

NICK HARVEY



Swarovski Optik's new line of Z6 scopes have unprecedented sixfold magnification increase, enhanced optical performance a wider field of view, and longer eye relief.

Extra long eye relief on the Z6 variable ensures that the shooter never has to worry about getting a 'Weatherby' eyebrow.

# Swarovski's Impressive Z6 Riflescope

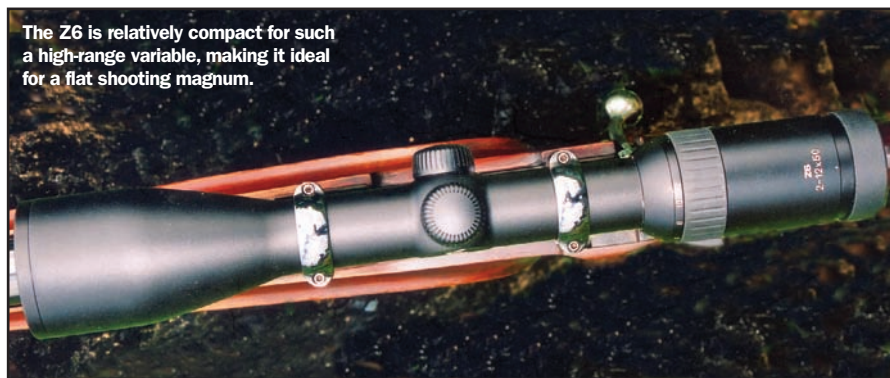
**T**he well-respected Austrian firm of Swarovski Optik has created a line of new generation riflescopes with a number of innovative features which set a new benchmark for optical design. The Z6 is unique in offering a 6x zoom capability. Prior to this, variable-power scopes had either three or fourfold magnification increase e.g 3-9x or 2.5-10x. Now Swarovski has engineered a technological revolution in this sector which not only allows a wider power range, but several other worthwhile advances. These include a wider field of view and handsome styling.

Hunters are no longer satisfied with a fixed-power scope: this is the era of the versatile variable. Modern nimrods realize that higher magnification coupled with top-quality optics helps them see better during those twilight hours when game is on the move. They've come to see the variable as a

multi-purpose instrument which can be set on the lowest power for use in brush and woods where ranges are generally short, but which can be cranked up to progressively higher powers as ranges lengthen for more precise long range aiming.

Versatility then, is a big selling point. Hunters no longer settle for a fixed 4x or 6x

when they can have anywhere from 2.5-10 or even 6-24x at the twist of a ring. Now thanks to Swarovski we can have a sixfold magnification increase which offers a wider selection of powers in a more compact scope with handsome styling. Initially, the range is limited to 1-6x24mm, 1.7-10x42mm and 2-12x50mm which offers



The Z6 is relatively compact for such a high-range variable, making it ideal for a flat shooting magnum.

incomparable flexibility in hunting scopes.

The current trend to more magnification for long range shooting with variable scopes, however, does raise the important question of reticle shift. Does the new technology which offers a 50-percent greater power range, in say the test 2-12x50mm, allow more shift than three and fourfold zoom systems, particularly with the Z6 having a second plane reticle?

When the reticle is placed in the second focal plane, behind the power changing mechanism, its apparent size stays the same, but the point of impact can shift if the power change tube doesn't slide precisely back and forth along the same axis in the centre of the scope.

While reticle shift still poses problems with cheap scopes, top quality optical companies like Swarovski have perfected manufacturing techniques using lasers and computerised instruments which hold finer tolerances. Reticle shift was all but eliminated years ago, or at least reduced it to the stage where it is no longer noticeable. Nor is the amount of shift dependent upon magnification increase since tolerances for the new Z6 scopes are even tighter than those for lower range variables in the green boxes. The problem has been taken care of in the Z6 line which has no detectable reticle shift.

Swarovski's high grid PVI-2 technology and innovative lens system guarantees smooth zooming and produces sharp images of unusual brightness and unparalleled clarity. Old scope technology dictated that eye relief couldn't be increased without the field of view shrinking inversely (growing narrower), and that the field couldn't be made wider without a corresponding reduction in eye relief. Just how Swarovski managed to circumvent the normal parameters to allow the field to be increased by up to 50 percent and at the same time



The Z6 is graduated with 1cm clicks, equivalent to about 1/3 minutes of angle.

increase eye relief from 95 to 120mm is truly mind boggling!

The width of field is unprecedented. The 2-12x50mm has a field of view at 100 metres which spans 21 metres (61 feet) at 2x shrinking to 3.5 metres (10.5 feet) at 12x.

Other benefits are: quadratic adjustment for a full range of elevation and windage even in marginal areas of the adjustment range. Z6 scopes have foolproof adjustments and the knobs can be turned with the fingers – no coin slots or tiny ridges. A zero setting beneath the dial allows precise adjustment for the point of impact without the use of tools. Z6 offers a choice of 10 different reticle choices.

Models with illuminated reticles have the rheostat built into the ocular in what is without a doubt the most attractive design I've ever seen. Lighted reticles show up brightly in dim light and are seeing increased use by deer hunters who set out in the pre-dawn and hunt right up until dark. The Z6i

is fitted with a state-of-the-art BE4 Digital Illumination unit which gives the highest luminous intensity both by day and at twilight. A switch on top of the eyepiece allows the hunter to instantly change from day to night mode and a display indicates which mode has been selected. An extended illumination control allows 64 different brightness levels for the orange-coloured reticle. Using an orange reticle instead of red gives a better perception of game.

