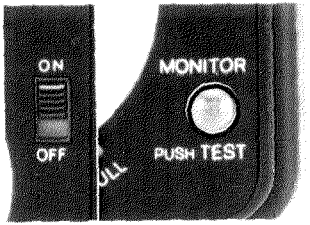
• Instale las pilas con sus extremos tal y como se muestra (p. 60).

• **WARNING:** Do not fire flash directly into eyes of people or animals at close range.

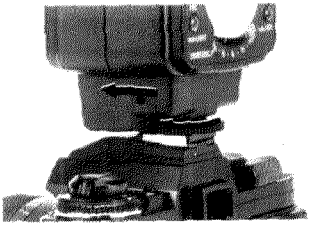
• **WARNUNG:** Blitzen Sie niemals Personen oder Tieren aus geringem Abstand in die Augen.

• **ATTENTION:** Ne pas diriger le flash directement dans les yeux d'un sujet à courte distance.

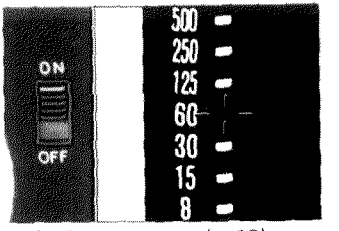
• **AVISO:** No dispare el flash directamente a los ojos de la gente ni animales a distancias cortas.



- Check batteries.
- Batterien/Akkus kontrollieren.
- Contrôle des piles.
- Compruebe las pilas.



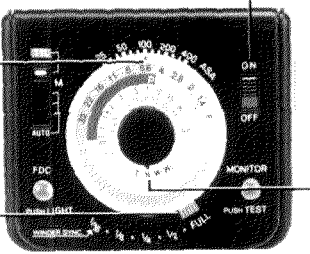
- Slide flash into hot shoe and lock clamp (p. 13).
- Blitzgerät in Zubehörschuh schieben und Feststellschraube anziehen (S. 29).
- Glissez le sabot du flash dans la griffe porte accessoires de l'appareil et verrouillez le (p. 45).
- Deslice el flash en la zapata de contacto directo y fíjelo con el sujetador (p. 61).



- Check connections (p. 13).
- Anschlüsse überprüfen (S. 29).
- Contrôle des connexions (p. 45).
- Compruebe las conexiones (p. 61).

- Align red dot with film speed.
- Roten Punkt auf entsprechende Filmempfindlichkeit drehen.
- Reportez une sensibilité du film en regard de l'index rouge.
- Haga corresponder el punto rojo con la sensibilidad de la película.

- Move lever to FULL.
- Leitzahl/Leistungsregelung auf „FULL" einstellen.
- Déplacer le levier sur la position FULL.
- Mueva la palanca a la posición FULL.



- Turn flash on.
- Blitzgerät einschalten.
- Positonnez le flash sur "ON".
- Conecte la alimentación del flash.

- Grasp beads and turn white area to align N with index.
- Innere Scheibe an Nocken fassen und „N" an den Index drehen.
- Alignez l'indication N en regard de l'index adéquate.
- Toma los rebordes y gire la zona blanca para que N corresponda con la marca de referencia.

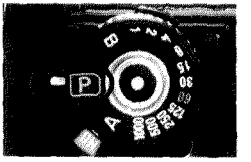
• **TTL AUTO MODE** (through-the-lens automatic flash control)
Set flash at TTL; green TTL lamp lights.
Check camera's film-speed and exposure adjustment settings.

• **TTL-BLITZAUTOMATIK** (Blitzautomatik mit Direktmessung auf dem Film)
Blitzgerät auf „TTL" einstellen; grünes TTL-Signal leuchtet auf.
Einstellungen für Filmempfindlichkeit und Belichtung an der Kamera kontrollieren.

◦ **MODE AUTOMATIQUE TTL** (contrôle automatique de l'éclair au travers de l'objectif).
Positionner le flash sur TTL; la lumière verte TTL s'allumera.
Contrôler la sensibilité du film affichée sur l'appareil et la position du correcteur d'exposition.

◦ **MODO AUTOMATICO** (control automático del destello a través del objetivo)
Ajuste el flash a TTL; se iluminar á la lámpara verde TTL.
Compruebe los ajustes de la sensibilidad de la película y de la exposición en la cámara.

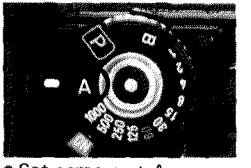
• **PROGRAMMED TTL AUTO** with X-700 and MD lens (camera sets aperture)
• **BLITZ-PROGRAMM-AUTOMATIK (TTL)** mit X-700 und MD-Objektiv (Kamera stellt Blende automatisch ein)
◦ **AUTOMATIQUE PROGRAMME TTL** avec l'appareil X-700 et l'objectif MD (l'ouverture de diaphragme sélectionnée par l'appareil)
◦ **MODO AUTOMATICO TTL PROGRAMADO** con la X-700 y objetivo MD (la cámara ajusta la abertura)



• Set camera at P.
• Kamera auf P-Funktion einstellen.
◦ Positionnez l'appareil sur le mode "P".
◦ Ajuste la cámara a P.

