

THE POWER OF CLOTHING

Special Feature
Sustainability
in Jeans



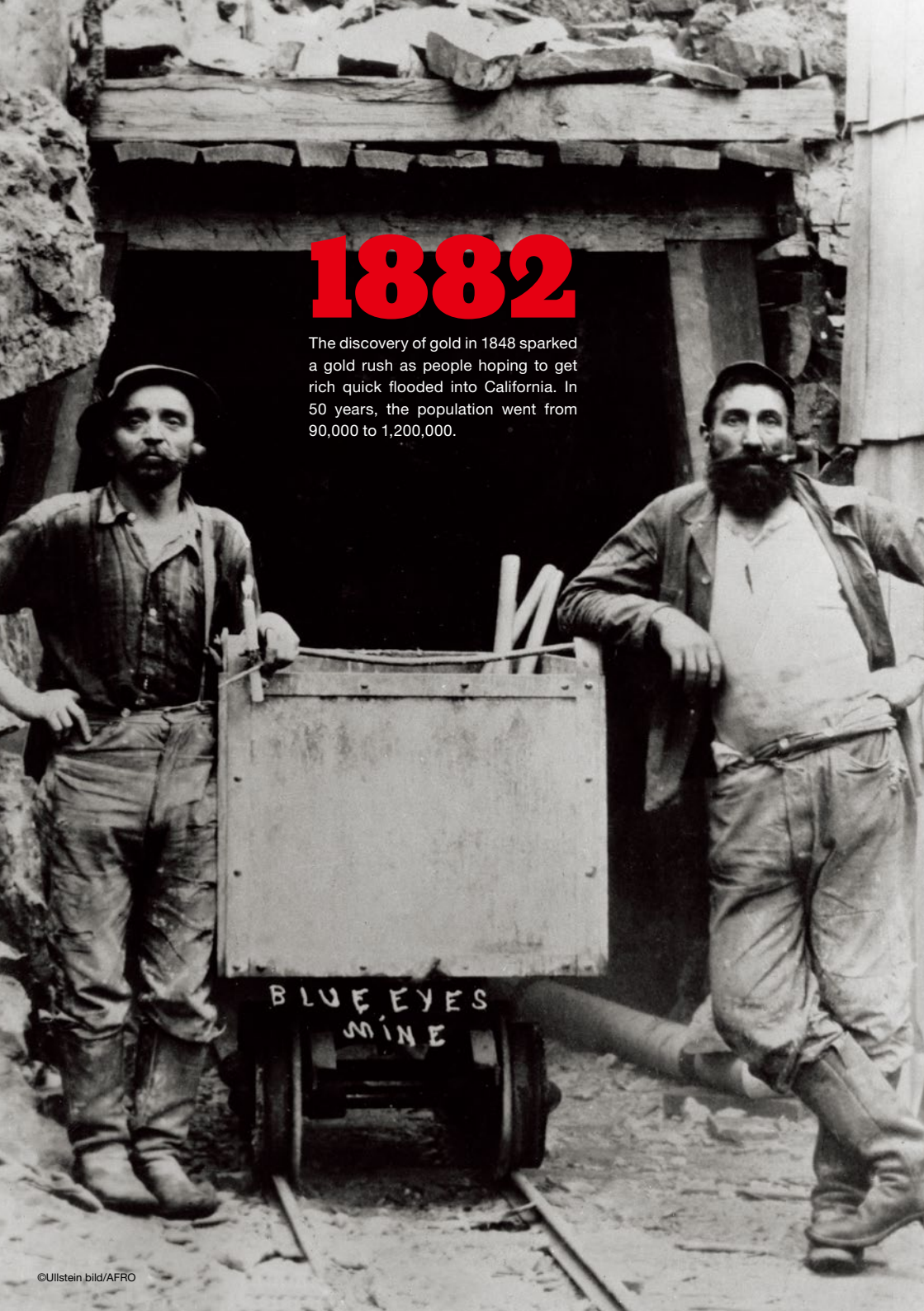
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LifeWear

1882

The discovery of gold in 1848 sparked a gold rush as people hoping to get rich quick flooded into California. In 50 years, the population went from 90,000 to 1,200,000.



Jeans: Hard-wearing, Long-lasting, Tough Work Clothes

Jeans were invented on the West Coast of the United States during the gold rush at the end of the 19th century. Going into the pits to seek and carry out gold ore was tough, and the workers' clothes got covered in dirt and chafed against rock faces. Hard labor required hard-wearing clothes to prevent immediate holes and rips.

