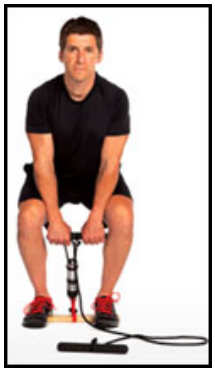
History Of Development Of The World's First Isokinetic Exerciser



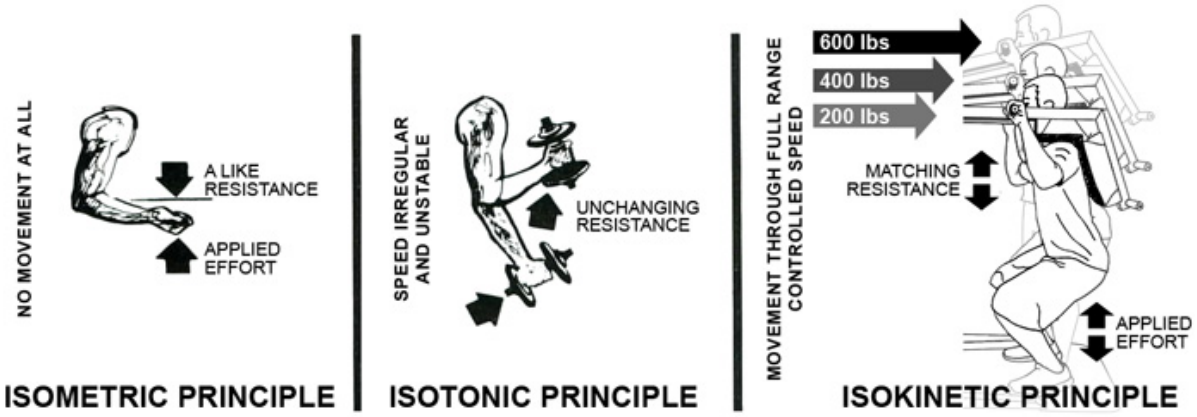
The humble beginning of the first Isokinetic Exerciser is a story worth telling. It is a story of how many products in our free country develop because an individual sees a better way to improve or develop a product. I believe most business success stories come to those who exercise their God given talents, who have patience and perseverance, and who are willing to endure some hardships that usually come with a new product. I tell this story of the beginning of the small rope Mini Gym to encourage any individual who has a dream or an idea that he or she may think will sell. My advice, don't give up the dream! In this country, with its freedoms and opportunities (like nowhere else in this world), it only takes an idea, some sweat, a break here or there, and you could see that dream come to fruition.

Approximately 50 years ago, 1967, I came in contact with a totally new exercise device. It was a small tubular unit with a rope wrapped around a steel shaft. The more wrapping of rope around the shaft, the harder it was to pull. The user pulled on one handle until the rope pulled all the way thru, then they would pull on the other handle until the rope pulled all the way thru again. One could add more resistance by dragging the second handle across the floor. It was a simple new approach to resistive exercise, but from an engineering standpoint it was a joke. It was basically a "Mickey Mouse" method of resistance by wrapping the rope around a shaft. But it was selling to schools and individuals. The device was only thirty dollars and it was having great success across the country. For the athletic teams, usually football at the time, it was a bit of a change since most used weights or Universal type gym equipment to do their conditioning.

I can't begin to tell you how truly wonderful it is to be an innovative entrepreneur in America. One of the advantages of our economic system is that it rewards people who improve products that they see on the market. I knew there was a better way of doing exercises with this approach so I called a friend, Woody Fisher, who lived in Florida. I knew that he had engineering "know how" to help me design a better exercise machine. I showed him the smaller exerciser and showed him sketches what I thought might work. I wanted to change their device and design a new unit that will change exercise programs forever. I had this wild idea but I have never been one to physically do something with my own hands but I need somebody to put these ideas for a functioning unit. After several hours of discussion, Woody agreed to come to Independence, Missouri, and work on this new approach to exercise. I didn't have a shop or other suitable place to experiment but my brother, Bud, had a small workshop in his basement and we began tinkering there. Within a few days we designed the spool for a rope and braking arms, and then we were a bit puzzled as how best to return the rope from the spool for rapid repetitions until I showed Woody a window shade I had taken apart. Woody said, "I can copy that." He picked up some wire from a local hardware and wound a torsion spring to install inside the spool. It worked perfectly to recoil the rope rapidly for the next rep.

