DOWNLOAD PDF THE BALANCING FACTOR

Chapter 1 : Balancing Factors â€“ Honoring Conrad House's contributions to the art world

Balance Factor: Vitamins and Supplements from all natural resourced ingredients. With many distractions along the road of life, health needs to be a priority.

Young holds a Bachelors of Arts in radio, television and film from University of Southern Mississippi. The delicate dance of body equilibrium and balance Factors that affect equilibrium and balance in the body include breathing, vision, vestibular function, musculoskeletal alignment and proprioception. The eyes, vestibular system and proprioceptors of the neck read and adjust head placement in relation to the environment. The respiratory system, the musculoskeletal system and the proprioceptors of the feet and body influence the stability and equilibrium of the rest of the body. Video of the Day Breathing Breathing influences body equilibrium and balance in many ways. Breathing affects body equilibrium and balance in a number of ways. Relaxed deep breathing provides oxygen necessary for brain function and interaction with the sense organs that detect equilibrium and balance. Blockages in the nasal passageways may create spinal misalignment as the head shifts forward to open the airways. This causes the center of gravity to shift the upper chest and the body to become top-heavy. Vision Vision detects the stability of a surface. Vision also detects the stability of a surface or object. For example, seeing a swaying rope bridge causes a different response in the body than seeing a sturdy pillared one. When the eyes focus on a steady object, the vestibular system of the inner ear can orient the head vertically, horizontally and spatially. This helps stabilize the body. Vestibular Function The vestibular system of the inner ear senses head movement. The vestibular system includes the organs within the inner ear. It coordinates with the visual and auditory systems to sense direction and speed of head movement. A fluid called endolymph flows through the three canals of the inner ear as the head tilts and shifts. Tiny hairlike cells send impulses to the brain as the endolymph bends each hair. Disorders of vestibular function can cause vertigo or difficulty balancing on unstable surfaces. Musculoskeletal Alignment Musculoskeletal alignment affects body equilibrium. Balance within muscle groups and alignment of the skeletal system affect body equilibrium and balance. Small shifts of bones can affect the whole skeletal system. When the bite of the jaw is off or one leg is longer than the other, the entire spine compensates for the misalignment. Opposing muscle groups stabilize the joints of the body through the balance of strength and tension. If one muscle is tight and its opposite is weak, the joint is pulled in the direction of tightness. Proprioception Proprioceptors adjust the toes and feel to stabilize the body. Proprioceptors are reflexive organs within muscles and tendons that response to changes in position of the body or limbs. Muscle spindles cause contraction of muscle fibers in response to these changes. Golgi tendon organs cause the tendons to lengthen. The most sensitive areas of proprioception are the neck and the feet. The proprioceptors of the neck work with the vestibular system to adjust head position. Proprioceptors of the feet spread or contract the toes or roll the bones of the feet laterally to keep the body upright.

Chapter 2 : AVL tree - Wikipedia

Life is a balancing act, and frequently it gets off balance. There is so much going on in the world today, and it is difficult at times to keep it all balanced. When we get overwhelmed and out of balance, it can be challenging to get that balance back.

