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G | UI

Release

Common Controller – GUI 3.0

Graphic Principles and Application

7” and 10” Screen Formats

January 2020 – Rev1

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GUI Principles

Usability and Accessibility Statement

As a global leader in commercial food service equipment, Welbilt is committed to ensuring the highest quality and safety of our products. We focus on the end-user and incorporate human factors and user-centered design principles to maximize accessibility and usability of our equipment.

The GUI Principles outlined in this document is predicated on “principles of use” and best-practices for touchscreen-based user interfaces. It is heavily based on well-established UI / UX design standards, as well as, World Wide Web Consortium (W3C) and Web Content Accessibility Guidelines (WCAG), to accommodate the widest user base including those with disabilities.

These include:

- Color blindness, low vision, or limited perceptions of color
- Deafness and hearing loss
- Limited haptic movement, dexterity or manipulation strength
- Speech impairment or disabilities
- Photosensitivity
- With some accommodations for learning disabilities and cognitive limitations

By adopting these principles, not only will it make it more intuitive for end-users, a common user experience can be shared across the entire Welbilt portfolio of Brands.

Note: The principles espoused in this document are relevant to a variety of web and cloud based devices such as desktops, laptops, tablets, and mobile devices, however specifications outlined in this document are focused on touchscreen interfaces (7” and 10”) that are directly mounted to the appliance.

Table of Contents

1. Introduction

Introduction

Flexible and Adaptive

The GUI Principles outlined in this document were design to be flexible and adaptive across the broadest range of equipment types. It takes into consideration screen sizes, resolutions, orientations, positioning and includes split screen modes of operation.

Since it's nearly impossible to anticipate every screen type and subsequent layout, a "palette" of graphics, along with application principles were created to enable GUI developers to maintain a consistent design language, behavior and feel of the GUI.

The "palette" of graphics consists of colors, icons, widgets, fonts, screen layouts and other GUI graphics in a scalable, digital format that promise's to make everyone's lives easier developing *and* using graphical user interfaces.

Flat Design Style

When describing the "look and feel" or "style" of GUIs, Welbilt has adopted what is known as a "Flat Design Style" of graphical user interfaces. While this style is currently prevalent in the marketplace, it was intentionally adopted because of it's simplicity in graphical application. It is devoid of rendered objects (ie. "Glossy M&M Buttons") or use extensive cast shadows as in earlier user interfaces. This style is the result of UI / UX designers deliberate efforts to minimize the amount of graphical content that needs to be created and rendered, resulting in a flat, but clean appearance.

General Market Focus with Deference to Key Customers

The Welbilt GUI is designed primarily for General Market applications, but takes into consideration many of our key customer's GUI standards and requirements. This is reflected in the selection of colors, icons, screen layouts and graphical content described throughout this document.

To better manage and facilitate customization, the GUI enables the following customization:

- Product Imagery: (used for recipe and menu identification) can be imported, cropped and scaled by the customer
- Background Color: If warranted, the back ground color of screens may be changed, but only if it does not require subsequent changes to other colors used in the GUI.
- Home Screen Configuration: Icons and Imagery may be configured for specific customer requirements

Immediate Application – "Reskin" without addressing existing workflows and behaviors

The GUI Principles only go so far as to describe the graphical applications within screens and some behaviors associated with widgets, but does not address workflows and their associated behaviors. As such, all graphical elements may be implemented immediately to existing Welbilt touchscreens without (theoretically) affecting existing work flows, navigation or screen behavior paradigms.

https://www.nngroup.com/articles/top-10-application-design-mistakes/

GUI - Philosophy and Principles

Philosophy:

"Learn one piece of Welbilt equipment…know how they all work…"

Overarching Principles:

- "Familiarity by Precedence" - Adopting well-established Haptic Paradigms
  - Computers, Smartphones, ATMs
  - Screen Hierarchy and Navigation
- "Consistency Breeds Familiarity"
  - Screen Layout and Graphics Placement
  - Rote Processes / UI Behaviors (Emerging)
- Use of Heuristics and "Self Discovery" – Intuitive to Use
- Adopts best-practices of UI / UX design
- Minimize layers to navigate - "drill downs" and button presses
- "Discernable Difference" - High Contrast / Easily readable at 2ft. vs 20ft.
- "Progressive Disclosure" – Appropriate level of information, when needed
- Minimize Language Usage and Translation…Brevity of Thought…Simple Concepts
- Maximize real-estate on screens – No Brand or EasyTouch logos
- Balance of negative and positive space – No over-crowding of graphics
- Communications by at least two means: icons, text and color
- Limited customization by Customer (Imagery and Logo)
- Exceptions become the rule thru adoption of principles

https://www.nngroup.com/articles/top-10-application-design-mistakes/

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Graphical ←

- Color palette
- Fonts
- Iconography
- Screen Layouts
- Gridding
- Buttons Design
- Widgets
- Usage for all Above

User Interface - Behavioral

- Navigation / Hierarchy
- Functions
  - Recipe Development
  - Menu Management
  - Settings
  - Many Others
- Gestures of Interaction and Operation
  - Swiping
  - Tapping (Doubles, Long Hold)
  - Pop-Ups
- Conditions / States
  - Highlight
  - Grey Out

Principle: The Behavioral aspects of the GUI "Drive" the Graphical aspects of the GUI…not the other way around.

2. Haptics and Gestures

User Interface – Haptics and Gestures

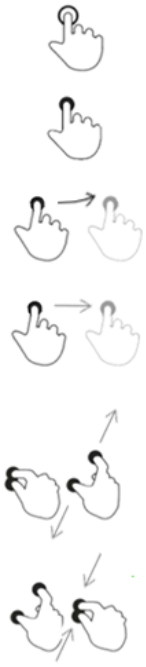
Purpose:

Establish a standard haptic interface with Welbilt touchscreens using well-known UX gestures (ie ATMs, Tablets, Droids, Smartphones). Haptics is defined as any form of interaction involving touch with the fingers to the touchscreen.

Principles:

- Incorporates industry UI / UX standards and best-practices for haptics
- Limit the range of Gestures to facilitate learning of GUI behavior by users
- Facilitate software development – Gestures already supported by QT App Framework

The primary Gestures for Welbilt touchscreens are described below.



Term	Haptic Description	Function / Behavior	Example
"Tap" (aka. "Short Press", "Press")	Momentary contact with finger and target on touchscreen (<1/2 sec)	Used for making selections or navigation among Screens	Selecting a Recipe, or navigating to Configuration Functions
"Long Press" (aka. "Press", "Press and Hold")	Prolonged contact with finger and target on touchscreen (>2 sec)	Used to induce secondary information or functionality of the selected target	Long Press of Recipe Button will display secondary options and / or functions of that Recipe (ie. Editing, Assigning Recipe)
"Swipe" (aka. "Flicking", "Swiping", "Scrolling")	Momentary contact and swiping motion of the finger across the touchscreen (<1/2 sec) - Vertical or Horizontal Swiping	Used for scrolling functions among Screens or navigate thru a series of options within Screens	
"Press and Drag" (aka. "Long Press and Drag", "Drag and Drop"	Prolonged contact with finger and target (ie. Icon, Picture, Button) and then dragging it across the touchscreen to a new location		1. Repositioning of "most-used" Recipe Icons to a prominent location on the touchscreen
			2. Assigning Recipes to Zones / Vats / Lanes
			3. Assigning Recipes from All Recipe Group to Sub-Groups
"Pinch Open" (aka. "Spread", Zoom In")	Contact with two fingers and the touchscreen, then either closing the fingers (pinching) or spreading the fingers apart (spreading)	Exclusively used to enlarge or shrink the viewing area of the touchscreen - "Zooming" functions	
"Pinch Close" (aka. "Pinch", "Pan Out")			

Note: The primary difference between Swiping and Scrolling is that Swiping implies navigating among multiple functions (“apps) , whereas Scrolling implies navigation within the same function (“app”). Both employ the same Gesture.

Source: https://manjubhat.wordpress.com/2014/04/06/tactile-vs-haptic-feedback/

Source: https://material.io/design/interaction/gestures.html#types-of-gestures

Source: https://uxplanet.org/time-to-press-85ac505d336b

Source: https://www.garciamedia.com/blog/scrolling_versus_swiping_whats_the_best_way_on_the_tablet/

Source: https://ux.stackexchange.com/questions/86819/standards-for-two-finger-touch-gestures

User Interface – Haptics and Gestures

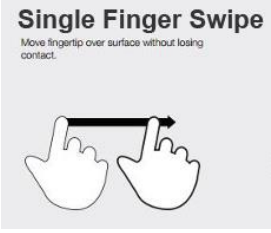
Purpose:

In addition to the haptic gestures described on the previous page, several other gesture's may be incorporated:

- Double Tap
- Single-Finger Swipe
- Double Finger Swipe

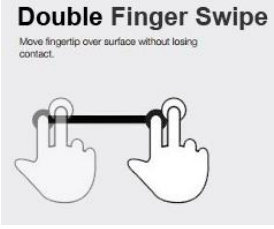
Used to induce secondary functions

Alternative to Press and Hold functions



Used to scroll among content or screens

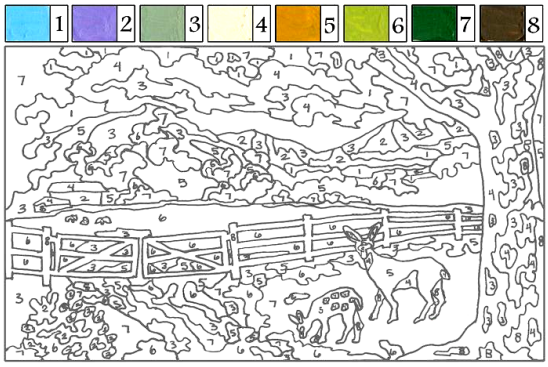
Horizontally or vertically



Used to scroll among content or screens where a single finger swiping may accidentally activate a functions