Readily available, robust denim material was perfect for making durable work clothes.

The original jeans underwent several innovations. Metal rivets were added to vulnerable pocket edges to stop them from ripping, and rivet buttons that didn't split or burst off were developed to evolve the hard-wearing jeans style we know today.

The gold rush came and went, but trusty, comfortable jeans became a permanent feature for Americans, who valued rationality and functionality.

However, it took the power of the big screen to make people see jeans not only as durable clothes but fashionable and cool as well. It wasn't until the 1950s that young people started wearing jeans out of choice. They were attracted by how great their young on-screen heroes looked sporting jeans such as John Wayne, the star of western movies, and Marlon Brando and James Dean, who played defiant, rebellious young characters. You could call this the birth of America's deep-rooted casualwear history.

The 1960s saw the blooming of the hippie movement on the US West Coast,

driven by young proponents of love, freedom and peace opposed to the Vietnam War. During this period, jeans became a unisex, natural fashion.

Rock, folk and other popular music swept the globe in the 1960s and 1970s, with the Beatles, the Rolling Stones, Bob Dylan, Carole King and a string of 70s singer-songwriters regularly performing on stage in jeans.

Jeans are the ultimate equalizer. Free-feeling clothing for all, regardless of age, sex, ethnicity or class. In less than a century, jeans had rewritten the history of clothing.

John Lennon





2018

The development of new denim material has encouraged more diverse designs. Slip easily into our soft Slim Fit EZY Jeans for a smooth velvety feel.

Perfecting Jeans Comfort & Fashion

Early jeans were designed as durable work clothes, but felt coarse to wear.

Many years ago, starch was often added to denim material during production, contributing to that rough, stiff feel. So how to make jeans feel suppler and softer to wear?

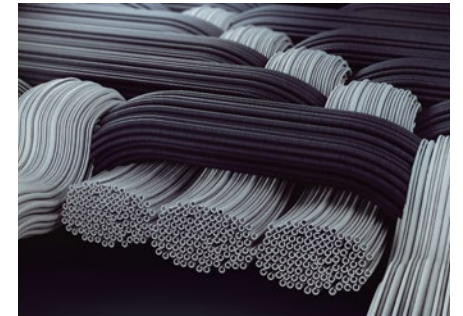
Manufacturers began washing finished jeans in the 1960s.

Finished jeans were rinsed in cold water to wash off the starch, settle the fabric, and create a different feel.

The arrival of vintage jeans made jeans more popular than ever, attracting customers with their worn look and feel, and the scarcity factor of early-design jeans.

In the 1970s, new processing technologies were developed to achieve the ultimate vintage jeans look, including stonewashing, which involved washing jeans in cold water together with pumice or other fieldstones.

Workers rubbed jeans directly with



A magnified cross-section view of the special macaroni thread developed by hollowing out the fiber at the spinning stage to create lighter jeans.

sandpaper or electric sanders for shaping to deplete the color and create the faded knee, hip and pocket look of older, worn jeans.

A century after the invention of jeans, the popularity of old-looking jeans is perhaps testament to a long history of loving use.

Great strides have also been made in the development of new denim fabrics. Denim fabric used to feel stiff when crouching, bending or stretching. Using stretch materials in denim weaving made it possible to create jeans that were comfortable and easy to wear, irrespective of how you moved.

Denim fabric used to feel thick and heavy, but today it is possible to create unprecedented light, soft jeans using macaroni fiber technology.

Jeans traditionally blurred the shape of the legs, but the advent of new materials has greatly enhanced jeans styling, enabling us to create leg-hugging skinny jeans, and improve the feel and freedom of design.



Denim fabric uses dyed warp and undyed weft thread. This damaged look is produced by cutting the warp thread to show the white weft thread (patch affixed inside garment).

Jeans-making Process Requires Water

Cultivating raw cotton requires sunshine, soil and water. Turning raw cotton into thread also requires lots of water during the indigo dyeing and the final washing processes, which is then drained as wastewater. Here's three key points on water resource sustainability.

Illustrations by Sho Fujita



Cotton Production

Sustainability Measure 1 Water for raw cotton cultivation

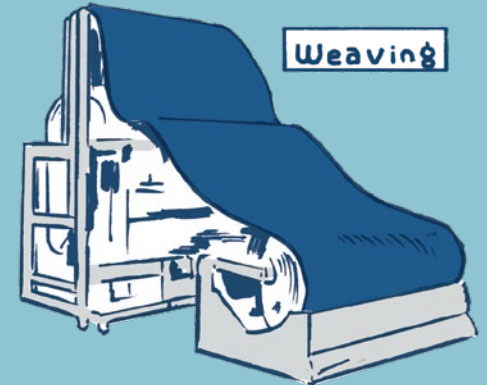
UNIQLO is a member of the non-profit Better Cotton Initiative (BCI) that supports sustainable cotton production. BCI seeks to spread better cotton cultivation techniques by teaching producers about appropriate water usage, and the uses of pesticides and other chemicals.