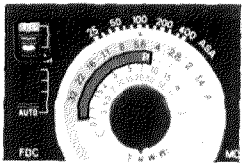
• Set MD lens at minimum aperture (green figure).
• MD-Objektiv auf kleinste (grüne) Blende drehen.
◦ Positionnez l'objectif MD sur son ouverture minimale (valeur verte).
◦ Ajuste el objetivo MD a la abertura mínima (*número verde*).

• **ANY-APERTURE TTL AUTO** with X-700, X-500, X-570 (user selects any aperture on lens)
• **TTL-ZEITAUTOMATIK** mit X-700, X-500, X-570 (Blende wird beliebig vorgewählt)
◦ **AUTOMATIQUE TTL SUR TOUTE OUVERTURE DE DIAPHRAGME** avec le X-700, X-500, X-570 (l'utilisateur choisit son ouverture de diaphragme)
◦ **MODO AUTOMATICO TTL CON CUALQUIER ABERTURA** con la X-700, X-500, X-570 (el usuario selecciona cualquier abertura en el objetivo)

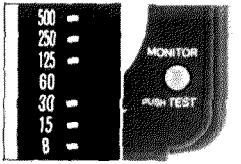


• Set camera at A.
• Kamera auf A-Funktion einstellen.
◦ Positionnez l'appareil sur le mode "A".
◦ Ajuste la cámara a A.

• Select desired aperture.
• Gewünschte Blende am Objektiv einstellen.
◦ Sélectionnez l'ouverture de diaphragme désirée.
◦ Séleccione la abertura.

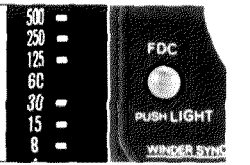


• Make sure subject is within P-mode flash range.
• Darauf achten, daß sich das Objekt innerhalb des P-Blitzbereichs befindet.
◦ Assurez vous que le sujet se trouve dans la plage de flash mode P.
◦ Cerciórese de que el objeto esté dentro del alcance del flash del modo P.

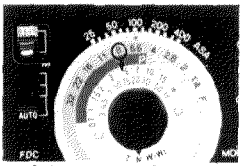


• Make sure flash is charged.
• Das Blitzgerät muß aufgeladen (blitzbereit) sein.
◦ Assurez vous que le flash est chargé.
◦ Cerciórese de que el flash esté cargado.

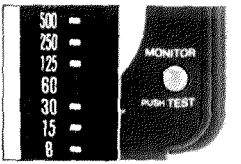
• Release shutter.
• Kamera auslösen.
◦ Déclencher l'obturateur.
◦ Presione el disparador.



• Check if exposure was sufficient.
• Kontrollieren, ob Belichtung ausreichend war.
◦ Vérifier l'exactitude de l'exposition.
◦ Compruebe si la exposición ha sido correcta.

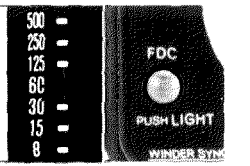


• Make sure subject is within flash range for that aperture.
• Sicherstellen, daß sich das Objekt im zulässigen Blitzbereich für diese Blende befindet.
◦ Assurez vous que le sujet se trouve dans la plage pour cette ouverture.
◦ Cerciórese de que el objeto esté dentro del alcance del flash para la abertura en cuestión.



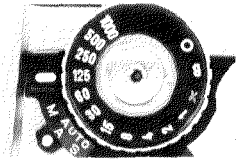
• Make sure flash is charged.
• Darauf achten, daß das Blitzgerät blitzbereit (aufgeladen) ist.
◦ Assurez vous de la charge complète du flash.
◦ Cerciórese de que el flash esté cargado.

• Release shutter.
• Kamera auslösen.
◦ Déclenchez l'obturateur.
◦ Presione el disparador.

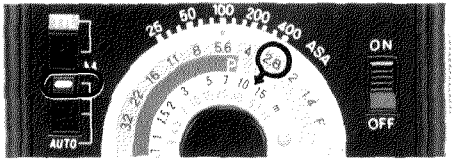


• Check if exposure was sufficient.
• Kontrollieren, ob die Belichtung korrekt war.
◦ Vérifier l'exactitude de l'exposition.
◦ Compruebe si la exposición ha sido correcta.

• **SENSOR AUTO MODE** with any camera (user selects one of three apertures)
• **SENSOR-AUTOMATIK** mit jeder Kamera (eine von drei möglichen Blenden wird eingestellt)
• **AUTOMATIQUE PAR "SENSOR"** quelque soit l'appareil (l'utilisateur a le choix de trois ouvertures de diaphragme).
• **MODO AUTOMATICO DEL SENSOR** con cualquier cámara (el usuario selecciona una de las tres aberturas)

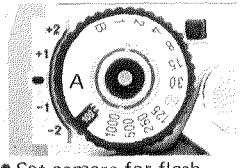


• Set camera for flash sync (p. 17).
• Kamera auf Blitzsynchronzeit einstellen (S.33).
• Positionnez l'appareil pour une synchronisation au flash (p. 49).
• Ajuste la cámara para sincronización con flash (p. 65).

