

**MUSTANG SURVIVAL**



# **OWNER'S MANUAL**

**MSD674 TO – SENTINEL™ TACTICAL OPERATIONS DRY SUIT**



**WE SAVE LIVES FOR A LIVING**

**DO NOT REMOVE PRIOR TO SALE**

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# DESCRIPTION

## MSD674 TO – SENTINEL™ SERIES TACTICAL OPERATIONS DRY SUIT

The Sentinel™ Series Tactical Operations Dry Suit is a waterproof & breathable constant wear dry suit ideal for users engaged in potentially hostile military and law enforcement maritime operations where there is a need for immersed hypothermia protection that won't hinder their primary mission.

Optimizing fit, comfort and functionality are extremely important, especially when a poorly fitted suit can impede on a mission's efficiency and your safety. Validated by NAVAIR and the SAR Model Manager Office, Naval Special Warfare, and swift water and ice rescue instructors and trainers, our Sentinel™ Series is designed to be compatible with all types of equipment used in these environments.

The MSD674 TO was designed with end user feedback from Naval Special Warfare, several US Federal tactical units and several State & Local Police SWAT teams. The result is a durable, lightweight, well fitting dry suit with features typically found on industry leading combat and tactical uniforms.

- NEW Mobility Based Sizing™ reduces bulk and increases range of motion, offering a semi-custom size fit without the custom price tag.
- NEW zipper design for entry and relief openings. More comfortable, easier to operate and less maintenance required than traditional dry zippers
- NEW two-point attachment removable suspender system for an improved fit, mobility and comfort
- NEW Rapid Repair Technology™ enables users to self-replace neck and wrist seals and repair small leaks in an hour or less
- NEW Rapid Repair Adjustable Neck Seal combines the benefits of our adjustable neck seal with our Rapid Repair Technology™
- 1050 Denier Ballistic Nylon reinforced elbows, knees, seat and wrist and leg over cuffs
- NEW Flexible Molded Foam knee and elbow pads help prevent injury and still allow the use of external knee pads
- NEW Back knee tabs to secure knee pads in place
- NEW Velcro® waist adjustment with loops for removable duty belt keepers.

- Integrated universal size GORE-TEX® Dry Socks (Size XL+ come with jumbo socks)
- Military grade BD6.5 GORE-TEX® waterproof & breathable dry suit fabric
- Neck collar for improved abrasion protection and comfort
- NEW 2 expanding arm pockets with Velcro® closures, pen keepers and covered in Velcro® for attaching patches
- NEW 2 expanding thigh pockets with Velcro® closures that include internal stabilizers for small equipment.
- NEW 2 expanding calf cargo pockets with Velcro® closures
- Large leg and wrist over cuffs have Velcro® closures for adjustability
- 2 Packages of TIZIP® lubricant

The Sentinel™ Series Tactical Operations Dry Suit is easily donned/doffed by the wearer using a diagonal watertight entry zipper across the torso and wearer's left shoulder and includes a relief zipper. Customized fit can be achieved through adjustment of the internal suspenders to modify trunk length for improved range of motion.

Every Sentinel™ Series Tactical Operations Dry Suit produced by Mustang is leak tested to ensure waterproof integrity prior to leaving our factory. All suits are 100% tested to ensure the highest level of reliability and performance.

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**WARNING: Dry suits alone provide inadequate protection for extreme climate differences. All users should wear appropriate wicking thermal undergarments to prevent hypothermia (in cold climates) and moisture wicking undergarments to prevent heat stroke (in warm climates).**

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**WARNING: Dry suits are not inherently buoyant. All users should wear appropriate flotation devices with the dry suit.**

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# SENTINEL™ SERIES SIZING GUIDE

The Mobility Based Sizing™ platform is like none other currently in the industry.

To order a suit that fits you best, please follow the instructions below:

## STEP 1 – MEASURING

For accurate measurements, please refer to the measurement diagram and instructions provided.

