

primus®

DX LINE OF TUMBLE DRYERS WITH
XCONTROL FLEX® PLATFORM

March 2021



GET AHEAD IN LAUNDRY 

Disclaimer

IMPORTANT NOTICE

This is a global presentation. Certain markets can be excluded from access to the products & technologies described in this presentation.

Contact your Alliance Regional Sales Manager for more information.

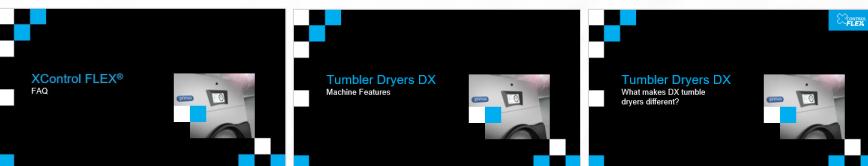
Table of contents



PRODUCT AT A GLANCE



MORE ABOUT XControl FLEX® for VEND & OPL



DIVE IN THE PRODUCT

XControl FLEX®

On DX Dryers: Introduction



XControl FLEX® control platform

- The most intuitive control in the commercial laundry industry
 - XControl FLEX® is a ground-breaking touch control platform featuring an enhanced customer experience as well as a number of brand-new functionalities through cloud in terms of connectivity and data accessibility.
 - Thanks to the large 7" touch screen, XControl FLEX® aims to be one of the most intuitive controls in the commercial laundry
- XControl FLEX® comes to market in 2 versions



XControl FLEX® is the touch control version for **Vend**-applications, featuring easy to use, easy to understand directions with profitable cycle modifiers enhancing customers' experience and increase return on investment



XControl FLEX® Plus is the touch control version for **OPL**-applications, featuring an enhanced customer experience for users as well as a new connectivity and data-accessibility functionalities through cloud for laundry managers



Invest in Brand Awareness & Strategy

- Premium aesthetic for optimal Brand recognition
 - Offers fully integrated solutions across the product line
 - Easy to use & to learn
 - More staff efficiency
- Unique features for Primus
 - Dry cycles ready to be used by customers
 - Freely programmable cycles can be adapted to your needs
 - Extra cycle modifiers to increase revenue
- Support the digital and mobile era:
 - Deliver fast & professional service based on accurate information (e.g. clear service messages: service alerts)
 - Offering remote support & services from anywhere at any time: stay connected!
- The XControl FLEX® offers a more profitable SOLUTION to today's store owner to stay ahead of the competition and meet the demands of today's laundry user

Excellence in User & Operator Guidance

- Best in class Graphical User Interface (GUI)
 - *High resolution screens*
 - *Screen is easy to read from any angle, even in bright daylight (1000 nits)*
- Full overview of all data at a glance:
 - *Large screens make it possible to have more text and graphic visuals*
- Improved segment-oriented features to make your business more profitable
- Real time awareness of what's happening:
 - *Preventive service alerts for your technicians and keep downtime at a minimum*
 - *Set up new prices and promotional campaigns wherever you are*
 - *Get direct business information on your mobile device or computer*

XControl FLEX® control platform

■ All new generation of control platform

- Attractive touch technology bringing new experience to users
- Intuitive and fast for operators / more detailed settings and wider connectivity for laundry managers and owners
- Design of GUI* vetted by end users in various regions all over the world

■ Primus family

- Control unification for FX washing machines (CZ) and DR tumblers (US)
- Common networking for perfect laundry management through the Primus i-Trace dashboard
- One common Primus DNA colors and GUI* used for FX65-280 as well as for DX tumblers (DX13-DX34)

■ Futureproof networking

- IPv6 WiFi addressing makes networking futureproof
- IPv4 still included
- No need to reinvest



* GUI = Graphical User Interface

Top Features for Machine Users

- Simple to use and visually enhanced:

- 7" & 5" (5" on stack dryers only) *Color IPS Capacitive Touch Display*
- *User Selectable Language (max. 34)*
- *Pocket Indicator*
- *Operating Instructions are part of the control*

- Flexible Payment Modes:

- *Coin*
- *Card*
- *Mobile*
- *Bill*
- *Kiosk*
- *NFC* (3rd party)...*

- Flexible Pricing and Customization of your cycle:

- *Modifiers on both the washer and tumbler*

* Near-field communication (NFC) is a set of communication protocols that enable two electronic devices to establish communication by bringing them within 4cm of each other.

Top Features for Investors

- Up to date and Connected Equipment:

- *Leading Unequalled Technology*
- *Over The Air updates*
- *Errors can be remotely cleared*
- *Mobile apps*
- *Cloud Services*
- *Break-in Alarm*

- Simple to use and visually enhanced:

- *7" & 5" Colour IPS (In-Plane Switching) Capacitive Touch Display*
- *User Selectable Language (max.34)*
- *Pocket Indicator*
- *Operating Instructions are part of the control*

- Flexible Pricing and extra Revenue:

- *Modifiers prompts*
- *Modifiers can be customized*

Top Features for Distributors

- Up to date and Connected Equipment:

- Over The Air updates
- Common Networking Interface for both washer and dryer machines
- Cloud Services
- Break-in Alarm
- Error Messages sent by e-mail or text

- Easy to Install, Set up and Service:

- 7" & 5" Color IPS Capacitive Touch Display
- User Selectable Language (max.34)
- Infrared
- Wi-Fi versus wireless
- Serial Payment System Open Architecture

- Less Service needed and updated during Servicing:

- Inverter Drives on Tumblers
- Audit Data retained with Control Replacement

XControl FLEX®

Product offering & control specs



Product view



DX20/20 with XControl FLEX®



DX25 with XControl FLEX® Plus



Availability *

Tumbler	CONTROL FLEX	OPL
DX13	✓	✓
DX16	✓	✓
DX25	✓	✓
DX24	✓	✓
DX34	✓	✓
DX 13/13 stack unit	✓	Not available
DX 20/20 stack unit	✓	Not available

Upgraded design for DR-models with XControl FLEX®

Upgraded design:

- Upgraded design only available for DX-tumblers with XControl FLEX®
- Existing design remains available for DX-tumblers with DDC (Dual Digital Control).
- No changes in machine dimensions & specs of new design vs existing design models



Controls overview for DR-tumblers

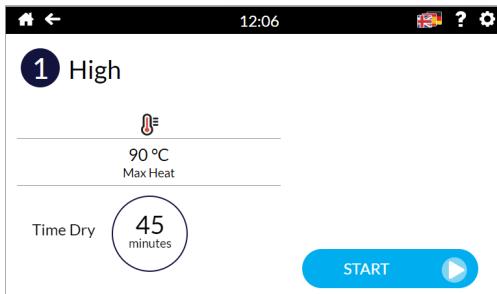


Type	“Button”	“Touch”
Vend	XControl “networked” *	XControl FLEX®
OPL	XControl + (Dual Digital Control)	XControl FLEX® Plus

* XControl “networked”: tumbler can be equipped with an additional network board, allowing data to be transferred to Primus i-Trace dashboard

Program Library

	 VEND	 OPL
Standard programmes	5	30
Total memory capacity	5	99



- 5 Basic Cycles in VEND:

- HIGH
- MEDIUM
- LOW
- DELICATE
- NO HEAT

- Flexible Pricing and extra Revenue:

- 2 A la Carte Modifiers (NEW)
- Time of Day Pricing
- Lucky Cycle

Up to 99 programs for OPL

Detailed features

User interface	Tumble dryers	Tumble dryers
	XControl FLEX® Plus (OPL)	XControl FLEX® (Vend)
Features		
Number of cycle combinations/selections	99	5
Multicolor graphical display	yes	yes
Touch screen	yes	yes
Multilingual display	Yes (34)	yes (34)
External end-of-cycle output	yes	yes
Programmable cool down	yes	yes
Anti-wrinkle	yes	yes
PC software	yes	yes
Overdry Prevention Technology (OPT)	yes	no
USB Capable (Device add-on board capable)	yes	yes
Network capable (This seems redundant with WiFi)	yes	yes
Infrared communication	yes	yes
Wireless communication	yes	yes
Cloud	yes	yes
Automatic maintenance reminders (on-screen?)	yes	No
Automatic warning /error emails	yes	yes
Service related audit data available	yes	yes