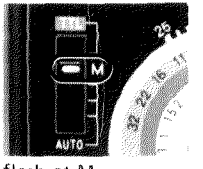


• Select desired AUTO position; make sure subject is within flash range for aperture lit by LED.
• Gewünschte Automatikbblende einstellen; darauf achten, daß sich das Objekt im zulässigen Bereich der beleuchteten Blende befindet.
• Sélectionnez la position "AUTO" désirée en vous assurant que le sujet se trouve dans la plage d'utilisation selon l'ouverture de diaphragme par l'intermédiaire de la DEL.
• Seleccione la posición AUTO deseada; cerciórese de que el objeto esté dentro del alcance del flash para la abertura iluminada con un LED.

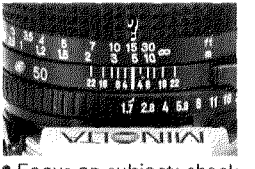
• **MANUAL MODE** with any camera (user determines aperture according to flash-to-subject distance)
• **NICHTAUTOMATISCHES BLITZEN** mit jeder Kamera (Blende wird je nach Blitz-Objekt-Abstand eingestellt)
• **MODE MANUEL** Quelque soit le type de l'appareil (l'utlisateur détermine l'ouverture selon la distance du flash-sujet.)
• **MODO MANUAL** con cualquier cámara (el usuario determina la abertura de acuerdo con la distancia del flash al objeto)



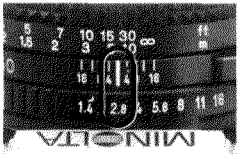
• Set camera for flash sync (p. 17).
• Kamera auf Blitzsynchronzeit einstellen (S.33).
• Sélectionnez l'appareil pour une synchronization au flash (p. 49).
• Ajuste la cámara para sincronización con flash (p. 65).



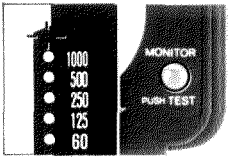
• Set flash at M.
• Blitzgerät auf "M" umschalten.
• Positionnez le flash sur le mode M (manuel).
• Ajuste en flash a M.



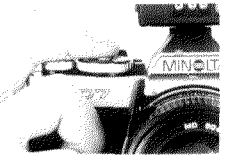
• Focus on subject; check flash-subject distance.
• Auf Hauptobjekt scharfstellen und Entfernung ablesen.
• Faites le point sur la distance flash sujet.
• Enfoque el objeto; compruebe la distancia del flash al objeto.



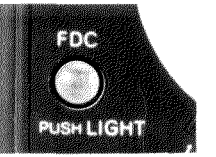
- Set lens at indicated aperture.
- Angezeigte (beleuchtete) Blende am Objektiv einstellen.
- Reportez sur l'objectif l'ouverture de diaphragme.
- Ajuste la abertura indicada en el objetivo.



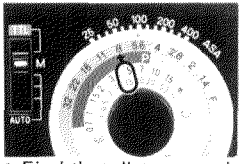
- Make sure flash is charged.
- Das Blitzgerät muß aufgeladen (blitzbereit) sein.
- Assurez vous de la charge du flash.
- Cerciórese de que el flash esté cargado.



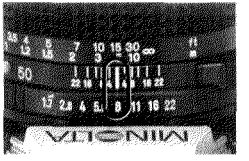
- Release shutter.
- Kamera auslösen.
- Déclanchez l'obturateur.
- Presione el disparador.



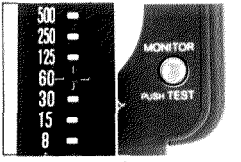
- Check if exposure was sufficient.
- Kontrollieren, ob Belichtung korrekt war.
- Contrôlez la valeur de l'exposition.
- Compruebe si la exposición ha sido correcta.



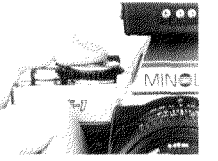
- Find that distance and corresponding aperture.
- Den Blendenwert für diese Entfernung ermitteln.
- Déterminez l'ouverture en fonction de cette distance.
- Busque esta distancia y la abertura correspondiente.



- Set lens at that aperture.
- Den gefundenen Blendenwert am Objektiv einstellen.
- Reportez cette ouverture de diaphragme en fonction de cette distance.
- Ajuste el objetivo en esta abertura.



- Make sure flash is charged.
- Das Blitzgerät muß aufgeladen (blitzbereit) sein.
- Assurez vous que le flash soit chargé.
- Cerciórese de que el flash esté cargado.



- Release shutter.
- Kamera auslösen.
- Déclenchez l'obturateur.
- Presione el disparador.