Horizontally or vertically

3. Graphics of the GUI

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Rev 3.0 - 2019


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Screen Formats

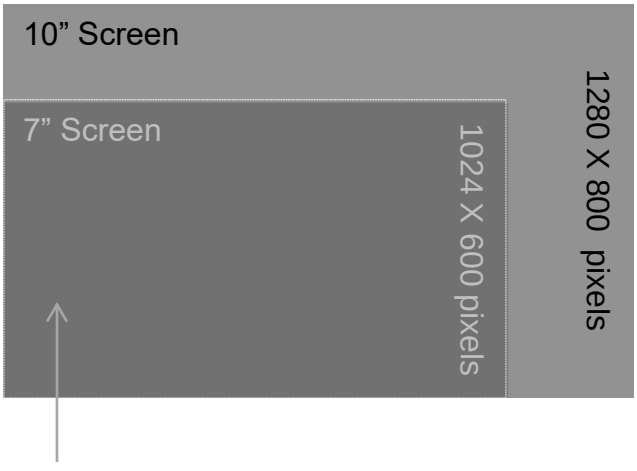
Purpose:

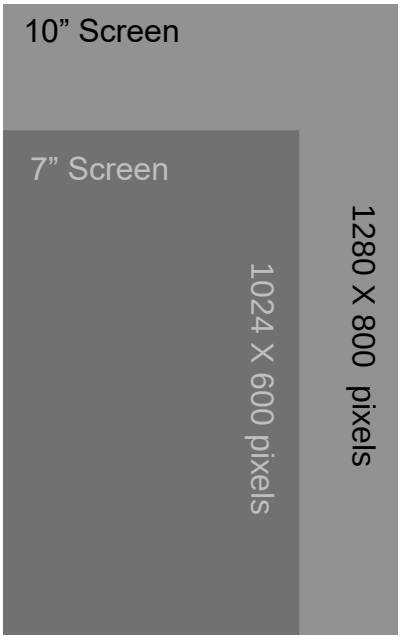
Create a consistent format and layout – “Rules” for placement of graphical elements and text on touchscreens.

Principles:

- Consistent and Intuitive Navigation among Equipment Functions
- Consistent Placement of Buttons and Information
- Flexible Field depending Functions and User Content

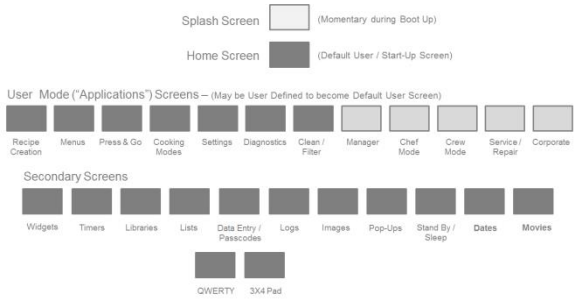
- 7” (1024 x 600) and 10” (1280 x 800)
- Vertical and Horizontal Format





Note: The GUI Standards outline in this document are predicated on the 7” Screen in Horizontal Orientation as an exemplar for subsequent touchscreen sizes and orientations. All GUI principles and standards apply.

4. Screen Types and Hierarchy



Screen Types and Hierarchy

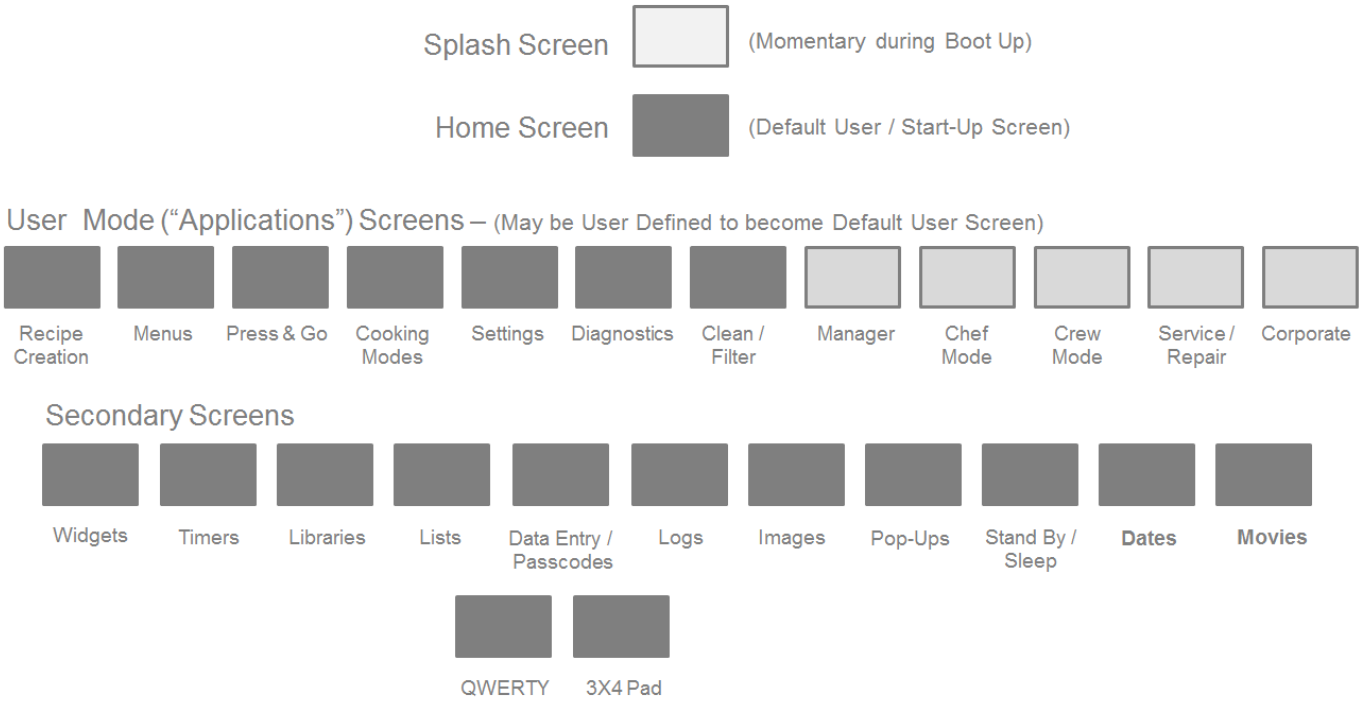
Purpose:

1. Establish a standard GUI architecture, with a logical hierarchy of screens (Functions and Work Flows) that enables easy navigation.

2. Minimize the number and varieties of screen types, across all equipment categories in order to simplify graphic applications and management.

Principles:

- Reduce complexity by eliminating or consolidating redundant screen types
- Establish basic graphic layouts for major screen layers and categories
- Same / similar Paradigms of Behavior of functions and navigation



5. Color Palette

Screen Format: Color Palette and Usage

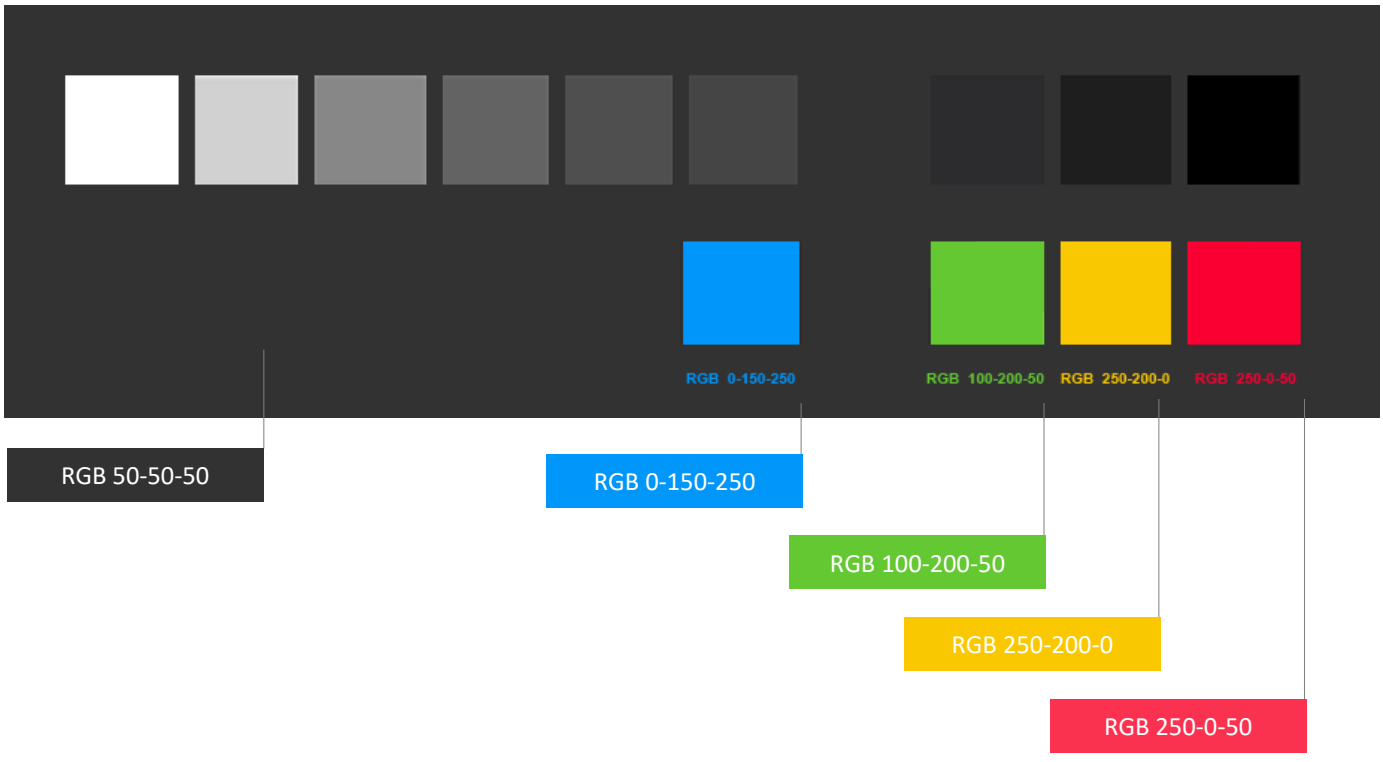
Purpose:

