ASTREA 20.20 Premium

Our Technical Training program allows you to service the robot yourself

RELIABLE. EFFICIENT. AFFORDABLE. **AUTOMATIC MILKING.**

PROVEN ROBOT TECHNOLOGY

After many years of successful application in the industry, the ASTREA 20.20 concept has proved its clear competitive edge, and provides exceptional durability and reliability.

ROBUST CONSTRUCTION, HYGIENE AND SECURITY

ASTREA 20.20 is in a class of its own, thanks to its robust construction in combination with the use of durable materials, such as easy-to-clean stainless steel. The robotic arm is the most reliable product of its kind on the market.

Statistics published within are taken from real farms running Astrea 20.20 Premium robots or their features. Results may vary and are not guaranteed.

FEATURES

PROVEN LOW-MAINTENANCE DURABILITY – Industrial strength Yaskawa Motoman® HP20 Robot Arm is time-tested and reliable.

20 Years of robot progress and development from Hokofarm Group – Manufactured in NL & DK.

FLEXIBLE DESIGN
A single robust, reliable robotic arm milks up to 130 cows in the Astrea 20.20 two-box setup.

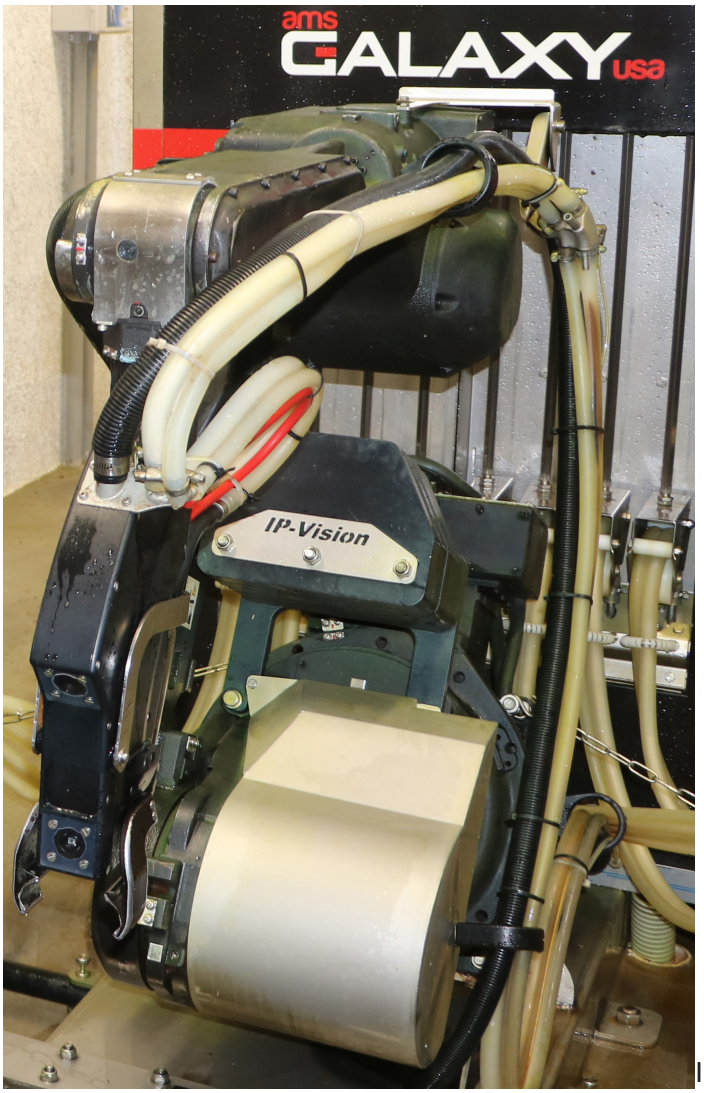
UNMATCHED EFFICIENCY & MILK QUALITY
The Astrea 20.20 leads the industry with steam-cleaning sanitation, low-stress natural milking, integrated sensor technologies, and rapid real-time vision technology for teat ID.

UNSURPASSED DATA COLLECTION & INTEGRATION
The Saturnus 20.20 farm management software provides data and grouping options tailored to the producer's management preferences for maximum performance.

EASE OF OPERATION
Less labor-intensive milking with innovative two-box / one-arm system.

AFFORDABLE
Efficient, automatic milking without the labor overhead.

COW-FOCUSED
Automatic Milking System (AMS) that preps like a human and auto-detaches without having the robot under the cow!



Robotic Technology

YASKAWA MOTOMAN HP20

Off the shelf industrial robotic arm.