Your Auto Electroflash 360PX is a powerful, versatile, programmed TTL autoflash unit forming the heart of a comprehensive flash system. It interacts with the Direct Autoflash Metering system of the Minolta X-700, X-500, or X-570 camera to measure light passing through the lens (TTL) and cut off the flash burst *the instant enough light has reached the film.* This enables programmed setting of the aperture by the camera in the X-700's P mode, and lets you select any aperture on the lens in A mode for depth-of-field control. The 360PX also has a built-in sensor for full auto control at any of three apertures on other cameras. Manual fixed-duration firing is also possible.

Among the 360PX's many other features (see next pages) are: variable power control in all modes, bounce flash capability, a handy computer dial for checking auto ranges and determining manual settings, sufficient-exposure confirmation signals in auto, and automatic power switchoff. The unit also signals flash-ready to applicable Minolta cameras and automatically sets their shutters for flash sync.

The 360PX comes with a wideangle adapter and sync cord (for cameras without hot shoes). Flash system accessories for off-camera use, multi-flash, flash filtration and varied coverage, auto charge control in time-lapse photography, and alternate power sources are explained starting on page 72.

CONTENTS

NAMES AND FUNCTIONS/FEATURES OF PARTS

Flash head
Tilts 90° up and swivels 90° left or right for bounce flash (p. 20).

Battery chamber
Only four AA-size alkaline-manganese or rechargeable nickel-cadmium batteries are needed (p. 12). Latter enable winder/motor-drive sync at up to 2fps.

External power input
Power Grip 2* connects for sync at up to 3.5fps and/or more flashes.
AC Adapter 4* connects for unlimited number of flashes.

Flash-control contact
Transmits signal from Direct Autoflash Metering system of X-700, X-500, X-570 for through-the-lens (TTL) off-film flash control.

Accessory terminal
Cable OC* (also Cable EX*) connects flash and X-700, X-500, X-570 for TTL control when flash is used off camera.
Off-Flash Sensor* connects to any camera with hot shoe for auto control when flash is used off camera.
Cable CD* connects hot-shoe-mounted 360PX with up to two other PX units.

Camera-control contact
Transmits flash-ready and auto sync-speed-setting signals to X-700, X-500, X-570, XD, and XG Minolta SLRs, and sufficient-exposure-confirming FDC signal to X-700, X-500, X-570.

Sync contact
Transmits flash-triggering signal from any camera with hot shoe.

Flashtube
Provides maximum flash range of 25m or 82 ft. (at ASA/ISO 100 and f/1.4 in A-mode TTL Auto or Manual) and coverage for lenses down to 35mm focal length.

Adapter grooves
Wideangle adapter snaps on to extend flash coverage for lenses down to 28mm (p. 19).
Panel Set* attaches for varying flash coverage and/or filtration.

Sensor
On-flash sensor enables auto flash control with most cameras (p. 16).

Cable-FB terminal
Cable FB* connects flash directly to Multi-Function Back* for auto charge control in time-lapse photography (pp. 13, 74).

Sync cord terminal (not shown)
Sync cord connects flash to camera without hot shoe (p. 14).

Mounting foot with clamp
Flash can be easily slid into place and locked in any standard accessory shoe (p. 13).

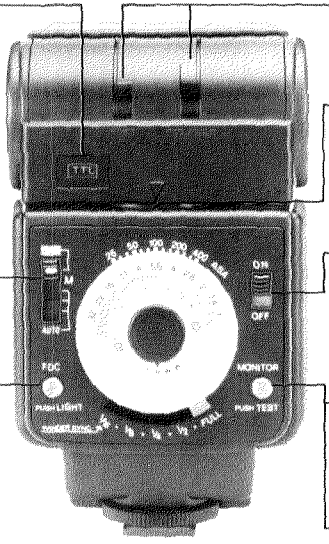
* optional accessory (p. 72 on)

TTL lamp
Green lamp lights when mode selector is at TTL.

Mode selector
TTL: TTL Auto (pp. 14 to 16) or Manual mode set by mode/shutter-speed selector of X-700, X-500, X-570
Provides flash control by Direct Autoflash Metering in Programmed (camera sets aperture) or Any-Aperture (user sets any aperture on lens) mode.
M: *Manual mode* (p. 17)
Provides fixed-duration firing with most cameras.
AUTO: *Sensor Auto mode* (p. 16)
Provides auto control with most cameras by on-flash sensor or Off-Flash Sensor* (user sets any of 3 positions and corresponding apertures).

Dial light button
Push to illuminate computer dial or to re-ready flash after auto power switchoff (p. 13).

FDC (Flash Distance Check) lamp
Green lamp lights in TTL and Sensor Auto modes if exposure was sufficient. Prechecking is possible in Sensor Auto by pressing test button.



Vertical-angle guides
Click-stops and markings indicate recommended minimum vertical bounce settings (p. 20).

Horizontal-angle guides
(not shown)
Click-stops and markings at 0°, 30°, 45°, 60°, 75°, and 90° to left and right aid in setting desired angle.

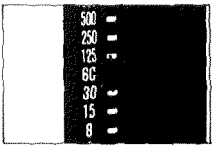
Power switch
Turns flash on. Special circuit in flash automatically turns unit off if not fired within about 15 min. after full charge is reached (p. 13).