Spinning & Indigo Dyeing

Sustainability Measure 2 Water for fabric production

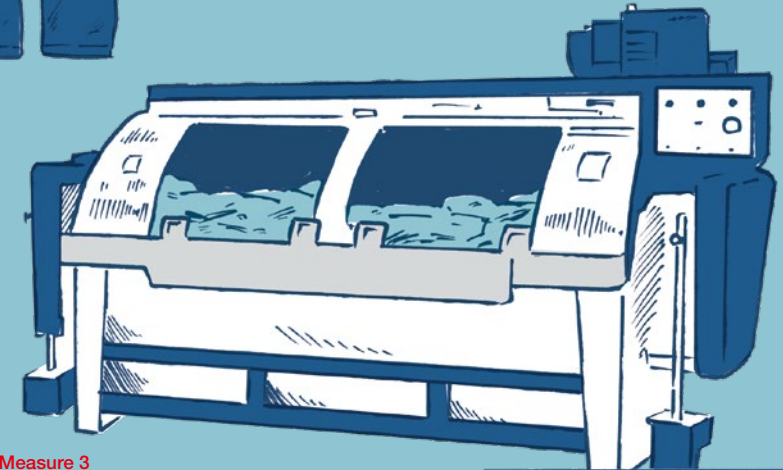
UNIQLO works with its partner factories to purify and reuse wastewater generated during production processes, and to reduce wastewater volumes.



Weaving



Sewing



Washing & Finishing

Sustainability Measure 3 Water for garment production

Finished jeans are washed together with stones in a washing machine for a popular faded look.

Read more about UNIQLO's latest water-saving initiatives





Innovation is Transforming the Value of Jeans

Masaaki Matsubara

Director
Jeans Innovation Center



We set up our Jeans Innovation Center (JIC) in Los Angeles in November 2016 as a hub for jeans research and development tasked to transform the value of UNIQLO jeans.

The history of jeans began on the US West Coast, so the jeans making tradition, premium brands, top designers and latest information is concentrated in Los Angeles, the superior denim stronghold of today and yesteryear.

JIC is constantly exploring what jeans people want right now. Of course, we are always thinking about design, but design with sustainability in mind. How to develop wonderful jeans designs that don't put a strain on precious water resources.

The jeans-washing process rinses finished pairs of jeans in large volumes of water. That in turn generates large volumes of wastewater. Jeans were originally forged out of American rationality, but producing them can cause an irrational amount of waste."

Sustainability: Adding new value to jeans

When you live in Los Angeles, you choose clothes that are comfortable for you. It's that rationality idea again. If you are hot, you take off your jacket. People instantly recognize clothes created with excessive expression by flamboyant designers, and don't like wearing them.

It is the same with jeans. We want our jeans to be comfortable. No one decides jeans have to feel hard and coarse. People will embrace stretch light denim if it is comfortable. Jeans design and value are left to evolve rationally, because that is the nature of this place.

The same comfort-focused thought process applies to the environment. California is a dry land that doesn't get much rain, so water is extremely precious. Using huge amounts of water in the jeans-making

process is not a comfortable situation, so people do something about it fast.

Water resources are not the only issue. Take people working in the factory for instance. They have to apply and rub chemicals onto the surface of the jeans to create whiskers, or white stripes resembling cats' whiskers on the upper thighs. Vintage processing such as creating holes used to be done by hand, but we now use new methods and technology to create more sustainable jeans.

Jeans are the product of rationality. We believe there are still many useful innovations we can make to improve jeans as much as the metal rivets introduced over 100 years ago.

The knowledge and information we need to do that is here in Los Angeles. It is JIC's job to take advantage of those resources to explore and realize further innovations.

The Jeans Innovation Center's new washing machine uses various technologies and innovations to successfully reduce environment impacts. The machines are being introduced into UNIQLO partner factories.

Washing with less water



Previously, we used pumice and other natural stones for our stone washes. These artificial "eco stones" were designed to fulfill the required stone-wash function. The stones are long-lasting and don't generate water-polluting stone powder.