It was working, beyond my expectations and as crude as it was, I just could not understand what we had done with so little equipment and in such a short time. It was a very good exerciser that had most of the features that I had listed. I had a speed controlled exerciser that maintained a constant speed regardless how hard a user worked against it. A user could do any number of repetitions at their maximum effort, and yet as they fatigued it was always adjusting to the user with every rep. I had accomplished exactly what I had envisioned. This type of exercise had never been done before. I accomplished it with the ingenious idea of a governor braking system. For the first time in history we had designed an exerciser that had automatic resistance in direct response to the effort applied against it. The machine accommodated to each individual's strength output regardless of how strong or weak they were. A 10-year-old child and the strongest man in the world could both use the same exerciser without making any adjustment whatsoever. They could do 10 reps or 100 reps (if they could still stand) without any adjustments. I knew I had something excellent, but now the question was, what do I do with it now?

To better understand why I was so excited. Since the beginning of mankind, worldwide there were only two types of resistive exercise for improving and strengthening athletes. That training was done with weights, called isotonics and the second type training done with Isometrics, which was pushing against an immovable object. Charles Atlas had made isometrics popular in the 30's. Both have their advantages but also limitations and now, I discovered a third method of resistive exercise that had many advantages over and above isotonic and isometrics. It just did not make sense that this type of exercise system had never been developed since mankind existed and yet I had designed this new fantastic exerciser in a home basement in but a few weeks with only a drill press and old lathe. And, most Important we have a safe exerciser that permits fast speed resistive exercise for athletes and anybody who refrained exercise because usual exercise time and problems of lifting weights. We changed the exercise world forever with our new Isokinetic accommodating exerciser.



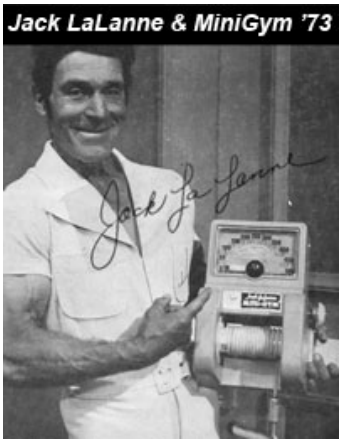
ISOKINETIC PRINCIPLE *The most advanced form of strength and power developing today involves the new principal of Isokinetics. When using the Leaper, resistance is always equal to the force being exerted at every angle thru the full range of motion and with every fatiguing rep. If you exert 200 lbs of effort at the beginning of squat exercise, you'll get 200 lbs of resistance. If you exert 450 lbs effort as your legs increase leverage, you will get 400 lbs of resistance and up to 800 lbs in the last 2 inches of that exercise. Our governor mechanism matches the effort applied and responds instantly and automatically to effort applied. This is perfection of resistive exercise. It responds to the user, you do not have to respond to it as you do with weights. Our Leaper is fast but safe. Athletes can work out quickly while developing more power for their game and without getting sore muscles or joints.*

I filed the first of our five patents and rented a 4,000 foot basement under a bicycle shop. My first production unit, Pro, had 2 lead brake arms. Next was my Indicator model followed by the Accommodator, the first unit that hung on a wall. Next, we need measuring so I did the Achiever, which measured the range of motion with a paper graph. Since my exerciser provided constant speed of exercise, a user would work at their maximum and the exerciser would draw out the force output for the full range of motion. This had never been done before because there was not a speed-controlled exerciser. The only way to measure muscle strength prior to this was with isometrics but, the user was measured at only a single point in the range of motion. That was a static measurement, not a moving range of motion. My Achiever unit, now drew a line of a moving Range of Motion. Now, muscle measurements could be graphed with exercise that had never been possible until we did it.

Our technology had tremendous advantages because of the nature of variable human biomechanics. For example, an individual usually is twice as strong in middle range of an arm curl or knee extension as they are the beginning or ending of that movement. In a squat exercise, this variation of force output for a high school athlete may vary as much as 200 pounds of leg press strength at the beginning or bottom of a squat to maybe 600 pounds just before the knees lock out or are fully extended. Now, we can measure all these exercises but also we had an exerciser to train those extensive motions for the first time. Up to now, an athlete was always limited to the max amount of weight that they could move at their weakest point in their range of motion. These measurements also further illustrated the advantages of our isokinetic accommodating resistance.

Because our new exerciser permits fast speed resistive exercise, we now develop athletes white quick twitch muscle fibers for more explosive actions such as jumping higher with much more speed in running etc. This HIIT training now is done safely and in less training time—just not safe to do with usual weight training. In addition to athletic training we now can offer this safe exercise to adults as recent research show that but 10 minutes exercise 3 times per week with our HIIT exercise can be comparable 50 minutes of exercising with weights. Click to read research articles from Time magazine and doctors at Mayo Clinic.

