

EXTRUSION CONTROL

Customers can use existing equipment from Maguire **while easily expanding control elements on both existing and new lines.**



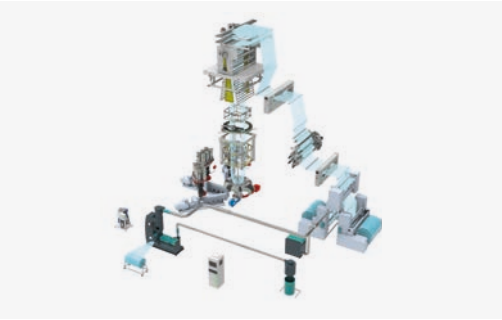


MAGUIRE® + SYNCRO
— EXTRUSION UPGRADES. CONTROL. SAVINGS. —

For Every Extrusion Process

Maguire+Syncro offer complete product line ups with all the corresponding product families.

Blown Film & Cast Extrusion



Complete Product Line Up:

- + Gravimetric blending & integrated Loss-in-Weight control
- + Gravimetric feeding & Loss-in-Weight control
- + IBC & layflat control
- + Automatic air ring and profile control
- + Flat sheet & 360 gauging
- + Calibration basket & haul off upgrade
- + In line and off line recycling

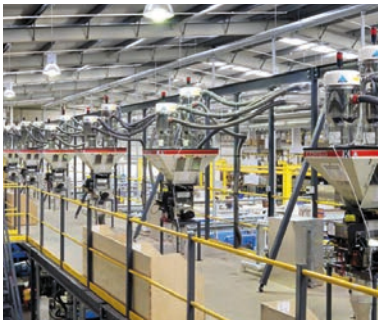
Sheet Extrusion



Complete Product Line Up:

- + Gravimetric blending & integrated Loss-in-Weight control
- + Gravimetric feeding & Loss-in-Weight control
- + Flat sheet & 360 gauging

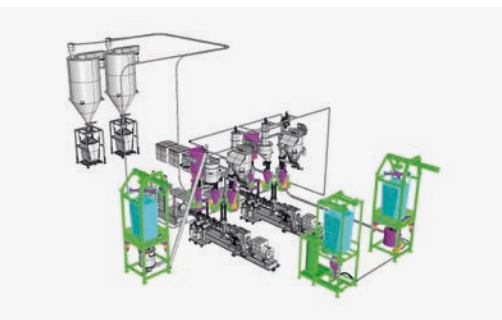
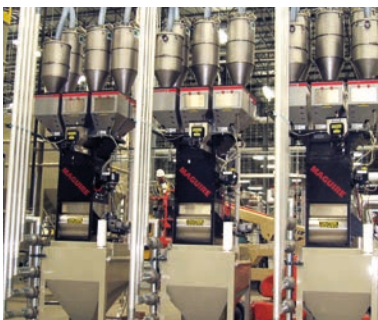
Pipe & Profile, Wire & Cable Extrusion



Complete Product Line Up:

- + Gravimetric blending & integrated Loss-in-Weight control
- + Diameter monitoring & control
- + Capacitance testing
- + Surface defect monitoring
- + Spark testers
- + Digital encoders

Compounding



Complete Product Line Up:

- + Gravimetric blending & integrated Loss-in-Weight control
- + Complete powder solutions
- + Powder feeding
- + Powder conveying
- + Powder storage

Gravimetric Blending – WSB Blender

10 blender series with over 120 models suited to every process and application. Maguire offers more models than any other producer, with off the shelf solutions and easily interfaces with all Maguire+Syncro’s extrusion control modules. Options available to add on a range of feeders for pellets and powders as well as integrate liquid color.



1 High Precision Accuracy

- + Precision dosing accuracy
- + ± 0.1% on a 1% setting
- + All materials controlled by same precision
- + Precision dynamically adjusts as densities / flow rates change

2 Intuitive Control Software

- + System monitors accuracy of total recipe
- + Adjust dosing automatically
- + Automatic error correction control

3 Regrind Control

- + Software and hardware controls regrind effectively
- + System manages flow rates and regrind availability
- + Options for maximizing regrind consumption & minimizing color if color already present in regrind

4 Color & Additive Control

- + Precision dosing devices for accurate, repeatable control
- + Integrated software to optimize dosing accuracy in relation to whole blend
- + Savings of 30% or more compared to manual / volumetric dosing



5 Vibration Management

- + System is proven to manage accuracy in vibration environments
- + Unique controls and features to enhance even extreme environments
- + Dosing and mixing is robust even in high vibration mixing environments

