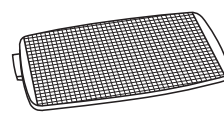
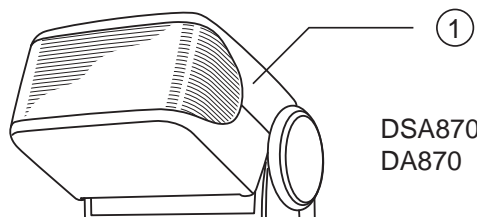
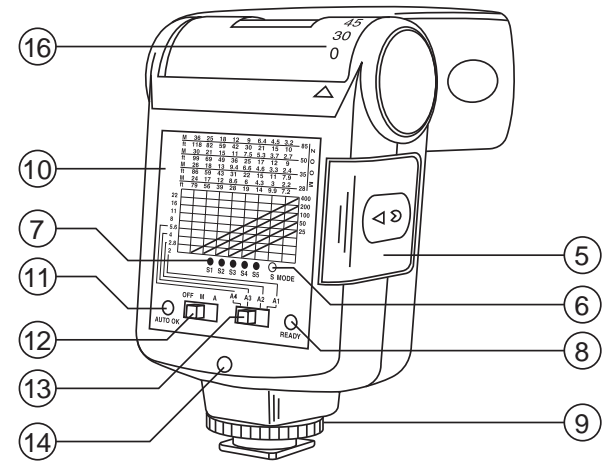
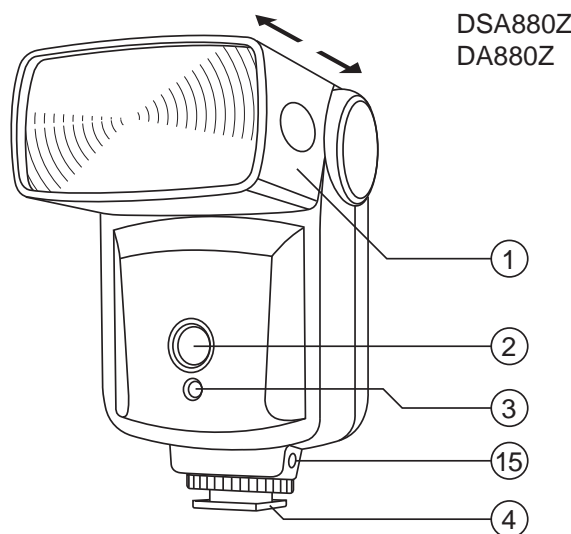


Instruction manual for TUMAX® DSA series & DA series Digital flash

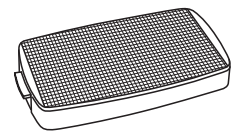
Thank you for purchasing Tumax products.

This is an innovative designed electronic flash for both digital cameras and film cameras. The features are leading photography into digital era. This flash uses low voltage and low current triggering system to secure the protection for most digital cameras, particularly, advanced technology IGBT is applied to provide the most precise photo exposure in auto aperture setting. Please kindly take few minutes to read the instruction manual before using.

1. Flash head
2. Delay / Slave Sensor (DSA series only)
3. Auto Sensor
4. Hot Shoe
5. Battery Cover
6. Slave Mode Selector (DSA series only)
7. Slave Mode Indicator (DSA series only)
8. Ready Indicator
9. Lock Ring
10. Exposure Table
11. Auto OK Indicator
12. On / Off / Auto Switch
13. Auto Aperture Selector
14. Test Button
15. Synchro Socket
16. Bounce Angle Indication



A. Lens



B. Diffuser

WD01 24mm Wide Angle Kit (A & B Optional)

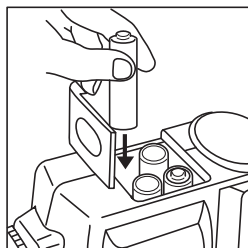
Specifications

	DSA880Z	DA880Z	DSA870	DA870
Guide No. (ISO 100)	32(m) at 85mm position		24(m)	
Flash Head	28-35-50-85mm		35mm	
Power source	4 x AA (1.5V) Batteries			
Bounce Head	0°, 30°, 45°, 60°, 90°			
Built-in Slave Mode	5 modes	N/A	5 modes	N/A
Auto range	1-5.7m at f5.6 1-8.0m at f4.0 1-11.4m at f2.8 1-16m at f2.0		1-4.3m at f5.6 1-6m at f4.0 1-8.6m at f2.8 1-12m at f2.0	
Recycling time	0.3-5 seconds with fresh batteries			
Dimensions	Approx. 70 x 50 x 155mm			
Weight w/o batt.	Approx.195g		Approx.175g	
Accessories	Synchro cord			

Specifications and design are subject to change without notice.

