

# HANDBOOK

A TECHNICAL MANUAL FOR GLOVES AND MITTS



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# Introduction

As you already know, many consumers recognize Swany® as the premier brand for high quality snowsport hand wear around the world. The many people who have already tried Swany® gloves are generally happy to invest in another pair, but those people who have yet to experience the warmth and comfort that Swany® offers may need some encouragement from you. The purpose of this manual is to give you the information to confidently communicate Swany's® many benefits to your retail customers.

In an era when most brands contract out manufacturing to the lowest bidder, it is reassuring to know that Swany® is both the brand and the factory. Owning its own factories and specializing in hand wear, Swany® is able to make gloves that fit better, work better, and last longer. By making superior products, Swany® has grown into the second largest manufacturer of dress, sport, and casual gloves on the planet with current production exceeding 12 million pair per year.

Every aspect of winter sports equipment has become more technical over the years and gloves are no exception. The quest for comfort and performance has meant that virtually every technical improvement in outerwear material has also been incorporated into hand wear. In fact, because the hands are so vital to a person's overall comfort and ability to enjoy winter sports, gloves and mitts may be one of the most important product choices your customers make.

I hope that you will find the information contained in this manual helpful in assisting your customers in selecting the right glove for their needs.

*Wishing you warm hands and perfect snow*

The Swany experience...



## Inspired

### Inspiration

A single idea can inspire a revolution. Every Swany® glove, from first prototype, to final product, springs from Swany's® desire to always find the better way.

### Need

Keeping the hands warm and comfortable is crucial to enjoying winter activities. Swany® is constantly seeking new and better ways to increase the functionality and comfort of winter hand wear.

### Solutions

Solutions to maximize comfort, durability, and functionality may come from utilizing new materials, creating new designs, or simply from perfecting current manufacturing techniques. For example, to maximize material properties, every model is subject to a two-step forming process, which creates the pre-curved hand-forms that reduce the stress of bending fingers. This process helps to create the fit and feel that Swany® is renowned for.

### Perfection

Perfection is an aim that keeps us striving for continual improvement. We take fun very seriously.

### Innovation

Swany® is constantly inventing and pursuing new and creative ways to keep your hands protected and comfortable.

### Recreation

Recreation is where fun happens and how Swany® truly is different. It's also where Swany's® ideas are formulated. It's how we learn: watching, listening, asking, and of course using the products we manufacture. We never forget that people buy our products so they can pursue the sports they love.

### Engineering

Every new design takes shape with a computer-generated blueprint to ensure proper fit and function. Swany® gloves fall into several categories customized for specific activities, but all styles under go the same stringent tests for quality, durability, comfort, and warmth. Quality materials are cut using precision equipment and sewn to the highest standards to provide the ultimate in fit and function.

### Devotion

All Swany® gloves are manufactured in our own factories, giving attention to detail and devotion to every stitch. Every glove is a work of art and is fully backed by our manufacturing guarantee.

*Do not go where the path may lead,  
go instead where there is no path &  
leave a trail-*

*Ralph Waldo Emerson*

# Our Story

## Yesterday

From different sides of world, two glove manufactures met by chance, thus launching a partnership that would give new shape to the snow and sport glove industry.

Our story begins back in 1895 when Elmer Little & Sons, a family run company located in the small upstate New York town of Gloversville, began specializing in upscale dress and casual glove production. Generations later, a well-known Elmer Little & Sons set out to create an overseas manufacturing operation. Impressed with the Japanese commitment to hard work, product quality and fair business dealings, Elmer Little began production in Gotembu, Japan in 1958.

Meanwhile, Swany Japan was an emerging leader as a dress and casual glove manufacturer in Japan. Swany Japan, seeking a venture of their own, created Swany America in 1980, which quickly gained respect and popularity among manufacturing peers in the US.

As this story goes, Swany America joined forces and acquired Elmer Little & Sons in 1987. Not long after, Swany was the first in the snow and sport industry to introduce the Flexor – a glove created from space age technologies. We use the same design that the folks at NASA use in their space programs. Another proud accomplishment was the acquisition of the Hotfingers name, a brand that combines the latest hi-tech materials with a great value.

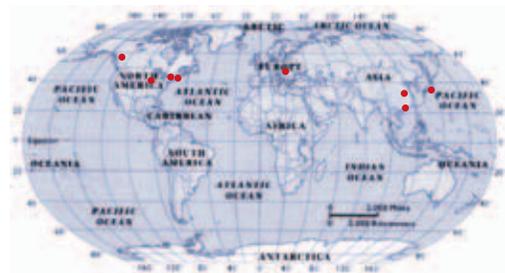
This was the beginning of the high performance sport glove program known around the world today as Swany.

## Today

It's been many years since the production of our first sport glove and we still love our job – combining the latest textile technologies with mind blowing glove designs that really work. It's easy to see our passion for the outdoors through our innovative styles - we create lightweight, functional stylish, and most importantly - warm and comfortable gloves.

Although we've built eight offices around the globe and have a presence in thousands of retail stores, our small company culture keeps us focused on what's important – producing the highest quality glove on the market.

In the beginning...



# The Science of Comfort

Designing hand wear presents unique challenges. Not only do we have to consider heat loss, moisture management, and the unique needs of each sport; we also have to deal with creating proper fit and balancing durability with dexterity. Furthermore, hand wear is part of an individual's overall outerwear system, but due to the number of nerve ending in the fingers people are much more aware of the comfort of their hands than other parts of their bodies. These factors combined with the start and stop nature of most winter sports creates a definite need for high quality materials and designs to help keep the hands comfortable.

Keeping all of these factors in mind, it is helpful to know a little bit about comfort, heat loss, and how the body goes about trying to maintain proper temperature. The following information may be touched on in other training material, but it is especially relevant to understanding how to keep the hands warm. We hope that you will find it useful in assisting your customers in selecting the proper hand wear and in building realistic expectations for what gloves can and cannot do.

The human body is an extraordinary organism that constantly self-regulates its own bodily functions in response to the environment. This process, known as homeostasis, involves numerous control systems designed to keep the body's internal conditions within an optimal range. Of the many parameters that the body regulates, temperature is one of the most immediate and noticeable. Regardless of the weather or our activity level, our body tries to maintain a core body temperature of 98.6°F (37°C). Even small variations in core temperature will cause noticeable effects in comfort and performance. High quality outerwear and accessories will dramatically extend the range of comfort and performance through a wide variety of weather conditions.

## Regulating Body Temperature

In cold temperatures the body has two primary ways to regulate its internal temperature. First, is the amount of heat generated inside the body. Active muscles produce heat as a by-product. During times of intense activity, even in the coldest weather, it is possible to overheat and begin perspiring. The second method of regulating core temperature involves regulating heat loss. The body naturally regulates heat loss through perspiration and blood flow.

When the body gets too warm the blood vessels dilate (vasodilation) which causes warm blood to flow generously through the extremities and skin. Perspiration, which is triggered by the increase in temperature and blood flow, evaporates from the skin and removes excess heat.

## Hypothermia

So, what is hypothermia and what does it have to do with the comfort of my hands?

When the body gets too cold the blood vessels constrict (vasoconstriction) to reduce the amount of blood flow to the skin and extremities, thus concentrating blood flow closer to the torso, which houses the vital organs, and to the head, which houses the brain.

If there is not enough heat being generated by the body to compensate for the heat being lost to the environment, a condition called hypothermia can result. Even subtle fluctuations in core body temperature will be accompanied by some uncomfortable feelings. The initial onset of hypothermia can often be detected by noting that the hands and feet are cold, and that the hands cannot be opened and closed quickly.

Feel it...



### Common Symptoms of Mild Hypothermia

- Sense of being cold, often experience initially as cold hands and/or feet
- Hands open and close slowly

### Common Symptoms of Intermediate Hypothermia

- Shivering
- Bluish lips
- Loss of coordination, walking is not smooth
- Subject is quiet and listless
- Subject demonstrates difficulty speaking and making sense

### Warning:

A low core temperature can kill. Hypothermia slows down thinking, speaking, and physical coordination. A person can appear intoxicated when hypothermic.