We weren't thinking of reducing water used for jeans washing by 10 or 20%. No, we are ultimately working to reduce water usage to nearly zero. Anything less cannot be considered true innovation.

The washing machines we use at JIC were originally manufactured in Europe. We introduced these high-performance machines and added some new technologies, so we could create the perfect mix of techniques for the greatest possible effect.

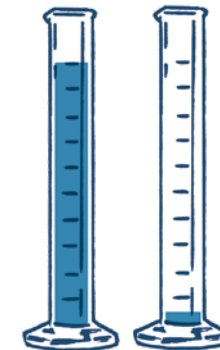
Traditional water-filled washing machines soaked clothes and washing powder in a full tank of water. The advent of drum-style washing machines helped conserve water to some extent, but the basic method still involved soaking clothes in water.

JIC's current wash machines do not soak clothes in water. In fact, they require only a tiny amount of water, enabling us to reduce water usage by an average of 90% compared to traditional washing machines.

The new wash process involves a combination of nanobubble and water-free ozone gas cleansing. Each has its own advantages and disadvantages, so we use them for different applications to achieve a wash process that uses nearly no water.

We have also made progress on the stonewashing process, which used to involve putting pumice stones or other fieldstones into the washing machine. The process gradually pulverized fieldstone and generated stone powder residue, so the stones had to be replaced after only two or three uses. We introduced new artificial "eco stones" two years ago, which have achieved the same effect with no stone powder residue.

While we haven't yet reached the zero-water stage, I feel we have opened a new door and fueled solid progress in the long history of wash treatments.



New washing process reduces water usage by up to 99%.

Our tests show that washing UNIQLO regular fit jeans with new sustainable techniques reduce water usage by up to 99% compared to our traditional jeans washing techniques.



Innovation-driven vintage jeans



As I said earlier, wash treatments were done largely by hand.

To create an overall whisker effect, chemicals had to be applied and rubbed with sand paper. Of course, cutting holes in jeans with a knife or cutter was also done by hand.

Whiskers are meant to resemble the white, faded chevrons that form naturally on jeans from repeated standing, sitting and washing, so they have to look authentic. It all comes down to experienced worker technique, but that system was vulnerable to differences in worker ability, so it is hard to guarantee uniform quality.

Constantly repeating the same process also takes a toll on the body, and invariably causes problems from a working environment perspective. Production and

labor costs are considerable for a brand such as UNIQLO that produces large volumes of high-quality product, and this became a significant hurdle to offering products at the price consumers expected.

Recently, we started using laser machines as a new technology for creating whiskers.

First, we create a design for attractive and natural-looking whiskers, incorporate that design into the machine, and use lasers to recreate the exact same whiskers on the jeans fabric. This doesn't require manual input. It ensures a uniformly high standard of quality and is efficient.

These are just the first steps on our quest to create sustainable finished jeans. We are still working on creating the perfect jeans that will change the value of jeans forever.

JIC computer-controlled laser machine whiskers/mustache processing (right photo). Vintage jeans used to be processed by hand, which was tough on workers and created large volumes of fiber waste (left photo).





Sustainable jeans are now a reality

UNIQLO started selling Men's regular fit jeans made using sustainable technology from 2018 Fall Winter. We aim to reduce environmental impact by shifting all jeans production for the entire Fast Retailing Group to the new technology by 2020.

Unlocking the Power of Clothing

We believe we can turn the power of clothing into a force for good. By designing, making and selling good clothing, we can make the world a better place.

Good clothing means simple clothing, high in quality, and built to last. It's clothing that enriches the lives of people who wear it by giving them comfort, protection and pleasure. It is produced in a way that is harmonious with nature, without excessive burden on the environment.

Good clothing is made by people of diverse backgrounds working with energy and enthusiasm, under conditions where their health, safety and human rights are respected and upheld.

And we will extend this same spirit to our customers and all our stakeholders, working with them to aspire to a better society where we all thrive.

This is our promise: to always work toward a better, more sustainable society.

<http://www.uniqlo.com/en/sustainability/>

Read more about UNIQLO sustainability initiatives

UNIQLO sustainability

Search





UNLOCKING THE POWER OF CLOTHING

Sustainability at UNIQLO starts with choosing good materials, crafting those materials into quality clothing, and delivering them to our customers – all in a responsible manner. Those items can be given a second life through our recycling program too. We are accelerating our efforts to enrich people's lives through our clothing, producing them without excessive burden on the environment while respecting the human rights, health and safety of everyone involved in the process.



UNIQLO's Sustainability

Learn more

[UNIQLO Sustainability](#)



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