

Requirements for Tosogu Photographs to be submitted to the Kokusai Tosogu Kai and a Method of Photography to meet these Requirements Version 2.0

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Introduction

The purpose of this document is to discuss the necessary requirements for photographs of tosogu to be used by the Kokusai Tosogu Kai (KTK) in its formal publications and to suggest a method of meeting these requirements.

Background

What is considered to be a “proper” photograph of tosogu is very different from what those in the west would think of as the “correct” way to photograph such fittings. A western photographer’s first instinct might be to copy what the advertising industry does with jewelry, with its flashy high key lighting/backgrounds, desire to print the finished product much larger than life, inventive angles of view, etc. The more classic approach to photographing tosogu is to photograph against a plain background, with the tosogu being viewed, for the most part, from straight on, and seldom with enlargements greater than life size without a good reason (to provide better view of a mei, highlight a particular feature of workmanship or metal activity, etc.).

Requirements

In accordance with these more conservative aesthetic standards, photographs taken of tosogu meant for inclusion in KTK publications should adhere to the following standards:

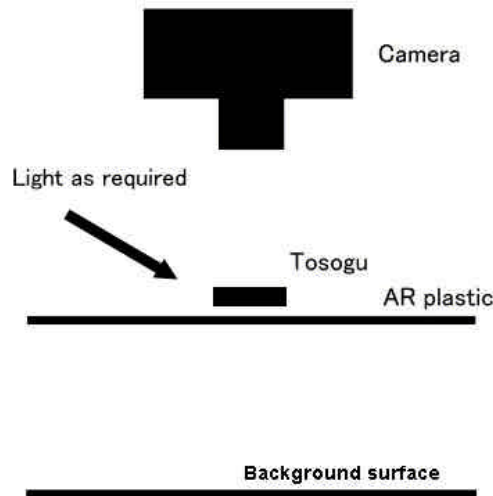
1. The finished photograph should have a featureless white background. This can be achieved either through lighting or “knocking out” the tosogu from the background (usually done with a digital photo editor).
2. The finished photograph should also be shadowless (a method is described later in this document)
3. To facilitate printing at the correct size, a metric scale showing mm should be visible in the photograph. This should be placed so that there is some space between the tosogu and the scale to allow the tosogu photo to be cropped to size without having to rework the photograph to remove the scales (or to at least minimize this retouch work). If close-ups or “art” photographs of the piece are submitted, the scales can be omitted.
4. There should be some method of identifying the photograph placed in the photograph that is meaningful (a “post it” note with an identification number, for example)
5. Photographs should be taken orthogonal to the tosogu unless there is a good reason not to do so (to show some special feature, for example)
6. The photograph should have sufficient resolution for the tosogu to be printed full size at high quality after the scale/identification information has been cropped from the photograph. This author will posit that that this resolution can be achieved with no less than a high quality 6 mega pixel digital camera or a 35mm film camera with a high quality lens – This may be conservative, but its better to have too much resolution than too little.
7. If a digital camera is used, finished photographs should be provided in TIFF, jpeg, or the new digital negative (.dng) formats. If the JPEG format is used, it should be set to have minimal compression to minimize artifacts. The color space should be set to sRGB.

8. Please do not submit physical photographs/negatives or chromes without also including a high quality scan of each image submitted. If the photo provider is unfamiliar with how to do this, please take the physical images to a professional photo processor and have the images drum scanned – this will usually guarantee a high quality scan of the image. See item 7 for acceptable data formats.
9. In general, flatbed scans of pieces are not acceptable due to aesthetic concerns. Images created using other types of non-camera based scanning systems will be considered on a case-by-case basis. See item 7 for acceptable data formats.
10. Minimal sharpening should be used unless the photographer/post process person is knowledgeable in this area (oversharpening looks bad...).
11. If the photo provider has not color corrected the image, please also include a “gray card” shot using the lighting setup so we can attempt to get the colors correct. This is done by placing a photographic “gray card” under the lighting conditions where the tosogu is being photographed and taking a photograph. Please note that it might not be possible to successfully color correct photographs taken with mixed types of light sources.

Proposed setup

To meet these requirements, the author has used the following setup with success:

Figure – 1 Camera setup:



In this setup, the Tosogu is placed on a piece of anti-reflective (AR) plastic (commonly used for picture framing and available at craft and plastic supply stores), with the “matte” side being the one the tosogu rests on. This plastic is then suspended above a white background. The author uses clear plastic boxes of identical size supporting each corner of the plastic sheet for support of this plastic sheet.