Hypothermia is always a concern in winter sports. The body has a narrow temperature range in which it can function. If the body cannot maintain its core temperature very close to 98.6°F (37°C), functions quickly begin to decline. Symptoms can come on rapidly or gradually and be very subtle. Many people will feel the first symptoms of hypothermia in their hands. Swany® makes some of the best gloves in the world, but if your core temperature drops and vasoconstriction reduces blood flow to your hands, your hands will feel cold. This is a fundamental bodily response to a drop in core temperature.

It is important to note that there is no mechanism for vasoconstriction in the head area because it is crucial that the brain always have full blood flow. As a result, as much as 80% of the body's overall heat loss, in cold weather, can be through the head and neck. Thus, the old adage: "if your hands (or feet) are cold, put on a hat." In fact, if hypothermia is quite mild, and there is little vasoconstriction, simply donning a hat can conserve enough heat to put the body back into thermal balance. The blood vessels in the extremities will reopen and the hands will become warm. Hypothermia is completely avoidable. With the proper equipment, a person can stay warm and dry in the most adverse weather conditions.

So, what does all this have to do with gloves? By knowing how the body works to regulate body temperature we can design products that work with the body to maximize comfort. Gloves and mitts, like most outerwear, generally work by insulating. This means that they are designed to retain the heat that the body naturally produces. Hand wear is an important part of one's complete outerwear system, but it is only one component and there are limits to how much a glove can do. If you are hypothermic, your hands will feel cold.

## Heat Loss

Understanding the mechanisms of heat loss can help one prevent hypothermia and ensure maximum comfort. The body loses heat in four main ways: Conduction, Convection, Radiation, and Evaporation.

**Conduction** – Conduction is one of the most familiar modes of heat loss and occurs when heat is lost through direct contact. For example when you grab a

cold object or sit on a cold chair lift. One very important note on conductive heat loss is that water conducts heat much more rapidly than air, so heat can be lost from the body very quickly when it is exposed to water. Wet clothing greatly increases heat loss through conduction. This is why moisture management is so crucial in winter garments. If moisture is allowed to enter from the outside or to accumulate near the skin due to perspiration the result is discomfort and potentially hypothermia. To protect against water penetration, Swany® relies on a variety of shell materials and membranes that are combined based on intended use. To effectively remove perspiration, Swany® uses lining, insulations, membranes, and shell fabrics that actively transport moisture away from the hands. Remember, dry hands are much more likely to be warm hands.

**Convection** – Convective heat loss occurs when heat is lost through air movement. This leads to the commonly known 'wind-chill' effect. As everyone knows, even on a warm day, a brisk wind can make you very cold. Wind-resistant and windproof shell materials are the primary defense against 'wind-chill'.

**Evaporation** – Evaporative heat loss is caused when perspiration evaporates. When body temperature exceeds 99°F (37.22°C) as during strenuous exercise, the body can lose 85% of its heat through sweating. Heat loss through evaporation increases in windy weather conditions and when the relative humidity is low. The proper selection of lining materials will facilitate temperature regulation by moving moisture away from the skin, thus reducing overheating and subsequent overcooling.

**Radiation** – Radiant heat loss, while not an obvious factor, also plays a role in heat loss. This type of heat loss usually occurs in air temperatures less than 68°F (20°C) and is responsible for significant heat loss. The amount of heat that is lost to the surrounding environment depends directly on the surface area and the ambient temperature difference. This is the primary reason why mitts are warmer than gloves. Mitts simply have less surface area to radiate heat.

### Note:

Heat loss in cold, wet weather conditions increases the risk for hypothermia and cold injury.

Start and stop activities present special challenges for maintaining comfort. For example, as you vigorously make your way down a mountain your increased muscle activity produces internal heat and naturally causes perspiration, which cools you down. At the bottom of your run you relax and cool off. The moisture that helped you cool down, now can cause your body temperature to drop uncomfortably. This is why moisture management is so crucial in outerwear, especially gloves and mitts.

The above information is just a glimpse of the many factors involved when we design gloves and mitts for each sport. The bottom line is that quality hand wear is a crucial for the enjoyment of winter sports, and it is important that people have a complete outerwear solution that is appropriate to the weather conditions and to their chosen activity. We hope that you will be able to use this information for your own benefit and when assisting your customers in selecting hand wear.

# The Science of Comfort

## Know the Hand

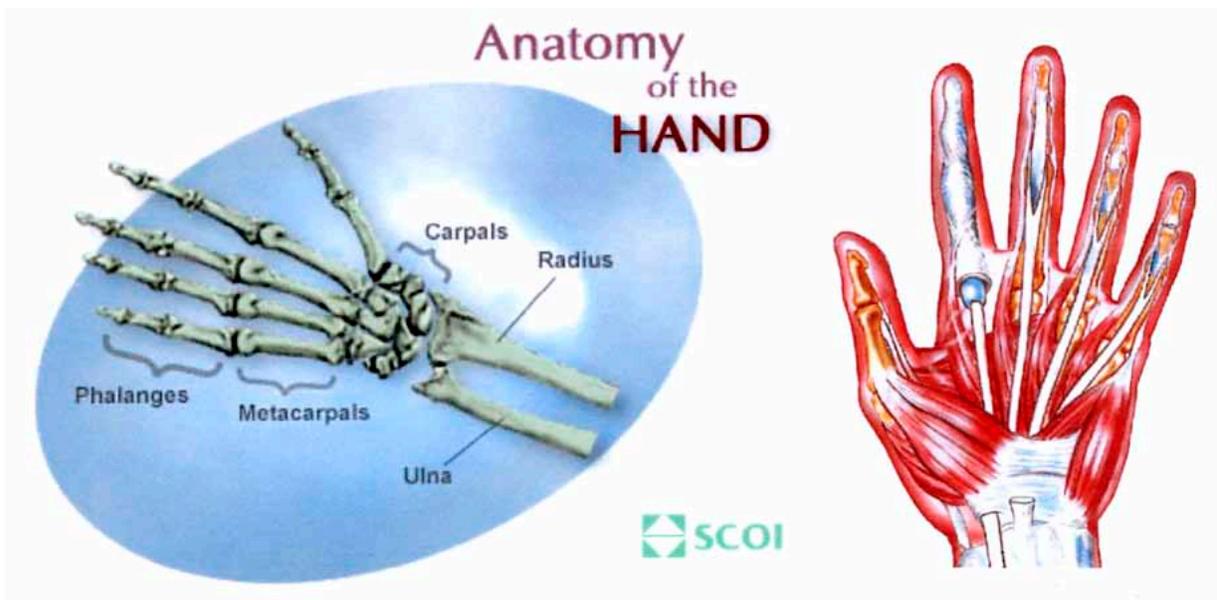
Our hands are usually taken for granted, until we lose comfortable use of them. It is important to know how your hand works to properly understand how to protect them from the cold weather, keep them comfortable, and not restrict your usage of them.

Your hands are heated internally through your blood flow. Your blood is pumped from your heart through your arteries to your hands, and then returned to your heart through your veins. The main arteries run up the sides of your wrist and closer to the surface of the back of your hand and also deep on your palm side. Your veins run on both your palm side, the back of your hand and your wrist. If your hands get cold, it returns the blood to your heart cold, and you begin to get colder. By keeping your hands warm, you assist in keeping the rest of your body warm.