Additional features

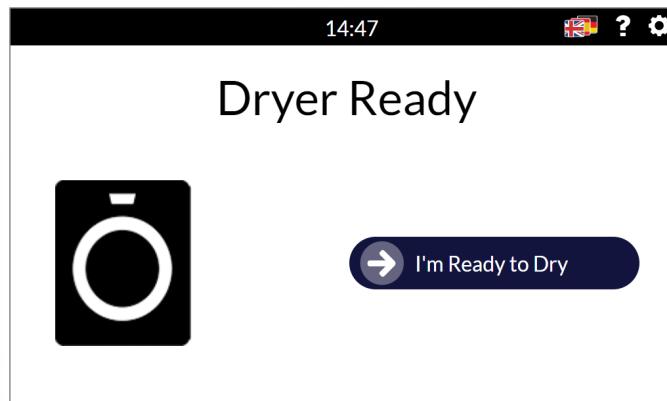
User interface	Tumble dryers	Tumble dryers
	XControl FLEX® Plus (OPL)	XControl FLEX® (Vend)
Additional features		
RS-485 add-on kit capable	yes	no
Anti-Wrinkle / Reversing as payable modifiers	no	yes
2-touch start	yes	yes
Customizable greeting message (Approach page message)	yes	yes
Programmable contact number	yes	yes
Screen Saver	yes	yes
Clean Lint Screen Reminder	yes	no
Out of Order mode	yes	yes
Drop Off mode	no	yes
Lucky Cycle	no	yes
Special Vend	no	yes
Manual mode protection	yes	yes
Multi-stage drying (multi-step cycles)	yes	no

Tumbler Dryers DX

Marketing Support



Interactive simulator:



[Click to open
the simulator](#)

Tumbler Dryers DX

Control Presentation



XControl FLEX® – Languages

- **34 available languages as standard**
 - 7 all new languages for selection
 - More languages for customers to select for better and easier interaction
 - Chinese, Japanese and Korean language no longer in separate software version
 - Slovak and Bulgarian now also fully translated in advance & service menu

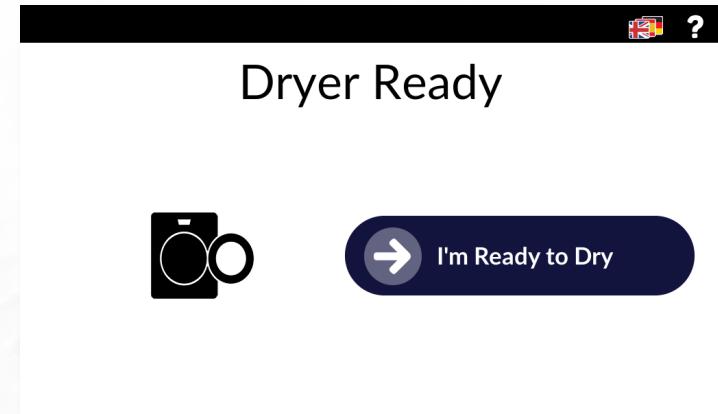
- **Simple selection by 1 button from main screen (for Vend)**
 - Instant language change to attract foreign users in laundromats

English	Hungarian	Romanian
Bulgarian	Indonesian	Russian
Chinese (Simplified)	Italian	Slovak
Chinese (Traditional)	Japanese (Standard)	Slovenian
Croatian	Korean	Spanish (European)
Czech	Latvian	Spanish (Columbian)
Danish	Lithuanian	Swedish
Dutch	Malaysian	Thai
Finnish	Norwegian	Turkish
French	Polish	Vietnamese
German	Portuguese (European)	
Greek	Portuguese (Brazilian)	

New compared to XControl
(.button" version)

XControl FLEX® Control Specs

Control Size	7" diagonal	5" diagonal
Resolution	1024 x 600	800 x 480
Luminance	1000 cd/m2 (readable in sun light)	
Colors	Mix (30°C)	
Display Technology	+16 million colors	
Touch Technology	Capacitive (like all smartphones)	
Communication	IRDA,WiFi and Serial Payment (Alliance Proprietary)	

