



FOR MODEL NUMBER MSD676 / MSD678

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# OWNER'S MANUAL SENTINEL™ SERIES LIGHT/ AND SENTINEL™ SERIES ULTRA-LIGHT/ SPECIAL OPERATIONS FORCES DRY SUIT

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#### MOBILITY BASED SIZING™

In order to take your measurements correctly and select the appropriate size, please follow the instructions provided on our website at:  
[www.mustangsurvival.com/mobility](http://www.mustangsurvival.com/mobility)

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## DESCRIPTION

### **MSD676 & MSD678 SENTINEL™ SERIES – LIGHT AND ULTRA-LIGHT SPECIAL OPERATIONS FORCES DRY SUITS**

THE SENTINEL™ SERIES SPECIAL OPERATIONS FORCES DRY SUITS ARE WATERPROOF & BREATHABLE CONSTANT WEAR DRY SUITS IDEAL FOR USERS ENGAGED IN MARITIME, LAND, AIRBORNE, SHIPBOARD, AND TRANSITIONAL ENVIRONMENT COMBAT OPERATIONS. THE HIGHLY VAPOUR PERMEABLE MATERIALS KEEP THE OPERATOR DRY AND COMFORTABLE THROUGHOUT HIGHLY ACTIVE MISSIONS IN EXTREME COLD AND WARM ENVIRONMENTS.

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Optimizing fit, comfort and functionality are extremely important, especially when a poorly fitted suit can impede 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.

## MSD676 & MSD678 SENTINEL™ SERIES – LIGHT AND ULTRA-LIGHT SPECIAL OPERATIONS FORCES DRY SUITS (CONT'D)

The MSD676 and MSD678 were 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. MSD676 is designed to have an average operational life-cycle of 3 years, equivalent to 300 hours, while the MSD678 is designed to have an average operational life-cycle of 1 year, equivalent to 100 hours.

- MSD676 – Military BD450 GORE-TEX® waterproof & breathable dry suit fabric
- MSD678 – Military LF GORE-TEX® waterproof & breathable dry suit fabric
- Mobility Based Sizing™ reduces bulk and increases range of motion, offering a semi-custom size fit without the custom price tag
- Low profile plastic waterproof entry and relief zippers
- Two-point attachment removable suspender system for an improved fit, mobility and comfort
- Patented Closed Comfort System (CCS™) adjustable neck seal
- Rapid Repair Technology™ enables users to self-replace neck, wrist seals, and socks and repair small leaks in an hour or less
- 330D Nylon reinforced elbows, knees, seat and over cuffs
- Flexible molded foam knee and elbow pads to help prevent injury and still allow the use of external knee pads
- Back knee tabs to secure knee pads in place
- Sized socks
- Expanding arm pockets with Velcro® closures (MSD676 includes pen keepers and covered in Velcro® for attaching patches)
- Expanding thigh pockets with Velcro® closures (MSD676 includes internal stabilizers for small equipment)
- Expanding calf cargo pockets with Velcro® closures (no calf pockets on MSD678)
- Velcro® closures for adjustability on sleeve and pant over cuffs

The Sentinel™ Series Special Operations Forces Dry Suits are easily donned and doffed using a diagonal waterproof entry zipper across the torso and left shoulder. The suit also includes a horizontal 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 Special Operations Forces 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 UNDERGARMENTS TO PREVENT HYPOTHERMIA (IN COLD CLIMATES) AND 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

Exclusively available for the Sentinel™ Dry Suits, we introduce the industry's newest improved fitting platform designed specifically for dry suit users for tactical, rescue or special operations.

Based on more than two years of extensive anthropometric research, range of motion testing and user evaluations, Mobility Based Sizing™ offers users a semi-custom suit that reduces bulk and increases range of motion without the expensive custom price tags or long lead times.

The **Mobility Based Sizing™** platform is like none other currently in the industry. There are **24 sizes** available. To order a suit that fits you best, please follow the instructions provided on our website at: [www.mustangsurvival.com/mobility](http://www.mustangsurvival.com/mobility).