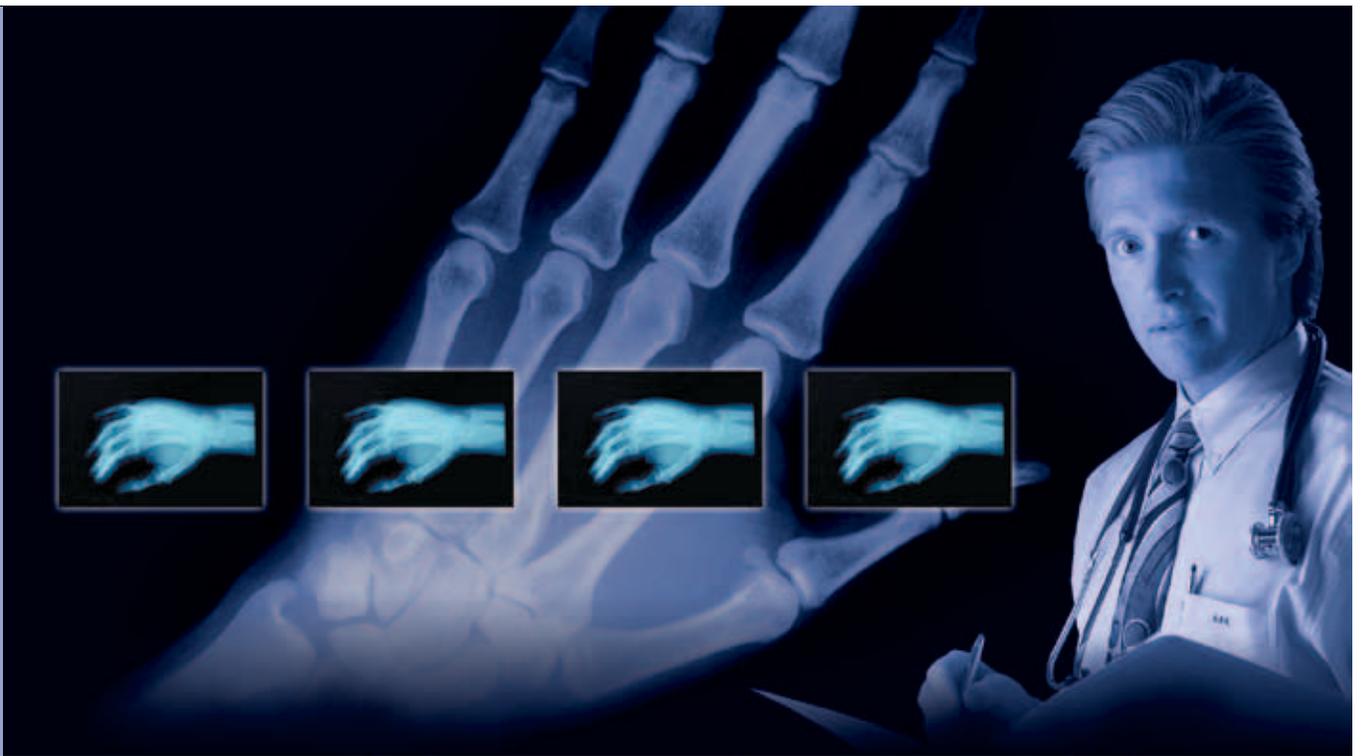
Your hand has also numerous nerve endings, which when exposed to cold, make you feel the cold more intensely.

Moisture management is extremely important since your hands (especially palm side) have sweat glands that can produce up to 10 ml of perspiration in just one hour of riding the snow. Moisture on your hands will make you uncomfortable and much colder.

The above information is just a glimpse of the many factors involved when we design gloves and mitts for each sport. The bottom line is that quality hand wear is a crucial for the enjoyment of winter sports, and it is important that people have a complete outerwear solution that is appropriate to the weather conditions and to their chosen activity. We hope that you will be able to use this information for your own benefit and when assisting your customers in selecting hand wear.



The hand is composed of many small bones called **Carpals**, **Metacarpals** and **Phalanges**. The bones of the lower arm - the **Radius** and the **Ulna** - meet at the hand to form the wrist.



## Raynaud's Phenomenon

Some people who suffer from chronically cold hands may have a condition called Raynaud's Phenomenon. Raynaud's Phenomenon (also known as Raynaud's Syndrome or Raynaud's Disease) is a disorder of the small blood vessels that feed the skin. During an attack of Raynaud's, the small arteries contract briefly (vasospasm), limiting blood flow. The hands and feet are most commonly affected, but Raynaud's can attack other areas such as the nose and ears.

Deprived of the blood's warmth and oxygen, the skin cools and can change color to white then blue. As the arteries relax and blood flows again the skin can turn red. Usually there is no pain, but it is not uncommon for the affected area to feel numb or prickly, as if it has fallen asleep.

When the body is exposed to cold, the hands and feet lose heat rapidly. To conserve heat, the body reduces the amount of blood flowing to these areas by narrowing the small arteries that supply them with blood. In persons with Raynaud's, these small blood vessels appear to over-respond to cold. For example, in some people even reaching into a refrigerator may trigger an attack.

Cold temperatures are more likely to provoke an attack when the individual is physically or emotionally stressed. For some persons,

exposure to cold is not even necessary; stress alone causes vessels to narrow.

Women between the ages of 15 and 50 are most commonly affected, but anyone can have the problem (even big macho men). It is not known for sure how many people suffer from these symptoms, but Raynaud's is a common problem and some estimates indicate that as many as 7 in 10 women may suffer from Raynaud's to some degree.

Commonly, people are taught to prevent attacks of Raynaud's by protecting themselves from exposure to cold. This includes protecting the entire body and not just the extremities. Whether the person has Raynaud's or not, it is wise for people who frequently experience cold hands to upgrade to a higher quality (often higher priced) glove or consider using a mitt. Toaster® mitts have an excellent reputation for keeping people's hands warm.

Doctors do not completely understand the cause of Raynaud's, but it is generally believed to be an overreaction of the blood vessels to cold. It is important for persons who suspect they have Raynaud's to talk with their personal physician. Only their doctor can diagnose and give advice on the best ways to manage and treat the problem.





## Gloves or Mitts?

For people seeking maximum warmth, mitts are the obvious choice. Most consumers already know that mitts are warmer than gloves, but not all of them understand why. The commonly held belief is that because the fingers are together, they share warmth. This is only part of the story. The more scientific answer is that mitts are warmer than gloves because mitts have less surface area than gloves. This translates to less convective and radiant heat loss. Mitts also have fewer seams than gloves. Less seams means less heat loss. The main drawback to mitts is the reduced dexterity.

For customers who want the warmth of a mitt, but the freedom of a glove, Swany® created Toaster® mitts. Toaster® mitts combine a glove within a mitt and a zipper opening, which allows the user to slide their hand out of the mitt. The customer gets warmth and dexterity. The side zipper also is ideal for inserting heat packs and for ventilation in milder conditions. Some consumers erroneously believe that having a glove inside the mitt will reduce its effectiveness. The easiest way to explain the situation is to remind them that while it is true that the fingers share warmth, they also share moisture, and moist skin loses heat much faster than dry skin. The gloves inside the Toaster® mitts wick moisture away from the skin to increase warmth and comfort.

For customers who prefer gloves, but want the maximum warmth possible, Swany® recommends Flexor®. Flexor® is a patented glove design that significantly increases warmth, dexterity, and durability. Flexor's® unique design reduces surface area, which dramatically increase warmth. Compared to traditional box finger construction, Flexor® uses about one half as many seams. This increases durability and further reduces heat loss. The patented flexing knuckle joints increase dexterity and reduce insulation compression that could otherwise lead to cold spots.

Some Flexor® styles are made with Swany's® Tri-plex™ insulation system.

Tri-plex™ is an ideal option for people looking for excellent warmth and comfort. This unique system incorporates a variety of strategically placed insulations and lining materials that will help to keep your hands warmer and more comfortable than any other traditionally made glove on the market.