Educational Fair Use Guidelines Since the current copyright law was adopted, various organizations and scholars have established guidelines for educational uses. These guidelines are not part of the Copyright Act and are summarized in Chapter 7, which deals with academic and educational permissions. The Purpose and Character of Your Use In a case, the Supreme Court emphasized this first factor as being an important indicator of fair use. At issue is whether the material has been used to help create something new or merely copied verbatim into another work. When taking portions of copyrighted work, ask yourself the following questions: Has the material you have taken from the original work been transformed by adding new expression or meaning? Was value added to the original by creating new information, new aesthetics, new insights, and understandings? In a parody, for example, the parodist transforms the original by holding it up to ridicule. At the same time, a work does not become a parody simply because the author models characters after those found in a famous work. Purposes such as scholarship, research, or education may also qualify as transformative uses because the work is the subject of review or commentary. Roger prints these quotes under photos of old-growth redwoods in his environmental newsletter. By juxtaposing the quotes with the photos of endangered trees, Roger has transformed the remarks from their original purpose and used them to create a new insight. The copying would probably be permitted as a fair use. Determining what is transformativeâ€”and the degree of transformationâ€”is often challenging. RDR Books, F. The Nature of the Copyrighted Work Because the dissemination of facts or information benefits the public, you have more leeway to copy from factual works such as biographies than you do from fictional works such as plays or novels. In addition, you will have a stronger case of fair use if you copy the material from a published work than an unpublished work. The scope of fair use is narrower for unpublished works because an author has the right to control the first public appearance of his or her expression. The Amount and Substantiality of the Portion Taken The less you take, the more likely that your copying will be excused as a fair use. In other words, you are more likely to run into problems if you take the most memorable aspect of a work. A parodist is permitted to borrow quite a bit, even the heart of the original work, in order to conjure up the original work. Acuff-Rose Music, U. The Effect of the Use Upon the Potential Market Another important fair use factor is whether your use deprives the copyright owner of income or undermines a new or potential market for the copyrighted work. Depriving a copyright owner of income is very likely to trigger a lawsuit. This is true even if you are not competing directly with the original work. For example, in one case an artist used a copyrighted photograph without permission as the basis for wood sculptures, copying all elements of the photo. The artist earned several hundred thousand dollars selling the sculptures. When the photographer sued, the artist claimed his sculptures were a fair use because the photographer would never have considered making sculptures. The court disagreed, stating that it did not matter whether the photographer had considered making sculptures; what mattered was that a potential market for sculptures of the photograph existed. Again, parody is given a slightly different fair use analysis with regard to the impact on the market. That is, the parody may be so good that the public can never take the original work seriously again. Too Small for Fair Use: For example, in the motion picture Seven, several copyrighted photographs appeared in the film, prompting the copyright owner of the photographs to sue the producer of the movie. New Line Cinema Corp. As with fair use, there is no bright line test for determining a de minimis use. For example, in another case, a court determined that the use of a copyrighted poster for a total of 27 seconds in the background of the TV show Roc was not de minimis. What distinguished the use of the poster from the use of the photographs in the Seven case? Black Entertainment Television, Inc. Are You Good or Bad? When you review fair use cases, you may find that they sometimes contradict one another or conflict with the rules expressed in this chapter. Despite the fact that the Supreme Court has indicated that offensiveness is not a fair use factor, you should be aware that a morally offended judge or jury may rationalize its decision against fair use. The parody card series was entitled the Garbage Pail Kids and used gruesome and grotesque names and characters to poke fun at the wholesome Cabbage Patch image. Some copyright experts were surprised when a federal court considered the parody an infringement, not a fair use. Original Appalachian Artworks, Inc. Topps Chewing Gum, Inc. This is not true. Acknowledgment of the source material such as citing the photographer may be a consideration in a fair use determination, but it will not protect against a claim of infringement. In some cases, such as advertisements, acknowledgments can backfire and create additional legal claims, such as a violation of the right of publicity. When in doubt as to the right to use or acknowledge a source, the most prudent course may be to seek the permission of the copyright owner. What is the best thing to write to prevent getting sued? Only a court can determine that. So what do you say? If you believe material has been used in an unauthorized manner, please contact the poster. Does It Help to Use a Disclaimer? In close cases where the court is having a difficult time making a fair use determination, a prominently placed disclaimer may have a positive effect on the way the court perceives your use. However, generally a disclaimer by itself will not help. Fair Use Measuring Fair Use:

Chapter 3 : Harley Balance Factors

Ayurveda, pH balance is an index for the total health of the body: when the pH is too high or too low, it disrupts the "balancing factor" itself, a situation which in turn can lead to complications under the guise of various diseases.