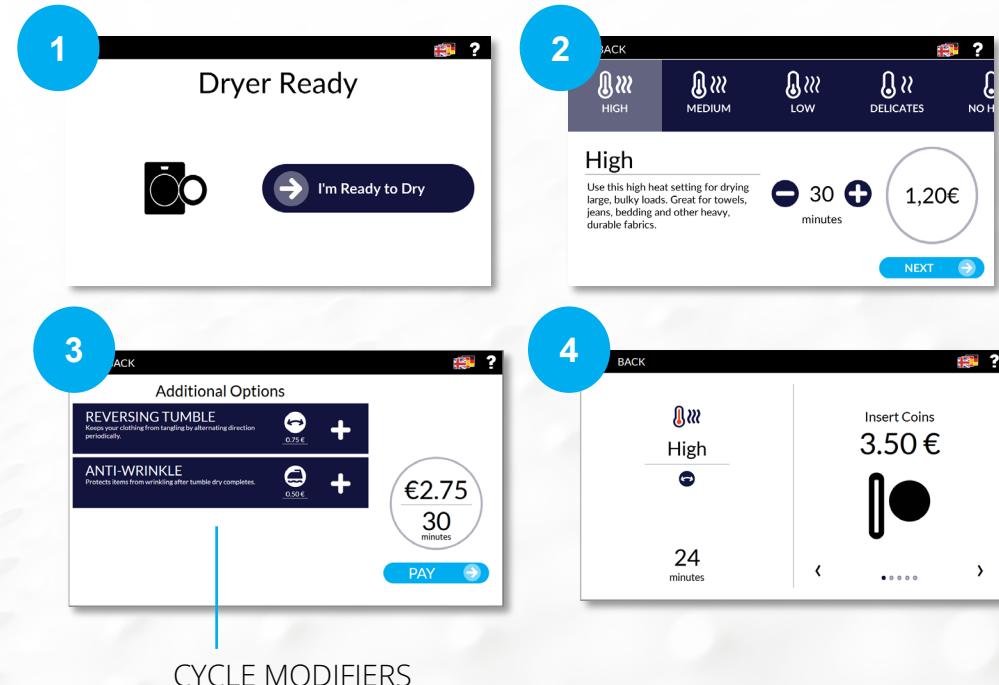


VEND only - Primary Investor GUI Design Goal

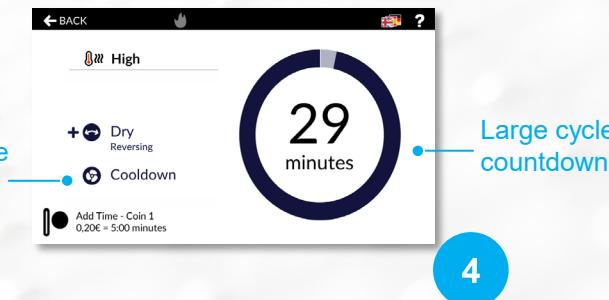
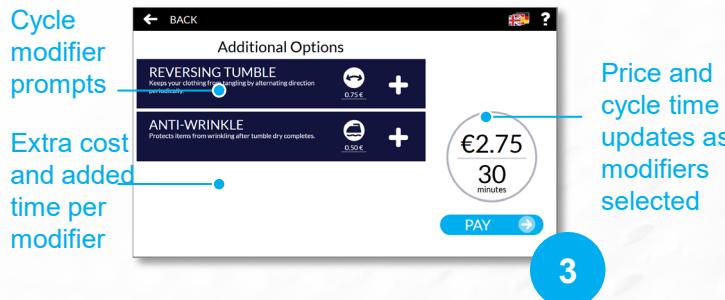
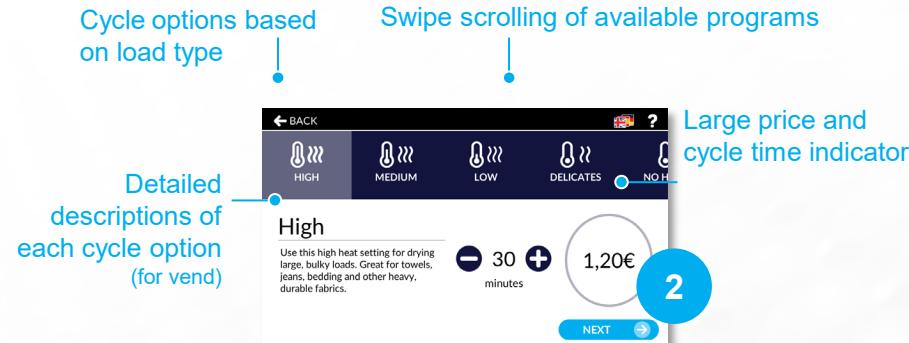
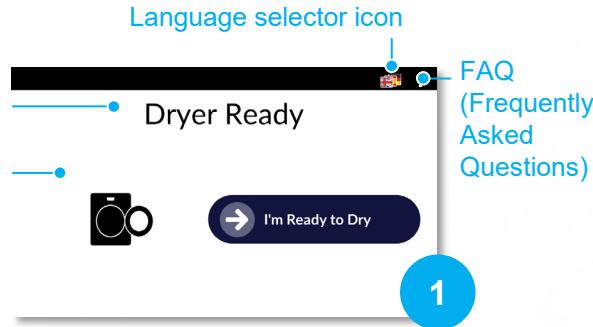
- Result: 4 Basic Screens in End User GUI workflow. Can be configured to 2 Basic Screens (Cycle Selection and Payment Screen)
 1. Approach Screen (optional)
 2. Cycle Selection Screen
 3. Upgrades (“Cycle Modifiers”) Screen (optional)
 4. Payment Screen

Operator can turn on/off 2 available modifiers to End User (reversing and anti-wrinkle) along with the ability to create pricing strategy at this level of control.

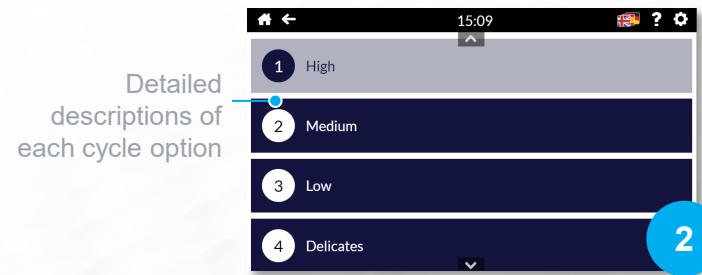
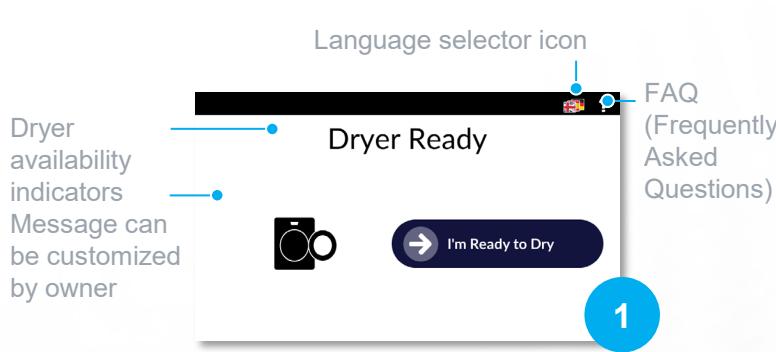
- Design iterated and vetted in various regions all over the world with End Users



Dryer availability indicators
Message can be customized by owner



OPL only - Primary Investor GUI Design Goal



Tumbler Dryers DX

Control Highlights



Control Highlights

- Userfriendly User Interface:

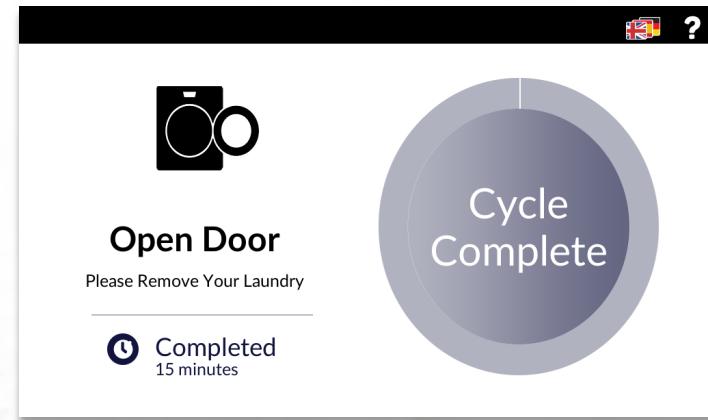
- *User Selectable Language (34)*
- *Operating Instructions are part of the control*

- Flexible Pricing and extra Revenue:

- *Over The Air Updates*
- *Speed Queen Insights*
- *Quantum Vended Software*
- *Infrared*

- Flexible Pricing and extra Revenue:

- *Coin*
- *Card*
- *Mobile*
- *Bill*
- *Kiosk*



XControl FLEX® - Comparison: Tumbler dryers

	XControl FLEX	Dexter	Wascomat/Electrolux	ADC
Control Type	5" or 7" Capacitive Touchscreen	4 Buttons and 7 Segment Display	3 Buttons and 3.2" LCD Display	3 Buttons and LCD Display
Multicolor Graphical Display	+	✗	✗	✗
Multilingual	30+	✗	22	✗
Total Number of Cycles (including modifiers)	5	3	4	3
Number of Cycle Modifiers	2	0	0	0
Lucky Cycle	+	✗	✗	✗
Time-of-Day Pricing	+	✗	✗	+
Vend Audit Data	+	+	+	+
USB or Flash Card	✗	+	+	+
Infrared Communication	+	✗	✗	+
Wired Communication	✗	+	+	✗
Wireless Communication	+	✗	✗	✗
Local Network	✗	✗	+	+
Cloud Network	+	+	✗	✗
Email/SMS Capable	+	+	✗	+
Diagnostic Program	+	✗	✗	+
Service Audit Data	+	+	+	+
Inverter Driven Motors	+	✗	+	+

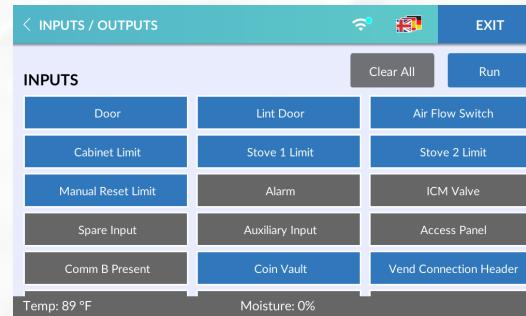
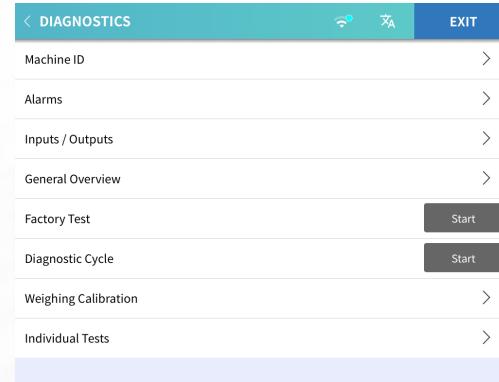
- No upsell features
- Programming not through infrared or network connection, still have to use flash drive