# Why so many Different Designs?

*There are two main reasons why we offer so many different styles of gloves and mitts: price and function.*

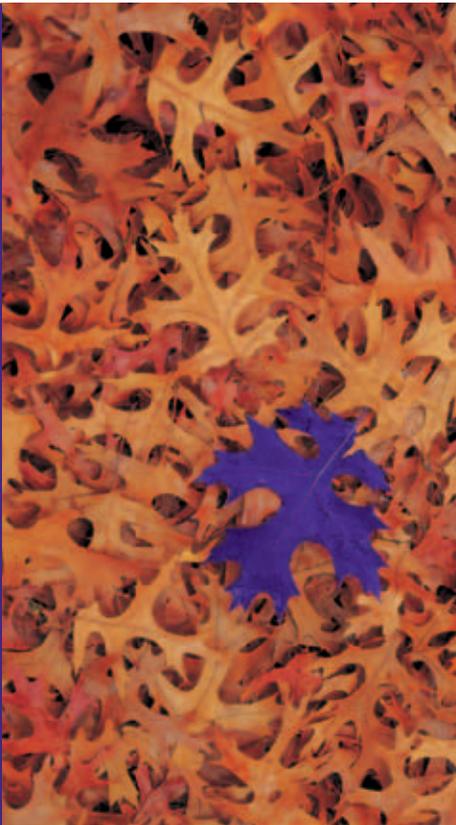
## Price

Not everyone has unlimited funds. Swany's® goal is to produce the best glove and mitt that fits a person's budget. Generally speaking, the higher the price, the longer the glove or mitt will last and the better it will perform. To many consumers, gloves may look similar, but as you move up in price point you will find better insulations, better waterproof/breathable inserts, more durable materials etc. If a customer uses a glove or mitt only a few times a year, then a less expensive Swany® will usually do. If a customer is a more frequent user (10 or more days a year), they may need a more durable choice. In the long run, what seems more 'expensive' upfront really turns out to be better value on a per use basis. For example a \$30 glove may only last for 30 uses on the hill. This would cost \$1 per use. A \$100 glove may last for 200 uses on the hill. This would cost only \$0.50 per use. The consumer that bought the \$30 glove would have to buy 7 pairs of gloves for a total of \$210 to equal the same usage as the \$100 glove would have provided. This does not even factor in that the \$100 glove would be a warmer, drier, and more comfortable. As the saying goes, "You get what you pay for."

## Function

Many gloves and mitts are designed for the specific needs of a particular winter sport, such as skiing, snowboarding, or cross country. For example, ski gloves and mitts need special reinforcements around the thumb area where there is extra wear due to poles. Flexible palm material (leather is best) is also needed for a secure and comfortable grip on the poles. Because snowboarders' gloves are in contact with snow quite frequently, the gloves must be able to handle the perspiration that condenses within the glove. This necessitates fast wicking and quick drying materials. Temperature regulation is also a key factor in snowboard glove.

Even within each sport, there are many different disciplines, which create the need for gloves, and mitts that are specifically designed with features for that particular activity. For the customer who wants a glove or mitt to do a variety of sports, Swany® created the Sport Utility Crossover series. Sport Utility Crossover series gloves and mitts are constructed to perform well in multiple winter sports.



What for...

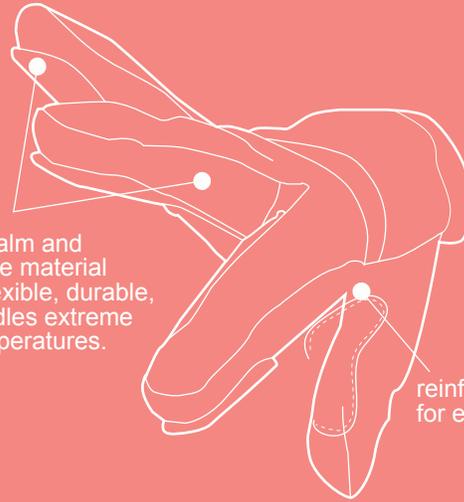


# ILLUSTRATION 1



*Forechette Detail*

proper palm and forechette material that is flexible, durable, and handles extreme cold temperatures.



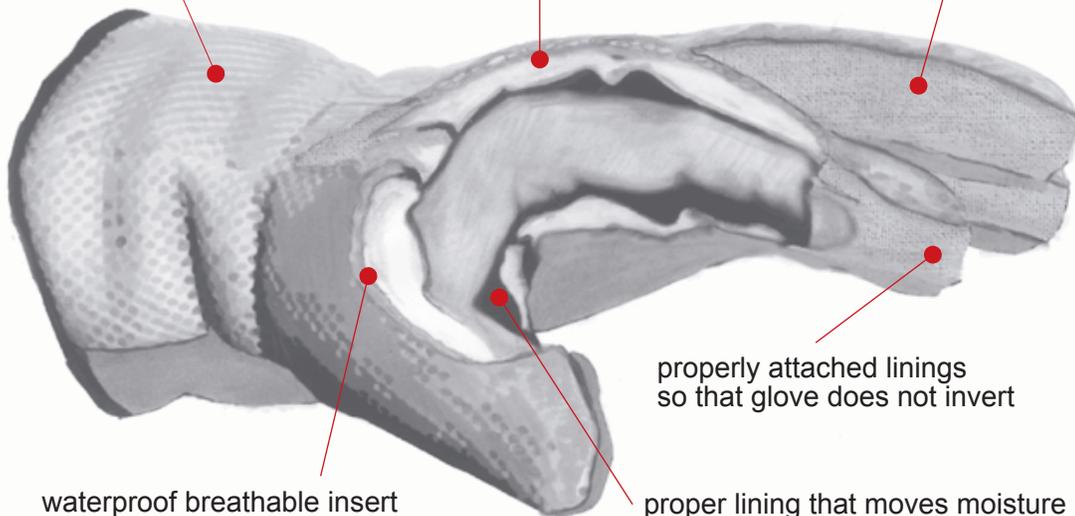
reinforced thumb area for extra durability

## Components of a Properly Constructed Winter Glove/Mitt

proper outer shell material that does not retain any moisture and protects from elements

proper insulation is what works it around the hand

preformed fingers for better, more natural fit



waterproof breathable insert to stop wetness from coming in, but release moisture from inside

properly attached linings so that glove does not invert

proper lining that moves moisture away from the hand. Sewn exactly like the glove for better fit.

Get in the Know...

SWANY®



SWANNY® Key Technologies.

## SX Crossover

- Versatile
- Superior Construction
- Special features

The SX Crossover glove concept creates truly functional gloves with remarkable versatility. By combining the best features from ski, snowboard, and mountaineering gloves, we have



created a range of gloves that is beyond compare. Rugged leathers and durable fabrics are constructed into works of art that will provide all the protection, comfort, and versatility you may ever need. Thoughtful features such as pre-curved fingers ensure maximum comfort and dexterity. The unique ventilation pockets provide a controlled cooling environment for warm conditions and a heat zone in sub-zero temperatures – it can even hold your Chapstick™. Sports Utility Crossover gloves are versatile; they may be the only gloves you ever need.



**FLEXOR®**

SWANY® Key Technologies.



### Key Technology

Aside from exceptional fit, durability, and comfort; Swany® is known for its innovative technology. The following are some of the innovative technologies that Swany® has incorporated into its products.

Flexor is a registered trademark of Rinehart Glove licensed to Swany America Patent # 4654896

### Flexor®

Flexor® is a patented glove design that was originally developed by NASA for the Apollo space missions. Flexor's® unique construction uses 50% fewer seams, than conventional gloves, to reduce heat loss and increase durability. Flexor's® mobility joints provide unrestricted finger movement and have been shown to improve dexterity by 30-50% in independent testing.



