

The Making Of A Perfect Olympic Plate

By Tom Lincir, President and Founder,
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How many times have you heard the phrase, “weight is weight,” or “a plate is a plate,” or “how much per pound”? In my opinion, these clichés have been circulated by people who have nothing more than that to say about their plates. They want to perpetuate the myth that there is nothing more to it. An uninformed buyer is susceptible to these tactics. An informed buyer is not. Read on.

When you consider that anything made of iron will last a thousand years, a small price difference to get the best quality weight plates works out to almost nothing per year. Price is not a significant consideration. Quality is, and it is important in four areas:

Casting Quality

Weight Accuracy and Consistency

Hole Accuracy and Consistency

Workmanship and Painting

Casting Quality

All iron weight plates are “sand casted”. Like footprints at the beach, an impression in the shape of the weight plate is made in damp sand, and molten iron is poured into the cavity. A number of factors influence the quality of the finished product: the fineness of the sand; the cleaning of the sand between castings; the moisture control of the sand, the grade and purity of the iron; the temperature control of the molten iron; the length of time the casting is left in the mold (the longer, the better). You

might think that perfecting all of these factors costs money, but quality casting procedures will reduce the rejection rate (“remelt rate”) and actually save money.

So, you can actually get superior quality for costs comparable to vendors with sloppy casting practices.

Once you get it right, you have to



Ivanko's custom made Toledo scales can hold accuracy within 2 grams

make sure the foundry doesn't start cutting corners or changing the system. This is why we require our foundries to make plates exclusively for Ivanko under our control — so that sloppy procedures for competitive plates do not spill over into our process.

Weight Accuracy and Consistency

Most manufacturers claim accuracy within +/- 2% of declared weight. For a 45 pound weight plate, this means a range of 44.1 to 45.9 pounds. This is acceptable for non-calibrated Olympic

plates. If you were to load three 45's on each side of the bar, one side could weigh 132.3 pounds and the other 137.7 pounds — a 5.4 pound or 3% difference. From my experience, this difference is too small to be noticed, and remember, this is the worst case scenario under a +/- 2% standard. That's why +/- 2% makes sense for Olympic training plates. To find out the reality of what is actually in use, I have personally weighed thousands of plates for accuracy — Ivanko's and our competitors. I have borrowed plates from gyms, weighed

them on accurate scales, and returned them. Only about 50% fall within the +/- 2% range. The rest run the gamut from slightly off to grossly off. The worst examples - a plate that weighed 37.5 pounds, and one that weighed 59 pounds. I still have these plates in my collection.

I believe a contributing factor to underweight plates stems from pushing the foundry too hard on price. I have visited foundries in China that purposely make the patterns smaller — the weight lower — to meet some customers' low price demands. The reduction is made in the cross section so it is undetectable without actually weighing the plate, which few buyers take the time and trouble to do. For buyers that do weigh plates, another tactic is to remove the overweight and underweight plates to meet the +/- 2% standard with the first order, which is the one most likely to be weighed. Then, they gradually slip the inaccurate plates (the "sliders") into future shipments that are less likely to be weighed.

A sure-fire way to guarantee accuracy is to own your own foundry, but as we learned, you can count on losing money for at least 10 years, and receiving a poor return on investment thereafter. Another solution is to discourage foundries from undercutting the weight by establishing pricing that leaves them with a fair profit margin. In Ivanko's case, however, I personally weigh a pallet of plates periodically to verify that our standards are being met. My supplier and good friend of 25 years does the same. We don't delegate this task. We want our employees, suppliers, and our customers to know that consistency is a CEO level priority.

Hole Accuracy and Consistency

There is no reason to accept plates with holes that are oversized, undersized, egg shaped, or off center. The correct size range is 50.2 mm (1.976") to 50.8 mm (1.999") in diameter, so that the plate fits precisely



Ivanko's competition calibrated powerlifting set is certified and approved by the International Powerlifting Federation (IPF) for use in international competition. Each plate is calibrated within grams of the exact weight.

on a 50 mm bar. An easy way to check hole accuracy is to place 45 pound plates on each end of a bar without collars. If the plates flop over at angles exceeding 30°, the hole is oversized and the plate is defective.

There is no excuse for plates with holes that are not consistently accurate. It is not necessarily more difficult or costly to get it right. However, it does take something that some CEO's are unwilling to do — hands-on management. You can delegate tasks, but the only way to truly guarantee consistency is to be personally involved in overseeing quality manufacturing practices. A good way to judge the CEO's commitment to quality is to check his fingernails. If he doesn't have any dirt under them, he's not involved. If his nails are manicured, save yourself a lot of problems and find a new supplier.

Workmanship and Painting

I have always believed in making weight plates that look good. If something is going to last for 1000 years, you might as well enjoy looking at it. There should be no unsightly surface irregularities, no sharp edges, and no noticeable grind marks. All it takes is a little loving care in surface preparation and quality painting practices.

Almost all companies use too much paint. This causes the paint to chip almost immediately. And if the undersurface is rusty, the paint will peel. To achieve the best results, the plate should first be sand blasted. Then, immediately after sand blasting, a high strength paint such as polyester base paint should be thinly applied. The painted plate should be baked at least one hour, then cooled completely before packaging. Cut any corners, and you've got an ugly plate for club members to look at.

Differences Worth Choosing

It gets down to pride. There is no place in a first class operation for plates

that don't weigh what they say; that don't fit snugly on the bar; or with surface irregularities, heavy grind marks, or peeling paint. When you have quality Olympic plates on your exercise floor, members will see, feel, and appreciate the difference. For a thousand years.

Ivanko Barbell Company was founded by Tom Lincir in 1967, and it is the leading provider of professional and commercial grade barbell and dumbbell products worldwide. Your comments or questions are welcome. Write Tom Lincir at Ivanko Barbell Company, P.O. Box 1470, San Pedro, CA U.S.A. 90733.

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