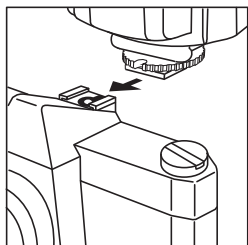
Loading batteries

Make sure the On / Off Switch is in Off position. Slide open the Battery Cover and insert 4 x AA batteries as symbols indicated in the battery compartment. Close the Battery Cover. Wrong polarities may cause batteries to heat up, leak, explode and damage the flash. Turn the On / Off Switch to M, the Ready Indicator will light within a few seconds if the batteries are properly loaded. When need to replace batteries, make sure all batteries are in same brand, type and same capacity.



Operating the flash with camera

The flash's hot shoe can be mounted onto camera's hot shoe socket directly. If hot shoe socket contact of camera does not match with flash, do not mount the flash onto camera, otherwise, damaging the camera or flash. Provided Synchro Cord can be used to connect with camera PC Sync terminal. If camera does not have hot shoe socket or PC Sync terminal, DSA series flashes have multi settings for slave mode function. So the flash can work with such cameras. The detail settings described in slave mode session.



Full power output (Manual mode)

Set the On / Off Switch to M position. Refer to Exposure Table, estimate the camera to subject distance and note to the film speed in order to get correct camera lens aperture setting.

Example: If the film speed is ISO 100, zoom position in 50mm, the flash to subject distance is 7.0m, the correct aperture should be f4.0. The aperture can be calculated as follow:

Aperture (f) = guide number (GN) / flash to subject distance (m)

Auto Mode

Set the On / Off Switch to A position. The auto aperture settings A1 (f2.0), A2 (f2.8), A3 (f4.0) and A4 (f5.6) can be set easily via the Auto Aperture Selector. Note that the aperture settings of both camera and flash must be the same. For example, when the camera is set at ISO100 and aperture set at f4.0, the flash need to set the aperture to f4.0. Within effective range, the flash will automatically control the correct amount of light output. The Auto OK Indicator will light when the pictures exposed correctly. For DSA series, The Auto and Manual mode can adapt with all Slave Mode settings.

Auto slave and delay time function (Slave mode) (For DSA series only)

Digital camera often fires pre-flashes to assist focusing or help reduce red-eye. The ordinary slave flash does not synchronize correctly. DSA series provide five settings for slave function to enhance synchronization. Relevant indicator lights when pressing the S Mode Selector.

S1 Instant synchronization. Camera's built-in flash fires will instantly trigger the flash.

S2 Start from the camera's built-in flash first fires, the slave flash under this mode would not be affected within 50uS. In fact, after 50uS the slave flash will be triggered by camera's flash.

S3 When sensed the second fires from camera's built-in flash, the flash synchronize to fire.

S4 When sensed the third fires from camera's built-in flash, the flash synchronize to fire. S5 When sensed the fourth fires from camera's built-in flash, the flash synchronize to fire. In slave mode S2 to S5, if the slave sensor can not sense the main triggering fire for main flash around 1.5 seconds, it will automatically reset slave mode to standby in order to reduce the interference from external unexpected fire.

To recall normal flash photography, simply press S Mode Selector again at S5 mode. All Slave Mode Indicators will go out, representing the flash is in normal flash mode.

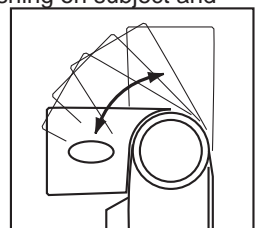
Battery Power Saving

The flash is equipped with specialized and exclusive built-in Battery Power Saving function which enables the flash in standby for over 48 hours without switch off the power. (For DSA series only)

In addition to Battery Power Saving, the flash will be turned off automatically if not in use after 3 minutes. Simply press the flash's Slave Mode Selector to activate the flash again.

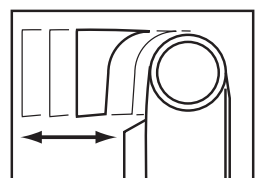
Bounce Head

By tilting the bounce head in 30°, 45°, 60° or 90° to avoid direct flashing on subject and harsh light, the flash head must be directed towards a reflecting surface such as ceiling or wall which should be neutrally white to create softer lighting effects.



Zoom Head

The Zoom Head has four positions that cover the focal length from 28 to 85mm. To choose these positions, move the flash head as shown. Make sure that the flash is set to a focal length equal to or wider than the lens' focal length to assure proper coverage.



CAUTIONS

- The flash unit does not function on camcorders.
- Do not cover the auto sensor or delay sensor when taking photographs.
- Misfiring sometimes occurs when the Power Switch is turned on and off continuously. If it happens, power off the flash unit for few seconds before switch on again, then the flash unit will back to normal.
- Do not leave or store the flash unit in temperature exceed 40°C that might adversely affect the internal structure or performance of the flash unit. Particularly, not to leave the flash unit in the automobiles during summer.
- Remove the batteries if you do not intend to use the flash unit for a longer period of time.
- The flash unit is not water resistance. Rain and humidity may cause damages, which cannot be repaired.
- The flash unit is composed of precision electronic parts. It should be protected against shocks, falls or other improper handling.
- The flash unit contains a high voltage condenser, do not try to open the housing or repair the flash.
- Do not clean the surface of flash unit by any petrol, detergent solution or strong solvents, it causes damaged.