- No upsell features
- Need to use USB port to program machine, no infrared

- No upsell features
- No communication capabilities to service, program, troubleshoot or monitor remotely

Control Highlights

- Full Text Manual Programming
- Improved Diagnostics:
 - Audit Data
 - Alarm history w/ Time and Date Stamps
 - Diagnostic Cycles
 - Individual Testing of Components
 - Input/Output Menu:
 - Digital & Analog Input & Output Monitoring
 - Manual Output Enabling



VEND: XControl FLEX®

Features & Benefits



F & B: Pocket Indicator



★ FEATURE

- Pocket Indicator Animation displayed on the screen

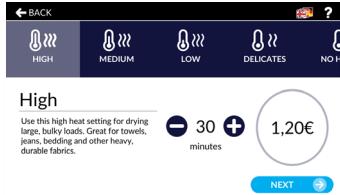
+ ADVANTAGE

- Clear indication of what pocket relates to which control on stack machines
- No more need for sticking arrows indicating the correct pocket on the machine

■ BENEFIT

- Customers feel more relaxed & confident when choosing a tumbler to start
- Nicer looking laundromat

F & B: Cycle Selection Screen



XControl FLEX®



XControl FLEX® Plus

★ FEATURE

- Swipeable Cycle Selection Tile
- Cycle Name and Description in language of choice
- Modifiable Time

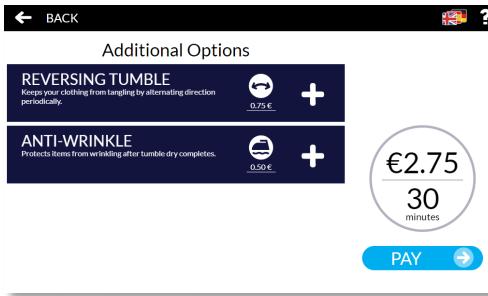
+ ADVANTAGE

- Mobile Well-known Interface
- You are informed about what you should use each Cycle for in any common Language
- Customize the Time to Your Needs and Price Accordingly

!! BENEFIT

- Confidence in your Selected Cycle and Machine
- No need to Stress that you made an incorrect Selection
- Extra Revenue due to easy Time Selection

F & B: Dry Upgrades Screen (1/2)



★ FEATURE

- Modifier Name and Description in language of choice

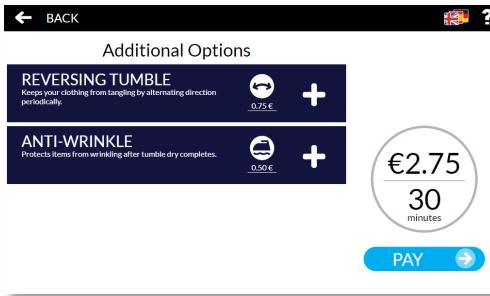
+ ADVANTAGE

- Mobile Well-known Interface
- You are informed about what each Modifier has to Offer you
- Customize your Cycle to your needs

. BENEFIT

- Confidence in your Selected Cycle and Machine
- No need to Stress that you made an incorrect Selection
- Extra Revenue due to the Dryer Upgrades

F & B: Dry Upgrades Screen (2/2)



★ FEATURE

- Number and Content of Modifiers can Customized
- A la Carte Modifiers

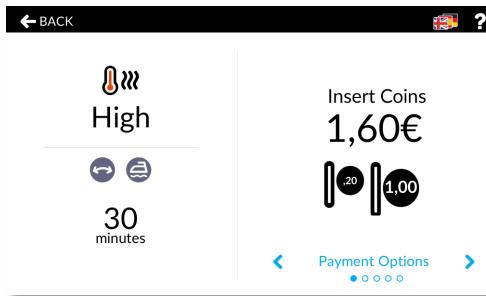
+ ADVANTAGE

- Customize the Modifiers to meet your Business Plan
- Optimize Revenue

. BENEFIT

- Meet your Needs & reach your Goals

F & B: Dry Payment



★ FEATURE

- Applicable Mode(s) of Payment is Displayed
- Confirmation of the Selected Modifiers and Cycle

+ ADVANTAGE

- Applicable Currency and Denomination is Displayed
- Confirmation of Your Selection

. BENEFIT

- Feel Confident by the Feedback provided

F & B: Dry Running



★ FEATURE

- Future and Past Steps fade in & out
- Selected Dryer Upgrades are displayed
- Remaining Time is Shown

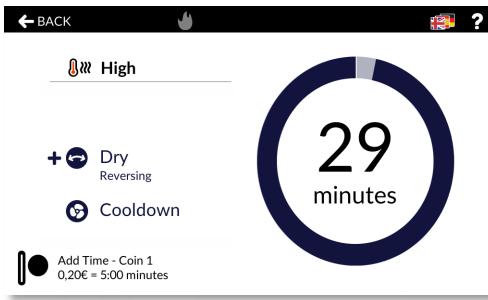
+ ADVANTAGE

- Confirmation of Your Selection
- Large Indicator of Remaining Time
- Time can be added when the Cycle is Running

. BENEFIT

- Feel Confident by the Feedback provided
- You are informed about what the machine is doing at every moment in the cycle
- Extra Time (Revenue) can easily be added

F & B: Burner Active Indicator



★ FEATURE

- Burner Active Indicator will pop up when ever the Heating is Activated

+ ADVANTAGE

- Meet local Legislations
- Useful Feedback for Users, Owners and Technicians

. BENEFIT

- Feel Confident by the Feedback provided
- You are informed about what the machine is doing at every moment in the cycle

F & B: Dry Complete Timer



★ FEATURE

- Dry Complete Timer

+ ADVANTAGE

- Informs about how long the Machine has completed the cycle
- Users are more likely to take out the linen and put in theirs

. BENEFIT

- Improved productivity & revenue

F & B: Anti-Wrinkle Running



★ FEATURE

- Anti-Wrinkle Running

+ ADVANTAGE

- Rotates the linen at regular 2 minutes intervals for 30 seconds
- Avoids wrinkles

■ BENEFIT

- Extra revenue for the owner
- Less ironing to do for the customer

F & B: Reversing Tumble



★ FEATURE

- Extended Tumble

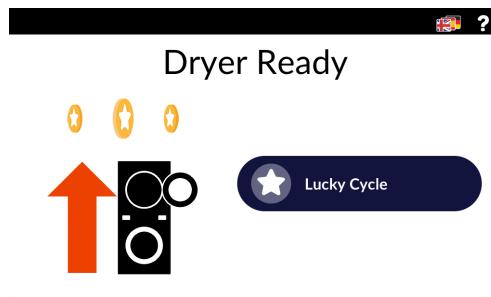
+ ADVANTAGE

- Keeps the drum rotating at regular intervals after the cycle has completed

■ BENEFIT

- Lowers the risk of spontaneous Combustion

F & B: Lucky Cycle - Award Animation



★ FEATURE

- Award a Lucky Cycle every X cycles

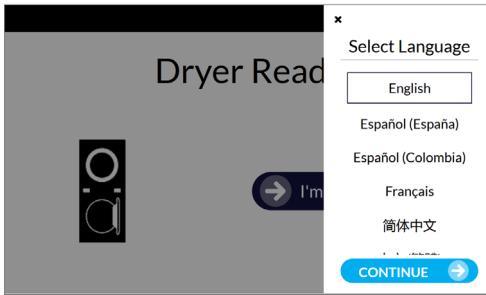
+ ADVANTAGE

- Customer Loyalty
- Create a buzz
- Mouth To Mouth advertising of this unique Feature in your Laundromat