BE4 has a built-in memory, doing away with the need for re-adjustment every time the unit is switched on. When BE4 Digital is switched off, the set brightness level is automatically stored and available for use next time the unit is activated. In the event you forget to turn it off, BE4 automatically shuts itself off after three hours to preserve battery life.

The new low profile Z6 ocular is slim in form, has a diameter of 45mm and impressive function. The battery compartment and operating buttons are not intrusive, being set low. The test 2-12x50mm measures 346-349mm and weighs 520 grams. It has a 30mm monotube with dull satin black finish, nitrogen-filled and waterproof to a depth of 4 metres, so even the most extreme climatic conditions won't put it out of commission. The rubber power-change ring is grooved with a thumb ridge.

Lenses are fully multi-coated to minimize internal reflections and transmit 90 percent of available light. No riflescope can transmit 100 percent of the light as a tiny bit of it is simply absorbed in each lens it passes through. Reflected light is a loss which reduces the brilliance of the image and dulls

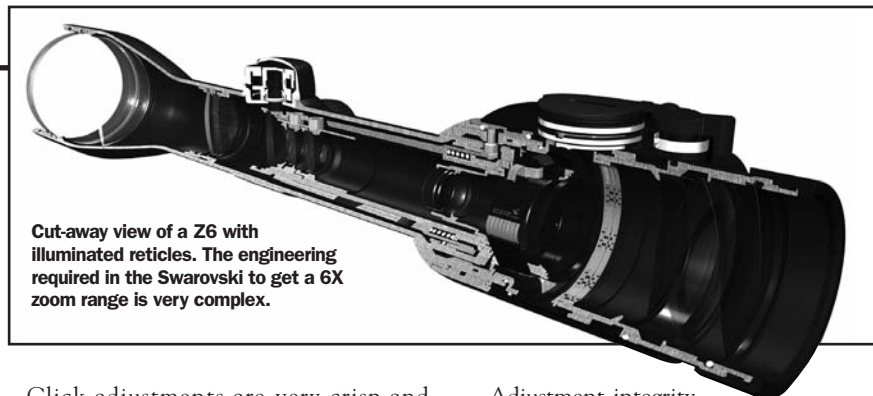


LEFT: The Z6 adjustments are precise as expected in a scope of this cost. These groups were shot after zooming and making large windage and elevation adjustments to return to zero settings.

colours. It can also bounce back and forth inside the tube, further reducing optical efficiency and sometimes causes ghost images. To reduce the amount of reflected light, the internal surfaces of the scope tube is ribbed and this "grooving" prevents residual reflections inside the tube producing bright, high-contrast images, even in intense light.

When multi-coating was first introduced many shooters who bought cheap scopes were told that they could be recognized by a green sheen on the exterior lens surfaces. But many merely had a crossed-phase coating which only reflects the colours associated with true multi-coating. The high-quality multi-coated lenses in the Swarovski Z6 shows bars of blue, orange, violet, green, yellow and purple, denoting the different oxides used and the number of layers.

My tests carried from 20 minutes after dark to full darkness revealed that the Z6 is sharp, contrasty and transmits almost all of the available light to satisfy the European liking for hunting in bright moonlight as well as in the comparative murk of dawn and dusk. The twilight factor increases from 5.7 to a whopping 24.5 as the power is raised from 2x to 12x. Furthermore the Z6 is perfectly sealed to be waterproof, fog proof, shockproof, dustproof and fungus proof.



**Cut-away view of a Z6 with illuminated reticles. The engineering required in the Swarovski to get a 6X zoom range is very complex.**

Click adjustments are very crisp and positive, each having a value of 1cm at 100 metres or 0.36 inch at 100 yards, which for all practical purposes translates into 1/3rd of a minute, or if you like, roughly 3 clicks to the inch at 100 yards. Elevation and windage scales are not numbered, but graduated with longer hash marks at every sixth interval. The test scope has a rather fine Plex reticle, but 4 and 4A are available.

Optically, the scope was excellent. The reticle appeared razor sharp following proper adjustment of the rubber-buffered focusing eyepiece which has a dioptic compensation of -3 to +2. The scope was visually free of glare and ghosting across the field from 2x to 12x under all viewing conditions. Small .204 calibre bullet holes were easily discernable at 200 yards. Distortion was totally absent. Eye relief was a long 95mm but rather critical with regard to positioning the sighting eye, so that alignment had to be quite exact.

Adjustment integrity was checked at 100 yards with the scope set at 12x, beginning with two shots in the centre of the target, followed by four additional pairs, one at each corner of the target. A final adjustment of 10 clicks right and 10 down brought the impact back to centre. The first and last groups were perfectly superimposed, indicating precise return to zero after accurate tracking.

All things considered, Swarovski's Z6 is a handsome instrument that shows exceptional performance outside normal parameters. It is a noteworthy addition to riflescopes designed with the serious hunter in mind. And it's the only one that I know of which offers the option of a sixfold zoom together with enhanced performance, let alone all the other worthwhile features.

Trade enquiries: contact Highland Sports. Website: [www.highlandports.com.au](http://www.highlandports.com.au)

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