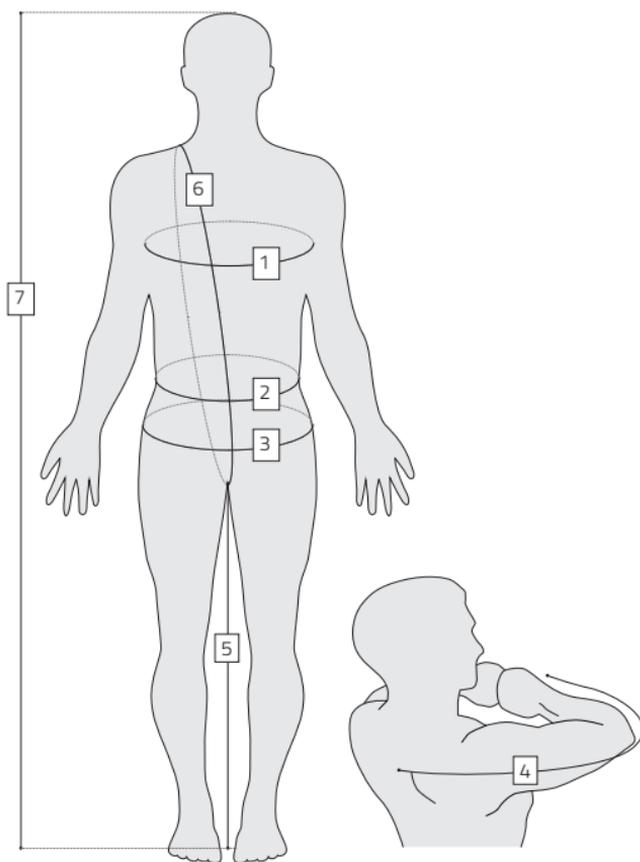
All measurements should be taken with a "tailors" (flexible) tape while wearing garments and any accessories such as body armor usually worn under the dry suit.

	LOCATION	VALUE	PROCEDURE
1	Chest		Measure the horizontal circumference around the chest at maximum girth. For males, this is typically where the tape runs under the armpits at the scye. For females, this is at the bustline.
2	Waist		Measure the horizontal circumference around the waist (belt) line.
3	Hips		Measure the horizontal circumference around the hips and buttock at maximum girth.
4	Sleeve		With your arms horizontal, bent at the elbows, and with your fists touching knuckle-to-knuckle out from the chest, measure the distance from the center of the back along the outside of the arm to the outer tip of the wrist.
5	Inseam		Measure the vertical distance from the crotch to the floor. Use a book pressed firmly up between the legs and measure from the top of the book.
6	Torso Hoop		With your shoulders relaxed and the tape running over the center of one shoulder and between the legs, measure the vertical trunk circumference
7	Height		Vertical standing height with good posture and no footwear.

## STEP 2 – SIZING

Based on your measurements, determine your size according to the chart below. If all your measurements fall between the ranges of two sequential sizes (such as between S and M) select the size that best fits your Torso Hoop and Inseam.

**Figure 1** MEASURING LOCATIONS



LOCATION	XS	S	M	L1	L2	XL	XXL	3XL
Chest	35-38"	37-40"	39-42"	41-44"	43-46"	45-48"	49-52"	53-56"
Waist	29-32"	31-34"	34-37"	35-38"	37-40"	41-44"	46-49"	51-54"
Hips	37-40"	38-41"	39-42"	40-43"	41-44"	43-46"	47-50"	53-56"
Sleeve	29-31"	31-33"	33-35"	34-36"	35-37"	36-38"	37-39"	38-40"
Inseam	28-30"	30-32"	32-34"	33-35"	34-36"	34-36"	34-36"	34-36"
Torso Hoop	59-62"	62-65"	65-68"	67-70"	69-72"	71-74"	76-79"	78-81"

## STEP 3 – SUIT LENGTH

Based on your height, determine your suit length according to the chart below. \*To further refine the fit of your suit, Mustang Survival offers the Sentinel™ Series Tactical Operations Dry Suit in short and long sizes as a special order.

HEIGHT	XS	S	M	L1	L2	XL	XXL	3XL
Short	57-60"	61-64"	65-68"	66-69"	68-71"	70-73"	72-75"	72-75"
Regular	60-63"	64-67"	68-71"	69-72"	71-74"	73-76"	75-78"	75-78"
Long	63½- 66½"	67½- 70½"	71½- 74½"	72½ -75½"	74½- 77½"	76½- 79½"	78½- 81½"	78½- 81½"

Following Steps 1 - 3 should bring you to one comprehensive size such as L1 Short or Medium Regular, which is a combination of your overall measurements (chest, waist, etc.) and your height.

\*Please note: If all your measurement DO NOT fall into the range of two sequential sizes, for example, chest measurement is Medium but Waist measurement is in L2, you may require a full customized suit. Please contact your Mustang Survival Representative for more information.

## INSTRUCTIONS FOR USE

This manual supplies instructional, maintenance and safety information for the Sentinel™ Series Tactical Operations Dry Suit.

