

Training for Starts – The First Push

By Susan Ellis

Ah, the elusive fast start! You want it, you practice and practice, but it just isn't getting better. Yes, there is hope!

The three main components of a fast start are:

- 1) TECHNIQUE
- 2) POWER
- 3) SPEED OF MOVEMENT



Having good speed of movement without power and technique means you'll be spinning your wheels on the line. You may be the strongest person on the line, and that won't guarantee you get there first if the movements aren't efficient enough to use your power. You may have great technique, but if you don't move through the sequence of motion fast enough, you'll be left behind too. To develop a great start you need all 3 components – Technique, Power, and Speed of Movement – training the Technique first, then introducing Power, and then finally Speed of Movement.

Training starting technique and power is often very difficult to do on the ice because it is hard to slow down the movements enough to make technical changes and recruit the proper muscle groups in the correct sequence of motion. Training with TECHNI-CORDS™, however, allows you to work all 3 components, both on ice and off ice. Using the adjustable resistance of the TECHNI-CORDS, you can perform each movement of the start slowly and precisely, recruiting the proper muscle groups, and executing the movement in the proper sequence of motion to create lasting muscle memory for the movement. Once the movement is learned and muscle memory has been established, you can start to perform the movements more quickly, adding the power component, and finally adding the speed component.

It's best to begin your technical training off ice, using the TECHNI-CORDS, as the ground is a much more stable surface and you won't have to worry about slipping. Once you have mastered the movements off ice, you can then take the TECHNI-CORDS on ice. For both on and off ice training, start with single movements by fixing the TECHNI-CORDS to a solid non-movable object and learn the movements first before doing partner assisted starts.

To begin your off-ice training you will need a level non-slip surface to work on, a solid place to attach the TECHNI-CORDS at about nose height, and a chair that will slide easily across the surface you are working on.

The start, as with all movements, can be broken down into 3 components – Set-Up, Load, and Execution. To perfect your technique you must master each component separately, and then put it all together to create an efficient, powerful movement.

The Set Up Position:

The Set Up Position of any movement, whether it be starts, the straightaway stride, or a corner stride, is critical to the proper execution of the movement. Without the proper set up position you have no chance of executing any movement with full power. Read Start Position – March 2004 on the set up position for the start. Master the position before you move on to the Load and Execution.

The Load:

Before ripping off your first push you must ensure the push is fully loaded. The Set Up Position has created the initial position from which to load. Now you must complete the load before pushing. The goal of the Load is to allow your body to lean to the point of instability to generate as much forward momentum as possible, while at the same time loading the muscles of the hips, butt and legs to get ready to push, and bringing the pressure to the back part of the ball of the foot.

- Securely fasten the TECHNI-CORDS to a fixed point at nose height. Start with a fairly strong resistance so you can execute the movements very slowly.
- Place a chair just slightly in front of you so you can place your hands on the seat with your elbows still bent. The chair will help support you as you learn to do the loading movements slowly at first, and then help support you at the end of the push to full extension.

Part 1 – Initiate the Load

- Initiate the load by pushing your back hip forward under your body. This brings your back knee forward creating even more lean angle on the shin, and thus, more pressure in to the ice. As you continue to fall forward you feel more pressure to the ball of the foot creating a firm position to push from.

Part 2 – Turn square and fall

- As you are falling forward, both hips drive forward so that your hips and shoulders come square to the line. Your front knee drives straight up towards your chest (don't rotate out yet). This action loads the hip muscles to be ready to produce during the push. Don't change or open any angles (hips, knees, ankles) as you perform this action. Just feel the drive of the hips under you and knee upward. Stop the action before opening angles or pushing. Take it back to the original set up position and repeat it several times feeling the pressure load to the back part of the ball of the foot as you do this.

It is very important to keep your butt tucked under you and moving forward during the fall forward. If you feel the cords pulling your butt back, then remove a cord or two. Power in the start comes from the powerful contraction of the butt and hip muscles and the extension of the hip muscles, so don't give the start away here already by leaving your butt behind.

The Execution:

One of the keys to executing a good start is in understanding that the first step on a start is NOT a step, it's a PUSH! This is where the compromise between speed of movement and efficiency of movement takes place. Sometimes, in an effort to get that front foot out there quickly (step), skaters don't complete the push. It's like spinning your wheels and going nowhere fast. The push must be complete before the other foot lands!

