MATRIX

SOLVING THE SLAT-BELT RIDDLE

At Matrix, we're always striving to deliver a better running experience, both for the facilities that own our treadmills and for the fitness enthusiasts who use them. We knew slat-belt treadmills provided unique advantages for both owners and users, and that truth posed an interesting question: How could we bring this level of performance to the cardio floor for more users and owners? To find an answer, we started where we always start — by doubting old conclusions and gathering feedback from all the different people who interact with both traditional and slat-belt treadmills.

GATHERING INSIGHT

Driven by a problem to solve, our team set out to visit traditional health clubs and athletic training facilities. Casting a wide net to gather as much insight as possible, we interviewed facility owners, trainers and coaches, service technicians and end users to better understand their perceptions of the difference between traditional treadmills and slat-belt designs. We also watched each of these groups interact with the equipment, examining big issues like where they struggled and where they excelled. We also investigated seemingly minor details like how and where they touched the treadmills.

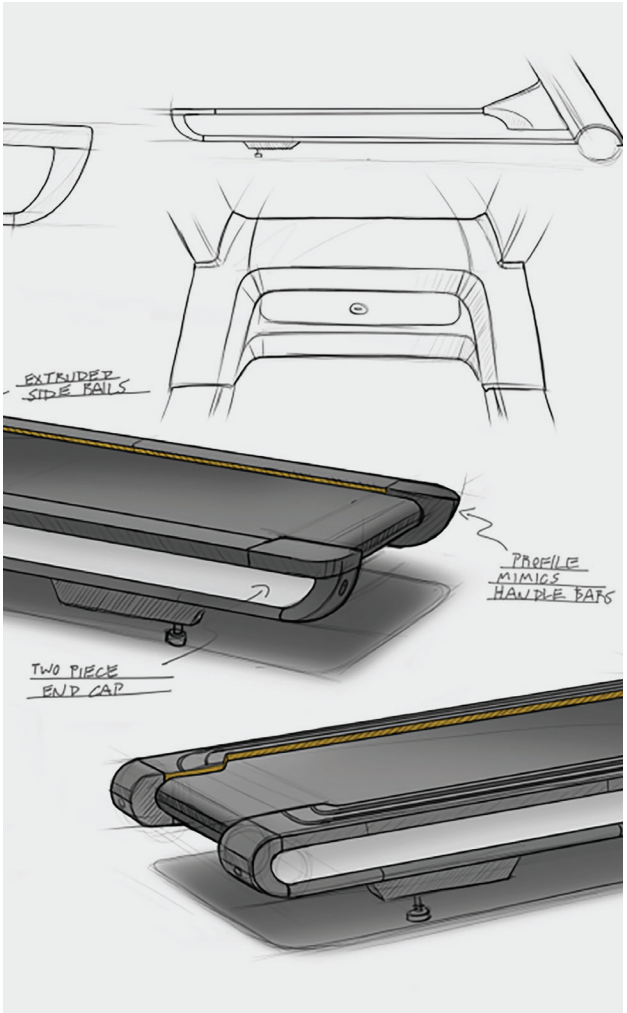
INTERPRETING THE FINDINGS

The results of our team's many visits were full of intriguing contradictions with regards to the advantages of slat-belt treadmills. While the slat-belt itself required less service than a traditional belt, the critical components of the slat-belt treadmill were extremely difficult to service due to their placement directly beneath the running surface. Though the slat-belt allowed for higher top speeds to challenge elite athletes, they were disruptive in low-noise environments like hotel or corporate fitness centers. It also seemed as if the slat-belt treadmills available to clubs were designed with athletic facilities in mind. That meant they were intimidating, with an aesthetic and touchpoints that felt out of place in the club.

REDESIGNING FOR DURABILITY & SERVICE

With our challenges clearly defined, we set about designing a new kind of treadmill that would accentuate the advantages of the slat-belt design. We began by moving the motor components from beneath the deck and placing them at the front of the treadmill in a specially designed drive compartment. This protected the drive motor, lift motor and motor control board from sweat and debris, minimizing the need for cleaning and reducing service time. This small but significant change also offered two additional benefits, lowering the step-on height to make our new treadmill more accessible while also making the motor components much easier to service. Now technicians could open the drive compartment with two simple hex bolts, letting them get in, get out, and get the treadmill running again much more quickly. To maximize this serviceability advantage and assist with routine maintenance, we even added a set of heavy-duty caster wheels to our design. Unlike existing slat-belt treadmills, ours could now be easily wheeled out of the way so staff could clean beneath it.