In the summer of 1968 an article was given to me that was published in JOHPER, the Journal of Health, Physical Education, & Recreation. This article explained a new type of exerciser that offered accommodating resistance and would measure the ranges of motion since they had a preset speed of exercise. They called the exercise “isokinetic”. This was the first time we ever heard the word “isokinetic”. Now, for the first time, we had a term for the cutting edge technology that I had developed and selling. This new term named by James Perrine at Iowa State Univ. At that time, they began selling their unit for five thousand dollars and our units were only two hundred dollars. We had been selling our units 16 or 18 months ahead of them, but because the ideas were somewhat similar, there was some patent litigation, but we won that lawsuit in the courts of New York.



We were selling our new exercisers with great success. We had both floor and wall models. The next challenge was to design a single unit that was a combination of a floor and wall unit. About this time, 71, Jack LaLanne came to town to see our new exercise device. He was so impressed that he helped us financially tool a new design that would permit exercises from the floor and yet attach to a wall for downward and outward pulls. This model was our Super Mini-Gym #180 with a force dial. Jack showed it one night on television on the Tonight Show hosted by Steve Allen. This gave us a lot of free publicity.

We began selling units to every University worldwide for research. Next opportunity emerged when we sold a couple units to Harding College in Searcy, Arkansas. Professor, Dr. Orlee was so impressed with our isokinetic exerciser that he contacted Dr. Rummel of NASA to consider the Mini-Gym for space flights. The NASA engineer for this type of equipment was John Lem, who later wrote articles on the Super Mini-Gym. John came to our plant a couple times to get a mini gym ready for the space environment. Dr. Rummel was in charge of the astronauts exercise programs. He began a crash exercise program to remedy the astronauts’ loss of muscle in their first two flights and the next flight # 3 was to be extended to sixty days. This next crew of astronauts took their Super Mini-Gym with the other supplies in their space ship from Cape Canaveral and transferred them to Skylab which was already circling the Earth. The crew of Skylab 3, Bean, Garriot, and Lousma, worked diligently on the Super Mini-Gym daily for the sixty day flight. They returned to earth in much better shape than the crew of Skylab 2. The crew of this 3rd flight was on worldwide television using the Super Mini-Gym and praising it. (See our video on You Tube). They called the unit “Mark I”. It was so effective for them, the continuing flights used it, and the Super Mini-Gym 180 had made its debut.

Click to enlarge.

By 1974 we developed several other applications from the basic Mini-Gym such as the Leaper, Swim bench, and Knee Unit. We had tremendous success with many athletes and teams, including Bruce Jenner, Mark Spitz, and Kent Benson. Most colleges and universities as well as several pro teams also used Mini-Gym equipment. The isokinetic principal had proven itself by developing more strength, athletes jumping higher and rehabilitating injuries quicker and easier.

In a sense, we had turned the world of resistive exercise upside down. By the middle of the 70s, hundreds, if not thousands of universities worldwide were doing research projects in their biomechanical or kinesiology labs — or athletic trainers with their sports teams — did testing to either vindicate our Isokinetic principal or to disprove its effectiveness. Many research projects were done as thesis of masters or doctorate degrees. Without exception, every project has shown isokinetic resistance developed more strength, develop quicker reflexes, jump higher, and rehabilitate injuries more effectively in less time than other methods heretofore. This is just a partial list of those research projects on Isokinetic Exercise for testing, injury prevention, rehabilitation, comparisons to isotonic and isometrics, measurements of human performance, measuring force output, muscle strength and power, and dozens more projects.

Now, with our success, several additional companies began to design and manufacture isokinetic exercisers. Some were selling very expensive therapy units measuring ranges of motion, which provided a pathway of rehabbing all types of bone and muscle injuries. What I had invented for the industry was now succeeding big time. I was responsible for establishing a totally new industry of exercise equipment with Isokinetic Exercisers for athletic training, home exercise, measuring and rehabbing injuries of all types.

1st leaper 1974

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As for my basketball background, Decatur High, Illinois, Graceland University and a couple years in Air Force (Biggs Field). I always had basketball interest and took college coaching classes for a future job as high school or college coach. My big concern back then with our basketball teams there was a lack of any type exercises that actually improved our game. We did the usual running and agility drills but really did nothing to make us stronger or to jump higher. Nobody dunked the ball and there were never drills to control our dribbles so we could out-drive out opponent. Additionally, many coaches had the idea that resistive exercise would make their athletes muscle bound and too bulky to play. I was never happy with these limitations of our basketball training and I was always dreaming ideas how players could play faster and jump higher. I knew we had to transfer what we had in our small mini gyms to a stronger/ larger unit to develop athletic legs to their optimum. Thus, I developed our 1st Leaper and inserted a new larger governor mechanism into our first frame. The first time I got under the pads and experienced the accommodating resistance for the legs, I knew this new Leaper would change the basketball game forever. I was so excited, just couldn't contain my enthusiasm.