6 Integrated Conveying Control

- + Touchscreen controller allows easy control of conveying to and from blender
- + Simple user-friendly graphical control
- + Manage conveying dosing and blend all in one control

7 Standard Solutions of Every Process

- + Throat mounting for optimum mixes in molding applications
- + Range of online and offline solutions for all extrusion applications
- + Central blending applications

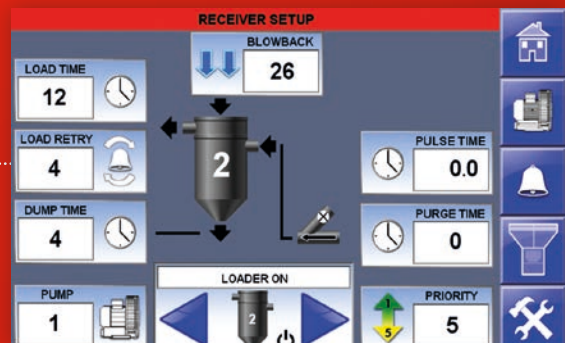
8 Complete Materials Data

- + Blender measures every gram of every material
- + Complete usage data for QC / process control / costing / ISO
- + Full user and alarm history

4088 Controller - Integrated Conveying Software



FlexBus Lite is integrated with our touchscreen controller for loading multiple materials into a blender.



Gravimetric Blending – WXB Blender

The WXB series of blenders offer all the functionality and capabilities of the WSB, plus add unique features and benefits for all extrusion applications.



Please Visit www.maguire.com to download our product data sheets.

9 Integrated Blending & Extrusion Control

- + Precise dosing of all raw materials into a batch
- + Mix chamber integrated as a Loss-in-weight hopper
- + Loss-in-weight updates every second process consumption

10 Extrusion Control – Saving up to 10% of Materials Cost

- + Switching from manual regulation to automatic extrusion control allows significant savings
- + Savings by reduced start-up material waste & changeover scrap
- + Immediate control by responding to actual material consumption versus target required
- + Rapid return on investment

11 Faster Material & Job Changes

- + WXB blender allows the integrated blender and loss-in-weight control to mount direct to process
- + Less materials mixed and in process
- + Quicker direct access and quick material changes

WXB 460 MODEL



12 Solutions for Many Extrusion Processes

- + WXB Gravimetric Blending can bring major benefits to blown film and cast film processes
- + Sheet extrusion
- + Pipe, profile & tube extrusion
- + Cable & wire extrusion

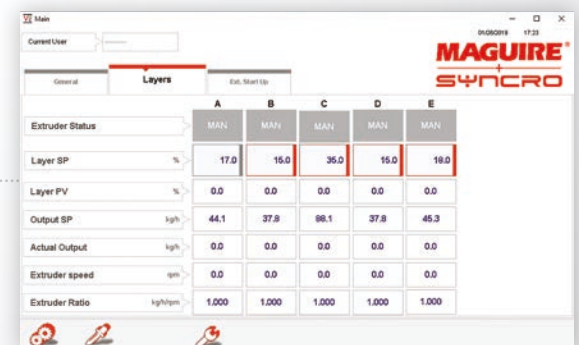
13 Maguire+Syncro Control Flexibility

- + Detailed control of materials settings, layer ratio control, & extrusion control
- + Control allows effective control for mono and co-ex processes, managed from 1 HMI
- + Modular upgrades available for air rings, IBC, gauging and wide range of control options for optimising different extrusion processes

14 Integrated Loss-in-Weight

- + The WXB mix chamber also is a loss-in-weight hopper
- + The cantilever design offers consistent lb/hr or kg/hr data
- + The design operates effectively as process ramps up or down, as well as during the mixing process

HMI



LIW Loss-in-Weight Control & Gravimetric Feeding

The Maguire LineMaster Loss-in-Weight control allows for faster start-up time & reduced scrap, while ensuring the correct amount of material flows into the extrusion line.



- 1 Suited to all Continuous Extrusion Processes**
 - + For both mono and co-extrusion processes
 - + Applications include cable, cast film, blown film, sheet, pipe, tube & profile extrusion
- 2 Extrusion Control – Saving up to 10% of Materials Cost**
 - + Switching from manual regulation to automatic extrusion control allows significant savings
 - + Savings by reduced start-up material waste & changeover scrap
 - + Immediate control by responding to actual material consumption versus target required
 - + Rapid return on investment

- 3 High Precision Accuracy**

The LIW hopper is suspended on a pair of highly accurate load cells, sized according to throughput



- 4 Automatic Throughput**

Throughput of the line is fully automatic and requires no user intervention
- 5 Maguire+Syncro Control Flexibility**