I build stock engines. Mostly for others restorations. So, the only reason I try to learn as much as I can, is to try and figure out what the Harley engineers were trying to accomplish. Also, as a result of this digging, I have decided to incorporate it in all my rebuilds. Not to change the balance. It may not matter at all. But, just part of record-keeping for future reference, when someone does figure it out. Now, for some basic info that has come out of this discussion on many websites: Makes for a quicker revving engine. But, some loss maybe a lot of ability to sustain torque throughout the rpm range of the engine. You would probably use this in a bike that has lots of close ratio gears, and running at higher than normal speeds racing? Makes for a machine that will pull good throughout the rpm range. This will be good for heavier machines, machines with passengers, machines towing trailers. The smoothness of the engine will be unique to that engine, rpms, loads, etc.. Just my opinion now. The lower factor probably will make for smoother overall, with less harmonics. A couple of things to keep in mind: If the engine that you are building is not a race engine meaning very high RPMs , a few grams difference in piston weight will not make any noticeable difference in the overall assembly balance, as they are both connected to the same crankpin. I tend to do it. They will be the only thing matched in the reciprocating components, though. The rods are not matched, just because the female rod is heavier than the male rod. When balancing an assembly, the total reciprocating component weights are summed your pistons fall into this category , and multiplied by the balance factor. Then, added to the rotating weight. This new total is divided by 2, and becomes the bobweight value to balance the wheel halves. My point is, V-Twins are balanced as if they were single-cylinder machines. If your rods occupied a separate and different location on the crank, then matching would be critical for proper balance. As is, they become basically one weight, as far as the crankpin is concerned. Male rod is lighter. Logic would say put heavier piston on the lighter rod. But, remember what I said. They are both attached to the same crankpin. So, the balance comes out the same either way. Pistons are reciprocating weight. Summed, they become one weight in the calculation to balance the whole assembly. If you really wanted to split hairs, there may be some way to calculate the affect of separating the pistons by 45 degrees. But, no one does. It is very forgiving with any balance that falls within the factors in use. And, that can be affected by load on the engine. The heavier the load, the less likely that vibrations will be an issue. But, it really shows up on a lighter machine choppers, bobbers, race. Engines are built to vibrate the least in the RPM range that they are most ridden. Race dictates high, sustained RPMs. Street dictates lower, sustained RPMs. Higher factors leave more meat on the flywheels. Matching weights is a good practice. But, some aftermarket makers usually automotive put a tab on the wristpin end just for this reason. Not enough meat on a stock rod to do so. I have a set of fresh Carrillo rods that I had made for my 45 racer project. Beautiful, and heavy duty. And, almost the exact weight of OEM rods for this machine. No tabs for grinding. Just a smooth, satin from shot peening finish. As to pistons, cast pistons can be ground a bit just a bit to compensate for weight differences. Forged provide more meat and are easier to find material to grind. Or at least, the the old technology behind them. They came from old race technology that compensated for the weakness of cast pistons on the race track, and really are not the best for long life street engines. Meaning, open clearances necessary for expansion. Modern technology has brought us hypereutectic pistons that are beefier read that as lots of meat , stronger, lighter, and can be run with closer tolerances than cast. Did I mention that I really like this type of piston? However, I build primarily old stock engines for others. So, quality cast is what I use when available. All my builds get a fresh balance as part of the build. Just what I practice. Reverse calculate to see where they fall, to begin with. I was told that it was necessary to remove this weight from the total in order to compensate for the force the exploding fuel created, which the engine sees briefly as weight on the spinning assembly. Whether it was just the opinion of the wrench, who told me. Or, first hand knowledge. Never had anyone to tell me different. Not a very scientific explanation. Flywheel Workshop The Virtual Indian.

Chapter 4 : Balancing test - Wikipedia

Crankshaft balancing is the term commonly used to describe changes made in the "counterweights" of the crankshaft (and other components in some cases) to compensate for the weights of the moving components including the crankshaft and the components attached to it (connecting rods, pistons, etc.).

