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POLISHED TO PERFECTION



A crucial yet often undervalued part of watchmaking, polishing is a finely honed skill that demands patience and the lightest of touches. This meticulous art dates back several centuries and requires a keen instinct – the polisher holds the magical key to controlling the play of light on every facet of the watch that ultimately brings the timepiece to life



Should you meet one of Patek Philippe's watchmakers and he has reason to take off his timepiece, watch very carefully what happens next. If it is a standard pin buckle it will be laid flat. But if the watch is fastened with a deployant clasp or metal bracelet, keep an eye on which side the watch is placed. Chances are it will be the crown that is the point of contact between timepiece and table top. It is a small gesture but a significant one, as in minimizing the contact that the watch case has with the hard surface, the wearer is respecting the art of the polisher.

It has become a cultural norm to appreciate Patek Philippe as a maker of complicated timepieces: perpetual calendars, split-seconds chronographs, minute repeaters, and so forth. But one of my favorite Patek Philippes is also one of the simplest: the Nautilus, a mid-1970s masterpiece that has improved with age. Only in recent years has this model done anything more than inform its wearer of the hour of the day and the date and accompany him when he has a swim or takes a shower. But much more than a rugged water-resistant timepiece, the Nautilus is an essay in another type of perfection, a passport to another world of horological excellence – that of the master polisher.

The Nautilus was one of the first watches to be conceived as an integrated whole with the case and bracelet imagined as a single entity, rather than considered independently, made separately, and then brought

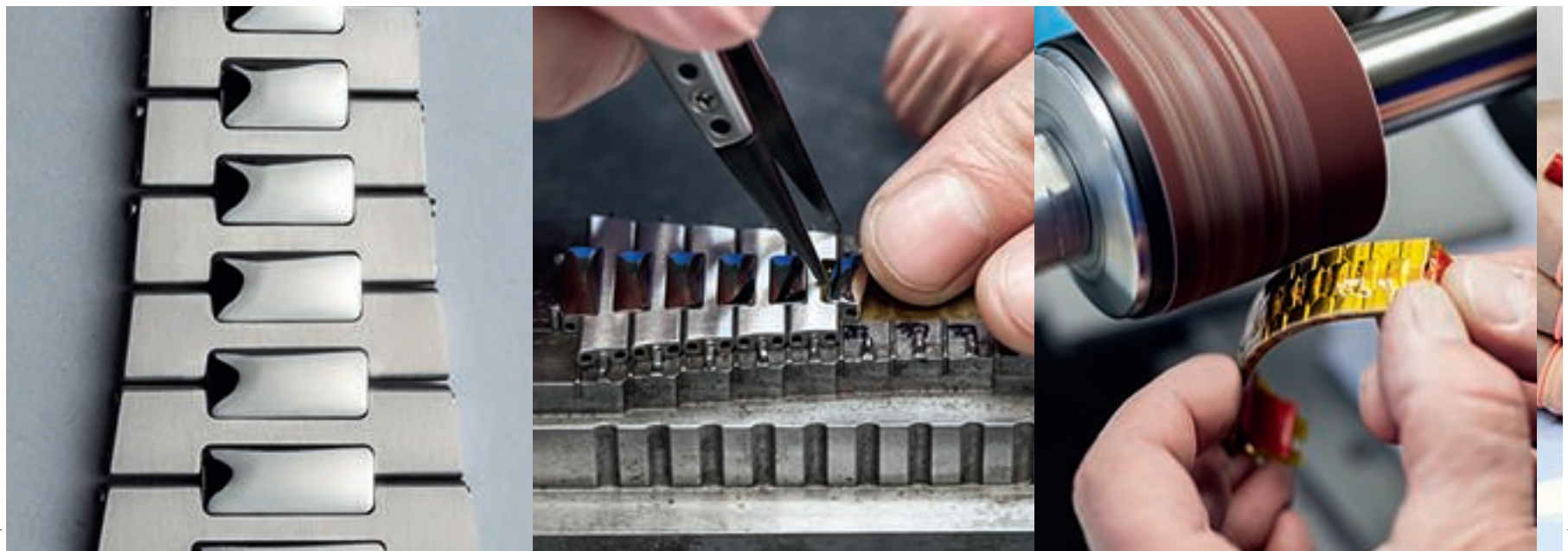
together at the last minute. The Nautilus challenged such arranged marriages and instead proposed a perfect union in which it was impossible to tell where the case ended and the bracelet began; a supple, supremely comfortable creation across which the light moved with a balletic gaiety.