TRACK RECORD

- More than 500,000 operating worldwide
- More than 10 million servo motors operating worldwide
- Milking cows on Galaxy robot farms since 1999

TOUGH, BUT GENTLE

- Heavy duty cast iron and cast aluminum construction
- Proven to operate continuously in harsh environments
- Designed to be maintained in sand bedding environments
- Programed with force limiting sensors to be quiet, calm, and gentle milking your cows

MANUAL ATTACHMENT

- Allows for improved cow handling and training of nervous heifers
- Easiest manual attach functionality available on robotic technology today
- The robotic arm is not needed to prep or attach teat cups when dealing with a special needs cow.

TEAT PREPARATION

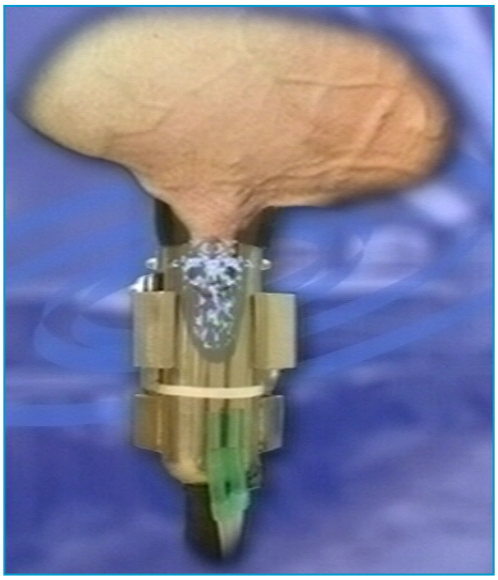
PMO APPROVED TEAT PREPARTION – Occurs in a uniquely designed liner / inflation that cleans under vacuum and pulsation.

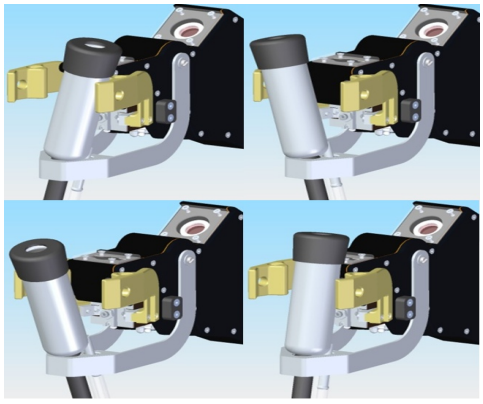
COMPLETE AND THOROUGH PREPARATION

A vacuum sensor installed in the preparation line monitors and triggers a re-attempt if a nervous cow moves prior to teat preparation which increases teat preparation performance

TEAT PREPARATION DESIGNED AND TIMED FOR MAXIUM MILK FLOW

- Pre-dip
- Water rinse
- Pre-milking
- Teat drying





FLEX-PREP DESIGN

- Allows the preparation liner to follow a moving cow
- Grippers are closed for prep contact and open when teat is sensed in the liner

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TOTAL FARM AUTOMATION.
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DIGITAL IP VISION SYSTEM

ETHERNET BASED IP CAMERA AND LASER – real time vision technology will quickly find teats using a combination laser to light the profile of the teat and a color camera that is all being processed by "Vision to Milk" software technology.

MORE MILK POTENTIAL
The current vision system allows for faster attach times, which translates into more milkings per box per day = more milk potential

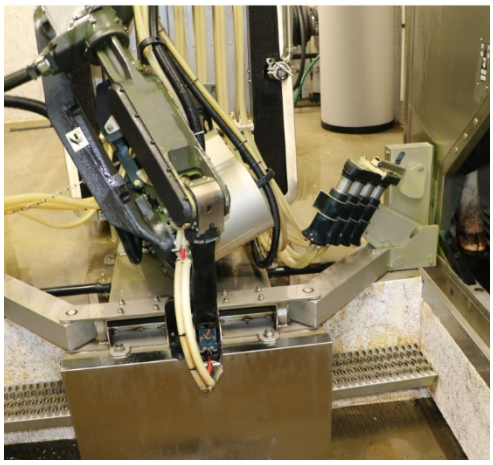
AUTOMATIC CAMERA LENSE CLEANING
The camera and laser lenses are rinsed with water and dried with air after every cow to ensure the best potential vision for each milking.

SELF LEARNING OF TEAT PLACEMENT
The vision system can pre-scan and find teats automatically on any new cow. There is no farmer task required to teach the robot arm teat coordinates.

CENTRAL MACHINE UNIT FEATURES

STEAM SANITZIING AFTER EACH COW

- Disinfection of the milking liners with steam after every cow
- Disinfection of the prep cup with steam after every cow
- Reduces risk of cross contamination of bacteria between cows through the milking liners.