Provide a standard, simple and consistent palette of colors for the GUI that is applicable across the entire portfolio Welbilt equipment.

Principles:

- "Judicious Use of Color" – limited palette for consistency of use
- High contrast and visibility (Both Dark and Light Modes)
- Discernable Colors - Specific hues selected for those with limited color perception
- Clean / modern colors - Updateable
- GUI color palette based on Red, Green, Blue - RGB color scale
    - RGB colors are in multiples of 50, or rounded to the nearest whole 10

Note: No deviations are allowed, unless compelling reason to do so (ie. specific customer request).



https://uxmovement.com/buttons/the-myths-of-color-contrast-accessibility/

Screen Format: Color Palette and Usage

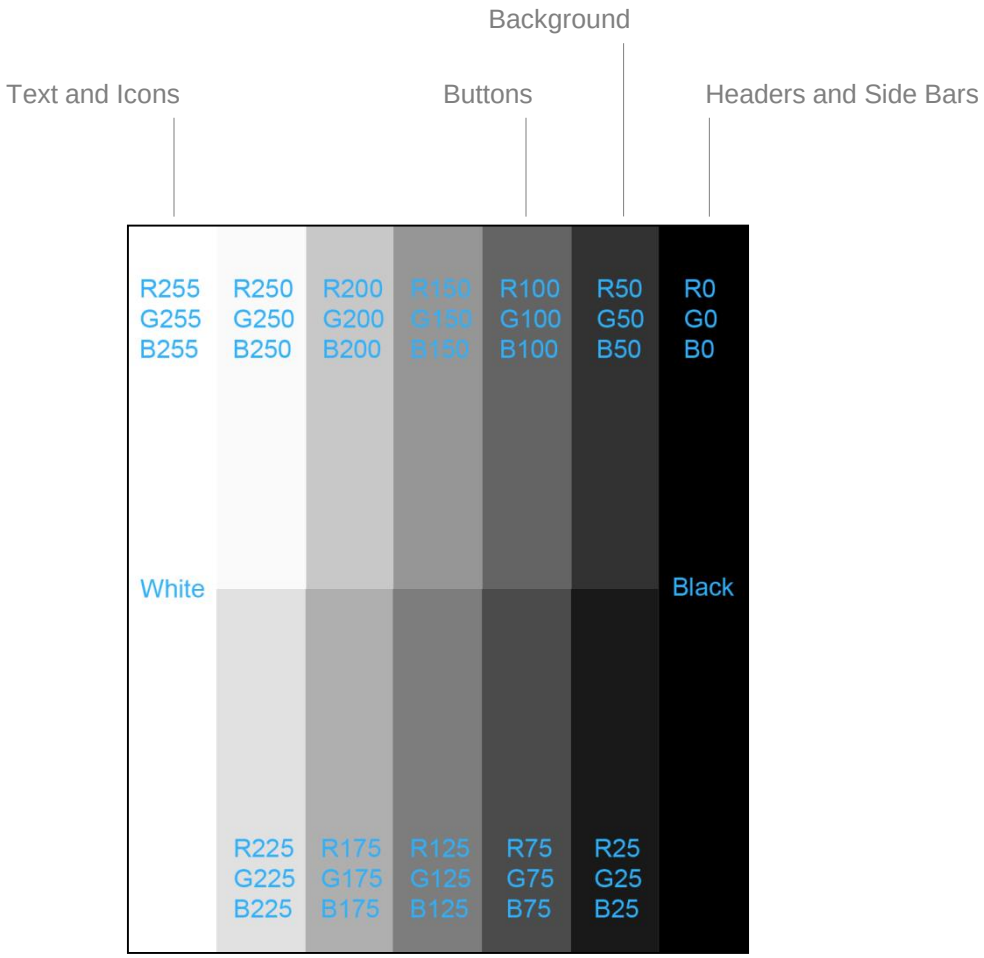
Purpose:

The Gray Scale is used for all “foundational colors” of the GUI including: Background, Header Bars, Buttons, Icons and Widgets.

The most common Gray shades are shown below. Additional shades of Gray and their application are outlined in subsequent sections of this document.

Principles:

- High contrast and discernible graphics for user screens
- Readily upgradable for future derivations with little effort



Screen Format: Color Palette and Usage

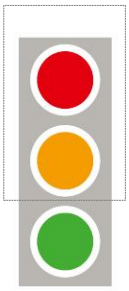
Purpose:

1. Provide consistent color usage in the GUI.
2. Establish hierarchy of colors based on equipment operating conditions.

Principles:

- Color usage follows a "Traffic Signals" paradigm to indicate "Escalating Urgency"
- Colors used for Progress Rings and Bars, Pop-ups, Warnings and other Widgets

Urgency Level

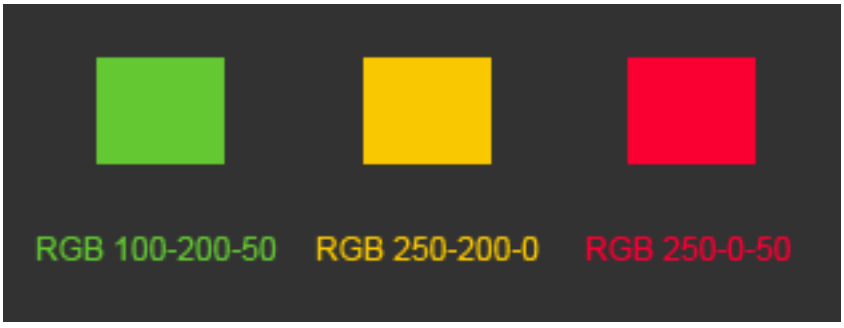


Red — Danger / Error : High Urgency. Requires immediate user attention

Amber — Warning / Caution: Medium Urgency. Indicates user interaction is eventually needed

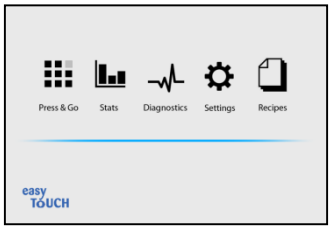
Green — Systems Normal: Low Urgency. No user interaction needed

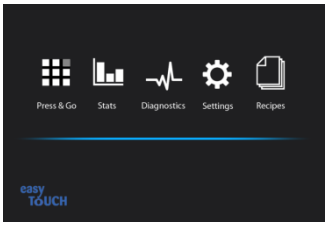
Note: "Blinking" or flashing of color elements as an "Attention Grabber" shall only be used with Caution (Amber) and Warning / Error (Red) conditions. Reference Page 68.



Note: RGB colors specified in this document are subject for testing of effectiveness on GUI touchscreens.

6. Screen Modes





Screen Modes: Dark Mode / Light Mode

Purpose:

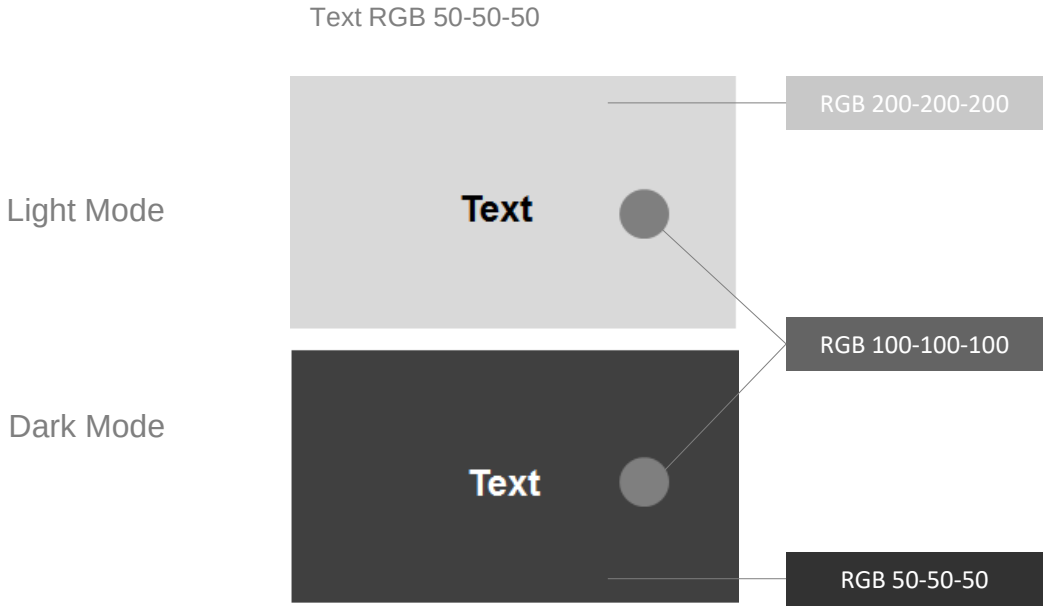
As a starting point, and to provide (some level) of customer customization for touchscreen appearance, a Dark Mode and Light Mode may be implemented.

