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Introduction

The circus dumbbell is a classic (and complex) strongman lift that requires great static unilateral overhead shoulder strength, dynamic unilateral shoulder stabilization in the rack position, and dynamic core stability throughout. So before you go out and perform this movement, understand that without these types of strengths listed you're placing yourself at risk for a nasty shoulder injury. With this precaution stated, let's move on and discuss how to safely and effectively perform the circus dumbbell clean and press. Executing this lift can be broken down into 4 parts: The clean, the rack, the dip and drive, and the catch.

The Clean

Cleaning a circus dumbbell is more like a sideways kettlebell swing than a traditional barbell clean. This portion of the movement starts from the floor and is finished when it's in the rack position. You should begin directly over the dumbbell with your feet just outside of shoulder width and a toe angle of roughly 20 degrees (assuming zero is toes straight ahead).



Reach down and grasp the dumbbell with hand of the arm you plan to rack the dumbbell to first and then follow with your opposite hand over top. From here you should sink your hips, get tall, and attempt to straighten out your back as much as possible. When picking up something around your shoe laces it's difficult to get your back to a perfectly flat and neutral position so don't fret too much if you can't find the hard neutral arch your used to lifting with, as long as you breath deep and brace your core hard your risk for injury is minimal.



Once in this position, forcefully grip the implement, set your lats, and brace your core for the lift. The liftoff begins by driving through your heels to lift the dumbbell to about knee level.



From here use your lats to drive the dumbbell into your sensitive and personal area while hinging forward slightly. With the full weight of the implement in your personal area and the hips hinged, drive through your hips hard into your arms. As the hips extend and you find yourself getting tall, use the arms to start guiding the implement to the rack on your shoulder, all while tilting the head away from the implement. Let the top of the dumbbell clear the shoulder and start punching the elbows high, this turns the dumbbell over in your hands and onto your shoulder. Keep both hands on the dumbbell as you make small adjustments to find stability in the rack.



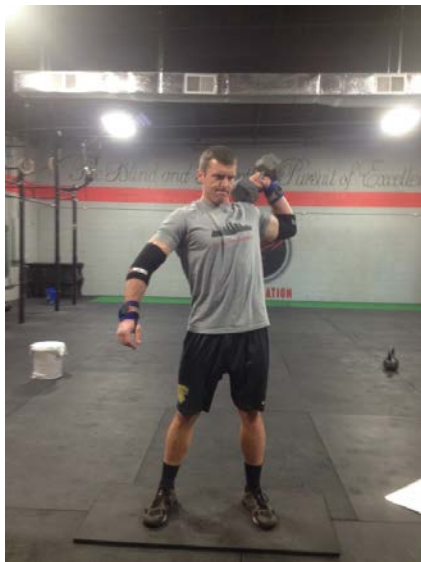
The Rack

The rack is not so much a movement as it is a sweet spot. Without this sweet spot you jeopardize the dip, drive, and catch. Even though this sweet spot is a little different for everyone due to differences in shoulder mobility and musculature, there are some universal no-no's to be aware of.

First, do not have t-rex arms. This is where your elbow is straight out in front of you and pointed down. This not only places the dumbbell low on your shoulder making the distance into the catch longer, but the forearm angle (straight up) places the position of the catch out in front of you. Trying to catch a heavy awkward object in front of you with one arm is a one way street to injuryville. This t-rex position also places most of the weight of the implement directly in the shoulder and in front of the body which forces you to compensate by overarching your back. You have to think about the implement as a traditional clean and jerk where the weight is resting on the body and not actively held in place by significant amounts of shoulder muscle tension. Doing this leads to more weight being moved since fatigue is setting in slower because you're not using little muscles to do big muscle work.



The next no-no in the rack position (I can already hear the critics but give me a chance here) is having the elbow too far out to the side where the elbow is behind the midline of the body.



This position is dangerous for two reasons. First, it forces the head of the humerus (arm bone) forward in the glenoid fossa (small cup of the scapula the head of humerus sits in) of the shoulder blade and rests it on the connective tissues surrounding it¹. Anterior shoulder dislocations are the most common type of dislocation because this position is the least biomechanically stable position for the shoulder to be in¹. So from this position, any instability that should occur when you dip and drive the dumbbell greatly increases the already high risk of dislocation and soft tissue injuries of the shoulder.

The second way this is dangerous is the angle it sets the implement up to be received in the catch. The angle of the forearm points the dumbbell into a position of the catch that is slightly behind midline of the body. Just like with the t-rex position, trying to catch a heavy awkward object behind you is a one way ticket to snap city. Since this rear facing elbow position is dangerous for the dip and drive as well as the catch, for the biomechanical reasons listed, I strongly advise athletes to avoid this position... unless they like doctors' offices... and copays... and surgery.