The counterweights are cast or forged in place when the crankshaft is formed, and the balance process is done by removing metal from the counterweights usually by drilling holes until their total is correct to compensate for the engine components. All crankshafts are balanced at the factory, but not to the same degree as would be required for racing, or even by a careful owner. The factory balance is only production-line quality, and can be improved upon by diligent effort. However, it is not, and cannot be completely successful in compensating for the weight of the internal reciprocating components, as I will attempt to explain. The purpose of this Paper is not to explain how motors are balanced, but to discuss in part why balancing is not easily accomplished, and to explore why even the most accurate balancing job is only partially effective. Balance Weight Placement Internal balance In an internally balanced engine, the extra weight for both balance and inertia purposes is contained completely in the counterweights. Ideally, each counterweight should carry the imbalance of its adjacent journal and rod: Early Chrysler hemis only have six weights, which leaves the weakest center area with heavily eccentric weight. Their proven racing history suggests that although theoretically inferior this method is fully effective, if the component design and strength are sufficient. This means that there will be some bending and flexing caused by the rotation of the eccentric weight as the crank rotates normally. Pictured here is a crankshaft with no center counterweights. Click the picture for a larger view. External balance An externally balanced engine is one in which the counterweights are not heavy enough to fully compensate for, and therefore balance, the engine components, so in addition to the usual eccentric counterweights the missing fraction must be re-located to outside the engine block. An additional eccentric weight is attached to the damper, flexplate, flywheel, etc. Even though on paper the total of the balance weights is correct, the out-of-balance forces engine components are corrected by opposing forces balance weights as much as one foot away from them. One method of correcting this, and converting an externally-balanced engine to internal balance, is to remove some metal from the counterweights, and substitute a cylindrical slug of a much heavier metal. If enough steel is removed and replaced with Mallory metal, the counterweights will now be sufficient to balance the components without added eccentric weight outside the engine block. However, Mallory metal is extremely expensive. A much less expensive, but more labor-intensive, substitute is lead [chemical symbol: Pb] or for those who believe in taking risks mercury [chemical symbol: Lead is much heavier than steel, but not as heavy as Mallory metal, therefore a larger volume of lead must be substituted for steel or iron in the crankshaft. These components never come to a complete halt while the crankshaft is rotating and never change direction. They vary speed directly proportionate to crankshaft RPM. These components come to a complete halt twice in every crankshaft revolution. The speed of each cycle varies in direct proportion to crankshaft RPM. The speed at different points in each cycle varies with the ratio of the connecting rod length to the stroke length, and crankshaft position; their direction reverses twice up to down during each crankshaft revolution: Its path is a long, narrow irregular semi-ellipse with the minor diameter equal to the amplitude span of oscillation, and the major diameter equal to the stroke length see 1 in the illustration below; the actual elliptical path would be irregular, and asymmetrical re motion away from TDC vs. The beam closest to the piston pin see 2 has an minor diameter amplitude almost equal to zero, plus a major diameter equal to the stroke length - almost a straight line. The beam closest to the rod journal see 5 has an minor diameter amplitude almost equal to the stroke length laterally, plus a major diameter equal to the stroke length - almost a perfect circle. Each point would travel the circumference of the shape shown during one rotation of the crankshaft, arriving back at the top TDC each time. The major diameter for all ellipses shown is the stroke length here shown at 4. The minor diameter is about. The minor diameter is about 1. The minor diameter is about 2. Rod Length and Ratio All methods involve separating the rod weight into reciprocating weight vs. The process is then reversed, giving the weight of the opposite end. The total of course equals the exact weight of the rod. The exact center of the rod journal is pure rotating weight no rectilinear motion , whereas the pin eye is pure reciprocating weight no rotational motion. Therefore, the absolute length of the rod as well as the rod ratio has an effect on balance. This partially explains why some factors work better on some motors. This affects selection of balance factor. In my opinion, the separation and assignment of weight fractions to rotating vs. Here is a rod drawn as if the cross-section were of continuous thickness. Of course, this is never true; however it makes analysis and comparison easier so please bear with me click either rod for a larger view. The red reciprocating weight is The blue rotating weight is The lower rod shown, right has been divided geometrically from the center of the pin eye to the center of the big end. The center of gravity method assigns grams more to the bob weight total: What may we surmise from this? There are several possible reasons. The dynamic forces are far more important than suspected. I suspect that a separate factor should be applied to hybrid weight, since it follows a path determined by rod geometry rather than a pure shape or vector. If so, the factor may vary inversely with some function of the rod: To weigh each end based on the geometric center: Weigh C 2 on a gram scale and record. Place C1 with the upper edges exactly level in C2. Fill C 1 exactly to the top with clean water. Suspend the rod from the pin eye so that the beam is exactly vertical. Very slowly submerge the rod in C 1 up to the marked centerline. If Archimedes was right, the water overflow volume is exactly equal to the volume of the submerged rod mass. Weigh C 2, and subtract the empty weight. The remainder is the weight of the water in grams water: Multiply by the specific gravity of steel approximately 7. If curious, do the other end the same way. If not curious, just subtract your result from the total weight. There have been many formulae published to calculate the exact amount of adjustment to make to the crankshaft to compensate for these factors. The adjustment is usually made by removing metal from the counterweight or cheek directly opposite the center of an imbalance caused by excess weight. The V angle is usually a whole fraction of a circle, and usually takes into account the number of cylinders: Large aircraft radial engines were designed with 27 cylinders: The calculation must be made for the entire range, not just the power curve except for racing. Over-balancing and under-balancing This method has been recommended for high RPM engines. Dynamic Factors; pressure acting as weight The behavior of the gas in the combustion chamber alters the effective apparent weight of the piston. The following text briefly discusses some of these factors, and the changes they cause in apparent piston weight. Pull can be positive simulating adding physical weight to the reciprocating components or negative subtracting weight , and can act in either direction up or down. Pull acts on the rod and crankshaft assembly in the same way as the actual weight of the reciprocating components themselves, but not at the same time, not continuously, and varying in degree based on the construction and size of the engine and its operating conditions. Even at the same speed, the degree of successful compensation for out-of-balance forces will vary dramatically with throttle opening. The engine will strangely vibrate as the throttle is opened, causing the driver to fear broken mounts, bent driveshaft, etc.