NOTE: Do NOT use glass for this purpose. It is much harder than the tosogu and can EASILY cause scratching or other damage by dragging the tosogu across the surface, dropping the tosogu on the surface, etc. Note also that while the plastic is MUCH softer, care should still be taken when placing the tosogu on this surface, as soft metal pieces can still be damaged by dropping them on the plastic surface, dragging them across the plastic surface, etc.

Irregularly shaped tosogu can be held “parallel” by a number of methods (chunks of foam, felt, “museum wax” or fun tack, etc.). This allows the piece to be supported securely. For tosogu without any lacquered surfaces, the author has had good luck with using museum wax or fun tack covered with a layer of plastic wrap (Glad™ ClingWrap or equivalent). Use a probe to pre-shape the fun tack to hold the tosogu. For lacquered or sensitive surfaces, the author uses a piece of microfiber cloth or sometimes felt between the plastic wrap and the tosogu itself. There is also a type of rice paper that is used to wrap koshirae that might be useful for this application as well.

As depth of field is an issue on larger pieces, it is usually best to have larger items (such as koshirae) be perpendicular to the camera. Methods similar to those listed above can be used to facilitate this. The author has had good luck using composite blocks of felt to support koshirae for photography.

NOTE: none of these suggestions may be acceptable for your piece – please take the amount of care necessary to prevent damage to the tosogu. We will accept no responsibility for damage done to tosogu using the beforementioned support techniques.

The camera is held perpendicular to the surface of the AR plastic, and lighting/reflectors/gobos are used as required/desired for lighting. The background can either be illuminated by “excess” light from the lighting sources used to illuminate the tosogu or by a dedicated lighting source. An option for this secondary lighting is to take the photographs of the tosogu suspended over a “soft box”, though great care must be exercised when doing this to prevent glare.

Please be careful about light sources used. They should all be of the same type and be fairly closely matched in terms of color temperature. If continuous lights are used, do not use dimmers on some of the lights. Color temperature errors are difficult to correct.

The camera has to be far enough away from the tosogu that the scales/reference information can be seen in the photograph. The camera’s aperture should be set so that all the visible areas of the tosogu are in focus. The plastic must be mounted high enough above white sweep’s surface that shadows are not cast onto it by the tosogu. Often the background must be illuminated by a separate light to achieve this.

The camera can be held above this by the use of a copy stand, tripod, etc. The only real requirements are that the mounting be rigid enough to prevent movement of the camera or fittings during the time the picture is taken and that the camera focal plane is parallel to the plane where the tosogu is placed. To that end, it is strongly recommended that either the shutter lockup/remote release be used on an SLR, and that the timer be used on digital cameras w/o a shutter. A method of getting the planarity “close enough” is to use a Level on the plane the tosogu is placed on, and a level that attaches to the camera’s hotshoe (its more difficult to achieve the required coplanarity if the camera does not have a hotshoe, but it can be done).

If the tosogu is very reflective, usually the camera’s reflection can be hidden by using a black camera at a significant distance, camouflage (cutting a hole in flat black paper and taking the photograph through the hole works), and making sure everything that the camera can “see” in the tosogu’s reflection is going to not be visible (done a number of different ways – distance, black (or necessary color) cards, necessary colors projected on surfaces, lighting power differential, etc.).

For lighting of the tosogu itself, what this author has found most useful is one or more lights “skimmed” across the tosogu to increase contrast, with white/black cards used as necessary. Note that the author has also found that photographs of tosogu made from shakudo look far better when modern innovations such as light tents are NOT used) with white/silver cards used to highlight gold/silver features as necessary. The light sources should be larger than the tosogu being photographed to soften the shadows (use soft boxes, plumber’s lights w/ large reflectors, photography umbrellas, etc.). The author also strongly recommends not using the “in camera” flash (turn it off via controls, or block it).

To minimize “grain”, the author recommends setting a digital camera to the lowest ISO available or using slower film (ISO of 160 or less) if a film camera is being used for the photos. Often consumer grade digital cameras can not produce photographs that can be used without software grain removal.

If a film camera is being used, please be sure to get the appropriate film and or filters for the lighting being used.