Test button
Push to test-fire flash, to re-ready flash after auto power switchoff, or for "open flash" photography (p. 19).

Monitor lamp
Red lamp lights when flash is ready to fire. Special monitor circuit maintains constant firing charge and minimizes battery drain.

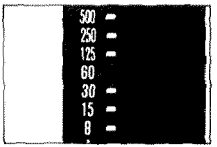
Viewfinder Signals

FDC 8 times/sec.

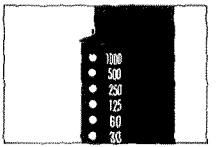


X-700, X-500, X-570 in TTL Auto

Flash Ready 2 times/sec.

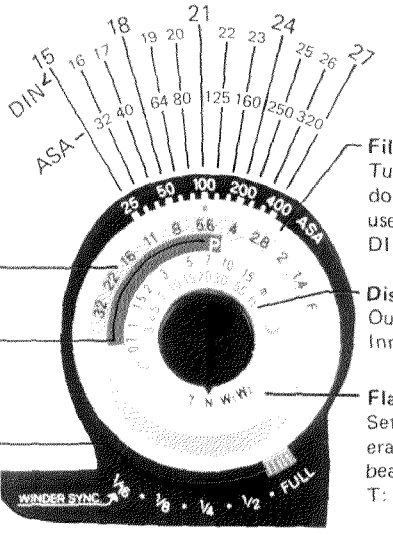


X-700, X-500, X-570, XG series



XD series

Computer dial
Lets you easily check flash ranges in TTL Auto (P and A mode), determine applicable aperture settings (indicated by 3 LEDs behind aperture scale) and flash ranges in Sensor Auto, and determine aperture and flash-distance combinations in Manual mode.



Aperture scale

P-mode range indicator
Shows typical range in P-mode TTL Auto.

Variable GN/power control
Lets you adjust flash's guide number (GN)/output for winder/motor-drive sync in any mode (p. 19), depth-of-field control (p. 19) or fill flash (p. 21) in Manual mode, or close-up photography. Power level can be varied in nine steps by half stops from GN 36 at FULL setting down to 9 at 1/16 setting (ASA/ISO 100, meters). Do not set control between click-stops.

Film-speed scale/ring
Turn film-speed ring to align red dot with ASA/ISO film speed in use. Intermediate settings and DIN equivalents are shown above.

Distance scales
Outer (black): meters
Inner (orange): feet

Flash coverage scale
Set computer dial for flash coverage being used by grasping beads and turning white area:
T: With Tele Panel T1-B of Panel Set* (concentrates output for lenses of 100mm or more)
N: When using flash as is (coverage for lenses of 35mm or more)
W_1: With wideangle adapter or Wide Panel W1-B of Panel Set (coverage extended for lenses down to 28mm)
W_2: With Wide Panel W2-B of Panel Set (coverage for lenses down to 24mm)

* optional accessory (p. 72 on)

POWER SOURCES

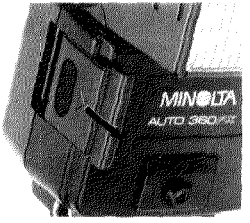
Usable power sources and performance*

	Type	Common names	Flashes per set	Recycle time	Notes	CAUTIONS
BATTERIES AA size (4) "penlight"	*alkaline-manganese* (1.5V)	*alkaline* AM	100	10 sec.	• Prepare spares if monitor lamp does not light within 15 sec., replace if over 30 sec.	• Do not recharge.
	nickel-cadmium (1.2V)	nicad Ni-Cd	50	6 sec.	• Replace with freshly charged spares after about 40 full-discharge flashes (or if left unused for a while). • Enable firing at up to 2fps at 1/16 power.	• Recharge only in designated charger.
EXTERNAL (see p. 74)	Minolta Power Grip 2 (uses six AA batteries or Ni-Cd Battery Pack Np-2)		70	3 sec.	• Enables firing at up to 3.5fps at 1/16 power. • Values given for 6 Ni-Cd's.	• Connecting other power sources may damage flash and cause injury.
	Minolta AC Adapter 4 (115V or 230V types)		no limit	10 sec.		

* As determined by standard Minolta test method when firing flash at full power and range; actual performance depends on type, brand, lot number, and age of batteries and on ambient temperature.

To obtain indicated recycle times when flash is new or has not been used for some time, test fire it two or three times to reform its capacitor.

Installing batteries



1. Slide battery chamber cover out.

2. Wipe terminals with clean, dry cloth. Insert batteries with ends as shown. (If reversed, flash will not operate.)

3. Reinsert cover in grooves, press down on batteries, and slide cover completely back in.

CAUTIONS: To avoid damaging flash by battery leakage or bursting:

- Do not mix new and old, AM and Ni-Cd, or different brand batteries.
- Remove batteries if flash will not be used for more than two weeks.

WARNING: Keep loose batteries away from children.

