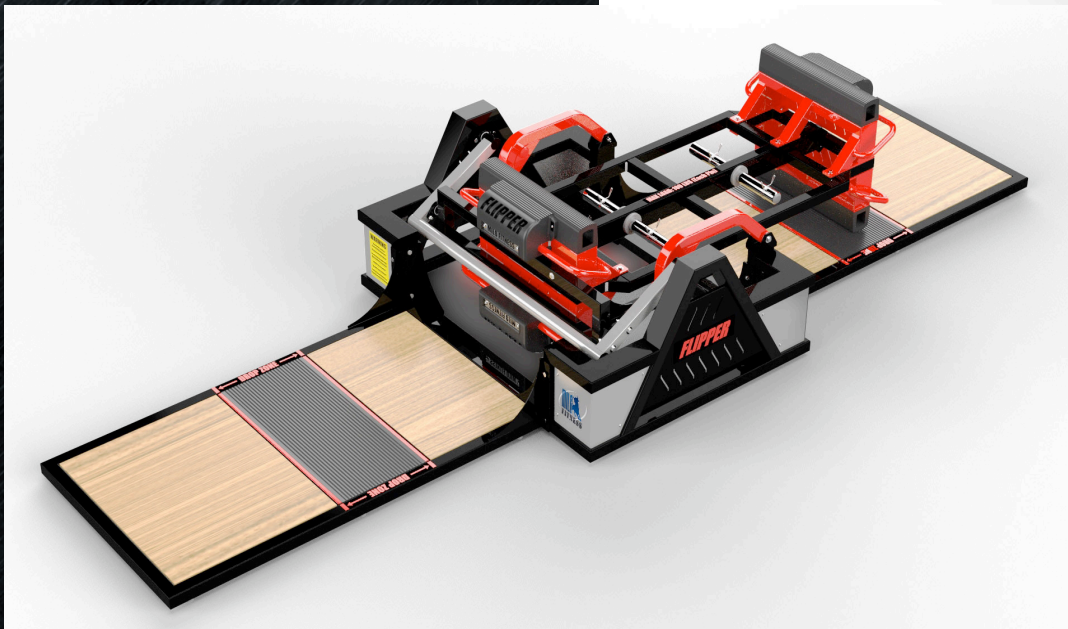
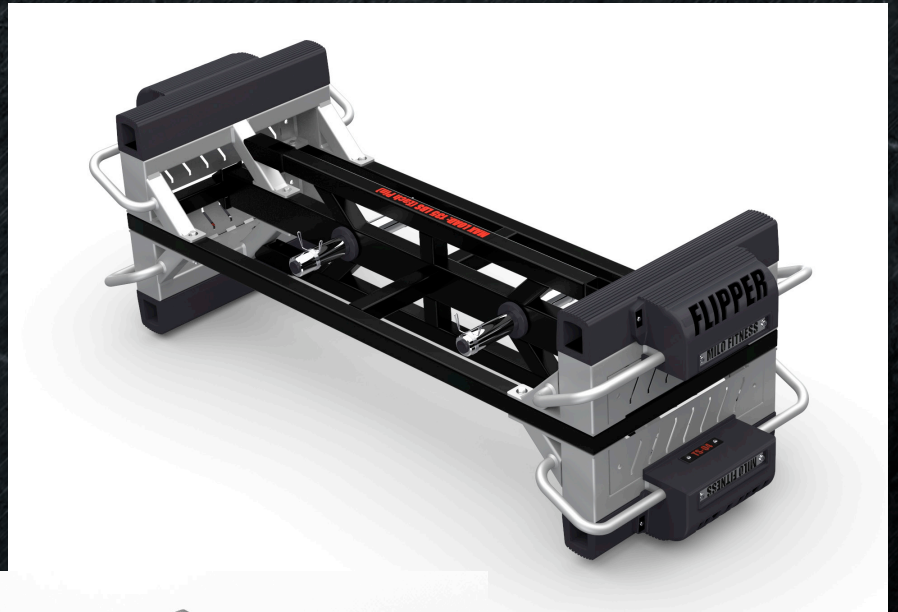


FLIPPER

Training Programs Guide



March 2012 Edition

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Flipper Exercises

Below are descriptions of a series of FLIPPER exercises, some of which are more traditional and are similar to exercises done with Olympic bars. One advantage to using the FLIPPER is it is much more stable than a weighted bar. This allows the athlete to concentrate less on the skill of catching the bar and more on driving the weight up, thereby increasing strength and power.

Standard Flip: A lifter grasps the bottom handles with an underhand (supinated), neutral or overhand (pronated) grip. With hips low and arms straight, the lifter drives the FLIPPER up to the chest in a standing position. From there, the lifter drives the FLIPPER over by extending their arms ([pages 5-9 of the Training Manual](#)).