	EXTRA SMALL	SMALL	MEDIUM	LARGE 1	LARGE 2	EXTRA LARGE	DOUBLE EXTRA LARGE	TRIPLE EXTRA LARGE
SHORT	XSS	SS	MS	L1S	L2S	XLS	XXLS	3XLS
REGULAR	XSR	SR	MR	L1R	L2R	XLR	XXLR	3XLR
LONG	XSL	SL	ML	L1L	L2L	XLL	XXLL	3XLL

## INSTRUCTIONS FOR USE

This manual supplies instructional, maintenance and safety information for the Sentinel™ Series Special Operations Forces Dry Suits.

### CCS™ ADJUSTABLE NECK SEAL

Mustang's patented Closed Comfort System (CCS™) can be worn loose to provide comfort out of the water and can quickly be drawn tight to keep the water out. The adjustable seal also provides increased durability compared to traditional latex seals and allows the suit to be worn by multiple users without compromising waterproof integrity.

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**CAUTION: THE CLOSED COMFORT SYSTEM NECK SEAL (CCS™) MUST BE FULLY CLOSED TO PREVENT WATER INTAKE.**

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1. The (CCS™) neck seal can be worn loose for comfort, but whenever there is a risk of accidental immersion the neck seal should be closed enough so that there aren't any gaps between the neck seal and the wearer's neck.
2. To close, firmly pull the elastic drawstring away from the neck. For maximum effectiveness the neck seal should be adjusted to be snug, but not uncomfortably tight.

- Once the neck seal has been drawn tight, the Velcro® tabs can be attached to keep the elastic out of the way.
- To loosen, insert fingers between the neck and the neck seal while pinching the toggle. Then gently pull on the neck seal with your fingers to loosen.

## NEOPRENE WRIST SEAL FITTING

The neoprene seals should only be trimmed if they are unreasonably tight and restrict blood flow. The below chart indicates the target body dimensions for the standard neoprene seals. The seals are designed to fit the individuals with the smallest measurements. If your neck and/or wrist is larger than the target dimensions, you will likely have to trim your seals. If your measurements are better suited to another size, you can order a Rapid Repair replacement kit in the appropriate size.

SIZE	TARGET NECK CIRCUMFERENCE		TARGET WRIST CIRCUMFERENCE		RAPID REPAIR REPLACEMENT KIT	
	INCH	CM	INCH	CM	NECK SEAL	WRIST SEAL
XS	12"	30.5CM	5.75"	14.6CM	RE0007-XS	RE0009-S
S	13.25"	33.6CM	5.75"	14.6CM	RE0007-S	RE0009-S
M-L2	14.25"	36.2CM	6.25"	15.9CM	RE0007-M	RE0009-M
XL-XXXL	15.25"	38.7CM	6.75"	17.1CM	RE0007-L	RE0009-L

**If seal trimming is required, proceed as follows:**

**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 TO A MAXIMUM OF 1". YOU CAN ALWAYS TRIM MORE, BUT YOU CAN'T REPLACE WHAT YOU HAVE CUT OFF.**

**REQUIRED MATERIALS:** Ruler, sharp scissors and a white china marker or silver pen.

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

- 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".
- 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.

**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**

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

## ATTACHING SUSPENDERS

To attach suspenders please follow the instructions below. The removable suspenders should be used to improve fit, increase suit longevity, 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.
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 4



FIGURE 5



FIGURE 6



## DONNING & DOFFING THE DRY 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 that the waterproof entry zipper is fully opened.
3. Ensure the suspenders are pulled out of the suit legs.
4. Apply talcum powder inside wrist seals.

## DONNING & DOFFING THE DRY SUIT (CONT'D)

### 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 and not twisted.
3. Place the right arm into the right sleeve.
4. 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.
5. Roll the Velcro® wrist covers back and close to a snug fit.
6. Repeat Steps 3 - 7 for the left arm.
7. 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.
8. 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 with your left hand, pull the toggle down until the zipper is completely fastened.
9. Ensure the waterproof relief zipper is completely closed and the slider is fully engaged with the zipper stop. Stow the zipper toggle in the 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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10. Tighten the ankle Velcro® covers to a snug fit.
11. 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® wrist 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 seal open.