M+S extrusion control solution allows to manage material settings, consumption, layer ratio control and recipe storage
- 6 Range of Materials**

Suited to every application of free-flowing material, pellets, granules or powder
- 7 Faster Start-up Time**

Switch from manual start-up to automatic and set required output. No further operator involvement

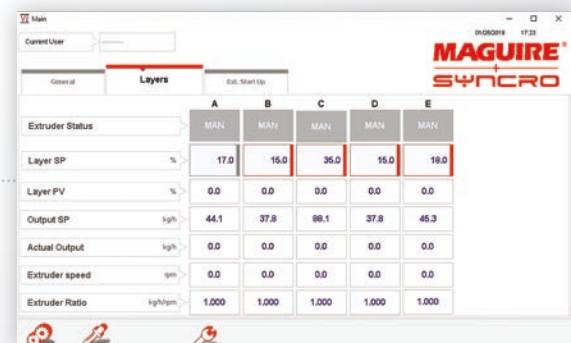
MGF ST Series

The Maguire MGF-ST configurations can be used for either injection or extrusion applications.

Self-Priming Control

Feeder automatically re-calibrates to new color, so no additional setup required.

HMI



MLS Conveying System

Flexible and compact conveying solution, ideal for conveying small to medium sized loads.

1

Full View of the Material Loading

Direct view of material loading makes it easy for the operators to monitor operation and adjust set conveying times

2

Reduction of Clogging

Patented deceleration chamber that facilitates separation of material from the air stream. Fast-action slide gate prevents pellet entrapment during material discharge

3

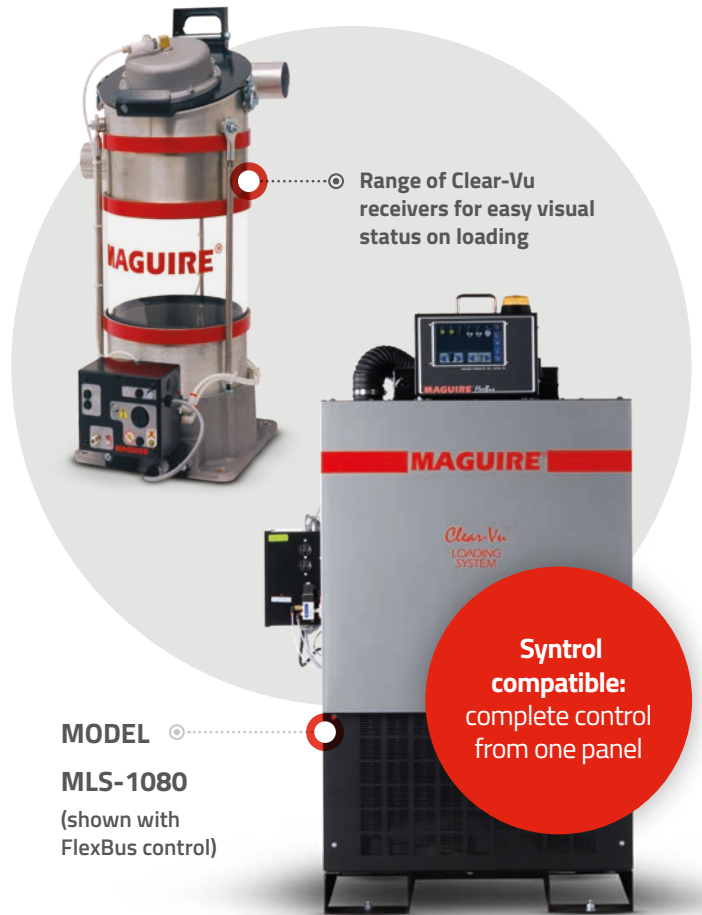
Easy Access for Cleanout

The top cover of the receiver includes the vacuum valve, material inlet and cleanout port. Easy access for on-the-fly cleaning and maintenance

4

48 Receivers per Vacuum Group

The basic MLS controller controls up to 8 receivers as standard. The advanced FlexBus control system is capable of controlling up to 5 vacuum groups and 48 receivers per pump, allowing the system to grow with you



FlexBus Central Conveying System

Operates up to 5x vacuum pumps, 48x receivers each, 240x receivers total using one single central FlexBus control.