Side Lift: Two lifters face one another with one end of a FLIPPER between them. The lifters grasp the lower handles with their back hands, and the lower spotting handles with the forward hands. The lifters drive the FLIPPER up and over in unison, rotating their bodies into the FLIPPER and driving off with the back legs (photos page 7 of this document and [pages 10-12 of Training Manual](#)).

Flipper Clean: The lifter grasps the lower handles with an overhand (pronated) grip, arms fully extended. The lifter drives the FLIPPER up with a triple extension (hips, knees and ankles) and cleans the FLIPPER bumper up to their shoulders. Upon completion of the lift, the lifter steps back and drops the FLIPPER to the floor or Docking Station pad.

Flipper Hang Clean: The lifter grasps the upper handles of the FLIPPER with an overhand (pronated) grip. The lifter cleans the FLIPPER up, keeping a straight back, until the upper handles are resting on the shoulders of the lifter. Upon completion of the lift, the lifter steps back and drops the FLIPPER to the floor or Docking Station pad.

Flipper Front Squat: The lifter cleans the FLIPPER up to their shoulders by a Flipper Clean (above). With the bumper resting on the shoulders, the lifter flexes the hips and knees into a squat position, and immediately drives back up to the standing position.

Overhead Flipper Squat: The overhead version of the Flipper Squat is identical to the Flipper Front Squat, with the exception that instead of the FLIPPER bumper resting on the shoulders of the lifter, the FLIPPER is controlled at the end of fully extended arms, as would be at the end of the push phase, without releasing the FLIPPER.

Flipper Push Press: The lifter cleans the FLIPPER as in the Flipper Clean described above. The lifter then extends the arms as in the push phase of a traditional lift, but the lifter does not release the FLIPPER. The lifter lowers the FLIPPER back to the shoulders and repeats the push. When completed, the lifter steps back and allows the FLIPPER to drop to the floor or Docking Station pad.

Flipper Deadlift (or Flipper Pull): The lifter grasps the lower handles using any grip, overhand (pronated), neutral or underhand (supinated) with arms fully extended. The lifter drives the FLIPPER up using the triple extension of the hips, knees and ankles until the lifter's body is fully extended with the FLIPPER at the lower waist.

Testing/Evaluations

It may be valuable to test your athletes to evaluate their strength, agility, power and speed quickly and without putting them through an extensive series of 1RM tests, agility runs, vertical jump tests and sprints. The 60-second Drill with the FLIPPER provides a baseline combination of these physical attributes in a short amount of time. In addition, when the coach is looking at overall performance, the combination of these is what is important because this is how the athlete is required to perform on the field. Testing each element independently may not identify if there is a weak link.

Test performance: Either FLIPPER model may be used. FLIPPER loading is recommended below.

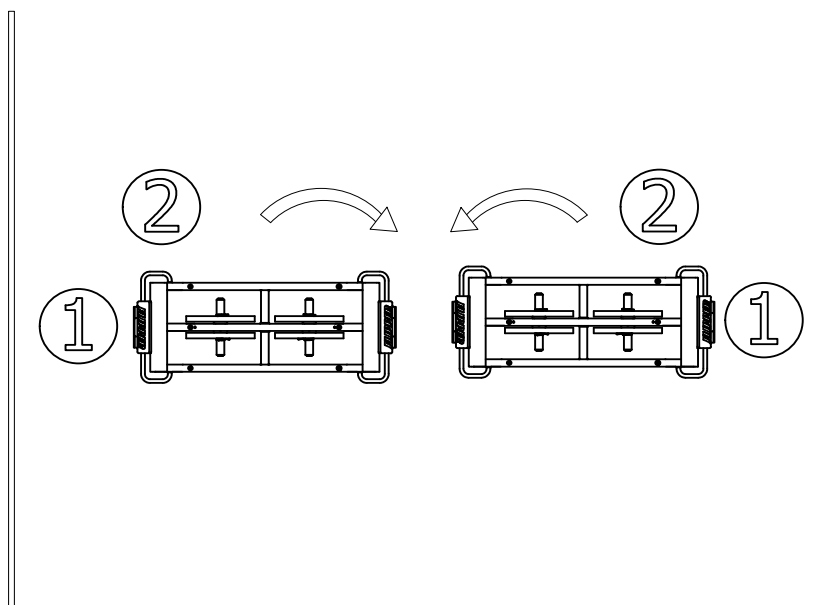
Loading: A general guideline for loading is:

High School Athletes: 260-350 Lbs

College Athletes: 300-450 Lbs

Professional Athletes: 450-600 Lbs
(approximately 50-55% of 1RM)

Procedure: Athlete #1 grabs the bottom handles on one end of the FLIPPER. The coach gives the command to begin and the athlete flips the FLIPPER over with athlete #2 standing by as a spotter. As soon as the FLIPPER leaves the lifter's hands, he moves to the other side and takes the same lifting position on the other side of the now flipped FLIPPER. Athlete #1 flips the FLIPPER back to the original starting position and repeats the process as many times as possible until the coach signals stop, 60 seconds after starting.