. BENEFIT

- Make Someone's day
- Create a Loyal Customer Base

F & B: Alternate Languages



★ FEATURE

- End-User can Change the Languages to suit their needs
- Max 34 Languages

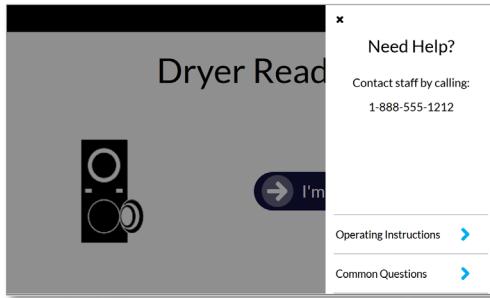
+ ADVANTAGE

- Customer Loyalty
- Adaptable to Regional Demographics

. BENEFIT

- Confidence
- Less calls to laundromat Owners
- Less Customers giving up on the Machine

F & B: Basic Help



★ FEATURE

- Help Available by the Touch of a Button
- Customizable to your Needs

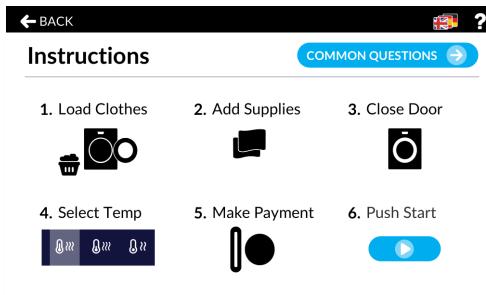
+ ADVANTAGE

- Customer Loyalty
- Adaptable to Regional Demographics

■ BENEFIT

- Confidence
- Less calls to laundromat Owners
- Less Customers giving up on the Machine

F & B: Instructions



★ FEATURE

- Help Available by the Touch of a Button

+ ADVANTAGE

- No need for wall signage
- Available at hand, in the user's own language.

■ BENEFIT

- Confidence
- Less calls to laundromat Owners
- Less Customers giving up on the Machine

F & B: Common Questions

The image shows a digital display or mobile application interface for a laundry machine. At the top, there are navigation icons: a left arrow labeled "BACK", a flag icon, and a question mark icon. Below these, the title "Common Questions" is displayed. There are three main sections of text, each preceded by a blue chevron icon:

- "Why won't my machine start?" followed by the text: "The balance has not been paid. Did you pay the amount due?"
- "The door is not properly closed. Is the door closed?" followed by the text: "There is an error message displayed. Contact the store manager."
- "Contact the store manager."

★ FEATURE

- Help Available by the Touch of a Button
- Customizable to your Needs

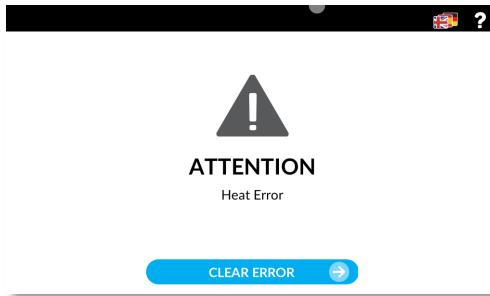
+ ADVANTAGE

- Customer Loyalty
- Adaptable to Regional Demographics

■ BENEFIT

- Confidence
- Less calls to laundromat Owners
- Less Customers giving up on the Machine

F & B: Error Display



★ FEATURE

- Full Text Error Messages
- Time and Date stamp

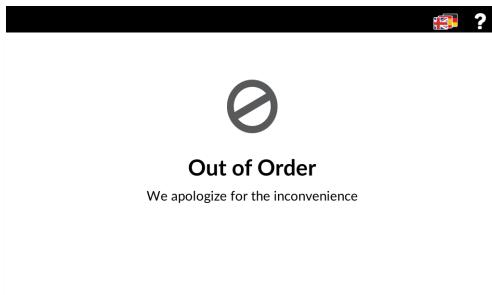
+ ADVANTAGE

- No need to Decypher Abbreviations
- Traceable to the moment when it happened

. BENEFIT

- Confidence
- Improved Use of your Time

F & B: Out of Order



★ FEATURE

- Out of Order Message on the screen

+ ADVANTAGE

- No need for Attaching post-its on the Machine
- Clean Laundromat
- Can be set remotely

. BENEFIT

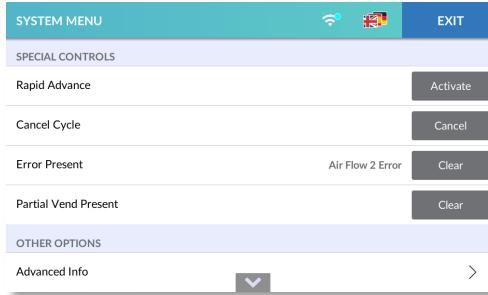
- Improved Use of your and the users' Time
- Less calls to laundromat Owners
- Clear Indication not to use the Machine

XControl FLEX®

Manual Programming VEND & OPL



F & B: Full Text Menus



★ FEATURE

- Full Text Displayed in Manual Programming, no more cryptic abbreviations
- 34 languages

+ ADVANTAGE

- No manual needed to understand what each menu and content is about

■ BENEFIT

- Faster and more efficient Manual Programming

F & B: Time of Day Pricing (incl. Modifiers)



★ FEATURE

- Time of Day Pricing (incl. Modifiers)

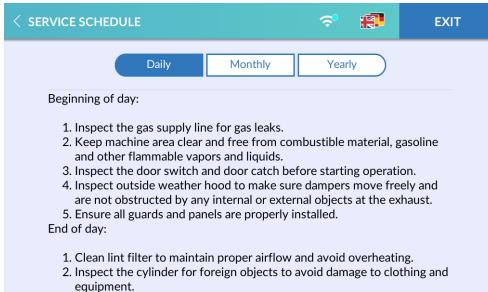
+ ADVANTAGE

- Program different Prices for Cycles and Modifiers based on the Time of Day

■ BENEFIT

- Streamline your business and boost sales even when business is slow

F & B: Service Schedule



★ FEATURE

- The control contains all service schedules to maintain the machines in good working order

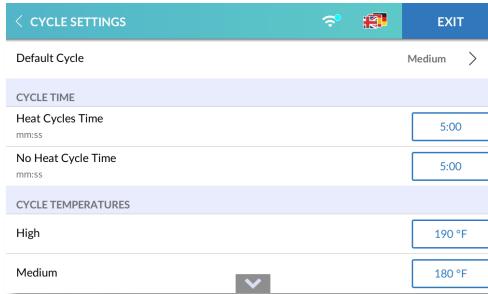
+ ADVANTAGE

- No need to search for the correct maintenance schedule, it's part of the control

▪ BENEFIT

- Everything is at hand, no need to look for paper or digital manuals

F & B: Full Cycle Programming



★ FEATURE

- All Settings can be changed through the Manual Programming

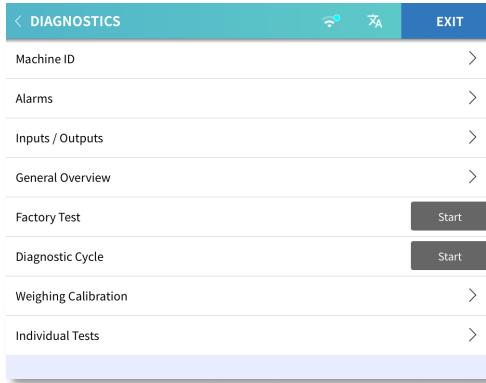
+ ADVANTAGE

- Even when you have no access to a PC or Mobile, you can still make changes to your machine

▪ BENEFIT

- No time loss, get straight to action

F & B: Improved Diagnostics



★ FEATURE

- Improved Diagnostics

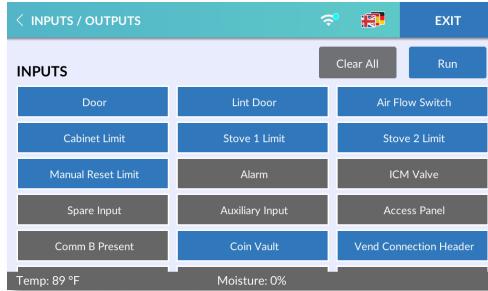
+ ADVANTAGE

- A complete menu dedicated to providing tools and data in order to improve service