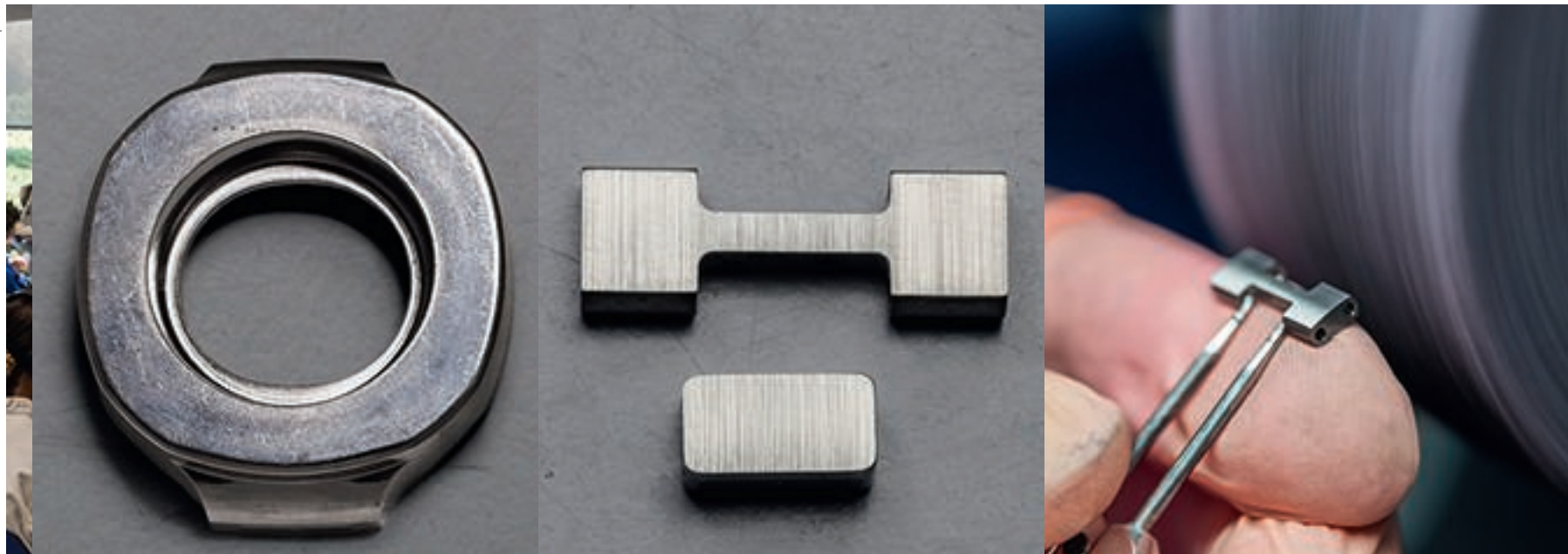
It is all too easy to take for granted this play of light over the brushed, satin-finished, polished, angled, and rounded surfaces of the Nautilus. But that lambent quality does not get there by accident; it is installed with just as much painstaking care as a watchmaker takes when assembling the microcosm of components that form the movement.

Think of it as a process akin to sculpture. It takes an artist to look at a block of marble and, amid the veins and seams imparted by geological eons, see a figure imprisoned within. Similarly, it requires a practiced eye, a skilled hand, and a patient demeanor to release the dancing light that lives within the facets and angles of the case of a Patek Philippe Nautilus. A visit to the polishing workshops of Patek Philippe in Perly, on the outskirts of Geneva, is not a question of familiarizing oneself with an aspect of the manufacturing process but of allowing oneself to be bewitched, to experience wonder, and to enable the sorcery of excellence to work its magic.

It begins with a dumb, perfunctory metal rod, nondescript and industrial in appearance. This raw material

Light dancing on the contrasting finishes of a Nautilus timepiece (previous pages). Above from left: the finishing stages for a Nautilus case and bracelet involve around 55 separate operations; the case and bracelet meet seamlessly for ultimate comfort; the Patek Philippe polishing workshops based in Perly, in Geneva; the "raw," machine-stamped Nautilus case ready for the polishing process; unfinished outer and inner links of a bracelet; one by one, the rounded curves of each outer link are satin-brushed





Below from far left: the tapering bracelet of the Nautilus combines two complementary finishes: a satin-brushed top, with polished and buffed inner pieces; the bracelet is assembled by fitting the links together and inserting tiny pins; smoothing down (or chamfering) the angled edges. The bracelet has been masked with yellow tape to shield the other surfaces during the process; perforated masking tape is carefully placed over the outer links for protection; the inner links are then given a last polish; the butterfly clasp is finally fitted to the bracelet

is machined into the basic shape of bracelet links and case by robots that handle each piece so delicately that they seem almost sentient. However, robots and multi-axis milling machines can only do so much. They can only accomplish the brute work of cutting away the superfluous metal to reveal the beginnings of the Nautilus. And it is reassuring that, in an automated and technical world, machines can only go as far as delivering the forms variously described as *usiné* or *brut*, leaving it to the hand to bring out the dazzling brilliance hidden within.