Scoring: A point is awarded every time the FLIPPER leaves the hands of the lifter before time runs out. Scores in the range of 8-12 are considered good.

Pre-Season Training

Functional training has become more popular as research has shown the advantages to functional training [1-6]. Strength and conditioning drills are based on 1RM values of the athlete. Though the coach may do 1RM testing using the FLIPPER, a deadlift comparison is provided if the deadlift is used as part of the 1RM testing procedures.

Straight Bar Dead Lift (1RM) * 2.04= FLIPPER (1RM)

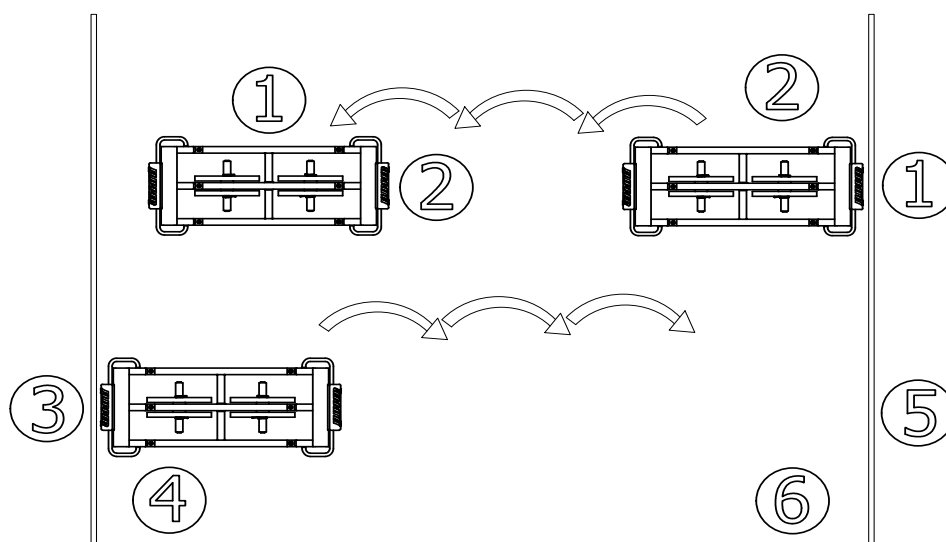
Hex Bar Dead Lift (1RM) *1.88= FLIPPER (1RM)

Strength: In programs using functional training, it is recommended that the athletes perform their functional training, such as using the FLIPPER, before traditional weight training (squats, deadlifts, etc.)[7]. Implement flipping, such as using the FLIPPER, require a great deal of energy. In terms of muscle activation, implement flipping generates some of the highest muscle stimulation of all functional training events [8]. It is recommended that using implements such as the FLIPPER be limited to 1-2 workouts per week in a strength or power cycle [3, 4].

Example: Set 1: 6 flips @ 50-55% 1RM
Set 2: 4 flips @ 70-75% 1RM
Set 3: 2 flips @ 90-100% 1RM

There is an automatic rest period between reps, as the lifter must reposition themselves on the FLIPPER after it has moved into a new location due to the previous flip. Given that, it is recommended that the rest period for "Set 3" be between 60 and 90 seconds.

Conditioning: Drills to increase muscular endurance and aerobic capacity may vary with the needs of the athletes. If a coach is looking to improve his "hurry up" offense, simple sprints will have limited transference. The athlete must adapt to high power output in short repeated bouts with short rest periods, repeated over and over again.



1. 2-man Relay:

Loading: Use a moderately heavy weight, such as 70% of 1RM

Procedure: As illustrated above, a lifter (#1) makes a lift with a spotter standing by (#2). After each lift the lifter and spotter trade places, repeating this process at least 10 times (5 flips each). If a relay is used, such as shown here, a second team (#3 and #4) takes over and returns the Flipper back to the starting position by performing 10 more flips. Optimally there will be a second FLIPPER with another team racing this team. This competition motivates the athletes to perform and not let their teammates down.