**Single seam construction**

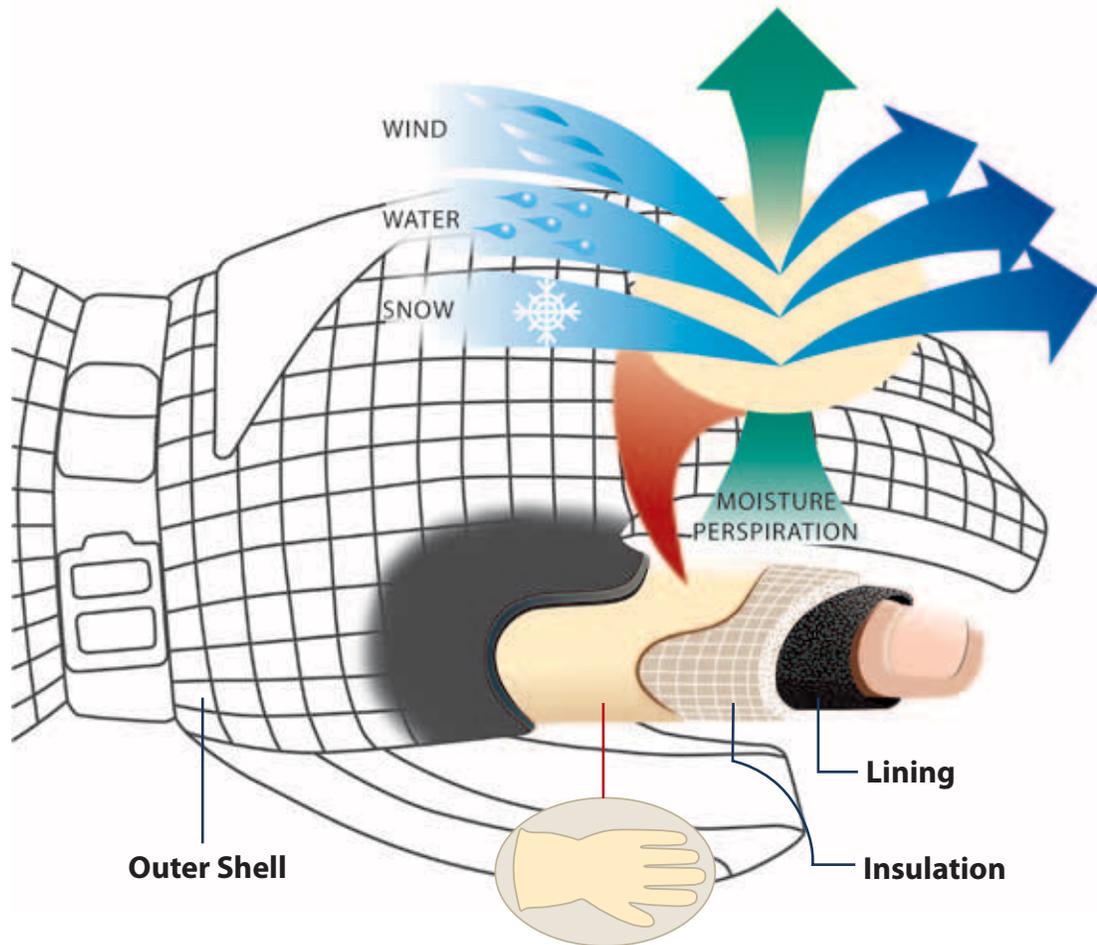
**Flexor patented knuckle joint improves flexibility and dexterity by 30 - 50%**



# DRYFINGER® II

Key Technologies.

SWAMY®



Advanced Polymer Monolithic Insert

## Dryfinger II glove inserts

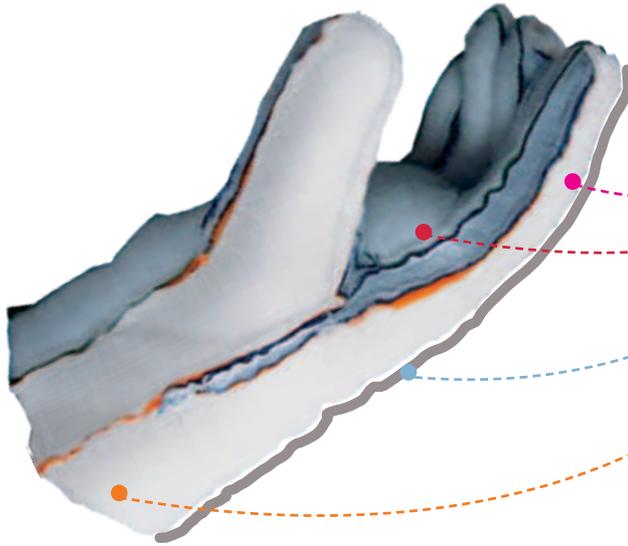
- **Totally Waterproof** - The Dryfinger II glove insert fully envelops the glove with waterproof material. Rain, snow and ice have no chance. No other breathable glove is more waterproof.
- **Extremely Breathable** - Not only is the Dryfinger material extremely breathable, the Dryfinger II inserts with their life-like shape fit perfectly in the glove. Moisture vapor from perspiration thus has a more direct path to the outside than with traditional inserts. No other waterproof glove is more breathable
- **No Pores** - Dryfinger is made of a hydrophilic (water attracting) material. It contains no pores that can get clogged with dirt, body salts, oils or detergents. Moisture vapor molecules are passed along the hydrophilic zones of the membrane to the outside. The driving force is the lighter temperature and humidity inside the glove.
- **Eco-Friendly** - Dryfinger is made of a modified polyester - one of the most environmentally safe polymers available. Unlike PTFE or polyurethane inserts, it contains no halogens and no solvents were used to make it. In addition, Dryfinger can be easily recycled.
- Dryfinger II is strong and stretchy for a longer surface life.

**The Dryfinger glove insert offers the optimal combination of high tech performance and environmental friendliness. It is one of the best performing glove inserts in the world today.**

### Dryfinger II Glove Insert Technical Specifications

- **Material:** Modified hydrophilic polyester.
- **Structure:** Homogenous, non-porous.
- **Optical Characteristics:** Colorless, slightly opaque.
- **Density:** 1.27 g/cm<sup>3</sup>.
- **Moisture vapor permeability:** > 2,300 grams/m<sup>2</sup>/24 hours - measured according to the modified ASTM method E96-66.
- **Waterproofness:**  
>150 mbar (w/o supporting fabric), > 500 mbar (with supporting fabric) - measured according to DIN 53886 using a Pfaff pressure gauge.
- **Windproofness:** No air passage (acc. DIN 53887)

# SWANY Performance Insulation Systems



## tri•plex<sup>®</sup>+

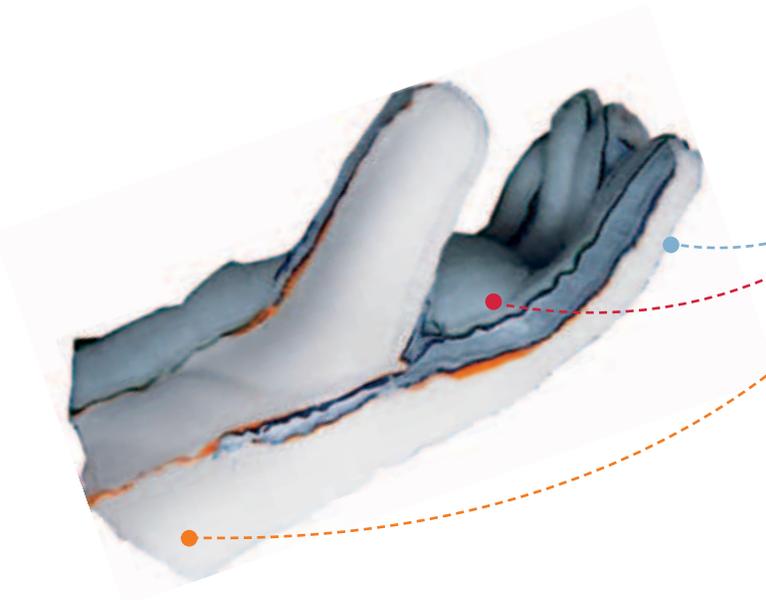
### Primaloft® Insulation

Thicker on back for extra warmth.  
Thinner on palm for greater dexterity.

### Dryfinger reflective insert

### Dyna-Therm™ Lining

Tri-Plex + is a combination of different weights of **Primaloft Insulation** with **Dryfinger Reflective** added for heat reflection and **Dynatherm Lining** for moisture management. Our warmest system available.