### NEOPRENE WRIST SEAL FITTING

The neoprene wrist seals should only be trimmed if they are uncomfortably tight and restrict blood flow. If wrist seal sizing is required, proceed as follows:

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**CAUTION: Trim wrist seals with extreme caution. A smooth trim line is essential. Excessive or careless trimming could result in loose seals that leak and necessitate replacement. Avoid nicking seal fabric, as this could result in tearing the seals when donning and doffing, and also could result in skin irritation. Trim only 1/8" at a time. You can always trim more, but you can't replace what you have cut off.**

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Required materials: Ruler, sharp scissors and a white china marker or silver pen.

Only the neoprene wrist seals can be trimmed using this procedure.

1. Trim only 1/8" at a time. Using a ruler mark a circular line around the seal that is offset from the edge of the cuff end by 1/8".

Figure 2

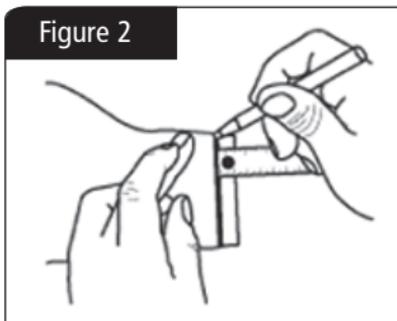
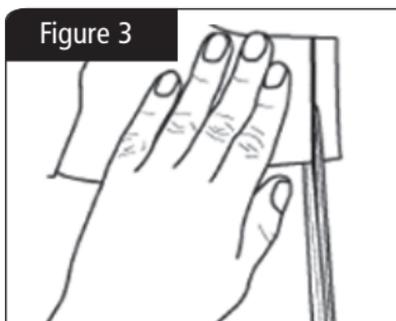


Figure 3



2. Using sharp scissors carefully cut the cuff end at the marked line. Evaluate the fit and repeat step 1 & 2 until there is a proper fit.

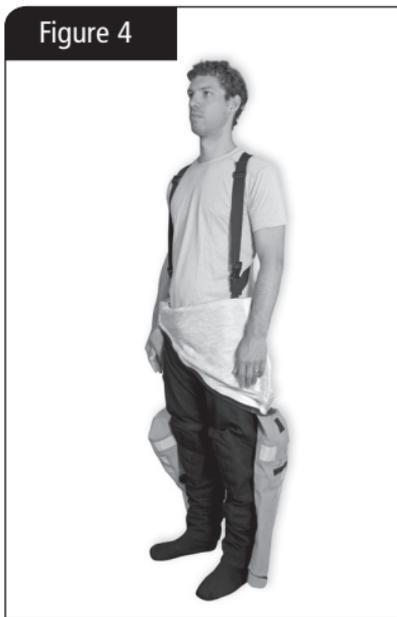
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**NOTE: Visually inspect the trimmed edge for nicks. If the cut is not smooth and straight carefully trim out any nicks. Nicks can cause a tear during donning and doffing**

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3. After trimming seals, have the user don the suit to determine seal restriction and water-sealing characteristics. Make any additional adjustments to the seal.

Figure 4



## ATTACHING SUSPENDERS

To attach suspenders please follow the instructions below. The removable suspenders can be used to improve fit, lower in-water resistance and reduce fatigue. Suspenders can be adjusted to a comfortable and secure position.

1. Completely unzip the entry zipper.
2. Open the suit so that the two attachment points are visible.
3. Thread the end of the nylon strap attached to the suit through the rectangular clip on the suspenders.

Figure 5

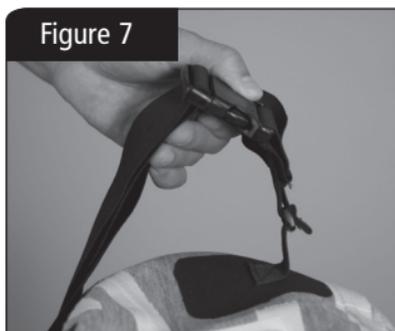


4. Once the nylon strap has been threaded, flare the sewn folds on the strap to prevent it from passing back through the rectangular clip.
5. Repeat these steps for the other attachment point.
6. Use the suspender strap ends to adjust for a secure comfortable fit.

Figure 6



Figure 7



## DONNING THE SUIT

Before donning the suit, ensure that appropriate undergarments have been selected for the conditions.

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**CAUTION:** Always don the dry suit on a clean surface such as a towel or tarp to avoid attracting debris. Pebbles, sand, dirt and other debris on the ground can cause damage to dry suit sock and compromise the suit's integrity.