Example: 4 sets of 10 flips (5 each) @ 70% 1RM; 2-3 minute rest between sets
Race second team, loser runs 4x40 yard sprints

2. Side Shuttle Drill

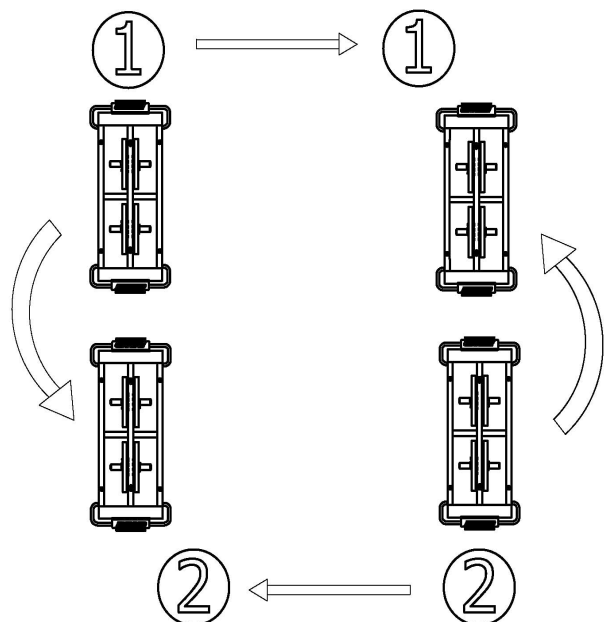
This drill may have several variations. The number of flips for each lifter may vary, as well as the distance between the FLIPPERS (horizontal distance on the previous page) and the type of run between FLIPPERS. The lifters may be required to run with their shoulders square to the FLIPPERS, or allowed to sprint straight to the other FLIPPER.

Loading: Use a light weight such as 50-60% of 1RM

Procedure: Two FLIPPERS are used, with a first lifter (#1) at the first FLIPPER and a second lifter (#2) at the second FLIPPER, as shown below. The FLIPPERS are positioned opposing one another, a distance apart of at least 10 yards (horizontal distance in the diagram). At the coach's whistle, both lifters flip their respective FLIPPERS over. Immediately after, they run to the other FLIPPER and flip it over to its starting position. This may continue with the same lifters for several flips, or after the second flip each lifter may be replaced with a new lifter.

Examples: WO 1: 2 sets of 4 flips each @ 50% 1RM (Approx., group drill); shuttle run 30 yards between FLIPPERS. Lifter #1 and Lifter #2 are first lifters of each team. After each lifter completes their lifts the next lifter on their team takes over. Each lifter completes two sets of lifts.

WO 2: 4 sets of 4 flips each @ 50% 1RM (Approx., group drill); shuttle run 10 yards between FLIPPERS. Lifter #1 and Lifter #2 are first lifters of each team. After each lifter completes their lifts the next lifter on their team takes over. Each lifter completes four sets of lifts.



Sleds: Drills using the FLIPPER as a sled or wheelbarrow sled may be incorporated into their training. This loading of the FLIPPER as a sled enables more drag (more push) if the weight is loaded more on the “sled end” of the FLIPPER. Conversely, if the FLIPPER is loaded more on the higher “handle end”, more emphasis is given to lifting, holding and grip.

This wheelbarrow sled can also be flipped over. A sample drill can be seen on the “Sled Attachments” video at www.Milofit.com/training-videos/.



Example 1: WO 1: 2 sets @ 10 yards
2 sets @ 15 yards
1 set @ 20 yards

Loading: 25 lbs on each pin on the sled side, no loading on the upper (handle) side