A photograph of a “typical” tosoгу photo setup is shown in Figure – 2.

Figure – 2: Photograph of typical setup



There are a number of things in this photograph that should be noted.

First, note the distance between the background and the AR plastic. While this distance is acceptable for a digital SLR/film SLR, the distance must be increased when using a consumer digital camera to prevent the texture of the graycard from being recorded (or the photograph must be “fixed” in photoshop). This is because the effective depth of field is larger on these cameras due to the geometry of the lens/sensor (please google “circle of confusion” for more information). The camera’s aperture should be adjusted until all visible surfaces of interest on the tosoгу are in sharp focus. This can often be quite a difficult compromise, as all lenses start suffering from diffraction effects as the aperture is made smaller.

Metering of the photograph can also be quite an issue. Most cameras default to some sort of averaging of the light intensities in the photograph to arrive at the appropriate shutter speed and/or aperture and/or flash intensity to capture a correctly exposed photograph. With this kind of metering system, the camera will try to get the average intensity in the photograph to be the same as an 18% gray (middle of the exposure range). The usual result when shooting a tosoгу against a white background will be an underexposed photograph. The amount of underexposure will vary according to the percentage of the photo is a white background, but about 2 F-stops of underexposure will be typical. You can either record the camera settings, switch to manual, and increase the exposure by the appropriate amount, or force the camera’s metering system to come to the correct exposure by telling it to increase the exposure (or increase the flash’s light output) by the appropriate amount.

Less expensive consumer digital camera sometimes will not have all the adjustments necessary to take a correctly exposed photograph against a white background – in these cases correct exposure can usually be obtained by using an 18% gray background (photographic graycard), as is shown in figure – 1. Note that

this will require that the image be “knocked” out of the background and a white background substituted, which is quite time consuming to do if a professional looking result is to be obtained.

Second, note the level attached to the camera hotshoe. Placing a small bubble level on the back of a camera w/o a hotshoe (they usually have the lcd reasonably parallel with the image plane in most consumer digital cameras) is an alternate workaround for cameras w/o hotshoes. Note that the surface the tosogu goes on should be fairly level as well. This is done to maximize the depth of field and minimize rework necessary on the photo.

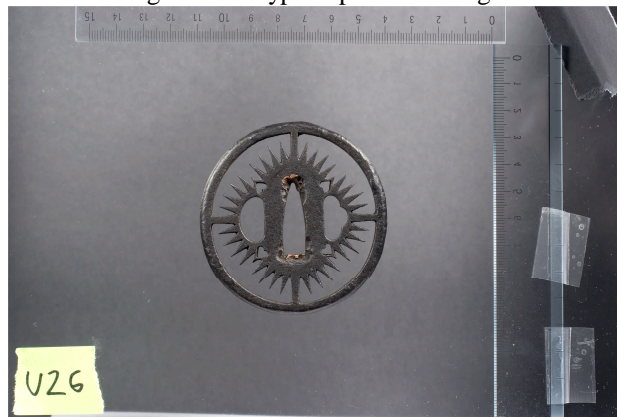
Third, note the lighting. They are actually not in the optimal place for lighting a lot of pieces, though the angle above the AR plastic is fairly “typical” (the lighting usually needs to be adjusted to show each piece in its best light (no pun intended)). In addition, it should be noted also that the light coming from the door at the upper left of the photograph should have been “blocked” to minimize color temperature/intensity changes (though usually this effect is minimal if most of the light is coming from controlled lights or flash is used). This author recommends doing a custom white balance for the purposes of these photographs (refer to your manual if you do not know what this is or how to do it). Please note the earlier comments about lighting types. It is very difficult to “fix” mismatched lighting in a photo editor.

And finally, there are some helpful items shown – a sandbag used to damp vibrations on the copy stand’s column, and the dust blower and antistatic “tiger rag” used for dust control.

Please note that the photograph of this setup is included to show a setup for taking a tosogu photograph only. The resulting photograph will show the tosogu against a gray background, which is not acceptable for submission without the tosogu being knocked out of the background and placed on a white background.