Easy Installation

- + Single wire connects the control to all receivers and pumps
- + Adjusting to complicated material pipework layouts (with different material bulk density and throughput)
- + System offers bespoke conveying solutions to meet individual requirements

Total Conveying Control

- + Touchscreen, adjustable load, unload, priority, proportioning, purge, blowback and alarm settings, line cleaning
- + Retrofit to existing pumps and existing receivers

System Compatibility

- + Integrates with existing range of Maguire conveying equipment
- + Can be integrate with many other manufacturers equipment

Syntrol Basic Extrusion Control

Modular and easy to apply. The Maguire WSB & WXB Blender, LineMaster Loss-in-Weight & MGF Gravimetric Feeder can be easily combined with the Syntrol Basic Extrusion Control System. It allows to capture and analyse all production parameters on a real time basis to maximize extrusion efficiency.

Raw Materials Savings - up to 10%

Extrusion control automates the control of the end product calculated average thickness. Automatic regulation of extrusion line(s) kg/hr, lb/hr and haul off to target gr/m, lb/ft, micron setpoints.

More Efficient Start-Ups & Changeovers

Constant updates of kg/hr, lb/hr usage every second to each extruder, plus real time monitoring of line speed allow for precise and automatic regulation of line target output. Dynamically versus manual check and adjustments significantly simplify the operator control.

Typical Return on Investment - 3 to 6 Months

Reduced product scrap & materials usage and reduced start-up time allow for clear, direct savings in materials and production time.



Scrap Materials Reduction

Improved control on raw material costs by immediate regulation and better materials utilization.

Increased Productivity

Quicker & automated start-ups, plus continuous line monitoring keep the product setpoints on target - 24 hours a day. No drift or manual interventions. Great improvement of line efficiency.

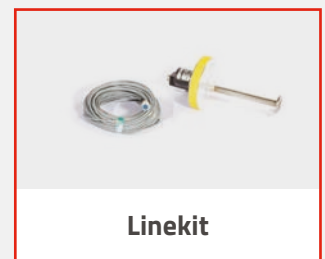
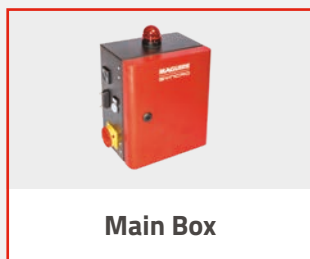
Syntrol Basic Software Interface

- + Touchscreen with user-friendly operator interface
- + Easy visualization & total control of all process parameters
- + Combined LIW mix chamber
- + Recipe storage
- + Material manager & layer control

Syntrol Basic Touchscreen Interface



Maguire+Syncro Hardware



Processes



Automatic Air Ring With Auto Profile Control

Available in wide range of sizes, the Typhoon and Flyer air rings are designed for efficient and controlled air flow to achieve your required film thickness.

Tolerance Deduction

- + Improve product tolerances up to 75% 2σ
- + Patented TECH 2.0 technology

Elevator Air Ring

Elevated air ring for increased cooling capacity & increased output

Standard Carbon Fibre Chamber

- + Moisture free processing environment
- + Single air inlet - easy maintenance and clean operation

Automatic Profile Control

Down gauge average thickness to $\pm 4\%$

Increased Output

Increased output up to 60% - application dependent

Saving On Raw Materials Of Up To 5%

Raw material savings from fast start-up and consistent production

Application

Retrofittable to either fixed or rotating / oscillating die

Wide Range Of Sizes

From 50 mm - 2300 mm die diameter

Increased Cooling Capacity & Excellent Bubble Stability

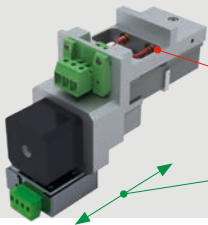
Higher bubble cooling capacity and improved bubble stability

Interchangeable Lip Set

Operator-friendly lip set change over - greater production choice

Easy Maintenance

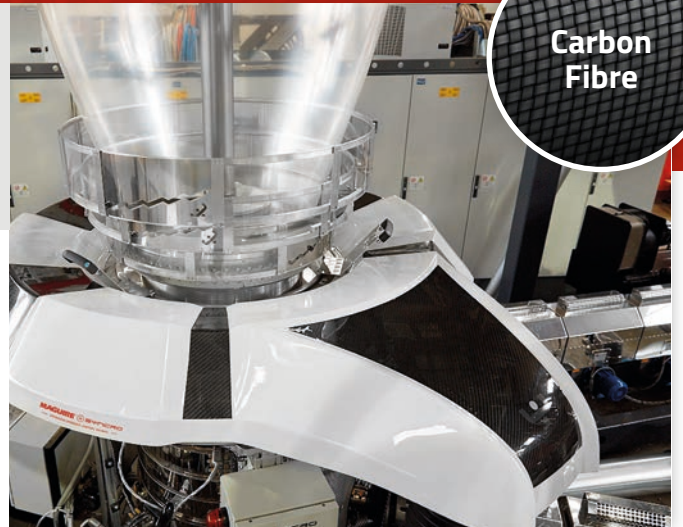
Easy access to all APC control elements



Combined volume and heater control for improved profile control.