■ BENEFIT

- Less time wasted on fixing these machines

F & B: Improved Inputs/Outputs Menu



★ FEATURE

- Improved Inputs/Outputs Menu

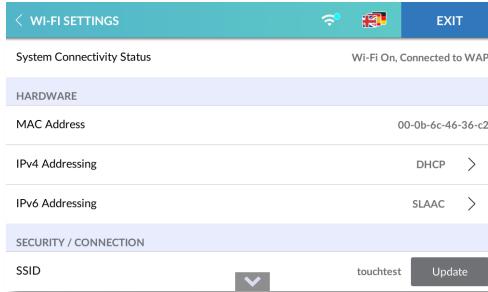
+ ADVANTAGE

- Check Analog and Digital Input & Output States
- Manually activate Outputs
- Full text, no Abbreviations

■ BENEFIT

- Directly test the components which you believe are suspect to being faulty
- Focused on Service

F & B: Futureproof Networking



★ FEATURE

- Futureproof Networking

+ ADVANTAGE

- Our controls are equipped with the technology that makes them future proof:
- IPv4

▪ BENEFIT

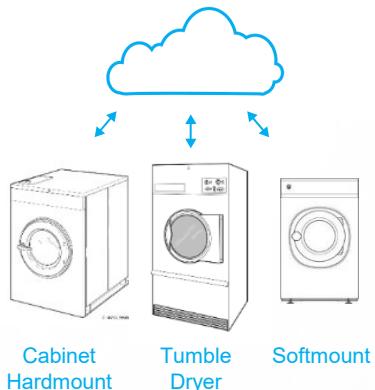
- No need to reinvest

XControl FLEX®

Networking VEND & OPL



F & B: Common Networking Interface



★ FEATURE

- Common Networking:
Using the Cloud interface
all machines can be
networked, either Ripon or
Czech made

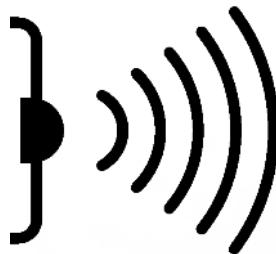
+ ADVANTAGE

- All machines can be
networked using the same
technology, while with older
controls this is not possible

▪ BENEFIT

- Networking is open to all
XControl FLEX® -controlled
machines
- Visibility
- Programmability

F & B: Infrared communication



★ FEATURE

- Legacy Infrared protocols expanded

+ ADVANTAGE

- Use current IR equipment to program & audit all product platforms (only Ripon made machines)

. BENEFIT

- Create new and improved after sales support opportunities, providing comfort and security to customers
- Provides service technicians key information to diagnose and correct problems with speed & accuracy
- One and done!

F & B: Cloud services



★ FEATURE

- XControl FLEX® Controls can be connected to the Cloud and benefit from all the benefits of i-Trace®

+ ADVANTAGE

- Easy to set up
- Check on your machines wherever you are located
- Machine programming and business management - all in one place
- Deliver the best possible experience for the end user

. BENEFIT

- Be more performing, with less effort

F & B: Break-in Alarm



★ FEATURE

- Break-in Alarm triggered when illegal opening of the coinbox occurs

+ ADVANTAGE

- Triggers an alarm inside the laundromat or sends text/e-mail notifications

. BENEFIT

- Peace of mind
- No tampering with your income

XControl FLEX®

FAQ



FAQ

Won't touchscreens get damaged easily?

All XControl FLEX® Platform have a protective plastic layer (IML) in front of the display to protect the display itself, a bit like a protective cover for a smart phone. This IML provides scratch and shock resistance to protect the actual touch screen.

FAQ

Will the protective plastic layer yellow over time?

Due to the nature of plastic, almost all clear plastic will yellow or discolour overtime when exposed to natural or incandescent light. Some plastics are worse than others and we knew this going in so we were very selective on the material we chose in the very beginning. Since the IML also has a decorated film moulded into it, that helps us protect the plastic even more. We had very little discoloration when we tested the plastic by itself and then we noticed that the yellowing decreased with the film added in over the life of our testing process with an exposure to UV and CWF @ 60°C.

FAQ

What tests/standards does ALS have for the scratch resistance on the protective plastic layer?

The scratch standards for the IML are the same as we have today on the overlays which utilize the standard 2H hardness test. The largest difference with these IML's is that we have a high gloss black surface, versus the overlays we utilize today have a textured dull surface. These IML's will hold up to standard use without scratching. With the display screen set to such a high brightness, that helps reduce any small surface scratches that the end user will notice. Same as a cell phone, when it is off you may see some small scratches but when it is powered on, you do not notice them.

FAQ

Can I keep on using my old card readers?

- If your current card readers use the pulse interface, yes.
- If your current card readers use the serial interface, the software of the card readers will need updating or you need to replace them by new updated ones, after that you are all set.
- ALS Engineering is contacting registered card reader companies with an updated spec of the card reader protocol.

FAQ

Will I still be able to use the same size coin boxes on stack tumblers?

Yes, the coin boxes remain the same as the ones currently used.

FAQ

What Payment Options allow Top-Off?

Will Top-off work via Coin? Yes

Will Top-off work via Pulse? Yes

Will Top-off work via Network Vend? Yes, it will work via i-Trace®

Will Top-Off work via Card? Yes

FAQ

Can I use a mix of XControl + and XControl FLEX® to be connected to i-Trace?

XControl+ is compatible with Trace Tech®

XControl FLEX® is compatible with i-Trace®

Both cannot use a single software

FAQ

Are XControl FLEX® Controls delivered with Wi-Fi capability as standard?

Yes, all XControl FLEX® Controls have a Wi-Fi Module as a part of the PCB. To enable networking to the cloud, you will need to have an ALS Gateway.

Tumbler Dryers DX

Machine Features



Available Capacities

- DX13 ▪ DX13/13
- DX16 ▪ DX20/20
- DX24
- DX25
- DX34

* Denotes Market Specific Digits below
“T” CSA Approved
“G” CSA Approved
“U” IEC/CE/EAC Approved
“A” Australian/IEC Approved
“H” China RoHS/IEC Approved
“J” Japan
“K” KGS/IEC Approvable
“R” IEC/CE Approved for Saudi Arabia



Tumblers 101

1. WHAT DOES A TUMBLER DO?

- 1.1. Evaporates and Evacuates Water from Textiles
- 1.2. Most Energy Intensive Part of Laundry Process; Up To 60% Of Total Energy Costs

2. HOW DOES IT DO IT?

- 2.1. Motor Starts; Exhaust Fan Pulls Air In
- 2.2. Air Moves Overheat Source
- 2.3. Heated Air Passes Through Rotating Cylinder
- 2.4. Saturated Air Exhausted

3. WHAT VARIABLES IMPACT DRYING?

3.1. Time

- 3.1.1. Energy (Temperature)
- 3.1.2. Water Molecules Vaporize 540 Cal/G°C; 2257 Kj/Kg; 970.4 Btu/Lb.