A typical setup as viewed through the camera is shown in figure – 3:

Figure – 3: Typical photo of tosogu:

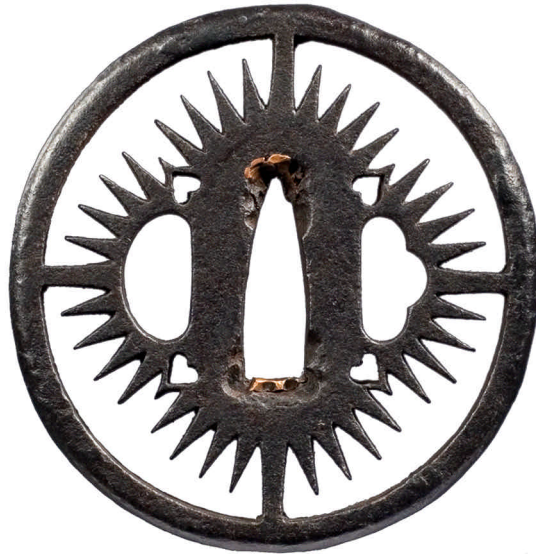


In this particular photo, there are halogen lights placed to shine light at a low angle of incidence from the upper left and upper right, with a “white card” reflector at the bottom to provide additional highlighting. A “black card” gobo can be seen in the upper right hand corner of the photo that was used in this particular situation to control a highlight on the rim of the tsuba.

Again, note that the resulting photograph is against a gray background, which would need to be removed prior to submission.

After removing the tosogu from this background and sizing to print at life-size 300DPI, the resulting image is shown in figure 3a. Note that the colors appear saturated because this photograph is shown after color adjustment so it would print correctly in a commercial situation.

Figure 3a: resulting edited tosogu photograph



Doing the clipping to produce the image shown in figure 3a is extremely time consuming. This is mostly due to the difficulty in separating the tosogu from its background so it looks correct. A better solution, if possible, is to photograph the tosogu so that a white (or nearly white) background it obtained in the first place.

A “one light” photographic setup to do this is shown in figure – 4.

Figure – 4: “one light” flash photographic setup



In this setup, an off-camera flash shoe is being utilized so that the camera's TTL metering system can be used to set the exposure for the photograph. If you try this setup yourself, remember that the camera's light meter will be “fooled” by the large white background, so some corrections will be necessary. A good starting point is 2 stops of overexposure. The author would recommend using the flash intensity adjustment to dial this in, as the shutter speed is basically irrelevant when flash is being used (set it to the maximum speed for flash operation in this case to help with vibration issues and minimize light color temperature issues), and the user will want to set the aperture to get sufficient depth of field without running into diffraction issues for a given lens. The high intensity headlamp taped to the flash is used as a jerry rigged modeling light to allow the photographer to set up the lighting modifiers for the photograph.

Obviously, a constant intensity light or a studio flash system can be substituted for the camera flash arrangement shown. Both lighting systems would probably be better in terms of allowing the photographer to set up the lighting modifiers. And a softbox or diffusion screen could also be substituted for the umbrella.

The use of a single light source is often advantageous because it is easier to get a consistent light “color” across the entire tosgu.

If studio flash is used, remember that the user will have to manually adjust the f-stop to produce a correctly exposed image.

A piece of white paper is being used for the background. As can be seen, the anti reflective plastic is being held above the background using transparent plastic boxes of identical size.

A resulting photograph from this setup without individualized lighting modifications is shown in figure – 5.

Figure – 5: resulting photograph



Note the background as photographed isn't white. This is not acceptable for submission can either be corrected in a photo editing tool, or fixed up front by lighting changes (a second flash to illuminate the background, etc.,).

A corrected version is shown in figure – 5a:

Figure 5a: corrected photograph



U Foo
G. Gaucys

And here is a second example shown in figures 6 to 6b. This image was lit with a large softbox.

Figure – 6: Original image



Figure – 6a: Knocked out image



**U Bar
R. George**

Figure – 6b: final image resized down to 1:1 at 300DPI



Please note that images 6 and 6a are shown reduced in size considerably.

It should also be noted there are a number of other ways to achieve this same “floating” appearance. It can be accomplished by the use of a light table/softbox underneath the tosogu, sticks with museum wax or fun tack to hold the tosogu above the background, hanging the tosogu vertically and taking its picture against a background, etc. All of these methods have strengths and weaknesses that it is beyond the scope of this paper to discuss.

Conclusion:

In conclusion, the requirements for what constitutes an acceptable photograph have been spelled out and a method for achieving the photograph has been described.

Acknowledgements:

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