- Heaters
- Motorized Opening

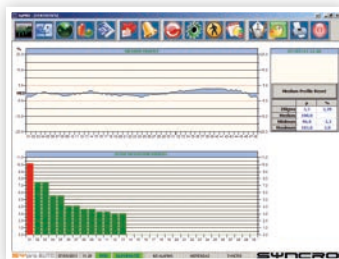
- + Fast coarse / brute adjustment (Motors / Flow)
- + Fine adjustment (Heaters / Thermal)
- + Quick adjustment of bubble profile allows for scrap material reduction during start up
- + Each box has: 1 step motor and 2 heaters (230 W)
- + Combined volume and heater control for improved profile control
- + Tolerance deduction up to 75% at 2σ



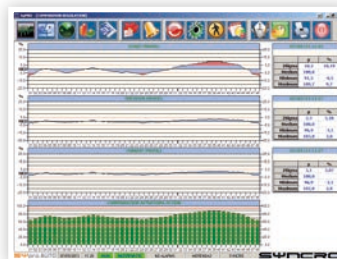
Carbon Fibre

AIR RING CONTROL - SYNTROL INTERFACE

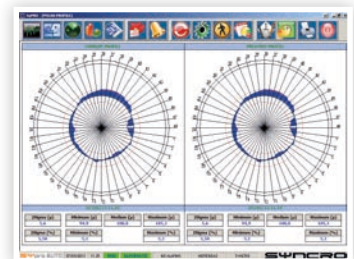
2 Sigma Trend



Start Profile, Actual Profile, Previous Profile



Polar Profile



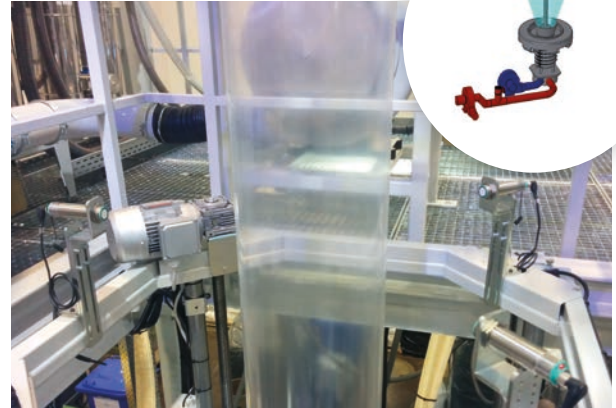
IBC & Layflat Control

Internal Bubble Cooling (IBC) is designed to automatically control and manage blower balance and increase cooling efficiency. Vortyx is an integral cooling device designed to increase the cooling capacity.



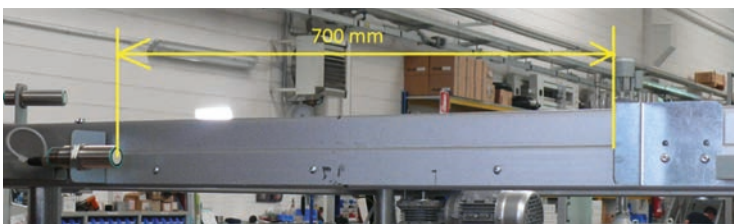
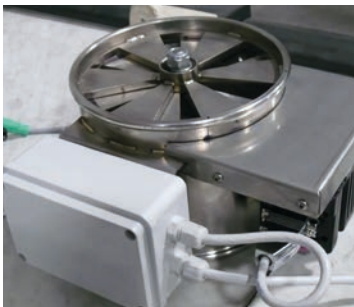
Ultrasonic Grap Sensors

To maintain distance between bubble and moving cage and avoid deflation of bubble.



Ultrasonic Layflat Sensors

Optional ultrasonic distance sensors mounted on top of cage where bubble is already formed. Controls automatic opening & closing of cage and improves layflat width control to less than ± 2 mm.



Ambient Temperature Control

Ultrasonic sensor installed at fixed distance to control ambient temperature variations.



IBC Control Valve

Unique bypass valve for improved flow control and accuracy in bubble stability.

