Air splint exercises

Place arm in splint up until armpit, make sure that fingers are spread to start. Blow up splint until firm. This will stretch out the elbow. So if the elbow is tight, stretch out prior to using. MAKE SURE TO WATCH FOR SIGNS OF POOR CIRCULATION!!!! If the arm/fingers start to turn blue, if there is numbness or tingling, let the air out and take a break or discontinue use. When taking off, make sure that the zipper does not get caught on the skin. You can run your finger along side the zipper to ensure this does not happen. These exercises are best done laying down or in a mostly reclined position to ensure the shoulder girdle is in the right place and that you do not grind the joint.

THINGS TO WATCH OUT FOR
-Elevation of shoulder
-Compensatory techniques throughout the body
-Improper use of muscles
-Breathing
1. Protraction/Retraction
   a. Place the person's arm at about 90 degrees. Only with their arm, have them push forward and back into the bed or up to ceiling and back into the bed. The more important movement is back into the bed. Clinician guides the arm taking off some of the weight of gravity. Make sure that they are not using their entire body- strictly use the arm. Do this 10 times- shoulder girdle should loosen with repetition.
b. Place the person's arm into flexion at their end range or just short of end range. Apply gentle pressure at lateral border of scapula to stretch.

c. After stretch, complete protraction/retraction at end range or just at end range. Clinician can provide assist at inferior angle of scapula.
2. Internal/external rotation

Arm is placed at 90 degrees again or at the highest point they feel comfortable. Movement is internal/external rotation. Clinician can provide stretch at end ranges if tolerated. Again, clinician guides the arm, helping to take off some of the weight of gravity.
3. Flexion/extension
While arm is next to the body, raise it straight towards the ceiling and then towards the head of the bed as tolerated. Return to initial position. This is where the clinician is more important. Helper guides and takes off gravitational pull on the way up but provides slight resistance on the way down so the person can still move, but patient continues to use their muscles.
4. **Horizontal abduction/adduction**
Arm starts in the 90 degree position. Clinician is to guide the arm into horizontal adduction and take off gravity on the way into the chest and apply slight resistance when moving away from the body into horizontal abduction.
ADDITIONAL TECHNIQUES
Once a person begins to get more movement, as long as there are no contraindications or concerns. A towel can add additional stretching.

Thoracic stretch
Place towel between scapulae along thoracic spine to allow for stretching of anterior chest muscles and to allow for additional retraction while they are in supine. Model is standing for educational purposes.
MOBILIZATIONS- Commonly used in this technique
(Adapted from *Joint Mobilization/Manipulation* by Susan L. Edmond)
REMEMBER TO LOOK AT CONTRAINDICATIONS AND PRECAUTIONS

INFERIOR GLIDE OF STERNOCLAVICULAR (SC) JOINT
Patient Position: Supine with arm resting at their side
Clinician Position: Above the patient's head facing the SC Joint
Mobilizing Hands: Mobilizing thumb over the superior surface of the clavicle about 3 cm lateral to the most medial surface with the other thumb over the primary thumb.
Procedure: The primary thumb glides the clavicle in an inferior direction
with the secondary hand controlling the position of the primary hand.

ANTERIOR GLIDE OF ACROMIOCLAVICULAR (AC) JOINT
Patient Position: Sitting with arm resting at the side
Clinician Position: Behind the patient
Mobilizing Hands: Stabilizing hand is over the anterior surface of proximal humerus and anterior acromion with thumb over posterolateral surface of clavicle. Mobilizing hand is over the stabilizing thumb with fingers gently supporting the clavicle.
Procedure: Stabilizing hand holds acromion in place while mobilizing hand glides the clavicle anteriorly, stabilizing thumb controls the position of the mobilizing hand