Batteries in cold weather

When using your flash in cold weather, always use fresh batteries and keep a spare set in a warm inside pocket. For prolonged use near or below 0°C (32°F), Ni-Cd's are recommended. Battery performance will be restored as temperatures rise.

Automatic power switchoff

To save battery power, the 360PX automatically turns itself off if not fired within about 15 minutes after a full charge is reached. Once off, the flash can be readied to fire again by pressing its test button or dial light button, or by turning its power switch off, then back on. The flash will recycle after the shutter is released.

Auto charge control in time-lapse photography with Multi-Function Back

The 360PX can be directly connected by Cable FB to the Multi-Function Back to turn it on for charging one minute before a time-lapse photo and off right after, thus saving power. See Cable FB instruction sheet for operation procedure. Note that:

- Cable FB can be connected to flash even before first exposure.
- Auto charge control will not begin (i.e., flash remains on) until approx. 15 min. after flash is turned on.

ATTACHING FLASH

Camera with hot shoe

With clamp turned fully to right, slide mounting foot straight forward fully into hot shoe. Then turn clamp to left to secure unit.

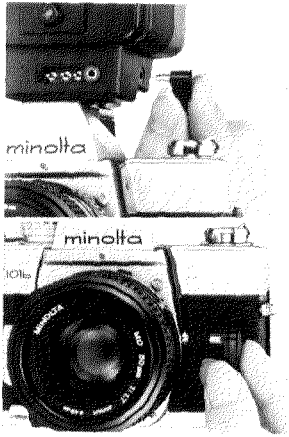
Operation check

To test camera-flash connections, turn flash and camera on and wait until flash's red monitor lamp lights, then:

For auto X-sync-setting Minoltas: Check if viewfinder's flash-ready signal blinks when camera's operating button is touched or slightly pressed (see p. 10 and/or owner's manual).

For other cameras: Release shutter (preferably without film in camera, and with eye away from viewfinder) to check if flash fires.

Camera without hot shoe



Attach flash to camera's flash or accessory shoe as shown on page 13. Then plug sync cord's single-prong end into flash's sync cord terminal **(a)** and PC plug into corresponding terminal **(b)** on camera (see owner's manual).

Removing flash

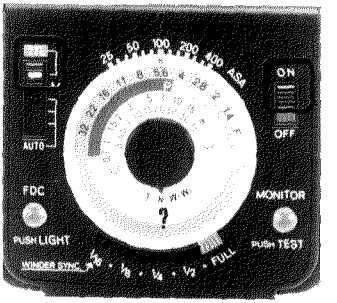
Completely loosen clamp, then grasp base and slide flash straight out of shoe.

TTL AUTO MODE

In the 360PX's TTL Auto mode, flash duration is controlled off the film by Direct Autoflash Metering. With an X-700 and MD lens set for P mode, the camera's flash program even sets the aperture for you, making Programmed TTL Auto ideal for general flash photography. All you need do is compose and focus on a subject within flash range, make sure the flash is charged, then shoot.

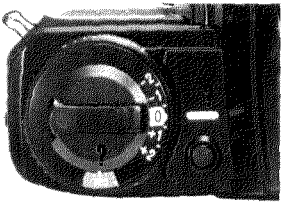
Any-Aperture TTL Auto mode (with an X-700, X-500, or X-570 in A mode) lets you control depth of field by selecting any aperture on the lens. This mode is especially ideal for close-ups, since virtually any Minolta SLR lens or accessory can be used while retaining through-the-lens (TTL) flash control.

Flash settings



- Set mode selector at TTL (green TTL lamp lights if power is on).
- Set variable GN/power control as desired (normally FULL).
- For checking flash ranges, set computer dial at film speed and flash coverage (normally N) in use.
- Turn power switch on.

Initial camera settings

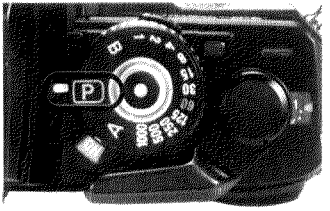


- Make sure desired film speed is set (flash control is linked to camera's film-speed input).
- Make sure X-700's exposure-adjustment control is at "0" unless desired otherwise. (After flash is charged, +/– LED will not blink even when control is set for exposure adjustment.)
- See following sections for other camera settings.

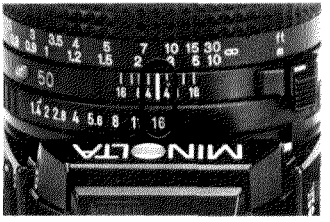
PROGRAMMED (P-mode) TTL AUTO (with X-700 and MD lens)

Preliminary settings

Make sure flash and camera are set as explained at left and below.



• Set mode selector at P.



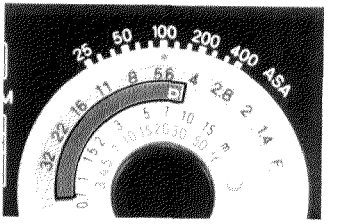
• Set lens (must be MD) at minimum aperture (green figure). At other settings, viewfinder's green "P" will blink as warning. New-type MD lenses can be locked at minimum aperture.