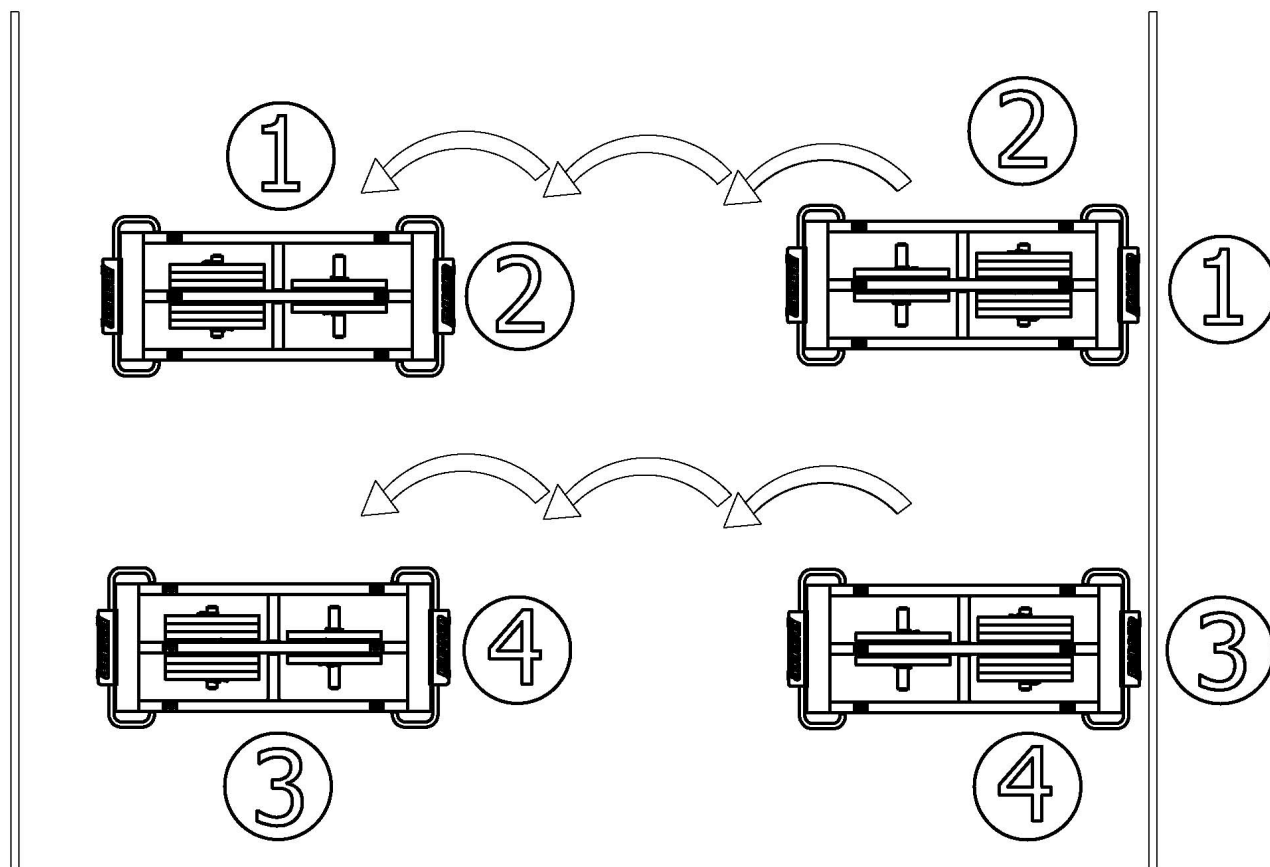
Example 2: WO 2: 10 sets @ 10 yards - flip over at the end of each drive
8 sets @ 15 yards - flip over at the end of each drive

Loading: 25 lbs all the pins w/ 15-30 seconds rest between sets

Teamwork Drills: Many conditioning drills may be used to force athletes to work together to accomplish a task, such as finishing a sequence of flips. These are classic teamwork building principles. One example is a lineman/back drill, which is one application to the 2-man race, with uneven loading. In this drill, the linemen (#1 & #3) are expected to be the stronger and more powerful of the two. The FLIPPER is loaded heavier on his side as opposed to the running backs (#2 & #4). The teams race to perform 10 flips (5 each lifter) trying to beat the other team.

Loading: For all conditioning drills, it is suggested to use 50-55% of 1 RM when multiple sets of 5 flips each are used or single sets of 10 flips with minimal rest (approximately 10 seconds) between flips. Higher weights can initially be used (60-70% of 1RM) and plates may be stripped off as the number of sets of drills or types of drills progress during the training session.

Example: 4 sets of 10 flips (5 each) @ 60% 1RM (unevenly loaded if necessary);



Core Training

Core strength and stability has a list of advantages including injury prevention [8,9]. Tire flipping and stone lifting were shown to have the highest degree of average peak muscle activation of eight popular strongman events [8]. The similar movement of flipping a FLIPPER falls into the same category.

Side Lift: In addition to the traditional standard flip, the presence of the handles on the FLIPPER allow for side lifts, where two lifters simultaneously lift the FLIPPER and throw it over using a wide base and controlled trunk and upper body rotation.



Three Way Lift: The Three-Way Lift is a unique feature to the FLIPPER. The handles of the FLIPPER allow it to be manipulated after the initial lift is completed so that the push phase of the lift may be directed to one side or the other. This pushing to the side causes the muscles on that side of the core to contract to resist the side force applied to the FLIPPER.