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**CAUTION:** Use extreme care when donning the dry suit. Prior to donning, remove all rings, watches, earrings, necklaces and eyeglasses that will cause damage to wrist and neck seals. Footwear other than socks must not be worn inside the dry suit.

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### Suit Preparation Prior to Donning

1. Ensure that the Velcro® wrist covers and ankle covers are unfastened.

2. Ensure waist adjusters are loosened.
3. Ensure that the waterproof entry zipper is fully opened.
4. Ensure the suspenders are pulled out of the suit legs.

### **Donning the Suit**

1. Slide your legs into the suit until your toes reach the end of the socks.
2. Don the suspenders. Ensure they are crossed in back but not twisted.
3. Apply talcum powder inside wrist seals.
4. Place the right arm into the right sleeve.
5. Carefully place the right hand into the right cuff by pointing the fingers straight, tucking the thumb underneath and inserting the hand through the seal. Do not make a fist when putting your wrist through the seal.
6. Roll the Velcro® wrist covers back and refasten to a snug fit.
7. Repeat Steps 4 - 8 for the left arm.
8. Bring the upper portion of the suit over your head, aligning the neck opening with the top of the head. Reach inside the top of the neck seal with fingers and gently pull the seal outward and down as you push your head through. Flatten any folds or rolls of the seal against the skin.
9. Close the waterproof entry zipper. Reach over your left shoulder with your right hand and grasp the zipper toggle. While holding the top of the zipper, pull the toggle down until the zipper is completely fastened.
10. Ensure the waterproof relief zipper is completely closed and the slider is fully engaged with the zipper stop. Stow the zipper toggle in the yellow loop located under the zipper cover.

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**WARNING: Failure to completely close the waterproof entry zipper and the relief zipper will result in leakage of water inside the suit and reduction of survival time when in the water. Have a fellow team member double-check each slide fastener to ensure they are completely closed against their sealing plugs.**

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11. Tighten the ankle Velcro® covers to a snug fit.

12. Burp the suit before water entry. Cross arms in front and gently slide fingers between the neck seal and your neck, squat down and force excess air through the neck opening.

### **Doffing the dry suit**

1. Remove all equipment worn over the suit.
2. Thoroughly rinse down the exterior of the suit while wearing it, paying special attention to the seals and zippers. Remove all dirt, salt and debris.
3. Loosen Velcro® waist and ankle adjustment tabs. Completely open the waterproof zipper. If not completely open, the zipper faces the risk of damage to the zipper during doffing.

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**CAUTION: Placing undue force on the zipper may damage the seal and harm the integrity of the suit. Never forcefully yank on the zipper.**

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5. Insert fingers between neck seal and neck. Gently stretch the seal outward and upward while pulling neck seal over your head.
6. With an unclenched fist, slowly pull each hand through wrist seals while holding the rubber seal open.

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**CAUTION: Pulling on the wrist seal may damage the seal.**

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**NOTE: If wearing suspenders, remove suspenders prior to proceeding**

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8. Pull suit down past hips and slide legs from the suit.
9. Follow the cleaning and storage instructions for the suit.

## **CLEANING AND MAINTENANCE**

### **CLEANING**

1. Thoroughly rinse your dry suit after every use.

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**CAUTION: Do not dry clean. Do not iron. Do not bleach.**

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2. Treat stains with a pre-wash treatment such as Shout® or Spray 'n Wash®. Follow the manufacturer's instructions. Rinse well.

- Machine wash warm (104° F/40° C) on gentle cycle using a gentle powder or liquid detergent. Do not use fabric softener, bleach or wash-in treatments, as they can affect the suit's breathability.

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**CAUTION: Use only a front loading washing machine or an top loading washing machine that does not have an agitator post. Washing machines with agitator posts can damage the suit.**

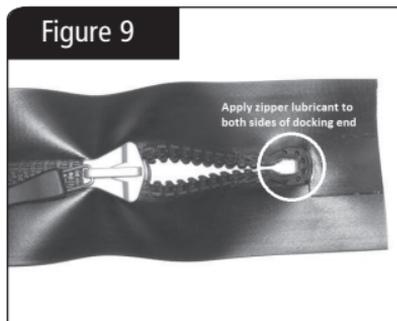
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- Tumble-dry using an air setting

## MAINTENANCE

Regular zipper maintenance is recommended to maintain a water-tight seal, inhibit corrosion and keep the zipper gliding freely. These steps are essential to zipper longevity:

- Clean the zipper of any heavy deposits of mud, sand, salt or foreign substances using warm soapy water.
- TIZIP® MasterSeal zippers need to be lubricated on the docking end from time to time. Two packages of TIZIP® lubricant are included with your suit. Please use the original TIZIP® lubricant or other available zipper lubricant as listed below.