3.2. Airflow

- 3.2.1. Optimize Contact with and Evacuation of Heated Air to Max. Moisture Saturation with Min. Energy Input

3.3. Load

- 3.3.1. Composition
 - 3.3.1.1. Different fabrics require different combination of TEA to optimal results

3.3.1.2. Cotton, Terry Towels

- 3.3.1.2.1. 1 Kg Per 18-25 Liters of Drum Volume;
Approx. 0.04-0.55kg/L; 2.5-3.5 lbs./Cu Ft

3.3.1.3. Synthetics and Blended Fabrics

- 3.3.1.3.1. 1kg Per 50-60 Liters Drum Volume; Approx.
0.017-0.02kg/L; 1.04-1.25 lbs./Cu Ft

3.3.2. Size

- 3.3.2.1. Not About Fitting as Much as Possible In The Drum.
- 3.3.2.2. Too Much or Too little for Given Unit Capacity = Inefficient Drying

3.4. Residual Moisture

- (Load Weight After Extraction – Load Weight Before Wash x 100 / Load Weight Before Wash)

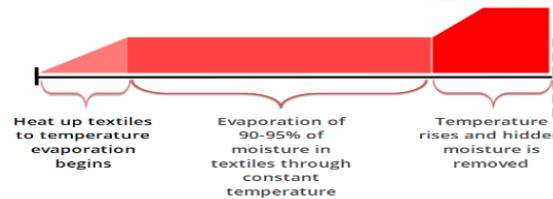
- 3.4.1. Lower Residual Moistures Require Increase in one or more TEA Variables

- 3.4.2. Level of extraction in WX largest single variable determining drying time/energy use

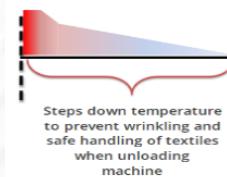
- 3.4.3. Extraction more efficient tumble-drying removing water (too a point).

Drying Process: Two steps

- Drying = Evaporation of the moisture from the load
 - Stage 1: Heat up textiles/laundry to temperature and evaporation begins (2-5 minutes)
 - Stage 2: Evaporation of 90-95% of moisture in load through constant temperature (20-30 minutes)
 - Stage 3: Removal of hidden moisture through temperate rising (5-10 minutes)



- Cool Down = Lowers the air temperature to cool down the load; preventing wrinkling and allows for safe handling when unloaded.



Tumbler Market Expectations

- Drying Time
 - 30 Minutes or Less Desired
 - 15-60 min acceptable depending on load-type and segment
- Energy Consumption
 - Low Cost to Operate
 - Longer Drying Time = Using More Energy
- Easy to Use
 - Controls Simple (Load, Press Start)
 - Time Expires, Open Door, Remove Dry Clothes
- Durability
 - Want to Last Forever
 - Need to Function Well in Abusive Environment
- Aesthetics
 - Units Look Good Even After Prolonged Use

Factors Impacting Perception

▪ WASHERS

- Lower G-force Washer-extractors (80 to 180 G-force)
 - More retained moisture requires longer dry time or increased drying capacity
 - Costs 15x more dry 1kg of water in dryer vs extract in washer
- Washers-extractors Process 1-2 Loads Per Hours; Tumble Dryer Must Do Similar
 - Keeps from having wet linen waiting
- Tumble Dryers Min. One Size Larger than Washer-extractor.
 - Required to ensure adequate air flow; dry times increase otherwise

▪ LOAD SIZE/COMPOSITION

- Linen Material and Weave
 - Composition changes moisture retention and dry time; mixed loads most difficult
- Load Size vs Tumbler Capacity

▪ INSTALLATION

- Adequate Make-up Air / Proper Venting
- Enclosing the Tumble Dryers / Segregate Make-up Air Supply
 - Each exposed face loses 2% of the rated BTU input; Enclosing reduces emission to user-area up to 80%.
 - Does not use conditioned room air for make-up air.
 - Reduces user exposure to noise from motors, belts, chains and the airflow in the exhaust duct
- Adequate Service Space Backside of Unit
 - Difficulty to service repair results in not being done

Tumbler Dryers DX

What makes DX tumble
dryers different?



What Makes DX Tumblers Different?

- Industry Leading Reliability/Durability
- Life Cycle Testing
 - *30,000 Cycles (Equivalent to 20,000 hours or 10 years)*
- Accelerated Component Testing
 - *Motor (120,000 cycles)*
 - *Door slam (50,000 cycles)*
 - *Lint door slam (10,000 cycles)*
 - *Heat circuit (250,000 cycles)*
- Capacity Testing
 - *50 Test Stations*
 - *Use weights to “overload” capacity*
 - *Test to Standard Cycle and Rapid Stop-Start Cycle (70,000 cycles)*

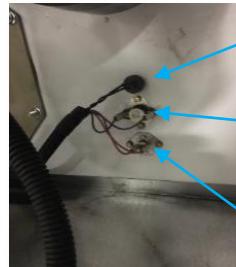
What Makes DX Tumblers Different?

- Usability Features
- Self Clearing Lint Filter
 - *Lint screen flexes w/ airflow; automatically clearing lint into storage area for daily removal (compared to every 2-3 loads).*
- Large Door Openings
 - *Easy to load and unload laundry*
- Belt Drive System
 - *Less noisy than competition.*
 - *Utilize self-adjusting belts, reducing maintenance costs.*
- High Performance Gas Burners
 - *Ignites instantly, reaches temperature quickly, efficiently distributes heat.*
 - *Reduces drying times*
 - *Increases energy savings*



What Makes DX Tumblers Different?

- Usability Features
- Main Diagnostic Components Available From The Back



Thermistor

Cabinet Limit
Thermostat

Cabinet Limit
Manual Reset

- Input/output Board Located In The Back Of The Unit For Easy Service/Diagnostics



What Makes DX Tumblers Different?

- Usability Features
- Reversing All Capacities
 - Benefits:
 - Opportunity for increased vend price for reversing units for larger items
 - Stacks Will Have Reversing Available
 - Single Phase Reversing Available On 25-75# And Stacks
 - Vended And OPL Reversing Availability
- Third Party Payment Wire Run
 - Benefits:
 - Easier Installation of 3P Payment Systems
 - All vended stack tumblers will come with ¾" OD / ½" ID conduit from the back of the unit to each control box compartment to facilitate the running of after-market payment system wiring with following payment actuation options
 - > Prep for Coin
 - > Coin Drop Installed
 - > Prep for Card (also comes with transformers in each control compartment)

What Makes DX Tumblers Different?

- Usability Features
- Decreased Operational Noise
- Benefits:
 - *Equivalent To Or Less Than Normal Conversational Noise*
 - *Decreased dB rating of ~4.5% on average (~3% incl. 170/200)*
 - *Average dB rating:*
 - > *60 dB (Singles, small & regular)*
 - > *64 dB (Stacks)*
 - > *65 dB (Large singles)*

What Makes DX Tumblers Different?

- Usability Features
- Consolidated Voltage Offerings
 - Benefits:
 - Less Motor Inventory On Distributor Shelves
 - Price Sheet Simplification When Ordering
 - Less Variables For Stocking Purposes
 - Consolidation: 29 voltage options to 13;
 - 10 motor part numbers: all caps and voltage
 - Gas/Steam Voltages:
 - > B – 100-120V/50-60Hz/1Ph
 - > X – 200-240V/50-60Hz/1-3Ph
 - > N – 440-480V/50-60Hz/3Ph
 - > P – 380-415V/50-60Hz/3Ph
 - > Q – 200-240V/50-60Hz/3Ph
 - Electric Voltages:
 - D – 200-208V/50-60Hz/1Ph
 - E – 230-240V/50-60Hz/1Ph
 - F – 200-208V/50-60Hz/3Ph
 - G – 230-240V/50-60Hz/3Ph
 - H – 380V/50-60Hz/3Ph
 - J – 400-415V/50-60Hz/3Ph
 - K – 440V/50-60Hz/3Ph
 - L – 460-480V/50-60Hz/3Ph
- Voltage/Frequency Compensation
 - Benefits:
 - Improved Drying Performance
 - Maintains constant airflow over incoming voltage fluctuations between the following ranges:
 - > 90-132V/50-60Hz
 - > 180-264V/50-60Hz
 - > 342-456V/50-60Hz
 - > 396-528V/50-60Hz
 - Standard on all tumbler capacities
 - Increased 50Hz performance and airflow to match that of 60Hz units

What Makes DX Tumblers Different?

