



FREQUENTLY ASKED QUESTIONS

Do all cows work well in a robot milker?

No. Robotic milking has unique challenges, with the biggest difference being that the cow decides when to be milked. A cow that goes to the robot voluntarily, performs well during the visit, and requires no assistance is valuable and directly impacts the robot's efficiency. Her behavior matters, and Semex can help.

What is an ideal robot cow?

The ideal robotic dairy cow combines four valuable attributes:

- 1. Milking Efficiency:** Cows that are efficient milkers; fast milking in relation to the total milk output during the visit.
- 2. Robot Behavior:** Cows that are willing to visit the robot unassisted and are highly efficient in the non-milking portions of the robot visit, including entry, teat preparation, attachment, post-dip, and exiting.
- 3. Robot Conformation:** Cows with the teat conformation that supports easy attachment and robot efficiency.
- 4. Udder Health:** Cows with superior milk quality, low SCS, and are mastitis resistant.

What is Semex's new Robot+ Index & What Are The Weightings?

The Robot+ Index combines these **efficiency (45%), behavior (10%), conformation (27%), and health traits (15%)** into a single index that helps breed cows ideally suited for modern robotic dairy operations.

How did Semex develop the Robot+ Index?

The Robot+ Index was developed using data from 15+ million robot visits (and counting!) by over 14,000 Holstein cows. It combines milking speed with key efficiency metrics, including entry and exit behavior, teat attachment proficiency, and fetching. It identifies productive genetics that move through the robot efficiently, maximizing the output and performance metrics per robot.

What makes Robot+ unique?

The Robot+ Index is the only index featuring two proprietary traits developed by Semex in partnership with Dairy Data Warehouse (DDW). These traits identify genetics that excel in the robot and help producers maximize robot ROI:

- 1. Milking Efficiency:** This trait measures milking time, adjusted for milk volume, from the moment the first cup is attached to the moment the last cup is detached. Also referred to as Residual Milking Time, it is defined as the total milking time adjusted for total milk output. Identifying these cows is important because they're faster, more efficient milkers who maximize throughput, increase turns, make each robot more productive, and improve labor efficiency, resulting in higher profits.
- 2. Robot Behavior:** This refers to a cow's actions throughout robotic milking, including willingness to visit, attachment performance, behavior during milking, and efficiency entering and exiting the robot. By capturing every step of the robotic milking experience, including motivation and drive to be milked, cows with a higher score contribute to smoother herd robot traffic, fewer disruptions, and improved overall system performance.

Only available from Semex, these two proprietary traits provide a more comprehensive view of robotic dairy cow performance than traditional selection indexes. By combining Robot Efficiency excellence with Robot Behavior, the Robot+ Index helps producers identify genetics that are productive and ideally suited to the demands of modern automated dairy operations.



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What is the heritability of the Robot+ Index?

The heritability for the overall Robot Index is 29%. Milking Efficiency is highly heritable, and some Robot Behavior traits are low to moderate, however all sub-traits are sufficiently high to make significant genetic progress and impact on-farm performance.

TRAIT	HERITABILITY
Overall Robot Index	29%
Milking Efficiency (Residual Milking Time)	45%
Robot Behavior	10%
Robot Conformation	27%
Udder Health	15%

What are the on-farm value metrics for the Robot+ Index?

Parameter	Top 25% vs Bottom 25% Bull	Top 25% vs Bottom 25% Female
Milk Flow	+0.8 lbs/min +0.4 kg/min	+2.8 lbs/min +1.3 kg/min
Box Time	-79.9 seconds/cow	-204.5 seconds/cow

Based on Holstein data, assuming a 20-hour robot occupation and an average of 2.5 visits per day.

Parameter	Difference Per 5 RBV Pts - Bull	Difference Per 5 RBV Pts - Female
Cows/hour	+0.14 cows/hour	+0.35 cows/hour
Milkings/day	+7.1 milkings/day	+17.3 milkings/day
Cows/robot	+2.8 cows/robot	+6.9 cows/robot

Who is Dairy Data Warehouse (DDW)?