Now that we've covered the rack no-no's, let's talk about some things that make the rack position more stable. Stability between two objects is most influenced by their position in relation to each other and surface area contact. The best position to create stability is with the elbow high and out.





This rests the weight of the implement on your traps and through the midline of your body, not through the shoulder itself. This isn't to say the shoulder is not actively working to help stabilize the implement, I'm simply saying it is not the primary supporting force of the weight. This elbow high and out position also sets you up to drop under and receive the implement in the catch as you would a traditional power jerk. It also places your upper arm at an angle that creates sufficient, but not excessive, tension of the musculature and supporting tissues of the shoulder complex. Tension = stability.

The second element of stability to address in the rack is surface area contact. From the elbow up and out position there is surface area contact between the dumbbell and your traps. To take it step further, let the convex sides of the dumbbell contour to the natural concavity of your neck. Note: This does not mean you place the weight of the implement in/on/or through your neck, it simply means the vertical surfaces of your neck and the implement are in contact with each other. Cautions to take with this position is not placing weight in the neck and not pressing the side of the head into the implement. With those cautions stated, this increased contact area will help lead to stability when executing the dip and drive phase. Not all circus dumbbells are shaped the same and some may not allow this point of contact to occur, I merely suggest it whenever possible to increase stability in the rack.



The Dip and Drive

Proper execution of the dip and drive sets up a clean catch position. This execution is dependent on lower extremity stance and stability of the rack position throughout the movement. Our stance to this point hasn't changed; our feet should be roughly shoulder width apart and our toe angle roughly 20 degrees. There are two variations of this stance worth noting. Some athletes prefer to shift their supporting hip out (same side as dumbbell) placing most of the weight in that leg. Others prefer to keep an even weight distribution. Either way is fine as long as principles of the dip and drive are applied.



When we initiate the dip we want to drive our knees out and forward to stay tall, keeping the weight in our heels, and a moving in a controlled manor. Driving your knees out and forward will prevent any hinging at the hips which would shift the implement anterior or posterior to midline which creates instability. We also want every bit of vertical force driven directly into the implement from our hips and none of it lost medial to lateral or anterior to posterior movement. Keeping the weight in our

heels in conjunction with knees out and forward will not only set up a completely vertical drive but will keep the dumbbell close to our center of mass, which increases stability throughout the dip and drive and eventually into the catch. Moving in a controlled manor helps keep the implement steady in the rack. All of these pieces put together aid in helping maintain the rack position. This is important because any arm or elbow movement in the dip will change the trajectory for the catch during the drive, create instability, and increasing the distance from the rack to the catch (elbow drop or t-rex arms).

The drive consists of explosively pressing the heels into the ground and maintaining tension in the dumbbell through the shoulder and triceps. When exploding through the heels we are trying to reach triple extension and create as much acceleration as possible. This acceleration is what will 'throw' the dumbbell off of your shoulders straight overhead into the catch. The triple extension will also set up the double knee bend required for the catch.

Triple Extension Mid Drive



Pressing tension into the dumbbell will help create stability through the drive by ensuring minimal movement of the implement in the rack until triple extension is complete. At which point the dumbbell

is propelled vertically off the shoulder toward the catch position. This tension also helps serve as a continuous physical guide of the implement as it leaves the shoulder toward the final catch position overhead. Another sensory guide we can use in the drive into the catch is the eyeballs which serve as a visual counterpart to the physical guide of pressing tension. Seeing where you want the dumbbell to go helps ensure the physical guide is heading in the right place. Sometimes the movement of large, heavy, unstable objects overhead needs as many sensory feedback systems in play as possible to execute the movement correctly.

At the point of triple extension and the implement leaving the rack the dip and drive portion of the movement is complete.

The Catch

Everything we've done from our stance in the clean, to the position in the rack, to the stable execution of the dip and drive; has been to set up a safe and strong position for the catch. Unilaterally putting heavy and awkward objects overhead can be a dangerous if not properly executed using a few general physical parameters. In order to properly catch the dumbbell we have to execute a double knee bend to drop slightly under it, keep the implement within its base of support over our shoulder, keep our shoulder within its base of support of our feet, and keeping our palms are facing forward in some capacity.

The end of the dip and drive portion of the movement is when we reach triple extension. From here we start the execution of the catch. Let's start from the ground up in the catch by talking about what happens in our legs at this point. After extension is reached we must execute a double knee bend to drop ourselves underneath the implement. This movement is identical to the execution of a push jerk. Our feet stay almost in the same place (although some people will shift slightly wider in stance and toe angle) as our knees bend to allow us to 'press' our bodies under the dumbbell. The double knee bend is completed, and stopped, at the same moment the arm is locked out in the catch. Think to yourself, feet and hands, as you lock these out simultaneously. In the end, this will look like you catch the implement in some sort of short squat variation.