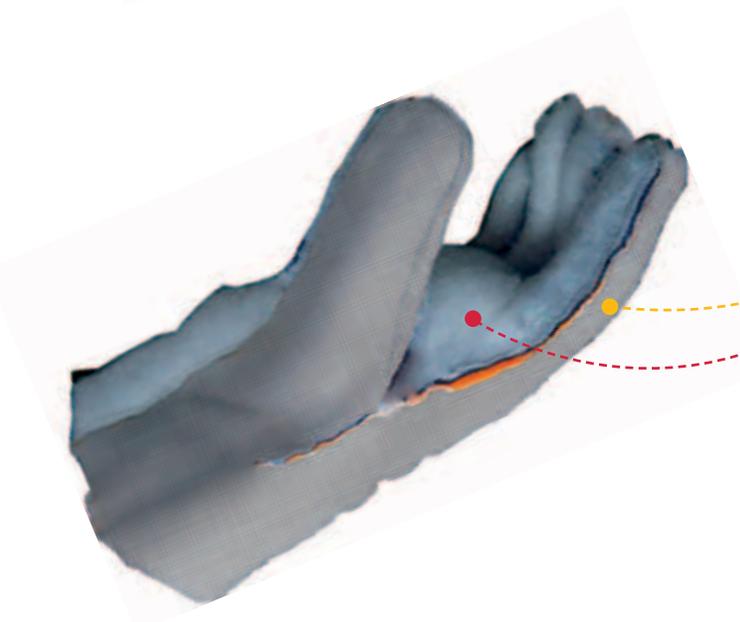
## tri•plex<sup>®</sup>

### Performance Insulations

Thicker on back for extra warmth.  
Thinner on palm for greater dexterity.

### Dyna-Therm™ Lining

Tri-Plex is a combination of different weights of insulation, plus Dynatherm lining for moisture management, to wrap your hand in perfect comfort, warmth and performance.



## bi•plex<sup>™</sup>

### Performance Insulations

Thicker on back for extra warmth.  
Thinner on palm for greater dexterity.

Bi-Plex is a combination of two different weights of insulation with a special one seam construction inside for great comfort and warmth.



# TOASTER®

Designed by a NASA scientist, the zippered concept proved problematic for use in outer space but ideal for winters here on earth. The problem with most mitts is that when you need to use your fingers you must remove the mitt. Even if the mitt doesn't fall into the snow you still end up with cold hands inside cold mitts. With the Toaster® mitt, you just open the zipper, do whatever it is you need to do: take a picture, adjust your bindings, or clean your goggles. All the while your hands stay warm and protected by the inner liner and when you are done simply close the zipper. The ingenious design ensures your hands stay warm and dry. In short, the Toaster® offers the warmth of a mitten and the freedom of a glove.

Toaster's® side zipper also provides a ventilation system during warm conditions or high aerobic activity. It is also a convenient way to slide in a heat pack for those extremely cold days.



Warmth of a Mitt



Open Zipper



Flexibility of a Glove

SWANY® Key Technologies.





A high performance fabric used in the lining of gloves. Dyna-Therm® is a special blend of fibers that not only rapidly dries and wicks moisture, but still retains heat when wet.

As a bonus, Dyna-Therm® is incredibly soft to the touch, hypoallergenic and antimicrobial.

## ***Dyna-Therm***®



**Outer shell fabrics with dual technical functions:**

Generates heat through absorption of visible and infrared rays from the sun

Reflects the wearers IR rays back to the hand

## ***Thermotron***®



**Made from natural renewable bamboo charcoal, this technical lining:**

- absorbs moisture and dries quickly
- improves blood circulation to help regulate temperature
- is an excellent insulator
- resists bacteria and is a natural deodorizer
- is hypo allergenic
- is soft and comfortable

## ***bamboocharcoaltech***®

# FlexPanel® Palms

After many years of research and testing, FlexPanel® palms were created to provide the best in dexterity, warmth and durability. By mixing materials in key areas, Swany has achieved the best balance between comfort and durability on the palms of high performance gloves. With added critical area cut positioning, insulation compression on the palm is kept to a minimum to maintain warmth.



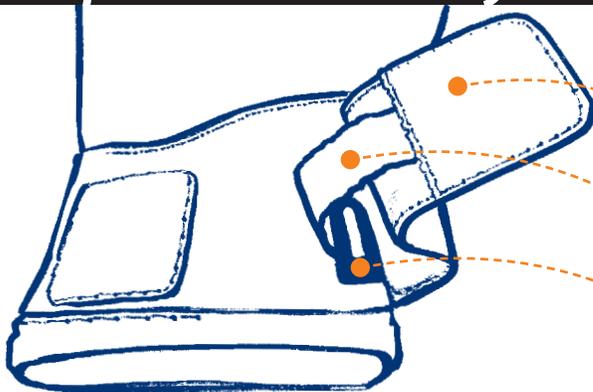
Leather Shield for superior grip, warmth and comfort

Flex Shield material for durability, abrasion resistance and flexibility

Extra palm patch for grip and durability

Critical area cut positioning for increased palm flexibility

# Speed Tab System



Easy pull hook and loop tab

Nylon closure strap

Nylon closure strap



The Speed Tab System secures the cuff of the glove to the wrist with a single unencumbered pull of the tab.



# Selecting the Proper Size

## Sizing Gloves

Selecting the proper size glove is important to both the warmth and service life of the glove. The most common error in selecting the proper glove size is customers buying a glove that is too small. Generally, people will know when a glove is too big. They will try it on and find that there is too much room at the fingertips. However, if the glove is too small it may still feel all right. What happens is the customer simply compresses the insulation that is designed to loft up and trap air. This forces the air out of the insulation resulting in a glove that will not be as warm. By buying a glove that is too small, the user also puts undue stress on the seams of the glove. This invariably leads to premature seam failure, customer dissatisfaction, and increased returns.

When assisting someone in their selection of glove size, look for the following:

1. There should be some room at the tips of the fingers. The glove should not feel tight across the back of the hand when they make a fist.
2. As a general rule, if both the medium and the large feel good, suggest the larger size. The larger size will be warmer and last longer.
3. Assisting your customers in selecting the proper size glove will increase customer satisfaction and reduce return rates.

## Sizing Toaster® Mitts

A consideration when sizing Toaster® Mitts is zipper size. When a Toaster® Mitt is properly sized, the customer should be able to slide their hand out of the zipper with relative ease and then close the zipper easily. If the mitt is too small, people will find it difficult to slide their hand out. If the mitt is too big, people will find it difficult to close the zipper.

Once your customer has selected the proper size, please let them know that using Toaster® Mitts effortlessly takes a little practice.

Sometimes it is helpful to point out the grippy material on the inside of the mitt just above the fingers. This is placed there to make it easier to remove the mitts. If people do not know about this feature, they may invert the lining when they remove the mitt.

ADULT XL

ADULT L

ADULT M

ADULT S

SWANBY®



PLACE BASE OF  
HAND ON LINE. READ SIZE  
FROM MIDDLE FINGER ABOVE





## Women's Hands

Selecting gloves and mitts that fit properly is especially important for women. As discussed in the section on Raynaud's Phenomenon, women frequently suffer from cold hands. Even if Raynaud's is not a factor, compared to men, women generally have fewer capillaries (the small blood vessels that feed the skin) in their hands and feet. To make matters worse, women's hands (and feet) also tend to have more nerves per square centimeter. This means that women are both more likely to suffer from cold hands, and will often feel the cold more intensely than men. These physiological factors can combine in such a way that it is virtually impossible for women to warm up their hands simply by skiing or boarding harder. The solution generally lies in buying the best gloves possible or using mittens. (In cold weather, a heat pack may also be required.)

Swany® has an excellent reputation for making gloves and mitts that properly fit women's hands. To make gloves that fit women properly requires making specific patterns for each gender. Simply scaling down men's sizes will usually result in a poor fit. Morphologically, women's hands tend to be more slender than men's hands and also tend to have longer more slender fingers.

Swany® does make a few casual styles in Unisex sizing, but generally you will find our gloves specifically labeled as Men's and Ladies. If you can fit into a Men's small and a Ladies large, you will notice that the overall size is similar, but the proportions are tailored to each gender.