Dairy Data Warehouse is a dairy data and analytics company that collects, standardizes, and analyzes data from dairy farms around the world. It connects to herd management software, robotic milking systems, milk recording programs, cow monitoring systems, and other on-farm technologies, then cleans and harmonizes the data into a common format for benchmarking, analytics, and AI applications.

Semex partnered with DDW to develop Robot+ after years of collaboration and data services work on programs including Elevate® and DairyTrack™. Semex's world-leading genetics expertise, combined with DDW's knowledge of farm data, made the ideal combination to bring Robot+ to market.

How will the new Robot+ Index be displayed?

The new Robot+ Index will be expressed on a 100-point Relative Breeding Value (RBV) scale. A score of 100 represents the breed average, and every point above 100 indicates increased genetic merit which will translate to improved robot performance. Any Semex sire with an RBV of ≥ 105 will be designated with the brand Robot+.

Will the Robot+ Index and brand be available for other dairy breeds?

The Robot research was solely based on Holstein robot data. A second project was initiated to indirectly estimate Robot indexes from the publicly available traits, and this will be used to provide Robot+ indexes and designate Robot+ brands for Jersey and Ayrshires. The overall Robot Index, Milking Efficiency, Robot Conformation and Udder Health are available for these two breeds. Milking Behavior is a novel trait that could not be estimated from publicly available evaluations, and thus not available for Jerseys and Ayrshires.



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The Robot+ index is built on four profit-driven traits:



Milking Efficiency
• Residual milking time

45%



Robot Behavior
• Entry to preparation
• Teat attachment
• Kicked or failed
• Exit
• Fetching

30%



Robot Conformation
• Udder floor
• Teat length
• Rear teat placement
• Front teat placement
• Overall Udder

15%



Udder Health
• SCS
• Mastitis

10%

Where can I find the Robot+ Index on a sire?

The Robot+ Index will be available exclusively on all Semex Holstein, Jersey, and Ayrshire sires beginning with the August 2026 genetic evaluations. Additionally, all Holstein, Jersey and Ayrshire females tested through the Elevate® genomic testing program will receive a Robot+ genomic index.

Will Robot+ Index be available for females tested via Elevate?

All Holstein females tested through Elevate since the service's launch will be assigned a Robot+ Index evaluation. This will also be expressed on a 100-point Relative Breeding Value (RBV) scale. A score of 100 represents the breed average, and every point above 100 indicates increased genetic merit. Along with the overall Robot+ Index, animals will receive individual Relative Breeding Values (RBVs) for the two proprietary robotic milking sub-traits, Robot Behavior and Robot Efficiency.

By providing both an overall Robot+ Index and RBVs for the underlying behavioral and efficiency traits, Elevate helps Semex clients identify and select animals genetically suited to their facilities and breeding goals.

Will the new Robot+ Index be included in myStrategy™?

Beginning with the August 2026 genetic evaluations, the new Robot+ Index can be incorporated into myIndex in the myStrategy™ platform. Integrating Robot+ into myStrategy enables the use of this new trait in custom indexes for sire selection, female selection, and matings in OptiMate™.

Is the Robot+ Index only for robot dairies?

No. The Robot+ Index also has real value for conventional parlor systems. The bold, cooperative, and self-directed nature underlying the Robot Behavior is the same behavior sought in many other milking setups. Milking efficiency and behavior traits have real value for any efficient and profitable parlor-managed dairy.

How does the Robot+ Index fit into a herd's overall genetic strategy?

The Robot+ Index is designed to complement a herd's overall genetic strategy. Because every farm has unique goals, Semex developed Robot+ to work alongside other important traits within the MyStrategy® platform. Producers can combine Robot+ with traits such as high production, Immunity+®, fertility, health, and longevity to build a breeding program tailored to their operation. This enables farms to select cows with high overall merit that are also efficient in robotic and automated milking.



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