This employs the use of only a Gray Scale as defined in the Color palette – Reference Gray Scale Page 19.

Note: Alternative color schemes (Background, Icons, Buttons, etc.) may be considered in future GUI developments, but not in scope of these standards.

Principles:

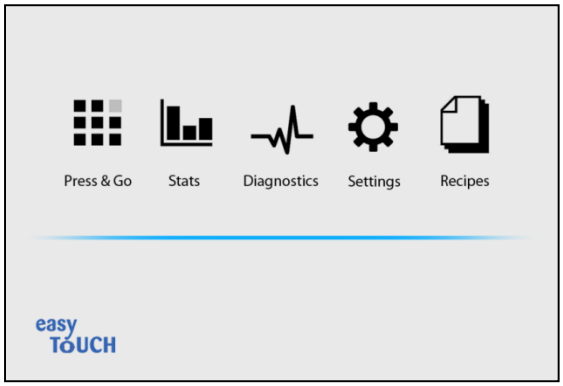
- High-contrast backdrop for graphical information to be clearly readable at varying distances.
- "Easy on the Eyes" in different light ambiences (eg. Front of House versus Back of House applications)



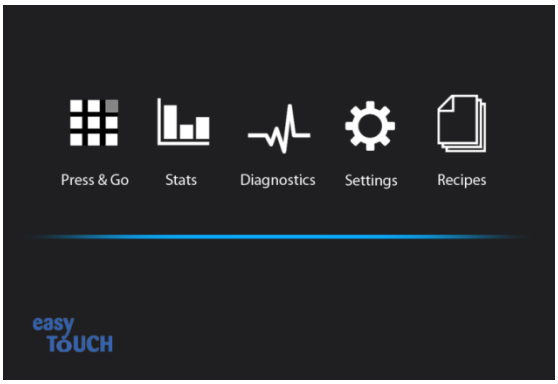
Note: The Dark Mode is used in this document.

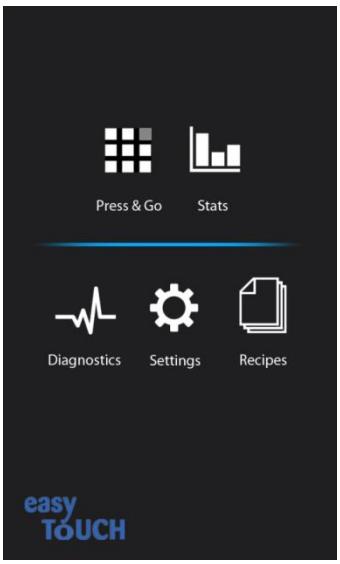
Screen Modes: Example Dark Mode / Light Mode on Home Screen

Light Mode

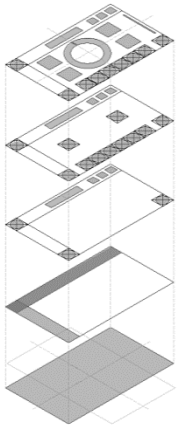


Dark Mode





7. Screen Layouts



Screen Layouts and Formats

Principles:

Screen layouts and formats are based on a foundational background with various layers of graphical content depending on equipment functions and user workflows. Screens may be composed with any number of variations, but generally follow principles of symmetry and hierarchy of information.

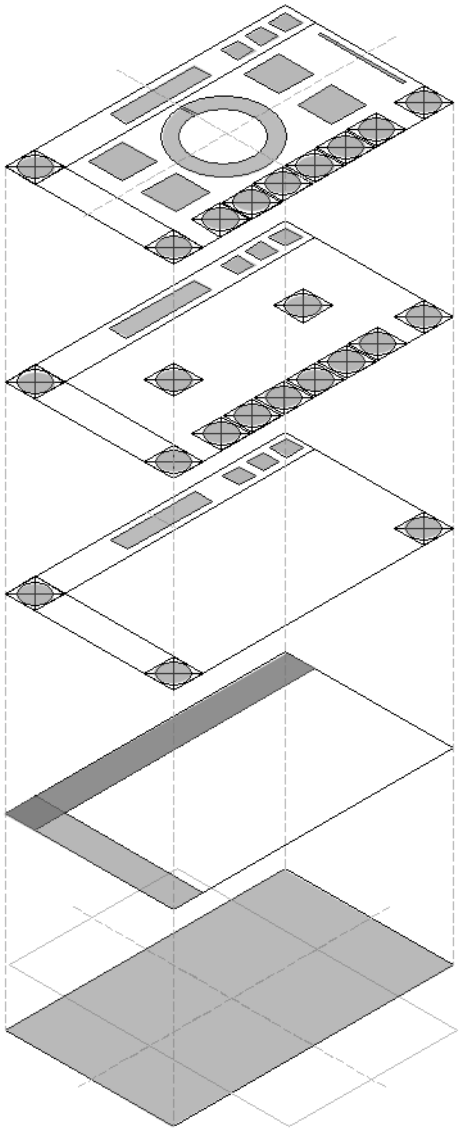
- Main Content Area / Work Flows
- Recipes / Menus
- Primary Widgets
- Prompts / Pop-Overs

- Main Content Area / Work Flows
- Secondary Icons / Functions
- Navigational Shortcuts

- Screen Title
- Priority Icon Locations
- Navigational Shortcuts
- Status Indicators

- Top Header or Side Bar

- Screen Orientation: Vertical or Horizontal
- Background: Dark Mode or Light Mode



7” Screen: Horizontal Format - Header Bar

Principles:

- Docking Bars / Headers provide consistent placement of graphical elements for both horizontal and vertical formats
- Maximize touchscreen real estate

Note: Header Bars are not used on the Home Screen.

7” Screen: Screen Title

Purpose:

The Screen Title is used to indicate which series of screens or functions the user is in.

- It is not used to convey messages or prompt users for actions.
- It is not used on the Home Screen

Principles:

- No Icons are used with Title (one less element to deal with, and avoids confusion as a selectable icon)
- Screen Title is 30 pixels tall (1/3 the Header Bar height) – 14 points
- Screen Title is centered on the Screen centerline
- Screen Title is centered within Header Bar

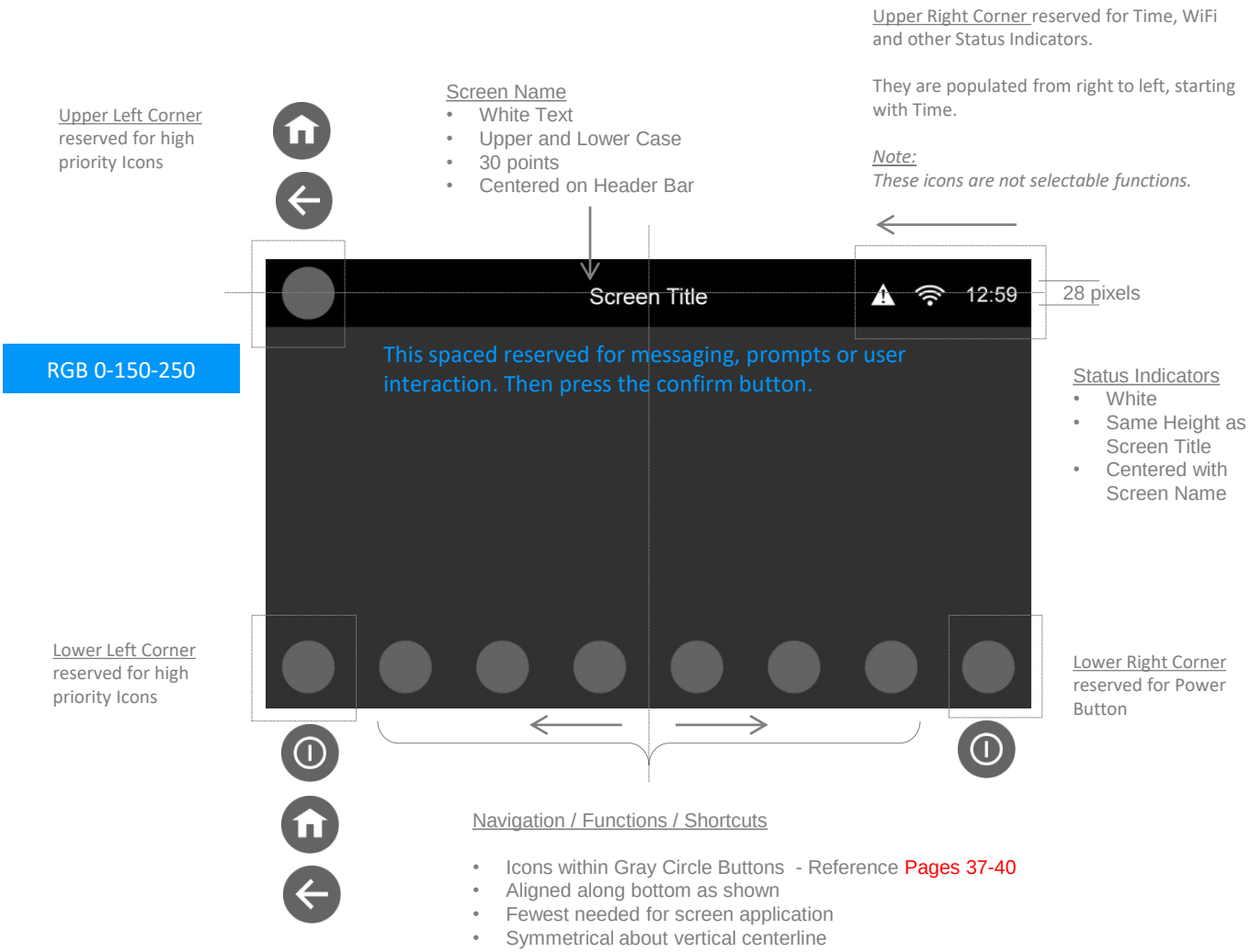
7” Screen: Horizontal Format – Graphics Placement