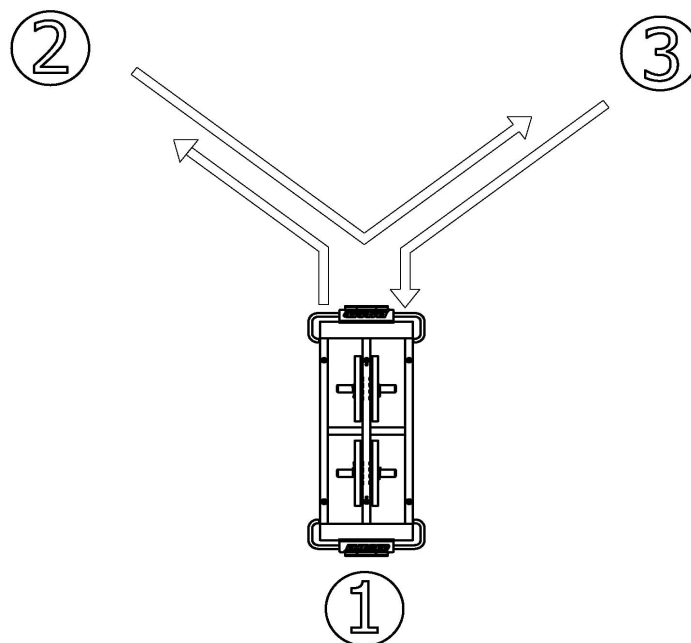
Loading: It is recommended that 45-50% of 1RM be used for this lift.

Procedure: The first lifter (#1) drives the FLIPPER straight up to their chest directed toward a midpoint between lifter #2 and lifter #3. The push phase is altered in that the lifter positions their feet to support a driving motion toward the second lifter (#2) during the push phase of the lift. The second lifter (#2) does the same thing and directs the throw phase of the lift toward the third lifter (#3) and the third lifter (#3) does the same back to the first lifter (#1). The next round, the first lifter (#1) again drives the flipper up straight only the push phase now directs the FLIPPER toward lifter #3. Lifter #3 directs toward lifter #2 and lifter #2 back to lifter #1. In each case, the lifter changes the FLIPPER's direction when the FLIPPER is in a raised position and throws it, ensuring the FLIPPER lands on the bumpers and not on its side.

Examples:

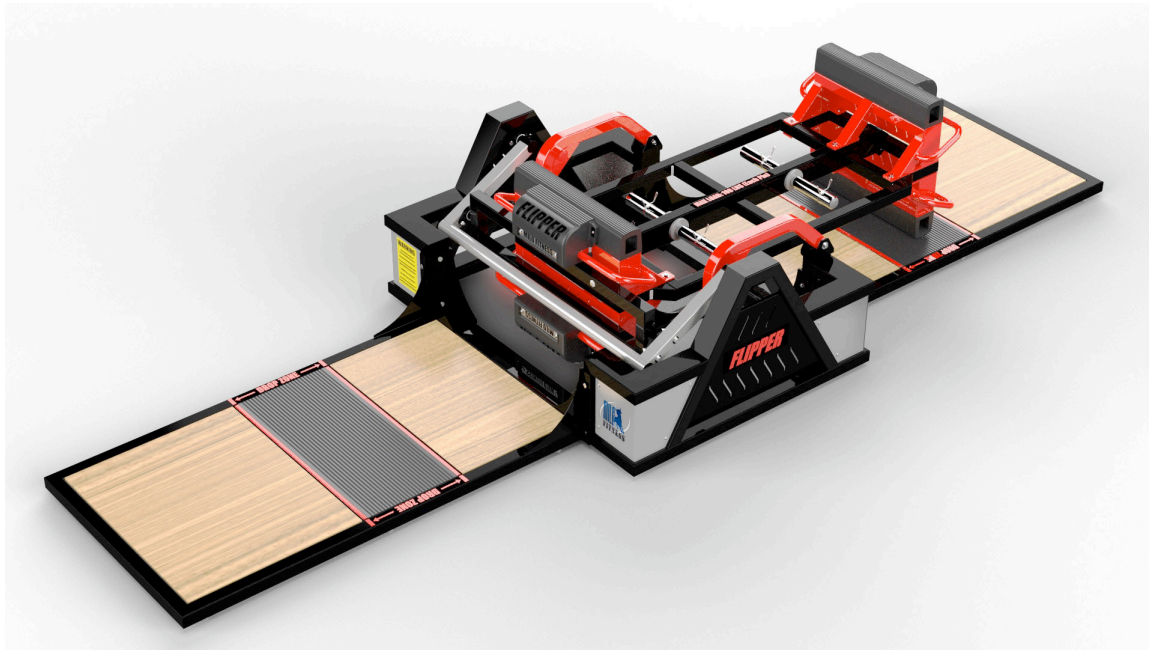
WO 1: Side Lift (out and back) 10 flips @ 70% 1RM of single lifter standard lift (2 equal lifters)

WO 2: Three-way Lift; 5 flips clockwise and 5 flips counter clockwise @ 60% 1RM (3 equal lifters)



In-Season Training

Docking Stations: Until now functional training has not had a great deal of acceptance for in-season training. More traditional power training in the weight room has been used. The FLIPPER, and especially used in conjunction with a Docking Station, provides a safe environment to perform high power triple extension throwing movements. The top handles may be used to provide a movement similar to a hang clean and the bottom handles for a power clean. The difference between the FLIPPER movement and the free weight movement is the bar has six degrees of freedom and requires the lifter to catch the weight, where the FLIPPER allows the lifter to throw the implement up and over, thus completing a fully extended throwing movement. This is very desirable from the performance aspect [10, 11] but also because it removes the need to catch the weight, thus reducing the likelihood of injury.