Gauging Control

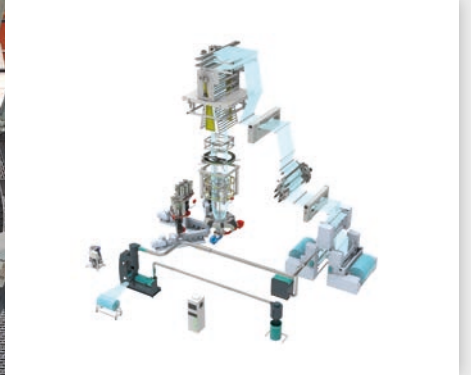
Wide range of gauging solutions for film, cast and flat sheet extrusion.

SkYmex

- + Capacitive technology (contact/non-contact options)
- + Rotating system and encoder band 360° - know position at all times
- + Belt free motion - significantly less maintenance and better accuracy
- + Ultrasonic distance sensor ensures gauging consistency
- + Three stage telescopic arm (patent)
- + Available for bubble diameters from 100 mm up to 9 m



Ideal For: PE & Non-Barrier Films

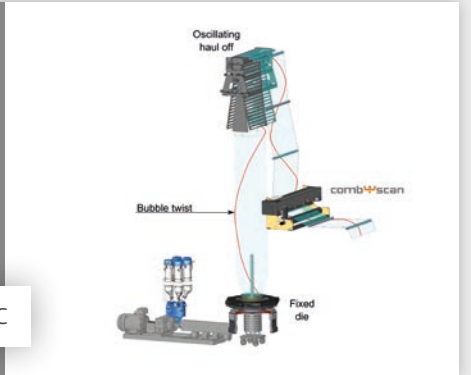


ComBYscan

- + Capacitive & inductive technology
- + Mono and co-extrusion applications
- + Excellent for both color and transparent products
- + Ideal for barrier and sensitive film
- + Measurement of total thickness - from 10 micron up to 4.5 mm
- + Layflat width from 500 mm up to 3 m

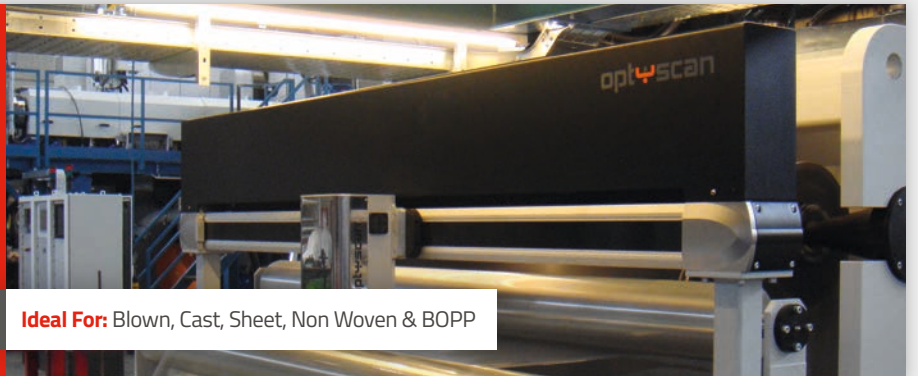


Ideal For: Blown Film, Sheet, Foil, Rubber & PVC



OptYscan

- + NIR Near Infrared sensor - back scatter application
- + Ideal to install on flat film or chill roll applications
- + Absolute gauge - no need to change parameters or filters when changing type of film
- + Measurement accuracy 0.1 micron
- + Web width from 500 mm - 10 m



Ideal For: Blown, Cast, Sheet, Non Woven & BOPP

RaYxscan

- + No radioactive compliance issues
- + Suited to stretch film, non woven and BOPP lines
- + Accurate measurement - down to 0.02 micron
- + Easy installation and maintenance
- + Web width from 500 mm - 10 m



Ideal For: Blown, Cast, Sheet, Non Woven & BOPP

Calibration Basket & Haul Off Control

Wide range of cages and haul off for calibration of the bubble on blown film lines. Guaranteed perfect radial movement of the bubble to roll - to the centre with zero error.