- Carefully apply over the docking end surfaces on front and back and inside where they connect to the zipper chain.

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**CAUTION: TIZIP® MasterSeal zippers do not require the zipper chain to be lubricated, only the docking end. Lubricating the zipper chain may affect the zippers performance and is not recommended.**

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- Repeat before long term storage leaving the slider closed and whenever the area is dry during use.

Care Product	Product Name	Supplier
Cleaning Fluid	Zip Care Lubricant	McNett Tizip
Lubricating	Zip Tech Lubricant	McNett Tizip

## STORING THE DRY SUIT

Hang the suit with all zippers open.

### FOLDING AND PACKING

1. Ensure that the suit is thoroughly clean and dry and that the main entry zipper is in the closed position before folding and packing.
2. Lay the suit flat on its back on a horizontal; clean surface, allowing the suit to be fully extended with none of the parts overlapping.
3. Fold the left sleeve, from the shoulder, straight across the body of the suit. Fold the right sleeve, from the shoulder, straight across the body of the suit on top of the folded left arm [Fig 7A].
4. Fold the socks over top of the legs until they reach crotch level.
5. Fold the legs, from the crotch, up to the chest level, right below the folded sleeves [Fig 7B].
6. Fold the suit in half.
7. To pack, roll or fold the suit ensuring that the zippers do not crease.

## REPAIRS

The protection provided by this dry suit relies very much on its watertight characteristics. It is extremely important that damaged suits are handled in accordance with repair requirements.

The Sentinel™ Series Tactical Operations Dry Suit takes advantage of Mustang's Rapid Repair Technology™ enables users to self-replace neck and wrist seals and repair small leaks in an hour or less. For detailed information on Mustang's Rapid Repair Technology™ please visit [www.mustangsurvival.com/rapid-repair-technology](http://www.mustangsurvival.com/rapid-repair-technology)

Qualified repair personnel can normally perform minor repairs, with adequate facilities. The manufacturer or a certified repair facility

should perform all major repairs. A listing of Mustang's certified repair facilities can be found by visiting [www.mustangsurvival.com/IM](http://www.mustangsurvival.com/IM)

## **ACCESSORIES**

The following Accessories are available for your Sentinel™ Series Dry Suit:

Neoprene Survival Hood (Part # MA7348)

Sentinel™ Dry Suit Liner (Part # MSL600)

Sentinel™ Female Dry Suit Liner (Part # MSL601)

McNett Zip Tech – zipper lubricant (Part # MA2292)

For more information on these items please visit [www.mustangsurvival.com](http://www.mustangsurvival.com).

## **WARRANTY INFORMATION**

### **LIMITED WARRANTY**

Mustang Survival products are warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase by the initial purchaser (the Customer End user) under normal and intended conditions and use. Proof of purchase may be required at the discretion of Mustang Survival. Products, which, in the sole judgment of Mustang Survival, have received excessive or abusive use or have been altered in any way by a dealer, the Customer or any other person, will not be covered by this limited warranty. Mustang Survival requires return of the product (postage or delivery costs prepaid by Customer) for inspection before determining whether the product will be covered under limited warranty. A return authorization is required before the goods are returned and should be obtained by contacting our Customer Service Department. Once returned, Customer Service, Quality Assurance and Sales Departments inspect the product as required. It is then determined whether the product will be covered under this limited warranty. If the product is deemed to be covered under our warranty policy, it will either be repaired or replaced at the sole discretion of Mustang Survival at no charge to the Customer. The only obligation or liability of Mustang Survival under this limited warranty is to repair or replace the product and Mustang Survival shall not, under any circumstances be liable for loss of use or any consequential damages sustained by the Customer. All other warranties expressed or implied, and remedies with respect to the

condition or use of the product, which might otherwise be provided by law in any jurisdiction, are specifically excluded.

## **CONTACT**

For further information concerning this manual or the suit, contact:

### **Mustang Survival**

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Mustang Survival has been providing lifesaving solutions for over 45 years. Through constant innovation and the application of new technologies, Mustang is the leading supplier of quality flotation and hypothermia protection products to the most demanding users — from fishermen, sailors and commercial mariners to the Coast Guard, fighter pilots and even NASA astronauts.



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