I called Doc Councilman, the immortal swim coach at Indiana University, who was always ahead of his contemporaries with his training ideas. I told him my new Leaper development was completed. He had been using our small isokinetic mini gyms with his Olympic and University swimmers. His immediate comment was "How soon can you bring that Leaper over to us?" I said," tomorrow". We approached Bob Knight, Indiana basketball coach, and asked to place his best player on the Leaper for the summer break. Kent Benson was an exceptional talented player but lacked the ability to jump high enough and quick enough to control the bank board. He worked on the Leaper all summer and increased his vertical jump from 22 inches to 26 inches. He continued to work harder and later he told me he increased his vertical 9 or 10 inches. He become faster and quicker with development of his white quick twitch muscle fibers. Doc and Bob Knight reported his summer improvement to Sports Illustrated and soon hundreds of newspapers picked up the story. That year, Indiana won the NCAA, Division 1, title with Kent leading the Indiana team with an undefeated season. He made the All-American team for a second time and became the #2 rebounder in Indiana University basketball history. He also was named the Big Ten Player of the year and became No 1 draft choice of NBA the next yr with Milwaukee Bucks. **THE GAME OF BASKETBALL WAS CHANGED FOREVER.**

This success created a new approach of training fast speed resistive exercise and the word was out to high school coaches. Many schools purchased the Leaper and got such improvement with their players that many opposing coaches would call us and ask how soon they could get one of those "things". Some would say, "Just played a team and got our tail beat. I can't believe the difference between last year's and their team this year. Last year we beat them badly, but their players improved so much, we'll never beat them again. They tell me they got a Leaper. How soon can I get one of those 'things'?" Virtually every high school and university purchased our leaper in 1970's and 80's and we could not manufacture them fast enough. Fast speed resistive exercise had made inroads for the first time with basketball teams and since has spread to most athletic sports. Many older basketball coaches give the Leaper credit for revolutionizing the quickness of player's reflexes and the dunking that exist today. The Leaper provided the way for basketball and volleyball teams to work fast and safely. The Leaper changed basketball and volleyball coaches' attitude of fast speed resistive exercise, which was not possible prior to the advent of isokinetic resistance.

We had proven, with several thousand research projects in most Universities, this new system of resistive exercise had many advantages that were never available with isotonic or isometrics exercise for both athletic improvement or rehabbing injuries. Most of our exclusive features are listed here that were never available until my advent of Isokinetic Exercisers:

- World's first speed controlled exerciser that had no setting of resistance as it provides automatic resistance to every person regardless of his or her strength
- Users exercise in less time as resistance is always automatic
- Users can do any number of reps safely
- No spotters needed as with weights
- First exercise system that provided full or max resistance at every point thru the full ROM, not only for that first rep but every rep thereafter as the user fatigued
- The only method of doing fast speed athletic training safely
- The advent of variable exercise speed training, we could exercise both fast and slow speeds safely

Our force dial-measuring device served us thru the 1980s, but when the 1990s rolled around, we knew we had to move into the next century with a more effective measuring device. We designed an LCD display for Leapers. Thus, we developed something new in isokinetic conditioning that measured an athlete's power output through the full range of motion. Our new LCD models measure the power of each rep exercised, counts reps, provides a reading for exercise time, measures work in foot pounds of all reps, and provides an average work number for all reps done.

It has been an exciting as well as motivating journey with our 50 years of developing and perfecting our centrifugal braking exercisers. We were first in advocating "TRAIN FAST TO BE FAST" for the athlete. Now, hundreds of other companies are manufacturing some type of isokinetic exercisers. Additionally there are hundreds or thousands of fast speed training centers that develop young athletes' power. They sell their program by developing an athlete's explosive power for jumping higher and running faster. We continue to fill a "niche" with our Leapers and our smaller mini gym rope exercisers that do what we say they will do.

Athletes and teams can develop more power with our isokinetic exercisers — which gives them that extra edge to be a constant winner. With our variable speed governor we have the only exerciser that permits those athletes to train for both power and strength. Weights develop athletic strength but there is no way athletes can train with weights for power with Iron safely. Speed training says "Train Fast to be Fast" because it's the most effective method of training for that explosive power with our Isokinetic Leapers and our rope mini gym exercisers.

We have recently designed a new Family Mini Gym that only weighs 12 pounds that is Ideal for most families who want to exercise in their own home, even watching TV if they wish. This small ISOKINETIC Family exerciser solves the problem for the home-body who can't got to health clubs since it permits dozens of exercises from the floor and attaching a wall bracket in a rec room permits many more exercises. With our new FAMILY MINI GYM members of the family can do the HIT exercise for cardiovascular and with turning the speed control to slow provides muscle toning and strength gains safely. In addition, this new unit also serves the young athletes in the family to train for jumping higher and developing quickness that weight training can't do. This unit will be available to area distributors for resale to others. Call us here at our office for more information on this program.

Glen E. Henson, President