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**CAUTION: PULLING ON THE WRIST SEAL MAY DAMAGE THE SEAL.**

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**NOTE: 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

### VISUAL INSPECTION

The lighter weight fabrics used on the MSD676 & MSD678 result in a reduction in the durability of the shell materials when compared to traditional Mustang Survival military dry suits. Before use, visually inspect the inside and the outside of the suit for damage. If the suit appears damaged, it is recommended that the suit be taken out of service for repairs, or discarded if damage is too significant. The MSD678 is intended to be worn no more than 100 hours, while the MSD676 is intended to be worn no more than 300 hours. Depending on the amount and intensity of use, the total number of hours could change +/-.

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**NOTE: BE SURE TO ALSO INSPECT UNDER THE NECK COLLAR, WRIST AND PANT OVER CLEANING AND MAINTENANCE (CONT'D)CUFFS**

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## CLEANING AND MAINTENANCE (CONT'D)

### CLEANING

1. Thoroughly rinse your dry suit with fresh clean water 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.
3. 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 A TOP LOADING WASHING MACHINE THAT DOES NOT HAVE AN AGITATOR POST. WASHING MACHINES WITH AGITATOR POSTS CAN DAMAGE THE SUIT.**

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4. Tumble-dry using a cool 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:

1. Clean the zipper of any heavy deposits of mud, sand, salt or foreign substances by gently brushing and rinsing the zipper with fresh water.
2. YYK® zippers need to be lubricated on the docking end approximately every 15-20 days of field use. One package of Molykote® lubricant is included with your suit. Only use the Molykote® lubricant.
  - a. Open the zipper to expose the W-SEAL.
  - b. Open the Molykote® by ripping the package seal.
  - c. Squeeze the package gently and apply a small amount of lubricant to the W-SEAL as indicated in the image. Only apply to the indicated areas.



FIGURE 8

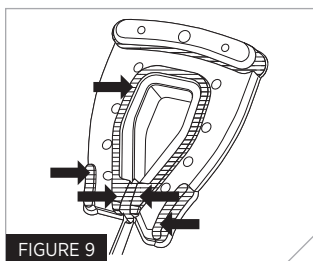


FIGURE 9

- d. Flip over the zipper end and lubricate the back in the same highlighted areas as the front.
  - e. Close the zipper.
3. Repeat before long term storage.

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**CAUTION: DO NOT LUBRICATE THE ZIPPER TEETH.**

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**NOTE: DO NOT DISCARD THE BLISTER PACKAGE. THE MOLYKOTE® LUBRICANT CAN BE STORED IN THE ZIPLOCK BAG AND REUSED**

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## **STORING THE DRY SUIT**

The suit can be hung with all zippers closed temporarily to dry the suit. For long term storage and transportation, the zipper chain should be closed. The closed chain protects the sealing elements from dirt and damage.

## **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 face down on a clean horizontal 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.
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.
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 on its watertight characteristics. It is extremely important that damaged suits are handled in accordance with repair requirements.

The Sentinel™ Series Special Operations Forces Dry Suits take advantage of Mustang's Rapid Repair Technology™ which enables users to self-replace neck, wrist seals, and socks 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 Special Operations Forces Dry Suit:

**NEOPRENE SURVIVAL HOOD (PART # MA7348)**

**SENTINEL™ DRY SUIT LINER (PART # MSL600)**

**SENTINEL™ FEMALE DRY SUIT LINER (PART # MSL601)**

**MIDWEIGHT BASE LAYER TOP (PART # MSL602)**

**MIDWEIGHT BASE LAYER PANT (PART # MSL603)**

**LIGHTWEIGHT BASE LAYER TOP (PART # MSL604)**

**LIGHTWEIGHT BASE LAYER PANT (PART # MSL605)**

**BASE LAYER TOQUE (PART # MSL606)**

**YKK ZIPPER LUBRICANT (PART # MA0094)**

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 ENGINEERED

For 50 years Mustang Survival has been engineering high-performance marine gear for military, coast guard, and rescue personnel. With a focus on applied research and field-testing, we're committed to the protection and enhancement of those who push themselves to extremes. We build gear that saves lives and fuels exploration.

[www.mustangsurvival.com](http://www.mustangsurvival.com)

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