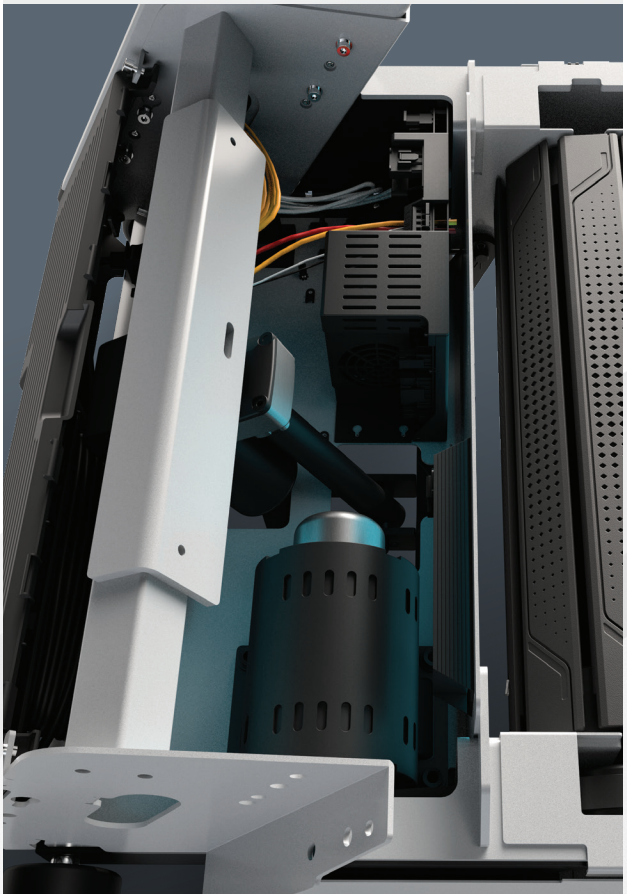
Now technicians could open the drive compartment with two simple hex bolts



REDEFINING FEEL

The slat-belt itself was also a major focus of our quest to make a better, smarter slat-belt treadmill. After much testing, our engineers settled on an aluminum core design with a durable rubberized coating. Next, we tested to determine the exact amount of flex that was best for the aluminum slats without sacrificing strength and the precise rubber durometer that would provide both shock-absorbing qualities and lasting durability. After many more phases of testing, we found the optimal composition for both the slats and the rubberized coating. How did we know? For starters, it felt great to run on. Still we didn't stop there. Based on the way we observed users interacting with traditional treadmills, we also added continuous multi-grip handlebars that were ergonomically sculpted to fit the natural shape of the hand. This infused a sense of security and stability into workouts, letting users reach out for a secure handhold whenever they needed it. It also had the added benefit of stopping runners from grabbing onto the console if they needed to steady themselves when working out at high inclines, preventing damage to the console mounting.

Our engineers settled on an aluminum core design with durable rubberized coating



PUSHING PERFORMANCE FURTHER

Yet another area we knew we could improve was the overall performance of our new treadmill. Key to this was not just rearranging the motor components to the front of the treadmill but trying new kinds of components altogether. Instead of an AC motor standard to treadmills, we opted for a 2.2 Kw PMSM high-efficiency drive system. This smarter design allowed for higher top speeds while still using less energy to reduce operating costs for facilities. We also used shielded ball bearings to support each slat, minimizing friction for a smoother feel. This combination of a high-efficiency drive system and low-friction ball bearings made operation significantly quieter. We also bolstered the lift motor beyond anything else in our portfolio, allowing for up to 20% incline and a higher maximum user weight. Finally, we optimized both the length and width of the deck without increasing the overall footprint of the product, providing plenty of room for elite athletes to run with maximum intensity.

CHECKING OUR WORK

While we were confident in our exciting new slat-belt treadmill, no amount of confidence can replace scientifically validated testing. We went about evaluating our design with the same rigor as we gathered insights to develop it, and the results have thus far exceeded even our most optimistic projections. The drive system has been proven to run at an incredible rate of 91% efficiency. Furthermore, projections based on testing of the drive system appear to show that the slat-belt treadmill will continue to function at the same efficiency over time, without the slumps caused by wear and tear that are seen on traditional belts and decks. Analysis of the aluminum slats show that they should last for a staggering 50 million cycles. In side-by-side testing with traditional treadmills, the rubberized coating of our slats provided significantly more shock absorption, delivering an experience as comfortable as running on a premium-quality track. The full slat-belt was assessed to withstand 6,000 continuous hours and 30,000 miles on a punishing testing apparatus that simulates the pounding of real feet. Cumulatively, our exclusive drive-and-belt system will last for up to 100,000 miles with minimal maintenance. In fact, with regards to total cost of ownership, most facilities will likely not have to replace the slats for years, even in a high-use environment. Best of all, facility owners would likely not have to do anything but clean their treadmill for the first five years of ownership.

PERFORMANCE PLUS SO MUCH MORE

In the end, our slat-belt design will outlast and outshine anything next to it. It's also available to fitness facilities of all kinds, not just premium clubs and athletic training centers. Yet our new Performance Plus Treadmill wouldn't be complete without one final, critical quality — choice. Performance Plus is compatible with five reimagined consoles, letting facility owners create experiences that span from beautifully simple to digitally connected and rich with entertainment. All of our sophisticated, easy-to-operate consoles give members control of the data they collect, the content that keeps them engaged and the way they reach their goals. Facility staff can also access our powerful Connected Solutions portfolio, including Personal Trainer Portal, Workout Tracking Network and Asset Management. No matter which console is paired with Performance Plus, facilities can be sure that our exciting new treadmill will be easy to service, more durable than expected, a joy to run on and a pure pleasure to own.

// See details and specifications