Taking pictures in P-mode TTL

1. Compose and focus, making sure your subject is within P-mode flash range (see next column).
2. Check that flash is fully charged:
   - If viewfinder display is on, 1/60 LED will start blinking.
   - Flash's monitor lamp will light.
   - Audible slow-shutter-speed warning, if beeping, will stop.
3. Take picture. (Shutter automatically releases at 1/60 sec.)
4. Check if 1/60 LED blinks faster for one second (and/or flash's FDC lamp glows for 2 sec.) to confirm that exposure was sufficient.

• If shutter is released before flash is charged, photo will be taken in regular P mode without flash.

P-mode flash range



Typical flash range for a given film speed is indicated by the green P-mode bar (e.g., 8m or 26 ft. at ASA/ISO 100, FULL power, N flash coverage).

ASA/ISO 1000 range is approximately 3 times ASA/ISO 100 range.

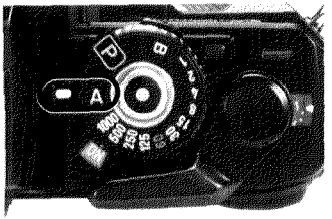
The X-700's P-mode flash program automatically sets the lens between f/8 and its maximum aperture (e.g., f/1.4) according to the scene's brightness metered immediately before exposure. When the scene is dark, the camera sets a large aperture, and flash range will be greater than indicated. When it is bright and a small aperture is set, the range will be less; however, even in this case exposure will normally be sufficient since the existing light will be added to the picture.

If you want to be certain before taking the picture that your subject will be within range, or when you want to control depth of field, use A-mode TTL Auto or Sensor Auto.

ANY-APERTURE (A-mode) TTL AUTO (with X-700, X-500, X-570)

Preliminary settings

Make sure flash and camera are set as shown on page 14 and below.



• Set camera's mode selector at A. ("A" in viewfinder will go out when flash is charged.)

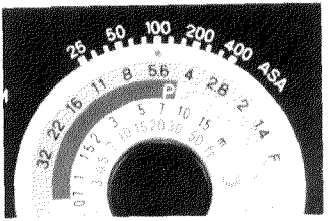
Taking pictures in A-mode TTL

1. Compose and focus.
2. Set lens at desired aperture (see next column), making sure subject is within corresponding range.
3. Make sure flash is fully charged (see P-mode section).
4. Take picture. (Shutter automatically releases at 1/60 sec.)
5. Check FDC signal(s) to see if exposure was sufficient.

• If shutter is released before flash is charged, photo will be taken in regular A mode without flash.

Selecting an aperture

small — APERTURE — large
shorter — RANGE — longer
more – DEPTH OF FIELD — less



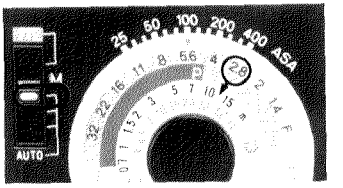
In A-mode TTL, any aperture on the lens can be used. A large aperture (e.g., f/1.4) will give greater flash range but less depth of field, while a small aperture (e.g., f/16) will give greater depth of field but less range. You should thus select an aperture that gives the best balance for your intended results.

Find the applicable flash range for a given aperture by checking the distance opposite it on the computer dial. For example, the range for f/11 is about 3m or 10 ft., and that for f/4 is about 9m or 30 ft. (at ASA/ISO 100, FULL power, N flash coverage).

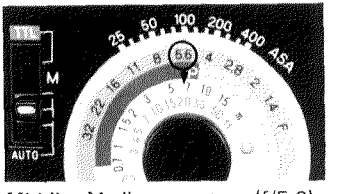
ASA/ISO 1000 range is approximately 3 times ASA/ISO 100 range.

Provided your subject remains within the same range, no resetting is necessary for subsequent pictures.

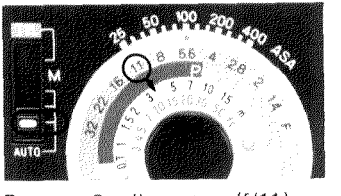
SENSOR AUTO MODE



Top—Large aperture (f/2.8): greater range (13m, 42 ft.) less depth of field



Middle—Medium aperture (f/5.6): medium range (6.5m, 21 ft.) medium depth of field



Bottom—Small aperture (f/11): less range (3.25m, 10-1/2 ft.): more depth of field

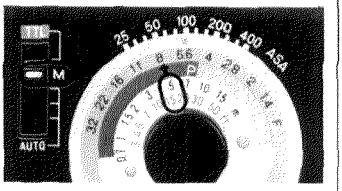
( ): value at ASA/ISO 100, FULL power, N flash coverage

In Sensor Auto mode, the 360PX's built-in sensor enables *auto control at three apertures* with any flash-synchronized camera. Camera settings for flash sync are explained in the table below. Other steps are:

1. Set computer dial at film speed and flash coverage (normally N) in use, and variable GN/power control as desired (normally FULL).
2. Set mode selector at Sensor Auto position that provides desired flash range and depth of field (*see column at left*). Corresponding aperture is indicated by red LED behind scale.
3. Set lens at that aperture. (If LED lights between f-numbers on aperture scale, set lens at nearest click-stop.)
4. Make sure subject is within indicated range, flash is charged, and sensor is not obstructed.
5. Release shutter to take picture.
6. Check green FDC lamp (within 2 sec.) to confirm if exposure was sufficient. Prechecking is also possible by pressing test button.