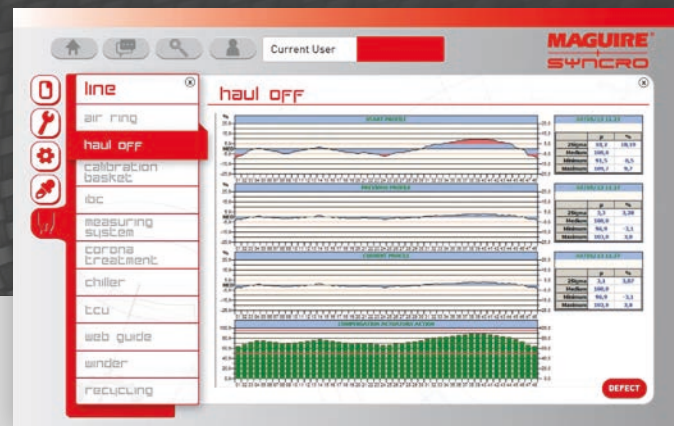
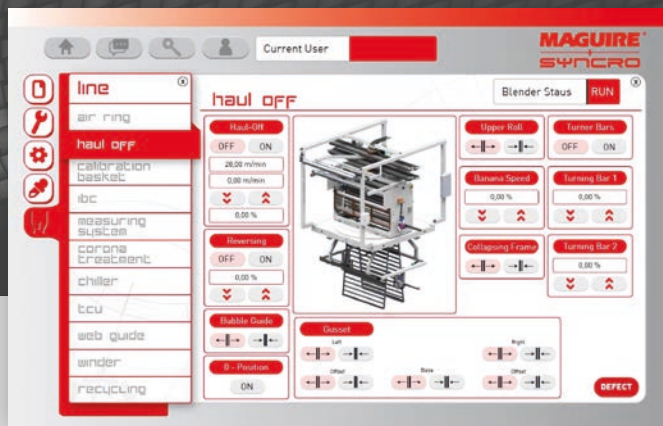
Haul Off

The AL Aligning System and the OP Oscillating Platform create a complete haul off unit. Based on the perfect axial rotation of 360°, the combination AL+OP guarantees a perfect defect distribution for the best reel planarity.

- + Key feature of the haul off unit is the collapsing frame
- + Manufactured with heavy duty structure
- + Easily customized based on product requirements

- + Collapsing frames are available with carbon fibre rolls or aluminium roll
- + The movement and setup is automated by electrical actuators

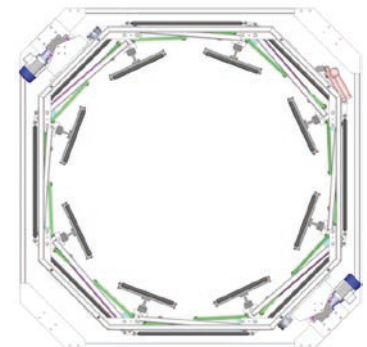
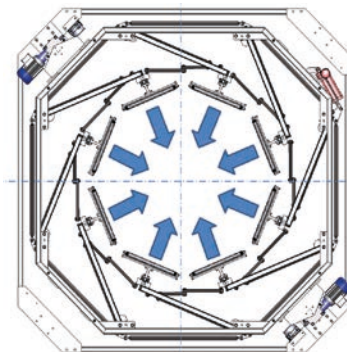
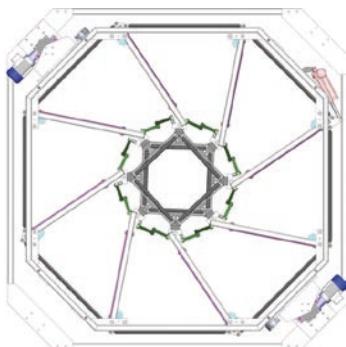
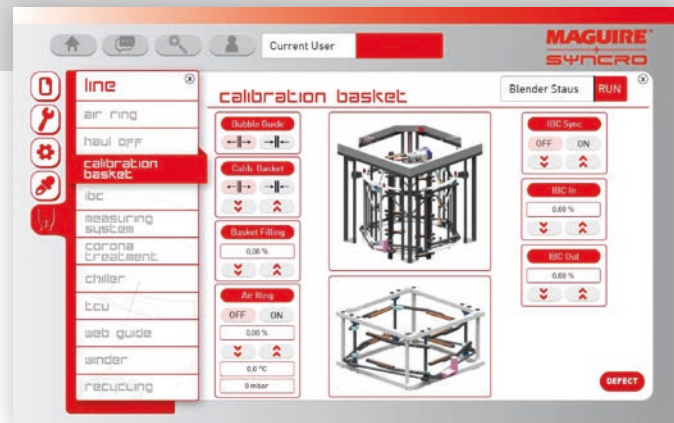
Haul Off Screens



Calibration Basket

M+S offer the latest generation of calibration baskets – Bsmart and Bwider bubble cages.

- + Interchangeable guides modules
- + Vertically adjustable by travelling screws
- + Quick guide rolls change over system
- + Radial movement to the centre is equal to 0°
- + Syntrol Plus stores the cage adjustments in the job receipt which helps the operator with repetitive jobs



Supervisory System – Syntrol Plus

Maguire+Syncro’s supervisory system, Syntrol Plus, brings together all elements of your line into one point of control.

