

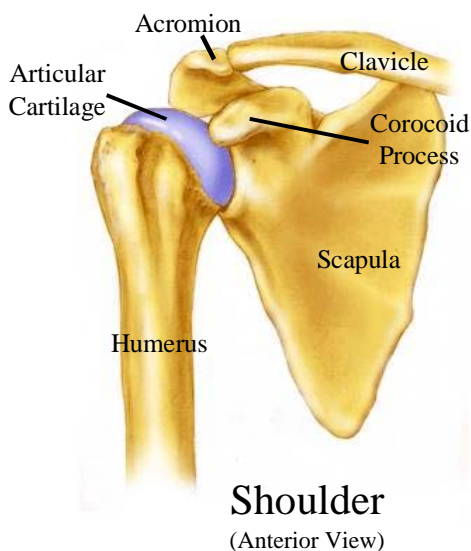
## Five Stretches for Shoulder Mobility: How to reach your valves

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Diving double tanks with an isolation manifold adds a great margin of safety to deep or overhead diving, but only if you can reach your valves without assistance. By the time your buddy comes to your aid, a significant amount of gas may be lost that you could have otherwise preserved by shutting down your own valves. This increases the risk not only to yourself but also to your buddy, who may have to share gas with you as a result. Because of this, many experienced divers incorporate valve shut-off drills into their pre-dive buddy checks.

### Shoulder Anatomy

The shoulder consists of not one but four joints and is connected to the trunk in only one place- the sternoclavicular joint. This is where the collarbone (clavicle) meets the upper ridge of the breastbone (sternum). The collarbone then continues outward to meet two



finger-like projections of the shoulder blade (scapula), called the acromion and the coracoid process. The acromion is that boney lump you feel at the top of your shoulder, and the coracoid process can be felt below it covered in muscle.

The final joint of the shoulder connects the shoulder blade to the upper bone of the arm (humerus) at the glenoid capsule. This final joint is often referred to as a “ball and socket” joint, but it really fits together more like a cup and saucer. The ball on the humerus is very large, but the socket on the shoulder blade is quite shallow, allowing for a large range of motion.

So, most of the shoulder is left suspended from the back and neck via muscle connections, which is good news and bad news. The bad news is that if you allow your muscles to get tight, then your range of motion will decrease. The good news is that soft tissue responds to stretching, and over time you can gain very large increases in ranges of motion.

Most people think of the deltoid when they think of the shoulder muscles. In fact, all of the muscles in the chest and upper back are muscles with the sole purpose of moving and stabilizing the shoulder joint. These muscles contribute to tension around the joint and must be included in your shoulder stretching program.

## Equipment

Your equipment must be properly adjusted before you have any chance of reaching your valves. One way of checking this is to have a buddy compare your shoulder mobility with and without your dive equipment on. If it is not *exactly* the same, you must identify the impediment and correct it. Common sources include:

### Exposure Protection

1. Too tight a wetsuit or drysuit will obviously prevent you from bending your arms.
2. Drysuit insulation that is too *large* is just as bad as insulation that is too *small*.  
Overly bulky insulation can prevent you from bending in an otherwise properly fitted drysuit. The use of argon inflation and compressed thinsulate insulation can make up for much of the bulk some divers think they need. In any case, use only insulation specifically designed for wear under drysuits.

### Backplate and Harness

1. Backplate should be positioned correctly on the harness.
2. Harness should be snug but not constricting.
3. Inflated wing should not get in the way.

### Other Gear

1. Gear such as lights, stage bottles, back-up regulators, etc., should be placed out of the way.
2. Wrists should be free from unnecessary clutter, such as extra gauges or writing slates.

Note: See <http://gue.com/equipment/equip-anatomy.shtml> for an excellent guide to gear configuration.

## The Stretches

If your gear is squared away and you still can't reach your valves, then it's time to adopt a stretching program. Give yourself 4-6 weeks to see an improvement in flexibility- you might even require several *months* of stretching to get to your valves. So, patience and persistence are required.

Stretching should not hurt. Do not do any stretch to the point of pain. Move slowly through all movements described below, and hold each stretch for 20-30 seconds. Perform these stretches 4-5 times per week.



### **Hanging Shoulder Stretch**

1. Place palms on a wall, shoulder width apart, keeping the elbows straight.
2. Walk your feet backward as you lean your chest towards the floor until stretch is achieved.

**Hint:** If you're tall enough, you can use a doorway.

### **Pectoral Stretch (High/Mid/Low)**

1. Place palm on wall or doorway. To stretch the lower pec, the hand should be at head level. To stretch the mid pec, the hand should be at chest level. To stretch the upper pec, the hand should be at stomach level.
2. Rotate upper body away from the wall until stretch is achieved.



### **Posterior Deltoid/Rhomboid Stretch**

1. Reach your right hand over your left shoulder.
2. Place your left hand behind your right elbow.
3. With right arm relaxed, press on the elbow until stretch is achieved.



### **Latissimus Dorsi/Triceps Stretch**

1. Reach your right hand behind your neck.
2. Place your left hand behind your right elbow.  
You might have to reach around the back of your head to get the best stretch.
3. With right arm relaxed, press on the elbow until stretch is achieved.

### **Swimmers Stretch**

1. Reach both arms behind your back.
2. Clasp hands while keeping arms as straight as possible.
3. Press arms up as high as possible.