Part 1 – Hip and Knee Extension

- Again, using the chair to help stabilize you as you keep the movements slow, go through the Load, feeling the lean to the point of instability and the pressure under the ball of the foot.
- Now, slowly extend your back leg through the hip, and knee as you continue to drive your hips forward and your knee straight up toward your chest. It is extremely important to keep your chest DOWN during this extension! Don't rotate your thigh out yet and don't extend the ankle yet either. We'll get to that later. As you extend through the hip and knee your chair will slide forward. If it didn't this means your extension was upward not outward. The purpose of the extension is to propel your body forward, not up.

IMPORTANT FEELINGS:

- At the end of the extension of the hip you should feel a stretching through the hip flexor and groin and a tightness through the butt. If you don't have this feeling, you have left your butt behind.
- Just before you begin the push you should feel the pressure under the back part of the ball of the foot. At the end of the extension of the hip and knee you should feel the pressure in the middle section of the ball of the foot.
 - If you felt some pressure move towards the heel it means you opened your knee to full extension before your hip reached full extension, or you pulled your knee back, rather than extending through it.
 - If you felt the pressure go past the middle section of the ball of the foot it may mean you've extended your ankle before it was ready.
- Now return to the Set Up Position and repeat the Load, Hip and Knee extension several times to create muscle memory and a good feel of the motion.

Part 2 – Full Extension – Hip, Knee, Ankle – Thigh Rotation

- Repeat all of the steps above. Now, just as you are approaching full extension through the hip and knee, your thigh rotates out to point your knee and skate outwards for landing. As you are doing this continue the extension through the ankle and feel the pressure come to the front part of the ball of the foot (not the toes!). Keep your front knee high up (hip height) and do not land the front foot yet!
- Repeat this action several times to create muscle memory for the movement.

Part 3 – The Landing

- Again, go through the Load, and the Hip and Knee and Ankle extension and pause there. Do not open your front knee angle and reach for the ground!
- Keeping your front knee as high as possible and your skate in back of your knee, allow yourself to fall forward onto the landing skate. If you have kept your knee at hip height you will have landed with your hips very low and around a 90 degree knee angle.

Keeping your knee in back of your skate and not opening the knee angle to land or reaching out with the lower leg helps to land with your center of gravity ahead of your new pushing skate. If you overstep, your center of gravity will be too far back, you will lose some of forward momentum component, and it is highly likely your next push will propel you upwards rather than forwards.



Landing

Creating Muscle Memory

Now you can start putting it all together without pauses. The key to changing or improving technique is to do enough reps to create lasting muscle memory for a movement. And muscle memory is best created through slow movements, allowing more muscle fiber to be recruited. Spend at least a week going through slow, controlled reps before you speed it up. You may find that as your technique improves you will need to add resistance to perform the same movement at the same speed.

Dynamic Power

Once the muscle memory has been clearly established it's time to add power. But whoa there! Not quite time to rip one off yet. You want to introduce the power in such a way that you are still working the muscle memory end of it. Start by removing just one cord at a time so the movement is just a little faster. Then, after a few days, remove another cord and keep doing this until you can perform the movement with great technique and with power and speed of movement.

Second, third and fourth pushes

Once you have this, you can start to work on the second, third and fourth pushes. We'll discuss the next steps in a later tip. Eventually you can progress to using a partner to resist you rather than a fixed point. Then gradually speed up the movements by having your partner give less resistance. Again, it's best to start with slow movements, so bring your chair along.

Key points will be:

- Forward momentum – landing with your center of gravity ahead of your knee and your knee ahead of your foot. Ensure your chest does not rise through the execution.
- Butt tuck – this happens by contracting the butt muscles and driving your hips forward on each execution.
- Knee drive – driving your knee straight up under the chest to 'lock' the hip before allowing it to drive outwards.
- Full extension of the hip, knee and ankle with pressure going from back part of ball, to mid-ball to front of ball.

Now you are ready to repeat the whole process on ice, starting with slow movements on fixed cords and a chair, and gradually progressing to partner resisted.