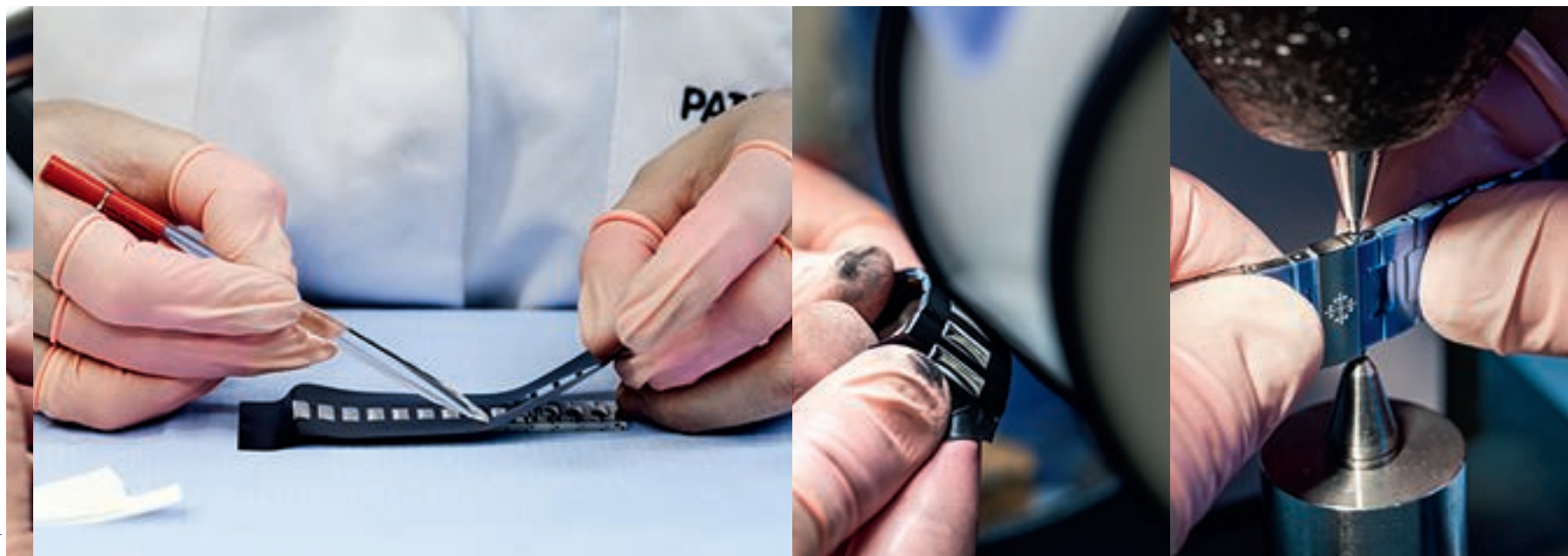
Satinage, polissage, anglage, avivage, sablage, émerisage, feutrage, lavage, lapidage... the metier of polishing comes with an entire lexicon of terms, each of which is accompanied by a discrete set of tools and various ritualized actions.

The bracelet is a definition of deceptive simplicity, “H”-shaped “exterior” links cupping the pebble smooth “inner” links. It is only when the components are laid out that the level of work involved in keeping the Nautilus attached to the wearer’s wrist begins to become apparent. Counting the hair-like pins and microscopic metal tubes that join the links, and adding the 15 parts that make the butterfly clasp, it takes 159 components to build a bracelet. The assembly of these anonymous-looking metal parts into the sinuous harmony of the bracelet can only begin when the polishers have been to work on each piece.

The appeal of the bracelet is the way in which it tapers from the head of the watch to the clasp, successive links narrowing barely perceptibly, each toying with the light. The gently domed, highly polished central links reflect light that is absorbed by the satin-brushed surfaces around, while comfort is ensured by a similar satin smoothness of the back of the links.

Care is taken with the places to which the eye of the wearer is unlikely to travel. For instance, the face of the link that meets the edge of the case is sandblasted with a needle-like high-pressure jet of air mixed with finely ground glass. The same trouble is taken with the faces of the links that abut their neighbors. Each minute plane is carefully finished, the polisher using a tool that resembles a pair of compasses crossed with a pair of tweezers to hold each link in turn against the abrasive wheel with much the same sort of delicacy that a philatelist might take when handling an especially rare and precious stamp.

Following this initial treatment, the pieces of the bracelet are mounted on adhesive paper, and then the tiny pins that join each link to its neighbors are inserted, locked into place using a strange-looking vice, and the sides sanded smooth. Then the work begins again, this time on the entire bracelet, to ensure a completely even finish on polished and brushed surfaces and to make and polish the angled edges. Each step needs to be performed with precision and accuracy,





The case of the Nautilus is made up of just three components: the middle, bezel, and back cover (above, from left).