The Catch



Now that we have an idea of what we are to do with our legs we can talk about our arms and what should be happening there during the double knee bend, lockout, and finishing position. As described above, when we drop underneath the dumbbell we should be pressing our bodies downward as we guide the implement with our arm into a position that places the dumbbell directly over the shoulder. As stated earlier, one of the best ways to help ensure a clean guide into the catch is to use your eyes. Being able to see where you want the dumbbell to go is adding another feedback system to the movement execution which will only increase the efficiency of the movement. A good way to remember this is to see the dumbbell from the dip and drive into the catch. Now, if the implement finishes anywhere outside of directly over the shoulder there will be an external moment between the dumbbell and the shoulder, which places large amounts of torque in one of the least stable joints of our body... which is bad. If the dumbbell is anywhere outside of this position, don't try to fight or muscle it

into position, this will only lead to a nasty shoulder injury. I know as strongmen/women we like to muscle things whenever possible but in this case it's a terrible idea.

With the idea of the implement staying over its base of support on our body (shoulder), we have to apply this same concept in terms of our shoulder being close to our center of mass (COM) within its base of support in our feet. If our shoulder is too far leaned away from our center of mass or outside of our feet we end up using trunk and hip musculature to maneuver the shoulder back towards our COM while supporting a large, heavy, awkward object overhead. Muscling/maneuvering our shoulder back between our feet and closer to our COM increases the risk of injury to the trunk and shoulder, especially when you're fatigued. So if the catch position is not achieved with the implement over the shoulder and the shoulder close to your COM within the confines of your base (feet), bail the rep, it's not worth forcing it out with regards to the increase risk of injury.

The Finish



The last part of properly, and safely, executing the catch position is to ensure the palm is facing some degree of forward position. If the palm is facing down, your elbow shifted at some point in the dip and drive, this is something you can't recover from. If your palm is facing laterally then you were either twisting as you pressed during the double knee bend or your elbow shifted at some point in the dip and drive. The problem with this position is that your arm is opened up placing your shoulder in its least stable position which makes you more susceptible to injury¹. If your palm is directly up, then you're overextending the implement behind the shoulder as a result of position shift during the dip and drive, or the press into the catch during the double knee bend. This subsequently places your back and shoulder into hyperextension which is an instable position to maintain overhead stability. If the palm is facing medially, then the elbow shifted down and in (t-rex arms) during the dip and drive or you internally rotated while pressing under the dumbbell during the double knee bend of the catch. This is not necessarily a compromised position in the catch if shoulder mobility is sufficient and the implement is kept directly over the shoulder. The problem with this is that most of the time when the implement shifts downward and the elbow shifts in, you've essentially lost leverage and made the distance to the catch longer and more difficult since the dumbbell will want to finish out in front of the shoulder. If the palm is facing some varying degree of forward position then stability was maintained in the rack during the dip and drive, the implement was pressed straight overhead without rotation of the arm during the double knee bend, both of which place the shoulder in the most stable position possible to receive and support the weight overhead. Once this position is achieved the rep is complete and the implement can be dropped out in front of the athlete and the processes started over.

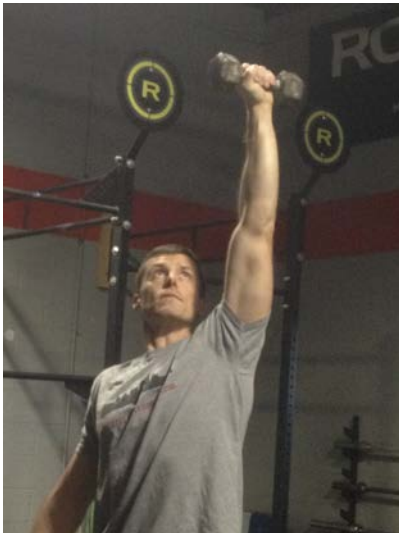
Palm Directly up



Palm Down



Palm Lateral and Palm Medial



Conclusion

As you can see, cleaning and pressing the circus dumbbell is not a simple task. I would argue that the margin for error is smaller than other technical lifts such as the barbell snatch or barbell clean and jerk. Like every other event in Strongman, great strength (coupled with great technique) is required to perform this lift safely. This article is meant to serve as a guide to completing the lift in the safest and most efficient way possible. Without safety you will accrue doctor bills. Without efficiency you will leave

valuable reps on the platform that will cost you points and a place on the podium. Both scenarios hurt (in different ways) and can be avoided by following the guidelines laid out in this article.

References:

1. Neuman D. A. *Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation. Second Edition*. St. Louis, MI: Modby Elsevier; 2010.