Touchscreens come in 3 different sizes: 7", 15" and 21"

OPXS-SYNTROL - 07
7" Touchscreen

OPXS-SYNTROL - 15
15" Touchscreen

OPXS-SYNTROL - 21
21" Touchscreen

The total supervisory system allows multiple line controls to be visualized and controlled from 1 touchscreen to synchronize the whole line together, including:



- Blender Consumption And Dosing Units + Air Ring Control + IBC Control + Line Thickness & Gauging System
- + Extruder Temperature & Pressure + Haul Off Speed + Web / Cage Control

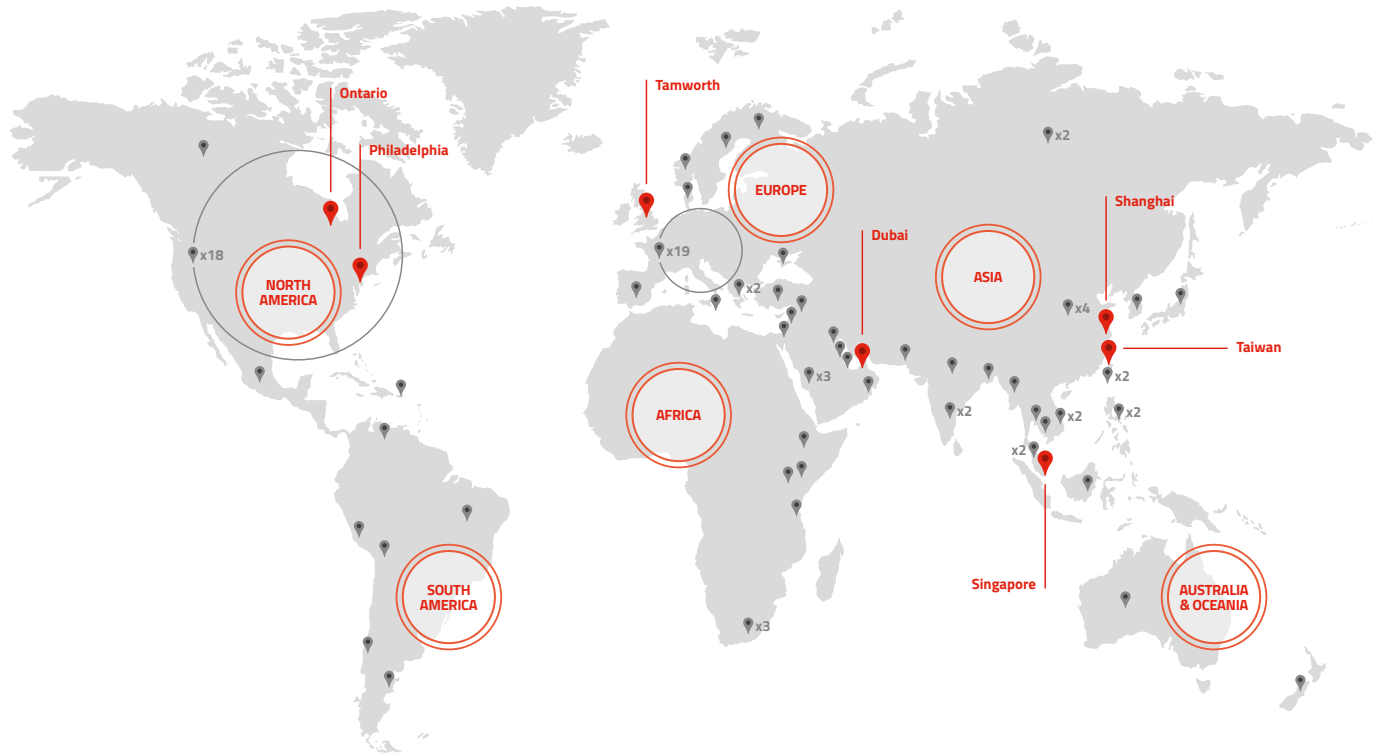
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Where To Find Us

With our extensive network of agents and distributors across the globe, we aim to support our customers locally as much as possible.

-  Maguire Headquarters
-  Agents & Distributors



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**Innovations For Raw
Material Handling For
Over 40 Years -
Blending, Drying,
Feeding & Conveying.**



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**MODULAR UPGRADES TO MAKE YOUR
EXTRUSION LINE PERFORM AT A FRACTION
OF THE INVESTMENT OF A NEW LINE.
UPGRADES, ENHANCED CONTROL AND
CLEAR SAVINGS.**

**STEVE MAGUIRE, FOUNDER AND PRESIDENT
MAGUIRE PRODUCTS INC.**

”

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Intelligent Simplicity