COMPACT – CENTAL UNIT - INSTALLATION

- All sensors, measuring devices, and controls are pre-installed, and factory tested
- Low noise, VFD controlled, energy efficient vacuum pump

MILKING PROCESS

VENTED SQUAIRE LINERS

- Vent located close to the shell of the liner designed for fast milking speeds
- Square shape is designed to be gentle on teat ends
- Long life rubber – designed for 2,300 milkings

SMART® COLOR SENSOR

Detects off color milk and safely discards milk when blood is detected

MILK QUALITY SENSOR TECHNOLOGY

- Individual quarters measure vacuum level, milk flow, and conductivity
- Real-time management of your herd down to the quarter

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COW ID - HEAT DETECTION - HEALTH MONITORING

MULTIPLE WAYS TO ID AND CARE FOR COWS – The Galaxy system uses a full ISO ID system that works with FDX RFID tags, leg transponders, or neck transponders with a variety of features.

RFID EAR TAGS

Works with many brands of RFID button ear tags supplied by "others". For the best read range and ID performance, AMS Galaxy USA recommends FDX tags (typically yellow). HDX tags also work, typically with shorter range. *Note: RFID read range performance can be affected by other barn equipment and farm electrical noise and stray voltage – not related to the robot scope of supply.*

MRS – MOTION REGISTRATION LEG TRANSPONDER

Entry level technology for cow ID and activity monitoring. Technology developed by Hokofarm Group and used on a majority of world-wide installations. Cows must visit the robot to download activity data.

HEALTH & HEAT LEG TRANSPONDER

Advanced health technology for cow ID, activity, and health monitoring. Technology developed by Nedap and sold under many brand names. Data is transmitted real time with one or more antennas in the barn and health and activity is measured by counting steps, measuring standing time, lying time, and the total number of laying periods.

ACTIVITY	DURATION
EATING	3 – 5 HOURS
NUMBER OF MEALS PER DAY	9 – 14 TIMES
LAYING	12 – 14 HOURS
NUMBER OF LAYING PERIODS	11
NUMBER OF STEPS PER DAY	2,500 – 3,000

HEALTH & HEAT NECK TRANSPONDER

Advanced health technology for cow ID, activity, and health monitoring. Technology developed by Nedap and sold under many brand names. Data is transmitted real time with one or more antennas in the barn and health and activity is measured by monitoring chewing motion of the cow. Optional upgrades also allow measurement of rumination time in addition to chewing time.

HEALTH, HEAT, & HERD NECK TRANSPONDER

Advanced health technology for cow ID, activity, health monitoring, and cow location. Technology developed by Nedap and sold under many brand names. Data is transmitted real time with one or more antennas and position beacons placed through-out the barn. Health and activity are measured by monitoring chewing and rumination motion of the cow. Cow position, or sometimes referred to as cow "GPS", is displayed on the management PC or smart phone app real-time for improved efficiency and herd management.

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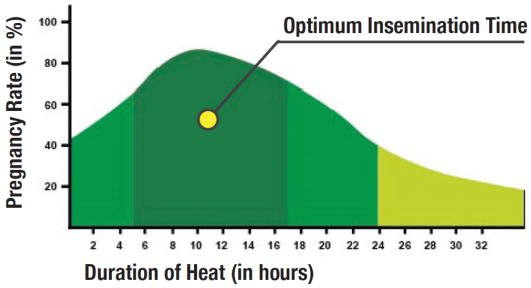
COW ID - HEAT DETECTION - HEALTH MONITORING

COW HEAT EXAMPLE

Why is this important?
A shorter calving interval results in improved earnings of $2 per cow, per number of days (of the shorter interval) annually.



Example:
If 120 cows have a 15-day shorter calving interval, it adds $3,600 to earnings.

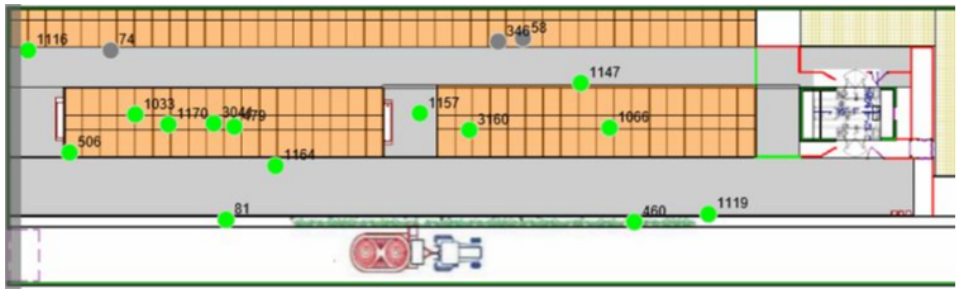
A shorter calving interval means fewer inseminations – reduced on average to 2.5 to 2.3 inseminations per cow (Cost of one semen dosage: $40).

Example: For 120 cows, this adds average earnings of $1,440 to the bottom line.

Improved earnings per year: $5,040*

COW HEALTH EXAMPLE

COW POSITION EXAMPLE



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