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Chapter 5 : Updating an AVL Tree Based On Balance Factors - Computer Science Stack Exchange

The Balance Factor. K likes. The Balance Factor â€" original industrial / hard rock music from Gary, Indiana!

Blog Life is a balancing act, and frequently it gets off balance. There is so much going on in the world today, and it is difficult at times to keep it all balanced. If we stay out of balance for too long, it can lead to crying fits, shopping therapy, and video game marathons or whatever your outlet is. So, how do we know if we are out of balance? For some people, it is easy to recognize. For many, though, it is much harder. It can take time to recognize when you are out of balance, and it can take even longer to figure out what to do about it. Chances are, though, if you are reading this, you suspect that your life is at least a little out of balance! There are six areas, or factors, of your life that need to be balanced in order to have a balanced life. Click on the giraffes below to find out more about each factor. All of these areas are intertwined, which is why they need to be balanced. Ideally, you want to have an even split between all 6 factors: In reality, this rarely happens simply because life is crazy! The key is to balance them as equally as possible, which is what this site will help you to do! First things first, you need to identify what your six factors look like. What does your pie look like right now? Assign a slice of the pie to each of the factors and show the size of your slice based on how much of your life is taken up by itâ€¦you can measure in hours, in stress levels, in the amount of energy you spend on that factor, etc. There is really no right or wrong way to measure your slices. What areas are out of balance? What changes do you need to make? What are three things you can change right now? What stresses you out? What calms and relaxes you? What do you find yourself doing when you feel overwhelmed? Use the resources on this site to help you do it. Life is going to get crazy again it just does , so the next time that happens, take a look at the six factors and repeat the process until you find balance again. It gets easier to go through the process as you do it more. The giraffe is symbolic of several things that relate to finding balance and improving your life. Giraffes have a willingness to stick their necks out in terms of making connections. The giraffe encourages us to elongate our vision and to stretch ourselves and reach as far as we possibly can. Giraffes remind us that we have the potential to rise to the challenge, that we can have grace and balance as we strive to reach our goals, and that we have to have the ability to see the big picture. Additionally, the giraffe is symbolic of prayer, flexibility, intuition, personal and spiritual growth, vision and foresight, gentleness and kindness, and big goals and possibilities.