Principles:

Icons and Buttons are placed within the Headers as shown below.

- Header Bars: Used to place Screen Title (Centered) and Status Icons (right side). Upper Left Corner reserved for “High Priority” navigational or function buttons.
- Side Bars: Reference Pages 29-30.

Note: High Priority functions include: Back, Home, or Power Buttons

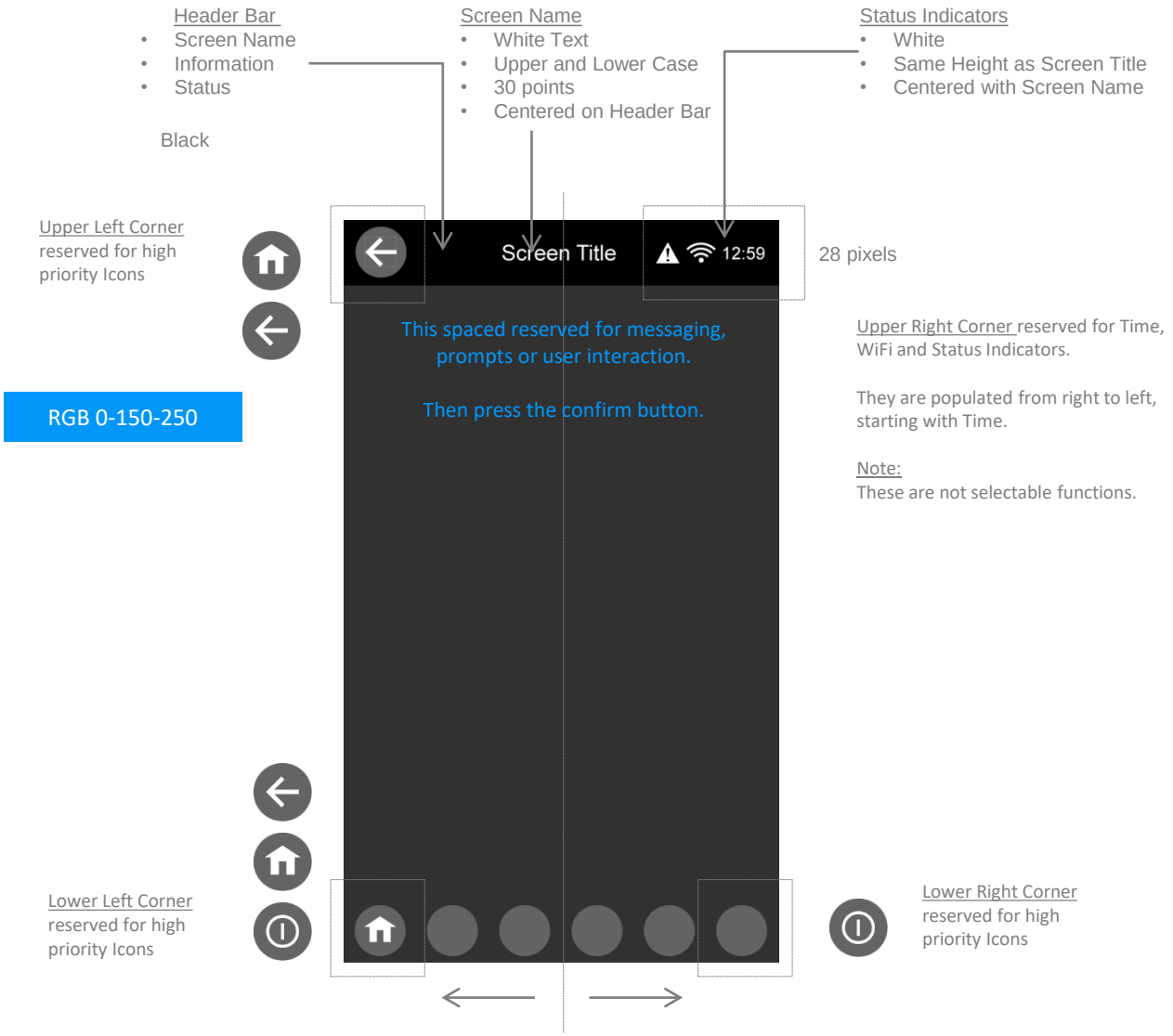


7” Screen: Vertical Format

Principles:

Vertical screen formats generally follow that of horizontal screen formats.

Note: Header Bars are not used on the Home Screen



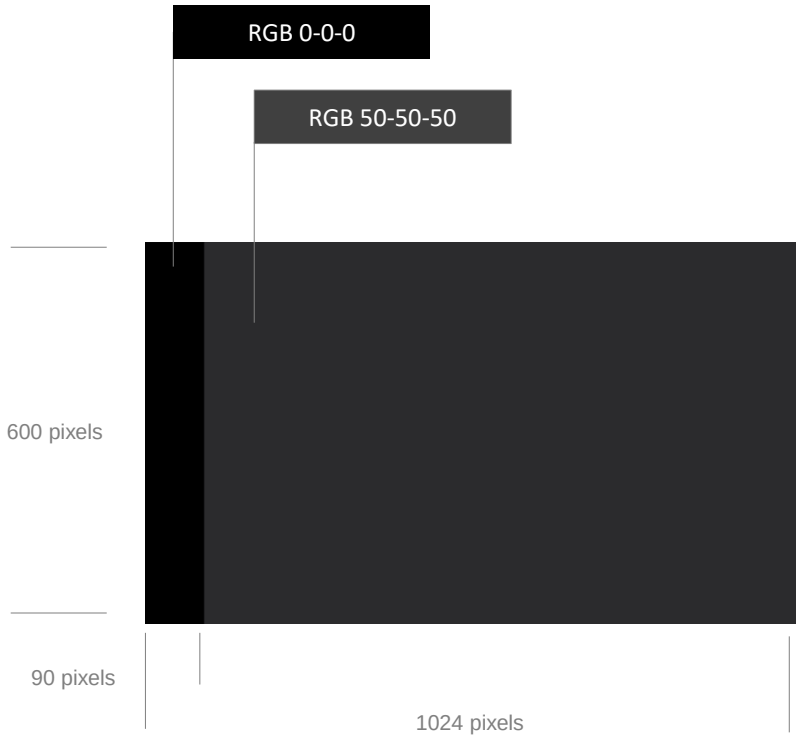
Navigation / Functions / Shortcuts
- Icons within Gray Circle Buttons - Reference Pages 37-40
- Fewest needed for screen application
- Symmetrical about vertical centerline
- Equally spaced

7” Screen: Horizontal Format: Side Bar

Principle:

Where screen real estate is better utilized without a Header, a Side Bars may be used. These are placed along the left and/or right side of the screens as shown below.