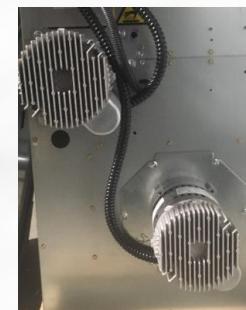
- Usability Features
- Enclosed Back
 - *Benefits:*
 - *Easier Access To All Rear Mounted Parts*
 - *Overcome Competition Claims Full Back Is Safer*
 - *Only one guard to remove instead of multiple guards for each component*
 - *Standard on 50-200# capacities*
- Direct Drive Blowers
 - *Benefits:*
 - *Better Balanced Fans*
 - *No Fan Belt Squealing*
 - *No Fan Pulleys, Belts, Bearings, Etc. To Service Or Stock*
 - *All capacities*

What Makes DX Tumblers Different?

- Manufacturing Excellence
- Lean Manufacturing
 - *Empower and Enable Production*
 - *Each worker responsible for their part of assembly process*
 - *Pride of workmanship, low worker turnover*
 - *Constantly Improve Tools and Process*
 - *Conduct Kaizen events improve product quality and workplace environment*
 - *Provide visual work instructions, double checks, flexing*
- Full Testing and Auditing
 - *100% Run and Inspected*
 - *Frequent Extended Audits*
 - *2-3% of units receive additional testing with a load*

What Makes DX Tumblers Different?

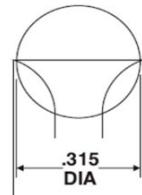
- Unique Technology
- Custom Frequency Controlled Drives
- Benefits:
 - Soft Start/Stop
 - Decreased Operational Noise
 - Longer Belt Life
 - Reduced Belt Slip
 - Less Service Calls
- Customized Variable Speed Motor
 - Benefits:
 - More Efficient, More Compact & More Power Density
 - Ability To Run On Large Voltage Spectrums & Fluctuations
 - More Consistent Tumbling Action (Basket Rotation)
 - Improved Diagnostic Capabilities
 - Ability to communicate any errors to the front-end control
 - Incorporates A Self-adjusting Spring Tensioning Method
 - Improved Serviceability = Less Down Time



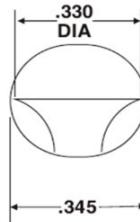
What Makes DX Tumblers Different?

- Unique Technology
- Patented Drywall Screw Solution
 - *Designed to reduce tumbler damage*
 - *Cylinder hole design allows drywall screws to pass through.*
 - *The .330" head diameter of drywall screws susceptible to lodge in a standard .315" tumbler cylinder hole.*

Conventional
Design



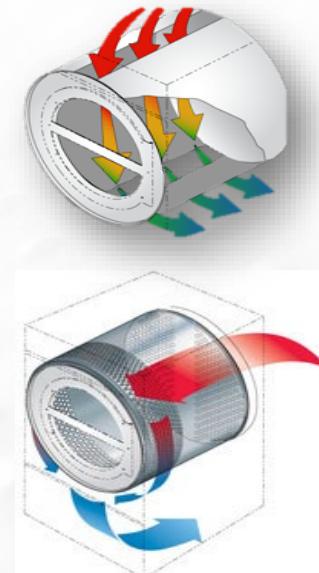
ALS
Design



Available Capacities
DX13 TO DX70 (no DX90)

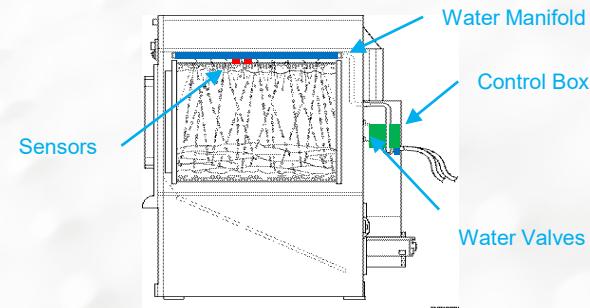
What Makes DX Tumblers Different?

- Unique Technology
- Airflow Optimization
- Benefits:
 - *Balanced Cylinder Dimensions*
 - Too larger diameter result in air bypass.
 - Too small diameter results in lack of load separation.
 - *Airflow Matched to Heat*
 - Too much airflow inhibits the load to get up to temperature quickly
 - Too little airflow does not remove the moisture fast enough
 - *Pattern by Capacity*
 - Vertical airflow (top to bottom)
 - 25,34,55,77,90
 - Axial airflow (back to front)



What Makes DX Tumblers Different?

- Unique Technology
- Fire Suppression System
 - If excessive temperature in cylinder detected...
 - shuts down electrical to front of the tumbler (including the fan and cylinder)
 - Water valves are activated for 90 seconds (12 gallons / 45 litres)
 - Auxiliary alarm output activated
 - Main tumbler control locked out until reset (in locked control box)
 - Control continues to monitor; reactivates if necessary



What Makes DX Tumblers Different?

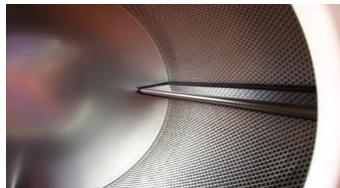
- Usability Technology
- Overdrying Prevention Technology (OPT)
 - Reduces Costs; Pays for Itself
 - Energy/Utility
 - Labor
 - Linen Replacement
 - Machine Automatically Stops When Load Dry
 - Based on Electrical Conductivity of Load
 - Simple, Maintenance Free Operation
 - Lifter Used as Sensor; Isolated from Cylinder
 - Laundry Load Provides Conductance from Lifter to Cylinder
 - > Rotational OPT Switch Receives Constant Signal; Sends To Micro Controller

DX MOISTURE SENSING SURVEY

- 79% respondents believe laundries overdry by more than 8 minutes per load.
- 84% respondents believe only 20% of managers realize they are over drying.

What Makes DX Tumblers Different?

- Unique Technology
- How Does OPT Work?
 - Program Machine to Desired End Moisture Level
 - *Moisture Level Options: 0, 1, 3, 5, 7, 10, 15, 20, 25, 30, 35, 40%*
 - *Fine Tune by Programming Additional Heat Time*
 - *Six Load Material Selections*
 - Start Machine
 - *With Full Load of Laundry*
 - Load Conductivity Measured Between Isolated Lifter and Cylinder Wall
 - *As The Load Dries, Conductivity Decreases*
 - Load Conductivity Signal Transferred from Cylinder to Switch
 - *Switch in Center of Cylinder Bulkhead*
 - Switch Sends Signal to Control
 - *Via Stationary Wires*
 - Machine Stops When Desired Moisture Content Attained
 - *Control Calculates Actual Moisture Level*

ALS

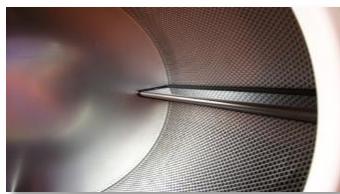
534 square inches of load contact



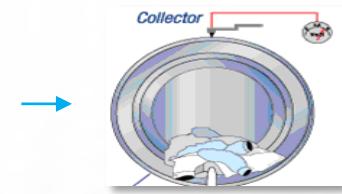
Maintenance free signal transmission



12+ moisture level settings

Electrolux/ Wascomat

534 square inches of load contact



Maintenance free signal transmission



12+ moisture level settings

ADC

2 square inches of load contact



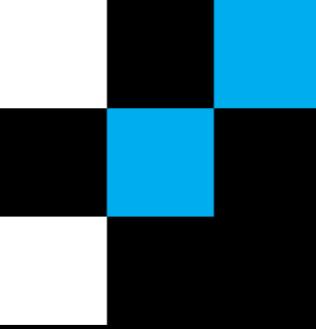
Stationary bulk head



3 moisture level settings

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