Chapter 6 : c++ - AVL tree balance factor - Stack Overflow

To calculate the balance factor of a node in an AVL tree we need to find the height of its left subtree and the height of its right subtree. Then we subtract the height of right subtree from the he.

You can help by adding to it. November This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. November Learn how and when to remove this template message When inserting an element into an AVL tree, you initially follow the same process as inserting into a Binary Search Tree. In case a preceding search has not been successful the search routine returns the tree itself with indication EMPTY and the new node is inserted as root. Or, if the tree has not been empty the search routine returns a node and a direction left or right where the returned node does not have a child. Then the node to be inserted is made child of the returned node at the returned direction. This is achieved by considering the balance factor of each node. The various cases of rotations are described in section Rebalancing. In figure 1, by inserting the new node Z as a child of node X the height of that subtree Z increases from 0 to 1. Invariant of the retracing loop for an insertion The height of the subtree rooted by Z has increased by 1. It is already in AVL shape. In order to update the balance factors of all nodes, first observe that all nodes requiring correction lie from child to parent along the path of the inserted leaf. The retracing can stop if the balance factor becomes 0 implying that the height of that subtree remains unchanged. The time required is O log n for lookup, plus a maximum of O log n retracing levels O 1 on average on the way back to the root, so the operation can be completed in O log n time. Delete[edit] The preliminary steps for deleting a node are described in section Binary search tree Deletion. There, the effective deletion of the subject node or the replacement node decreases the height of the corresponding child tree either from 1 to 0 or from 2 to 1, if that node had a child. Starting at this subtree, it is necessary to check each of the ancestors for consistency with the invariants of AVL trees. This is called "retracing". Invariant of the retracing loop for a deletion The height of the subtree rooted by N has decreased by 1. If the balance factor becomes 0 then the height of the subtree decreases by one and the retracing needs to continue. It depends on the balance factor of the sibling Z the higher child tree whether the height of the subtree decreases by one or does not change the latter, if Z has the balance factor 0. Set operations and bulk operations[edit] In addition to the single-element insert, delete and lookup operations, several set operations have been defined on AVL trees: Then fast bulk operations on insertions or deletions can be implemented based on these set functions. These set operations rely on two helper operations, Split and Join. With the new operations, the implementation of AVL trees can be more efficient and highly-parallelizable. The function Join is on two AVL trees t1 and t2 and a key k will return a tree containing all elements in t1, t2 as well as k. It requires k to be greater than all keys in t1 and smaller than all keys in t2. If the two trees differ by height at most one, Join simply create a new node with left subtree t1, root k and right subtree t2. Otherwise, suppose that t1 is higher than t2 for more than one the other case is symmetric. Join follows the right spine of t1 until a node c which is balanced with t2. At this point a new node with left child c, root k and right child t2 is created to replace c. The new node satisfies the AVL invariant, and its height is one greater than c. The increase in height can increase the height of its ancestors, possibly invalidating the AVL invariant of those nodes. This can be fixed either with a double rotation if invalid at the parent or a single left rotation if invalid higher in the tree, in both cases restoring the height for any further ancestor nodes. Join will therefore require at most two rotations. The cost of this function is the difference of the heights between the two input trees. To split an AVL tree into two smaller trees, those smaller than key x, and those larger than key x, first draw a path from the root by inserting x into the AVL. After this insertion, all values less than x will be found on the left of the path, and all values greater than x will be found on the right. By applying Join, all the subtrees on the left side are merged bottom-up using keys on the path as intermediate nodes from bottom to top to form the left tree, and the right part is asymmetric. The cost of Split is O.