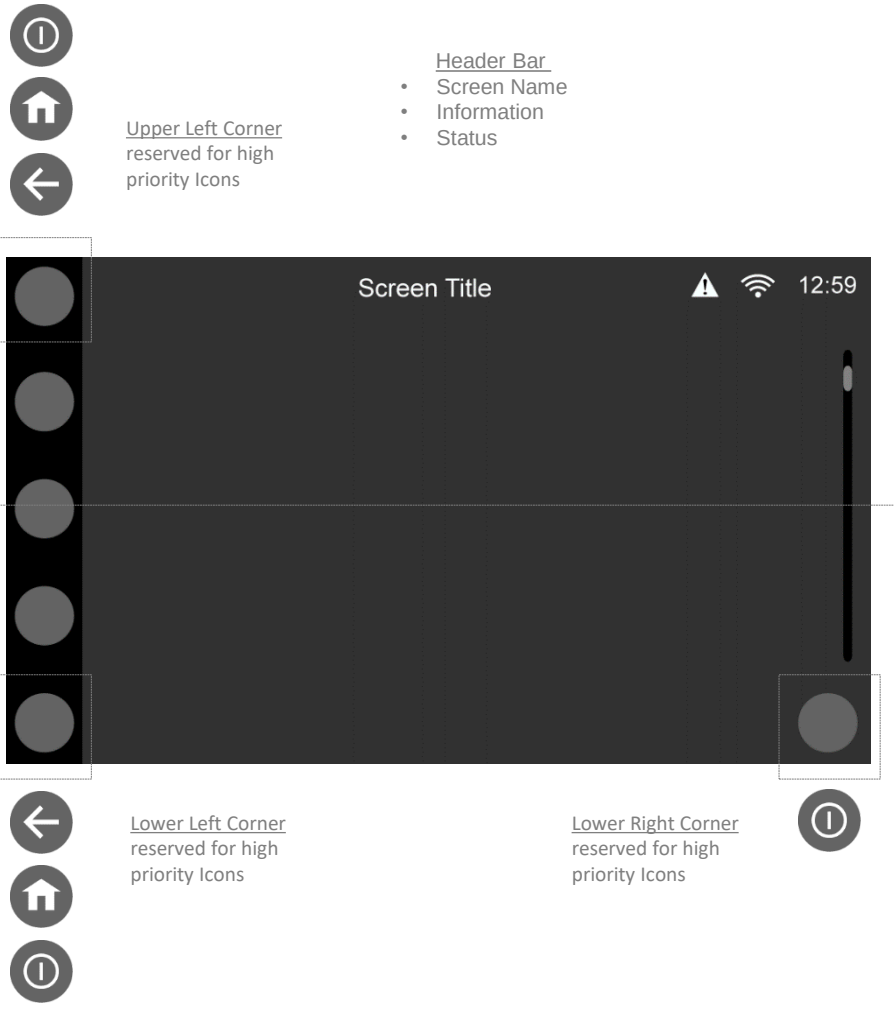
Note: Side Bars are not used on the Home Screen.



7” Screen: Horizontal Format: Side Bar

Principle:

Placement of Circle Buttons, Title Screen and Status Indicator Icons are shown below:



8. Fonts and Typography

Noto Sans

Fonts and Typography

Purpose:

Provide a consistent font that is clean, scalable and translatable across a wide range of languages.

Principles:

- Supports 20+ languages and character translation
- Clear and readable – “Clean”
- Scaleable – Vector-Based

- Usage:
  - Text will use Upper and Lower case
  - Regular – Most frequently used
  - **Bold** – Used for emphasis – high importance
  - Condensed – Used where space is limited – Square Buttons
  - *Italics – Not used in GUI standards (difficult to translate to character-based languages)*
  - Scale – Defined in subsequent pages of this document
  - Colors – Dependent on Light or Dark Mode

Note: Noto Sans is available in vector formats (.ai and .svg). Location TBD

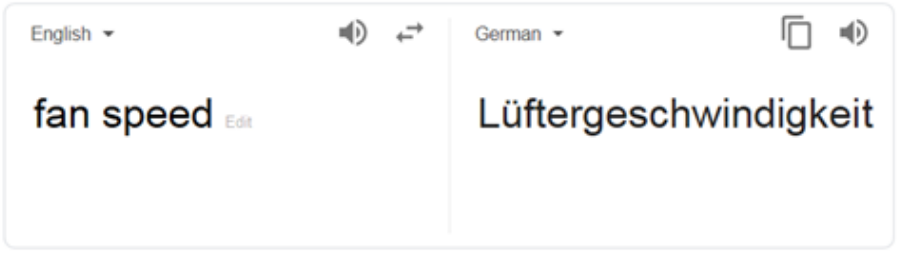
Text and Languages

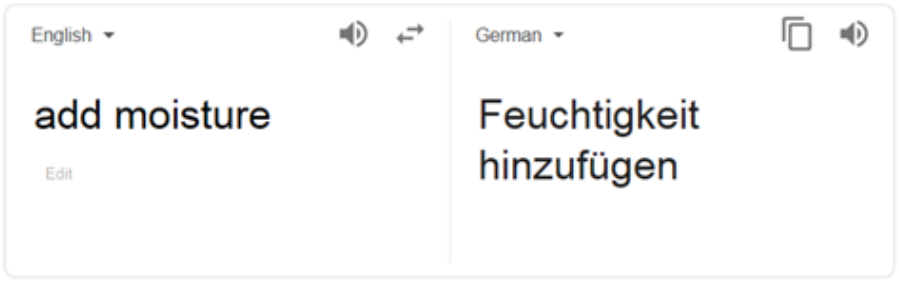
Principles:

- Brevity of Thought – “Less is More”
- Less text means less translation to other languages
- Minimize / eliminate use of arcane language: (ie “Polish Oil”) – Difficult to translate its meaning or intent among other cultures

Abbreviations are not desirable, but may be necessary to fit words within the confines of the touchscreen. When abbreviating, the following guidelines shall be applied (in order of priority):

1. Use full phrase or word (eg. “Grilled Chicken”)
2. Use significant word (eg. “Chicken”)
3. Eliminate suffix (eg. “Grill Chick”)
4. Eliminate vowels (eg. “Grll Chckn”)
5. Use letters as “icons” (eg. Chix”)





9. Icons and Symbols

Iconography – Function-Based Symbolism

Purpose:

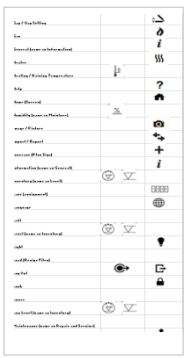
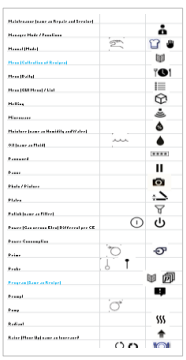
Establish a library of Welbilt icons that have a consistent design and with clear meanings of functions that are applicable across all equipment categories.

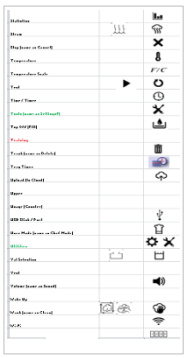
- 150+ Icons (80 / 20 applicable across equipment categories)

Principles:

- Icons based on ISO, Customer and Industry standards
- Stylistically Neutral – Readily Updateable
- Ability to communicate the most information with the least amount of graphics or text
- Shared understanding of meanings and definitions based on functions and context
- Stylistically clean and simple – **"Noto Sans of Icons"**
- Scalable (vector based)
- Reference: Library of Icons in Appendix





Note: All icons and digital assets are available in vector formats (.ai and .svg). Location TBD

10. Button Designs

Application of Icons and Imagery

Button Designs

Purpose:

To minimize button types and proliferation, and to simplify GUI design, only three Button designs are used in the GUI:

- Circle Buttons
- Square Buttons
- Pill Buttons

Principles:

- Circle Buttons used exclusively with Icons to designate actions, functions or navigation
  - Two Button States: Idle and Touched – Reference Page 40
- Square Buttons used exclusively for food imagery to designate recipes and menu items
  - Four Button States: Idle, Touched, Selected and Unavailable – Reference Page 42
- Pill Buttons are used for applications where Circle Buttons or Square Buttons don't make sense

  Note: Drop Shadow is used only with Square Buttons – Reference Page 41

Circle Buttons
Icons

Pill Buttons
Icons +Text

Square Buttons
Food Images

No Drop Shadow

Drop Shadow

Source: https://uxplanet.org/button-ux-design-best-practices-types-and-states-647cf4ae0fc6

Button Designs - Circle Buttons

Purpose:

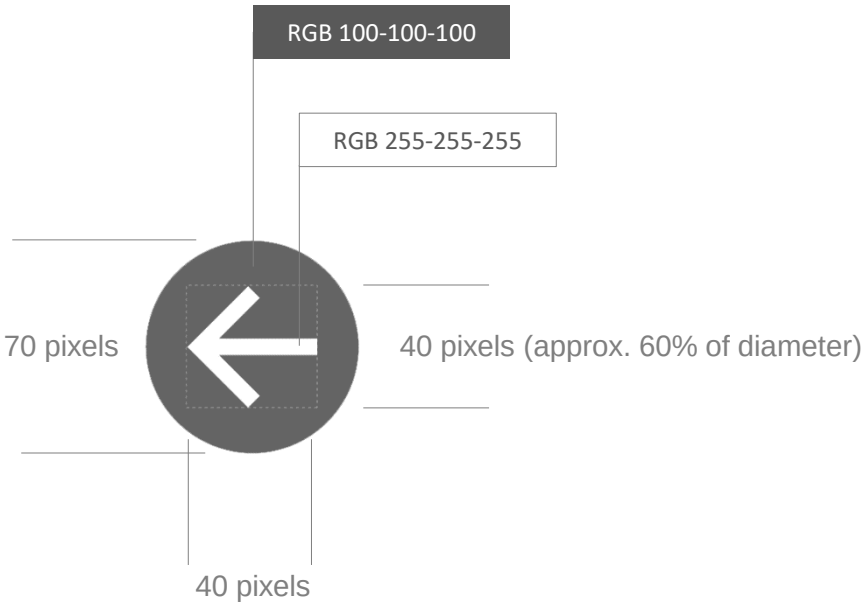
To visually communicate and indicate that Icons are a selectable target (ie. Navigational or Functional), Icons are placed within button circles.

Note: The only time this does not occur is on the Home Screen, where Icons are used without circle buttons. This is done to differentiate the Home Screen from other screen types.

Principles:

- Icons are visually and proportionately scaled inside circles
- White Icons (R:255 G:255 B:255)
- Gray Circles (R:100 G:100 B:100)
- Support by Text – Reference next page

Generally, Circle Buttons are 70 pixels in diameter (approx ½" inch diameter at 100% scale) which provides adequate finger area to press while not taking up excess screen real-estate.