## Working with hard to fit hands

Remember to keep in mind that everyone is unique. Some men have fairly small, slender hands and some women have large muscular hands. You may also find that ladies with very small hands need Junior gloves. And, periodically, you may find that children may need to wear a 'Ladies' glove. The bottom line is, "if the glove fits, wear it." This means that you may have to occasionally ignore the gender labeling to find a glove that fits properly.



## Care & Feeding

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As with any piece of equipment, proper care and maintenance will extend the useful life of gloves and mitts.

### General Care

- **Never wring out wet gloves!**
- **Never dry leather with direct heat!**  
It will dry and crack the leather.
- Remove from gear bag promptly and dry in an area with good air circulation.

### Water Repellent Finishes

All Swany® products are manufactured with Durable Water Repellent (DWR) finishes. These treatments are designed to make water bead up on the outer surface. Over time these treatments wear off and water will no longer bead up. Instead, the fabric 'wets out.' The gloves should still be waterproof due to internal fabric coatings and waterproof membranes, but the breathability will be greatly reduced and the glove will feel colder due to evaporative heat loss. In fact, many consumers may think their gloves are leaking when in fact it is

only their own sweat condensing inside the glove because it cannot escape through the cold, wet surface material.

To keep the gloves performing at their peak breathability, they should be kept clean and treated periodically with an aftermarket waterproofing. Your store should have a selection of excellent waterproofing products for fabrics and leathers. When water no longer beads up on the surface or actually soaks into the material, it is time to re-treat.

### Cleaning

The surface of most gloves can be cleaned simply by gently rubbing the material with clean snow. Fabric gloves can usually be hand washed with 'sports wash' or powdered detergent. Be sure to rinse thoroughly to remove all detergent. Soap has surfactants that reduce the surface tension of water and dramatically reduce waterproofness. Be sure to never wring out gloves, it will ruin the internal stitching and lining materials.

**Be careful if you dry-clean your hand wear.** Insure your dry-cleaner knows how to clean your gloves.

# Not all Materials are Created Equal

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**As the saying goes” just because it looks the same, doesn’t mean it is the same.”**

Many materials may look and feel the same, but when they are being used is when their differences are felt and noticed. To assist in knowing the differences between materials we have produced the following chart as a guideline to quantify these differences.

## 5 Star Rating Scale

Good				Excellent
1	2	3	4	5

## Outer Shell Synthetics

Materials	Warmth	Waterproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
Stretch 5000	4	5	4	n/a	4.5	5	4.5
Oasis Ripstop Dryshell	4	5	4	n/a	5	4.5	4.5
Thermotron	5	5	4	n/a	4	4.5	4.5
Honeycomb DryShell	4	4.5	4	n/a	5	4	4.3
S4 Softshell	4	4	4.5	n/a	4	5	4.3
Ottoman DryShell	4	4	4	n/a	4	4	4
Microfibre	4	4	4	n/a	4	3.5	3.9
Neoprene	4	4	3	n/a	3.5	5	3.9
Taslon DryShell	4	4	4	n/a	3	4	3.8

## Leathers

Material	Warmth	Waterproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
Smooth Grain Leathershield	5	5	5	n/a	5	5	5
Nubuck	4.5	2.5	5	n/a	4	5	4.2
Pigskin	4	4	5	n/a	3	5	4.2
Suede	3	2	5	n/a	4	5	3.8



### Insulations

Material	Warmth	Waterproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
Triplex +	5	5	5	5	5	5	5
Triplex	4.5	4.5	5	5	5	5	4.8
Biplex	4.5	4.5	4.5	4.5	4.5	4	4.5
Insuloft	4	4	4	4	4	4	4
For Insuloft, the higher the number the greater the warmth. The number signifies the gram weight of the insulation.							
Fleece/foam	2	1.5	2	1	2	3	2

### Membrane Inserts

Material	Warmth	Waterproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
Dryfinger II	5	5	5	5	5	5	5
Hipora	5	5	4	3.5	4	5	4.5
Snowtex	4	5	2.5	2.5	3	4	3.5
Waterproof insert	4	5	0	0	3	3	2.5

### Linings

Material	Warmth	Waterproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
Dyna-Therm	5	n/a	5	5	5	5	5
Bamboocharcoal	5	n/a	5	5	5	5	5
MicroPile	5	n/a	5	4	4.5	5	4.7
SwanyDry	4.5	n/a	5	4	5	5	4.7
Super Soft Tricot	4.5	n/a	4	3.5	4	4	4

### Palm Materials

Material	Warmth	Waterproofness	Breathability	Grip	Durability	Flexibility	Overall Comfort
LeatherShield	5	5	5	5	4.5	5	4.8
FlexShield	4	5	4	3.5	5	5	4.5
DuraGrip	4	5	0	4	4.5	4	3.5
PU DuraGrip	4	5	0	4.5	3.5	5	3.5

### Fleece

Material	Warmth	Windproofness	Breathability	Hydrophilic	Durability	Flexibility	Overall Comfort
SuperStretch	4	1	4	4	4	5	3.6
Wind Proof	5	5	1	1	4	4	3.5
Swany fleece	4	1	4	4	3.5	5	3.5



## Glossary of Terms

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### Outer Shell Materials

Outer shell materials provide the initial barrier to the elements and the primary protection against convective heat loss. Materials are chosen for each intended use based on a number of interrelated attributes including waterproofness, breathability, and strength. Other factors that affect the selection materials include the material's ability to block wind, shed water and snow, and its ability to resist cuts and abrasion. Aside from the purely functional considerations, designers must also select materials with good visual appeal and be sensitive to the budget of the target customer. As with all products, the materials with the best blend of features will often be the most costly.

#### *Leather*

Leather is the preferred shell material for many serious athletes. Nothing beats the fit and feel of a well-worn leather glove. Leather is especially well suited to cold, dry climates because of its excellent windproofness and natural insulation properties. All of the leathers used by Swany® are treated to shed water, but to keep the leather performing at its best, periodic cleaning and re-waterproofing is essential. Please see the 'Care and Feeding' section for more details.

#### *Fleece*

Is an excellent choice for warmer weather and more casual use. Fleece is soft, supple and breaths well. Windproof fleece is an excellent choice in terms of performance and comfort because it reduces heat loss in windy conditions.

### Palm Materials

The choice of palm materials is crucial to the feel and durability of gloves and mitts. Palm materials provide the initial protection against conductive heat loss and in large part determine the dexterity of durability of the hand wear. The best fit and feel is generally achieved by using high quality leather palms. People who have used leather gloves know that a brief break in period is required before optimum fit and feel is achieved. While leather palms may feel the supplest, they are not the best choice for intended uses where the glove will encounter cuts and abrasion or prolonged exposure to water or snow. Perhaps, the best example is snowboarding where the palms are constantly subjected to edges, bindings, and snow. For these types of conditions, synthetics are generally the best choice because they are totally waterproof and withstand cuts and abrasion better than leather.

### Waterproof / Breathable Membrane Inserts

Membranes are located just inside the outer shell and provide an extra layer of protection against wind and water penetration. High performance

waterproof/breathable inserts allow perspiration to escape from the glove and greatly improve overall warmth and comfort. A waterproof, non-breathable insert will keep out the water, but will also trap perspiration. This type of membrane is used to reduce cost and is not intended for high performance usage. A waterproof/breathable insert will allow some perspiration to escape. Microporous waterproof/breathable inserts works by allowing water vapor to escape, while not allowing liquid water to enter. The only problem with this is that if you perspire rapidly, there is not enough time for all of the perspiration to turn into vapor and escape. So, your hands may feel wet until the perspiration can turn into vapor and escape. For demanding users we recommend, Swany's® Dryfinger® inserts, which move moisture by osmosis. The inner membrane absorbs water and pushes it to the outwards without the need for the water to first form a vapor. Dryfinger® keeps you dry from the outside and the inside. Of course Dryfinger® costs more, but it is worth it.