Chapter 7 : MC Engine Design - Crank balancing factor

Balancing Factors is a term conceived by Conrad and Carrie House (Dine'- Navajo/Oneida Iroquois) to continue legacy and future honor of multi-dualistic spirit people. Those born nÃ¡dleeh, or two-spirit, are blessed by the holy people with a responsibility to keep the cosmos in balance.

Shell and Pennzoil Support Future Tech Success Campaign The first step in understanding crankshaft balancing is to understand the purpose of the counterweights. The counterweights are designed to offset the weight of the rod and pistons. You have the weight of the crankshaft and the pistons and rods. If the counterweights are the correct weight to offset the weight of the rods and pistons, the crankshaft is balanced. If the counterweights are too heavy, material must be removed by drilling or milling the counterweights. If the counterweights are too light, weight must be added to the counterweights. This is usually done by drilling a hole in the counterweight and filling the hole with "heavy metal" or "mallory". This filler metal is denser and heaver than steel but not stonger so the weight of the counterweight will increase as a result. If the counterweights are too light by themselves to balance the crankshaft and more weight is needed, an "external balance" can be used. This involves a harmonic dampener or flywheel that has a weight on it in the same position as the counterweight that effectively "adds" to the weight of the counterweight on the crankshaft. Since the harmonic dampener front or flywheel rear play a part in the balancing of the assembly, they must be installed on the crankshaft when it is balanced. This is unlike an internal balance configuration where the harmonic dampener or flywheel do not contribute to the balance of the crankshaft and are not required to be installed when the crankshaft if balanced. Both methods are used from the manufacturer. An example of some factory internally balanced engines are Chevy and 2 piece rear seal only! Some examples of factory externally balanced engines are Chevy and , Ford and W. Some engines are a combination of both being internally balanced in the front and externally balanced in the rear. The most common example of this is the Chevy 1 piece rear seal including LT1. All crankshafts must be balanced to your specific rod and piston combination. When a crankshaft is listed as "internal balance" or "external balance" this is stating how this crank is intended to be balanced. It can be balanced otherwise, but it is much more difficult to do so. Eagle crankshafts, for example, are listed with a "target bobweight". For instance, for a crankshaft listed as having a target bobweight. It might even be at the high end of that range on one end and the low end of that range on the other! This is not usually a problem because Eagle crankshafts are designed to have a target bobweight higher than most typical rod and piston combinations. Therefore, in most cases you will only need to remove material to balance the crankshaft instead of adding material. The main benefit of the target bobweight is to help the machine shop know what to expect before balancing so that a more accurate price estimate can be made. Eagle will balance a new crankshaft at the time of purchase. You will need to provide the bobweight you want it balanced to, which must be below the target bobweight listed for the crankshaft. Bobweight When a crankshaft is balanced, the actual rods and pistons cannot be used in the balancing machine, so they must be simulated. This simulated weight is called the "bobweight". Once the bobweight is calculated, weights are bolted onto the rod journals to simulate the weight of the rods and pistons during the balancing process. Due to the configuration of a "V" type engine, just adding all the weights together does not work. There are also some dynamic considerations to be made when balancing the crankshaft. Explaining those is beyond the scope of this discussion. If you want to study those topics further, contact a crankshaft balancing machine manufacturer and they can go into greater detail. To calculate the bobweight of a particular assembly, the following formula and balance card is used:

Chapter 8 : Crankshaft balance factors | High Power Media

Balance is something very complex and is controlled by many factors. The 3 primary systems that control balance are: Vision - input from your eyes that tell you whether or not you or your environment is moving.

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Chapter 9 : c++ - Balance factor of nodes in AVL Tree - Stack Overflow

A balancing test is any judicial test in which the jurists weigh the importance of multiple factors in a legal case. Proponents of such tests argue that they allow a deeper consideration of complex issues than a bright line rule can allow.