Loading: The work done by the lifter on a FLIPPER on the ground or in a docking station is virtually identical. When training for high power it is recommended that 35-50% of 1RM be used depending on the desire to develop strength-speed power or speed-strength power.

Example:

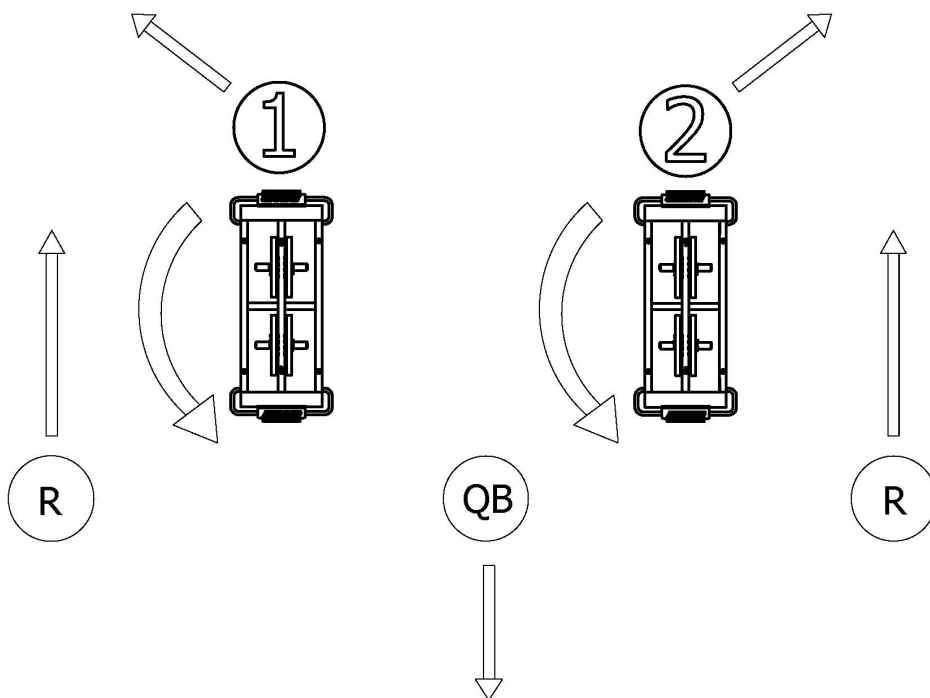
- WO 1: 4 sets of 8 flips @ 50% 1RM (top handles)
- WO 2: 4 sets of 5 flips @ 60% of 1RM (bottom handles)
- WO 3: 4 sets of one-handed flips (5 flips each arm) @35% of 1RM (bottom handles)
(see 2-1 Duel Drill for demonstration of 1-arm flips
at www.milofit.com/training-videos/.)

Functional In-Season Flipper Drills: There are many drills that can be performed using the FLIPPER that require the athlete to exert a concentrated bout of power to move the FLIPPER, but don't require a "hit" to be given or received. Incorporating the FLIPPER into the drills listed below may be used on "helmets only" days where it is not desirable for the athletes to take or receive hits outside of game day.

1. Linebacker drill: Linebackers and other defensive players start each play with their heads up. This drill has the lifter react to an opponent, the FLIPPER, and then read and adjust to the play.

Loading: Use a lighter weight such as 40% of 1 RM.

Procedure: The linebackers or lifters (#1 & #2) position themselves between a quarterback (QB) and two receivers (R), grasping the upper handles of their FLIPPERS. When the QB moves, the lifters clean and throw their FLIPPERS up but not over (unless there is sufficient room) as the QB backs up and the receivers move downfield, then cross or stay for a screen. As soon as the FLIPPERS are thrown, the lifters go into zone coverage to cover that receiver.