- Provided subject remains within *same range, no resetting is* needed for subsequent pictures.
- For ASA/ISO 1000 print film, close lens down 2 stops from aperture indicated for ASA/ISO 250.

MANUAL MODE



Manual mode provides fixed flash duration and thus requires a different aperture for each flash-subject distance (at a given power level). Camera settings for flash sync are explained below. Other steps are:

1. *Set flash as in step 1 of Sensor* Auto section.
2. Set flash's mode selector at M. (With X-700, X-500, or X-570, an alternative is to leave flash at TTL but set camera at manual.)
3. Determine flash-subject *distance (e.g., 4.5m or 15 ft.).*
4. Check computer dial to find aperture (i.e., f/8 in photo) that lines up with that distance, then set it on lens.
5. After making sure flash is charged, release shutter.

- Aperture settings can also be found by dividing guide number (e.g., 36 in meters at ASA/ISO 100, FULL power—see table on back foldout) by flash-subject distance: 36(m) ÷ 4.5(m) = f/8.
- For ASA/ISO 1000 print film, close lens down 2 stops from aperture indicated for ASA/ISO 250.

Summary of Camera/Flash Mode and Sync Settings

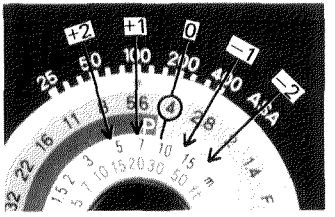
Camera Setting	Flash Mode	TTL Auto	Sensor Auto	Manual		If flash is charged (a), shutter releases at:
	Flash Setting	TTL	AUTO	M	TTL	
	X-700	P, A	not B, P	not B, P		1/60 (b)
	X-500 X-570	A	not B	not B	not B, A	1/60 (c)
	XG series	not usable	not B	not B		1/60 (b)
	XD series					1/100 (b)
	MD Zoom SLR Mark II					1/125 (b)
	Other		See owner's manual			

NOTES
(a) Provided flash is in hot shoe or connected by Cable OC, EX, CD, or Off-Flash Sensor
(b) For sync at slower speeds, flash must be electrically disconnected from hot shoe (e.g., *removed and connected* by sync cord).
(c) For sync at slower speeds, see camera owner's manual.

For "open flash" (p. 19) or intentional sync at beginning of long exposure, "B" setting is acceptable.

EXPOSURE ADJUSTMENT

In some situations (see table below), you may want or need to adjust settings or conditions. Doing so is especially important when using color reversal (slide) film due to its narrower latitude. Exact settings should, of course, be based on the specific situation and personal experience and taste.



In TTL Auto, flash exposure can be lightened or darkened by using the X-700's exposure-adjustment control (ⓐ) or temporarily changing the film-speed setting on the X-500 or X-570 (ⓑ). Adjusting exposure causes a change in range, as explained below.

For A-mode TTL, find aperture in use (e.g., f/4 in photo), then look one f-stop to left for each one-stop exposure increase (range decrease) or to right for exposure decrease (range increase). For P-mode TTL, look equivalent distance to left or right of end of P-mode range bar. ⓒ

	Situation	P-mode TTL	A-mode TTL	Sensor Auto
I	subject against bright, reflective background	set camera for up to +1 stop adjustment ⓓ		open lens 1/2 to 1 stop
II	subject against dark, nonreflective background (e.g., black curtain, or outdoors at night)	set camera for up to −1 stop adjustment		close lens 1/2 to 1 stop
III	handkerchief, tracing paper, etc. placed over flash to soften light	if subject near limit of range:		
		decrease subject distance	open lens 1/2 to 1 stop or decrease subject distance	open lens 1/2 to 1 stop and/or precheck with FDC
IV	long recycle times, or flash fired as soon as charged			

NOTES

ⓐ X-700's +/− LED goes out when flash is charged even when exposure is being adjusted.

ⓑ Set camera's film speed 3 click-stops lower (e.g., 100 → 50) for +1 stop, 3 click-stops higher (e.g., 100 → 200) for −1 stop, etc.

ⓒ Changes in range can also be found by temporarily changing film-speed setting on computer dial in same way as explained in note above, or from A-mode range graph on back foldout.

ⓓ If subject is near limit of flash range, also decrease distance if possible.

- In Manual mode, open lens 1/2 to 1 stop for situations II, III, IV, or if subject is in room with high ceiling.
- If initial or adjusted film speed (or film speed equivalent when using X-700's +/− control) is beyond ASA/ISO 400, results of exposure adjustment may not be as expected.