Below, from left to right:

blue paint is painstakingly applied to the case to protect some of the surfaces during the sandblasting process; satin brushing the area between the

crown guards with a minute wheel; all the beveled edges of the case are polished with utmost care to avoid damaging the adjacent surfaces

protective clothing. All these contribute to a quality that is neatly encapsulated by the job description *ouvrière*, used by the young woman who spent an afternoon guiding me on the journey that brings a trio of dull machined pieces to their apotheosis as the distinctive case of the Nautilus.

It is all the more impressive because polishing is not taught or learned. It is absorbed. There is not even a codified set of processes to be followed. When I asked the simple question: how many procedures do the components undergo to become the case of the watch, I was told that no such figure existed. And yet for almost three hours, I watched as the refined contours and precise angles of the Nautilus case were coaxied from the rough-grained metal of the machine-stamped pieces.



even the application of adhesive tape. For instance, the slotted tape that masks the satin-brushed “outer” links must be applied exactly, allowing the interior links to be polished and then buffed to a high shine with a soft cotton disk impregnated with diamond paste without affecting the satination of the outer links. The case is at once simpler and much more complicated. Simpler, because there are only three components. More complex, because those three components are subject to dozens of individual processes.

To describe the work of the polisher as undervalued is to understate things. To be a watchmaker is to be a bit of a rock star, to walk with a swagger in the horological world. Polishing, however, carries with it the unmistakable traces of industrial activity: the whirr of lathes turning, the grime that comes with handling various abrasive pastes and protective paints, as well as the need to wear

Holding the exact sequence of many dozens of different actions in her head, she patiently, dextrously, mounted and dismantled a dizzying variety of spinning wheels. Sometimes a disk the size of a pram wheel would be called for, the next moment it might be a tiny circle of rubber the size of a twenty centime piece, impregnated with diamond dust. Sometimes a paper of barely perceptible abrasiveness might be employed, at others something so coarse it could have been coated with gravel.

There were procedures that required a wheel covered in soft yet strong goatskin and others that necessitated the fitting of wheels comprised of gossamer-thin circles of tightly woven cotton, of the sort of thread count most usually associated with the sheets of suites in luxury hotels. No surface is left untouched; the tiny area between the crown guards – where the crown fits against the side of the

case – is finished with a tiny abrasive wheel attached to what looks like a toothpick, which is spun between thumb and forefinger.

As the afternoon passed, the pieces moved between various machines, sometimes applied to a large grinding wheel that looked like it could also do serviceable duty slicing salami, at other times clamped into a protective mask and then sandblasted, leaving the workshop half a dozen times to be washed, cleaned, and returned for more work. At no point during this process can the polisher's guard slip. Cotton polishing pads are minutely inspected for fraying and loose threads, because even a stray piece of lint could scratch a polished surface. Forensic care needs to be taken about even the most banal task, for instance the application of protective blue paint to shield finished surfaces as other surfaces are worked

pressure, at just the right speed, to take off a very few microns of metal to bring that play of light, which so many of us take for granted, to magical life.

I have a litmus test for luxury. If I leave a workshop wanting what is made there and marveling at how it can be made so reasonably, then I think it is safe to use the "L" word. I am fortunate enough to have two Nautiluses, one in steel from the closing years of the last century and an earlier model in steel and gold made especially for Beyer, bearing the famous Zurich jeweler's name on the dial alongside that of Patek Philippe. Now, having seen the master polishers cast their spell over lifeless metal, I find myself wanting a third.✦

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on. Not only must paint be applied to these few square millimeters with the steady hand of a miniaturist, extreme care needs to be taken when polishing or satinating an adjacent surface, because the paint only provides limited protection to the metal.

And just as the polisher holds the complex sequence of actions in his or her head, so the tolerances are stored in the fingers. There are no calibrating tools or digital read-outs; all the work is judged by hand and eye. Each angle is respected, in order to keep the original shape of the watch. Each metal – steel, yellow gold, rose gold, white gold, and platinum – behaves differently as it is polished, brushed, and sandblasted. Knowing exactly when and how much pressure to exert while buffing a bezel or brushing the distinctive little ears on either side of the dial can only be learned by experience and felt by the fingertips. Applying just the right degree of

Above, from left: the rounded edges of the case are satin-brushed; the polishing process takes several days and is performed entirely by hand. Patek Philippe master polishers use a combination of expert touch and visual instinct to produce the perfect finish. **Right:** the impeccably polished case and bracelet of the classic Nautilus Chronograph REF. 5980/1A are united as the finished timepiece