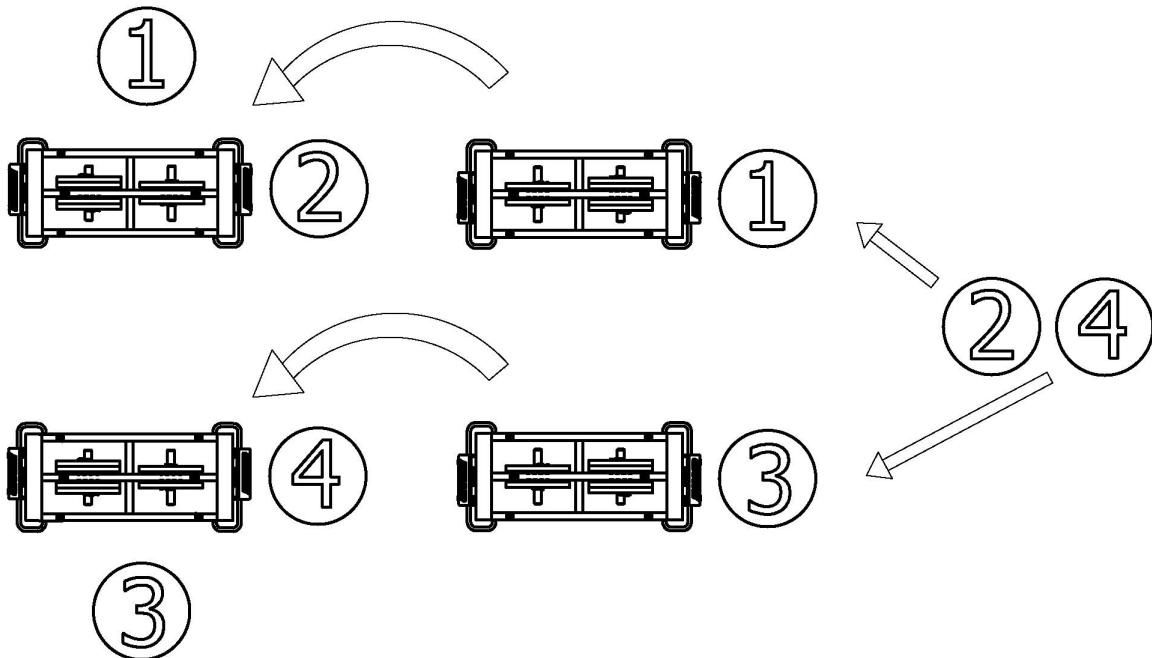


2. Up the Middle Drill: This drill may take more than one form. The linemen only can flip the FLIPPER, which simulates a defensive lineman, or the FLIPPER may be unevenly loaded and the running back may flip the FLIPPER by top or bottom handles after the Lineman.

Loading: Use a lighter weight such as 50% of 1RM. If both the linemen and the running backs flip the FLIPPER, it is suggested to unevenly load so the linemen lift the heavier end and the running backs lift the lighter end.

Procedure: On the command of the coach, the linemen (#1 & #3) flip the FLIPPER over. The backs (#2 & #4) stay in their ready position. A second command (whistle) is given by the coach and the backs run to their respective FLIPPER (light end now toward them) and they position themselves square to the FLIPPER, and flip either by the top or bottom handles as directed by the coach. For example after the first whistle for the linemen, the coaches command may be “#2 right bottom, #4 left top, ‘whistle’”. This makes the backs process the information quickly and then immediately act. The backs should never try to flip the FLIPPER on the run. They should plant their feet and then explode into the FLIPPER as if they are taking on an opponent head on, but in this case, without the impact.

Examples: LB Drill: 8 sets of 1 throw/flip @ 50% of 1RM
Up Middle: 6 sets of 1 flip @ 40-60% 1RM (unevenly loaded)



Off-Season Training

Off-season may require more recovery time for seasonal injuries for some athletes and for others it is an opportunity to start strength or hypertrophy training. Given that needs may vary greatly, it is important for the strength and conditioning professional to assess each athlete's needs and adjust their programs accordingly. The following are examples of different exercises and drills that may be used with the FLIPPER. These exercises may be done with the docking station or with the FLIPPER alone.

These may be incorporated into any program to add variation and added control to the athlete. The intensity of these exercises may be modified for an athlete that is recovering from a playing field injury. The added control of the FLIPPER may help the athlete to advance in weight faster than if using a weighted bar alone.

Examples:	Flipper Clean:	4 sets of 6 reps @ 75% 1RM
	Flipper Flips:	4 sets of 6 flips @ 70-80% 1RM
	Flipper Front Squats:	4 sets of 10 reps @ 70% 1RM
	Flipper wheel barrow Sled:	2 sets of 30 yards @ 25# each pin (sled end)
	Flipper hang cleans:	4 sets of 6 reps @ 75% 1RM
	Flipper Deadlifts:	4 sets of 6 reps @ 75% 1RM
	Flipper Push Press:	4 sets of 6 reps @ 75% 1RM
	Side Lift:	3 sets of 6 flips (3 out & 3 back) @ 50% of 1 RM standard lift (lesser of the 2 lifters)

For descriptions of the exercises listed review the Flipper Exercises Section. Additional information and exercises may be found in the Indoor Training Drills section of the Training Manual.

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NOTES

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