Icon correctly scaled

Reference: https://uxplanet.org/button-ux-design-best-practices-types-and-states-647cf4ae0fc6

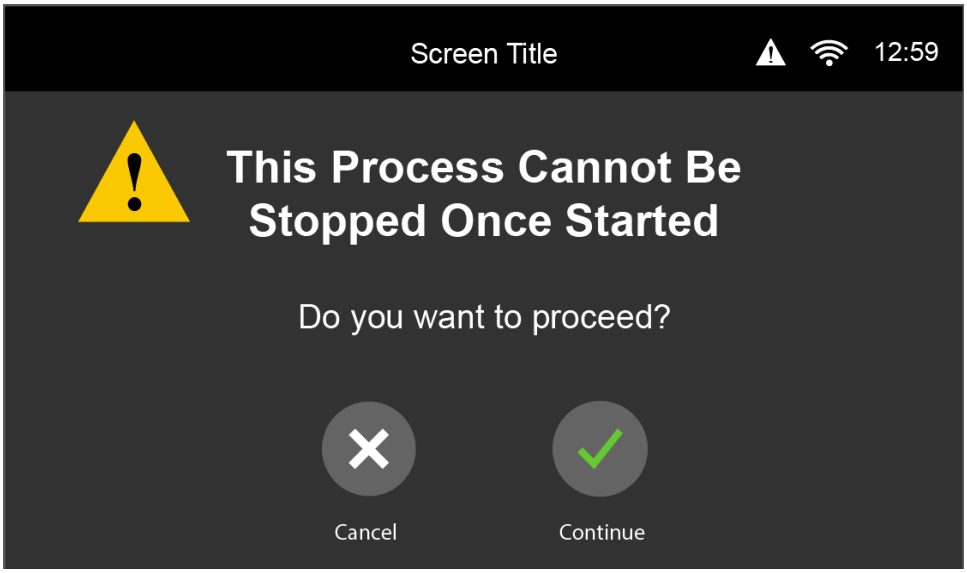
Button Designs - Confirm / Cancel Buttons

Purpose:

According to UI / UX design best-practices, there is no agreement on whether Cancel (Dismissive Functions) are place on the left or the right of Confirmation (Affirmation Functions). However, to provide a consistent placement of Cancel and Confirm actions across Welbilt equipment, the following principles shall apply.

Principles:

- "Dismissive actions" (ie. Cancel / Back Buttons) are always to the left of Affirmation or Confirmation actions (ie. Confirm / Check Buttons).
- Dismissive actions return the user to the previous state or user screen.



Reference: https://www.nngroup.com/articles/ok-cancel-or-cancel-ok/
https://uxplanet.org/primary-secondary-action-buttons-c16df9b36150
http://measuringuserexperience.com/SubmitCancel/index.htm

Button Designs - Circle Buttons + Text

Purpose:

To further clarify meaning or function among Circle Buttons and Icons, Text may be located beneath the icon as shown below.

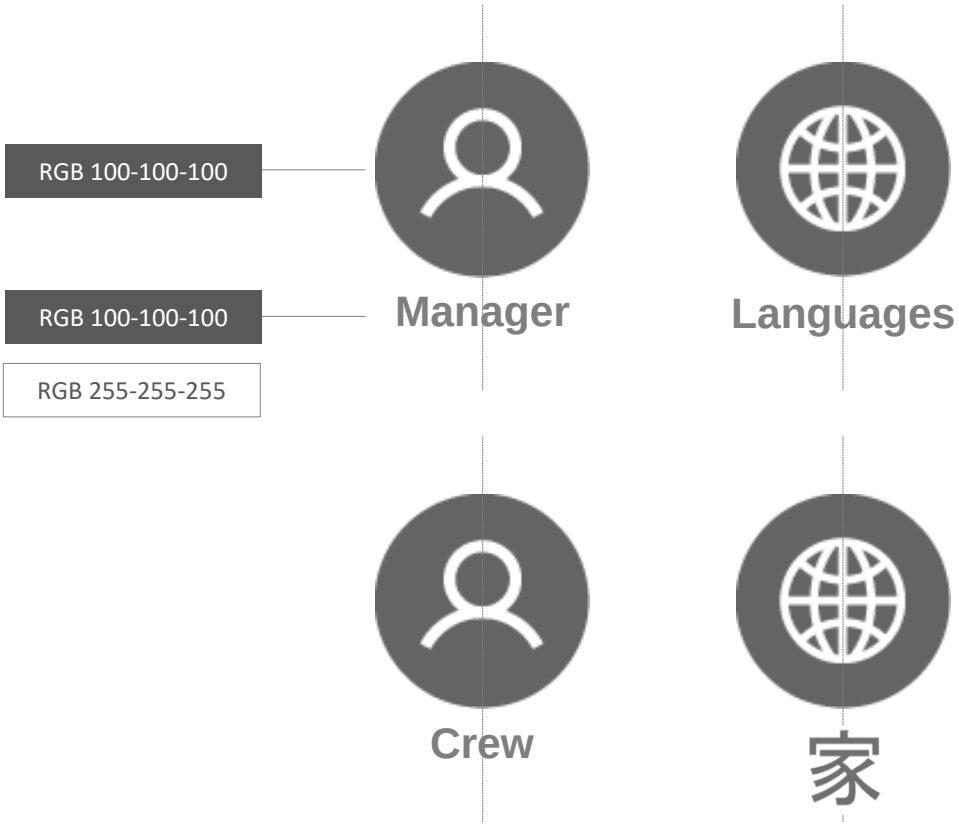
Note: No specific text size is specified, however, a balance of font size, circle diameter and available space must be maintained.

Principles:

- Text is centered about the vertical centerline of the Circle Button (or Square Button)
  - Single Line
  - Double Line (only if absolutely needed)

- Text scale is specific to screen application and available real-estate

- Dark Mode: Text is White – RGB 255-255-255
- Light Mode: Test is Gray – RGB 100-100-100



Button Designs – Circle Buttons - Behavior

Purpose:

To visually indicate when a Circle Button has been pressed, the following graphic rules and behavior shall apply.

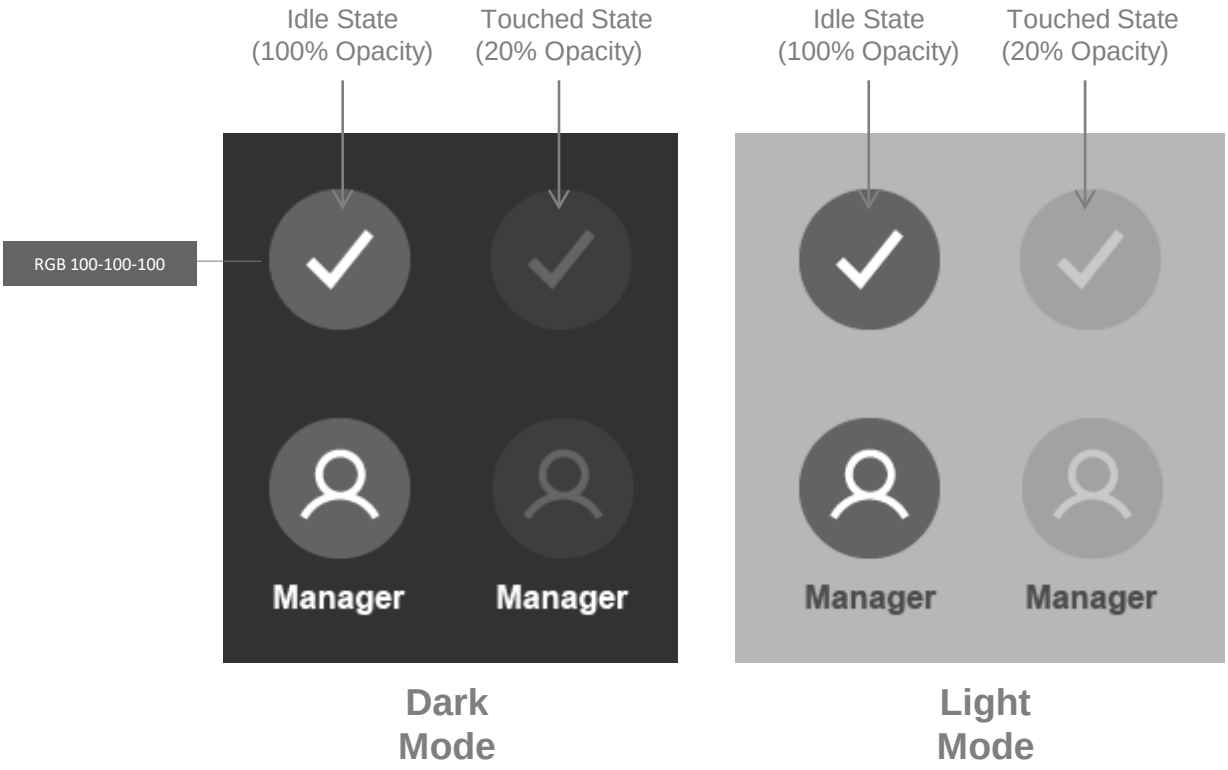
Two Button States are used with Circle Buttons: Idle and Touched

Principles:

Idle State: Circle Buttons are Gray (RGB 100-100-100) (100% Opacity / 0% Translucent)

Touched State: Button becomes (20% Opaque / 80% Translucent)…then returns to Idle State once released…Duration: Momentary (ie. 200 milliseconds

- This includes for both Dark Mode and Light Mode screens
- Reference: Haptics – Button Taps Page 10



Text remains unchanged when icons are pressed.