### Insulations

Insulation materials reduce conductive, convective, and evaporative heat loss by trapping a layer of air between the hand and the membrane. Insulation materials are selected and positioned within the hand wear based on a number of criteria. Insulation materials differ greatly in their durability, loft capacity, ability to move moisture, and resistance to compression. By carefully selecting and positioning insulations based on intended use, Swany® can tailor the function of each style to the unique needs of the sport.

#### *Tri-plex™*

Swany's® exclusive Tri-plex™ insulating system works with your body by using three popular Dupont® insulations coupled with three innovative lining and shell fabrics. When positioned correctly, these insulations create an environment with specific characteristics: loft, warmth, moisture control, stretch, and dexterity. All of these characteristics result in a lighter, dryer, warmer, and more comfortable glove. To be more specific: on the palm side, the insulation must work well when compressed. And on the back of the hand, where there is lots of blood vessels and less compression, high loft insulations are ideal. Finally, on the fourchettes (sides of the fingers), flexibility, durability, and thickness are of prime concern.

### Linings

Linings are what you see and feel when you slide your hand into a glove or mitt. Swany® only uses lining materials that are 'dermocompatible', so they feel comfortable next to the skin. Secondly, all linings should move moisture away from the skin to increase comfort and reduce evaporative heat loss.

# SWANY TECH SPECS

NAME	DESCRIPTION
 <b>ECO STORM</b>	The highly water-repellent base fabric combined with 100% polyester water proof/breathable membrane. Contains fibers recycled & recyclable using ECO CIRCLE™.
<b>LEATHERSHIELD</b>	Top grain leathers, specifically tanned for durability, water repellency and suppleness.
<b>DRYSHELL</b>	Nylon and synthetic fabrics tested and used by Swany to meet high standards of repellency, durability and flexibility.
<b>SWANY SOFT SHELL</b>	4-way stretch outer shell material that is soft, very breathable and water resistant.
<b>FLEXSHIELD</b>	Exclusive Swany stretch palm material. Cut and abrasion resistant, yet very flexible.
<b>DURAGRIP</b>	Synthetic palm materials, created by Swany, for superior flexibility, durability and grip.
<b>SPEED TAB SYSTEM</b>	The Speed Tab System secures the cuff of the glove to the wrist with a single unencumbered pull of the tab.
 <b>PRIMALOFT</b> Insulation Technology	A patented microfiber structure insulation created to replace down. Incredibly lightweight, soft and water repellent.
<b>INSULOFT</b>	Premium, lofted, micro polyester insulation, which traps and holds warm air molecules.
<b>DYNA-THERM</b>	Premium lining. Fast moisture absorption and dispersal. Quick drying. Superior heat generating properties after moisture absorption. Very soft.
<b>SWANYDRY</b>	A woven, synthetic lining material with soft, hydrophilic moisture management properties.
<b>ROLLED FINGERS</b>	Finger tip construction which minimizes drag and prevents excessive tip wear and tear.
<b>AQUAGUARD</b>	Waterproof zippers from YKK®.
<b>UTILITY POCKET</b>	Can be used for a heat pack, storing small articles or a vent for cooling off and drying.
<b>UNI-PULL CUFF</b>	Easy one hand pull to tighten and release.
 <b>GORE-TEX</b>	A durable light weight laminate by WL Gore, which is sealed at the seams and fitted over the insulated layer of the glove providing total waterproof and breathable protection. Gore-tex is name you can trust when it comes to water repellent warm sport gloves and apparel.



# Warranty Procedure for Swany® & Hotfingers®

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## For Swany® Canada

Swany® makes some of the best gloves in the world and stands behind all of the products it sells.

We fully guarantee the quality of each pair of ski and sport gloves we manufacture against manufacturing defects.

## Frequently asked questions

Q. What is a manufacturing defect?

A. True manufacturing defects will generally be found by consumers quite quickly.

- If the gloves were sewn incorrectly, the seam(s) will pull apart quite quickly.
- If the various lining materials were not attached properly, the lining will invert when a person removes the glove.
- If the membrane was damaged during construction, the glove will leak right away.

Q. What is not a manufacturing defect?

A. Everything wears out! Damage due to wear and tear on seams or material, abuse, accidental damage, and improper care are not manufacturing defects. Cuts, tears, rips, abrasion, burns, and bad smells, are not covered. If a material wears out within the first two or three uses only then will it be considered a manufacturing defect.

Q. How long is the official warranty period?

A. Our official policy is 1 year from the date the consumer buys the product.

## Warranty Procedure

Ultimately, each retail outlet sets its own policy regarding how it chooses to handle warranty related issues with its customers. Our goal is to a valued and hassle free supplier and we will work with you to satisfy the consumer.

**If you make a warranty decision, we will honor that decision.**

## Obtaining a replacement item or credit.

If you have an item that you have accepted as a warranty and need a replacement or credit from Swany® Canada, please complete a copy of the included form and fax it to us. (An Excel version is also available, which can be emailed.)

If you require a Warranty Form, you may request one by phone, fax, or email.

**Phone: 604-299-0309 or 1-866-455-5228**

**Fax: 604-294-3780 or 1-866-455-5229**

**Email: [warranty@swanycanada.com](mailto:warranty@swanycanada.com)**

Once we receive your complete form, you will receive a reply by fax indicating specific instructions for each item. In most cases, we will immediately give you a tracking number, which will be your assurance that a replacement or credit note will be sent for the item.

Further, we will request that you handle the warranty item in one of two ways.

**1. Send it to us for inspection,** quoting the return authorization number (RA#) provided. (Emailed photos of the warranty items are appreciated and will often eliminate the need to return items.)

**2. Dispose of the item.** This means that you can throw the item away or donate it to a worthy cause such as a local homeless shelter. (If you decide to donate the item, you must mark an 'X' in permanent felt marker on the inside tag or lining of the glove. This will prevent the same glove from being returned again by someone else.)

This liberal return procedure is designed to maximize customer service and minimize cost for all parties. If everyone respects the honor system, it should work well for all of us.



# Retail Staff Purchase Program

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## For Swany® Canada

Swany® Canada's **Retail Staff Purchase Program** is designed to allow you to purchase the gloves (or mitts) you want and need at the most affordable price possible.

As a staff member of one of our valued dealers, you can purchase products for your own use at **50% off the suggested retail price**. This means that if you want a glove that retails for \$120.00, you pay only \$60.00 for the glove and it is delivered right to your door.

Why would we do this? It is simple. We feel that once you have used our products you will be as enthusiastic about them as we are.

### To take advantage of this offer...

1. Determine the item(s) you want.
2. Contact Swany® Canada at 1-866-455-5228 to order your gloves. You may also contact us by email at [sales@swanycanada.com](mailto:sales@swanycanada.com) or by fax 1-866-455-5229.
3. Please provide your Visa or MasterCard number with card holder name and card expiry date, for payment.

It is that simple.

Alternatively, if you are willing to read the Hand Book and then take the short easy Quiz, you will **get 70% off the retail price of a pair of Swany gloves** of your choice. The Quiz can be found at [www.swanycanada.com](http://www.swanycanada.com) on the home page.

If you have any questions, please feel free to call.



## QUIZ

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We have designed a short quiz to test your much improved knowledge of gloves since reading our manual.

Please send an e-mail to [abriglio@swanyamerica.com](mailto:abriglio@swanyamerica.com) (or fax 1-866-455-5229) to request a copy of our simple multiple choice question quiz. Once you have completed the short quiz, (you only need to circle the correct answer for 10 questions), you can send it back to us for marking. If you score more than 90%, Swany will send you a certificate that designates you as a "Master Glove and Mitt Tech". You will be able to display your certificate with pride and know that you have slightly more knowledge than 99% of the people on the planet when it comes to glove and mitts.

Also, make sure you inquire about receiving a special price on a new pair of Swany gloves or mitts for yourself!

Thanks for reading our manual and we hope it was useful to you.

Sincerely,  
Alex Briglio  
Vice president  
Swany Canada