Button Designs - Pill Buttons + Text

Purpose:

Pill Buttons may be used where Circle and Square Buttons aren't appropriate or a differentiated button style is required for the application screen.

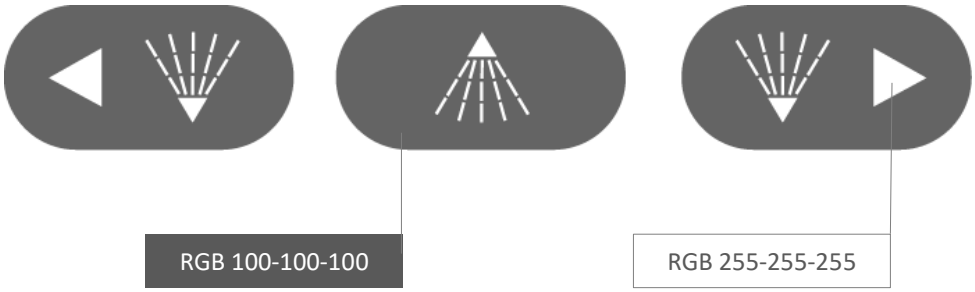
Icons and / or text may be placed within the Pill Button.

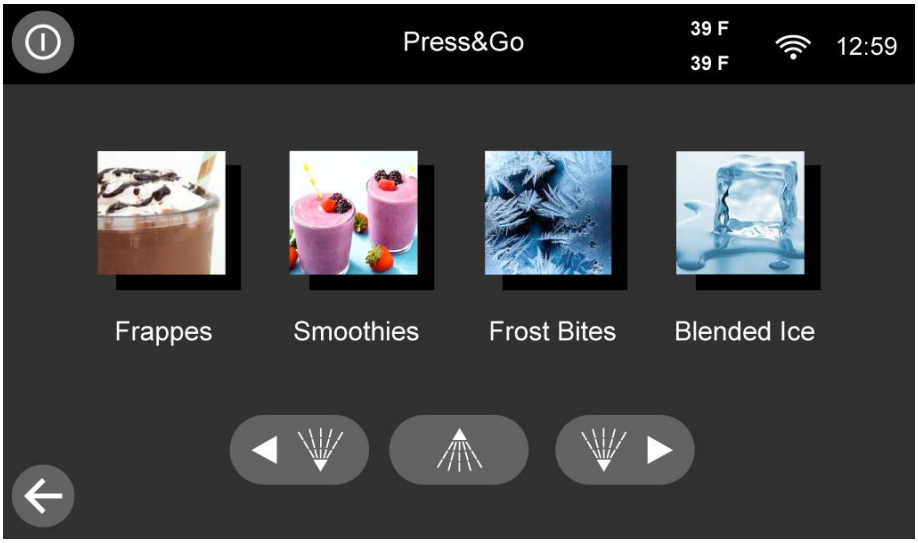
Note: No specific text size is specified, however, a balance of font size and Pill area must be maintained.

Principles:

- Button states and behavior follows that of Circle Buttons – previous pages

- Dark Mode: Text is White – RGB 255-255-255
- Light Mode: Test is Gray – RGB 100-100-100

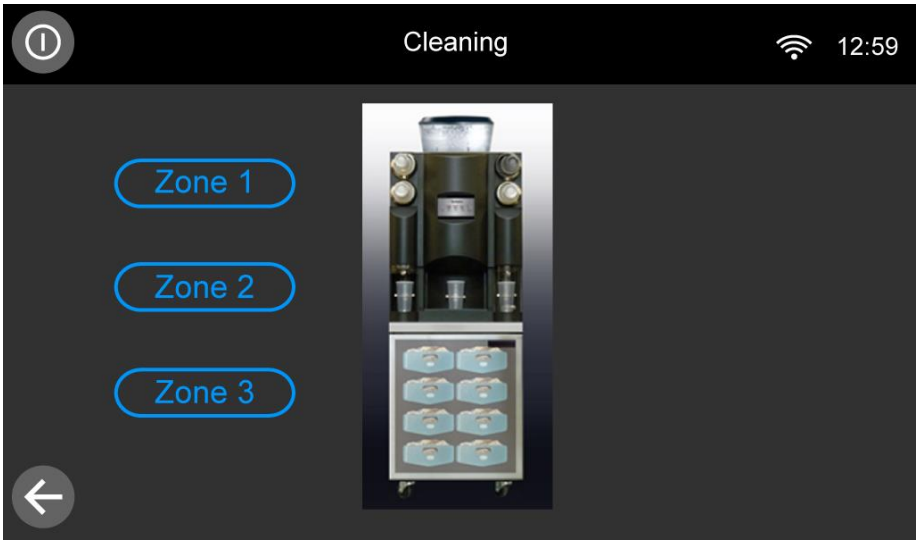




Button Designs - Pill Buttons + Text

Purpose:

Alternative Pill Buttons are shown below.



Button Designs – Square Buttons

Purpose:

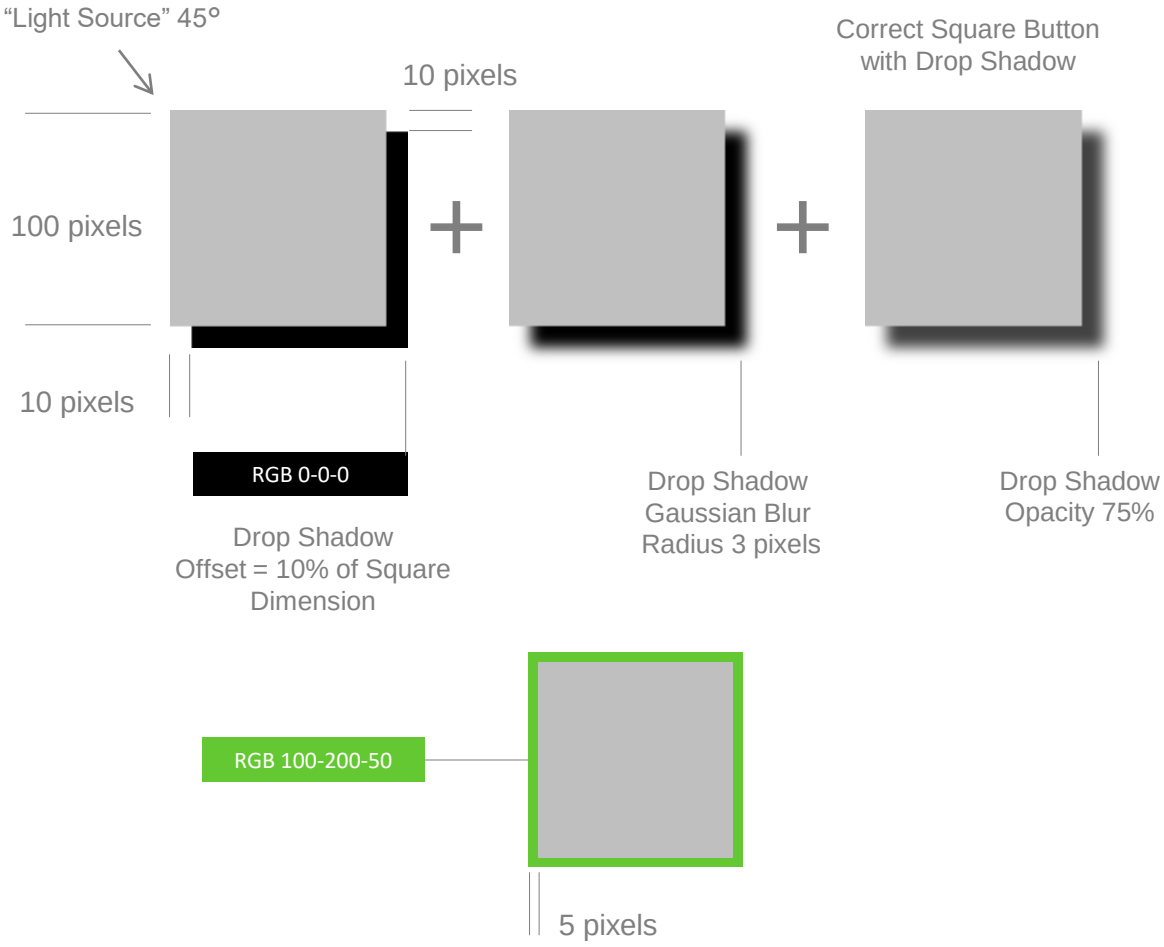
Square Buttons are exclusively* used for food imagery to designate Recipes and Menu items. The square shape enables easy alignment and scalability of pictures, images or other graphic depictions of food within a standardized format.

A Drop Shadow is used to indicate the Button is available for selection.

Four Button States are used with Square Buttons: Idle, Touched, Selected, Unavailable – Reference Next Page

Principles:

- Imagery supported by Product Name for clarity
- Easy formatting and customization of imagery by Welbilt and Customers
- Any image type allowable (ie. Photos, Images, Cartoons, Icons, Text)
- Scalable across all screen types and orientations
- It's hard to screw up a square



Button Designs – Square Buttons – States and Behavior

Purpose:

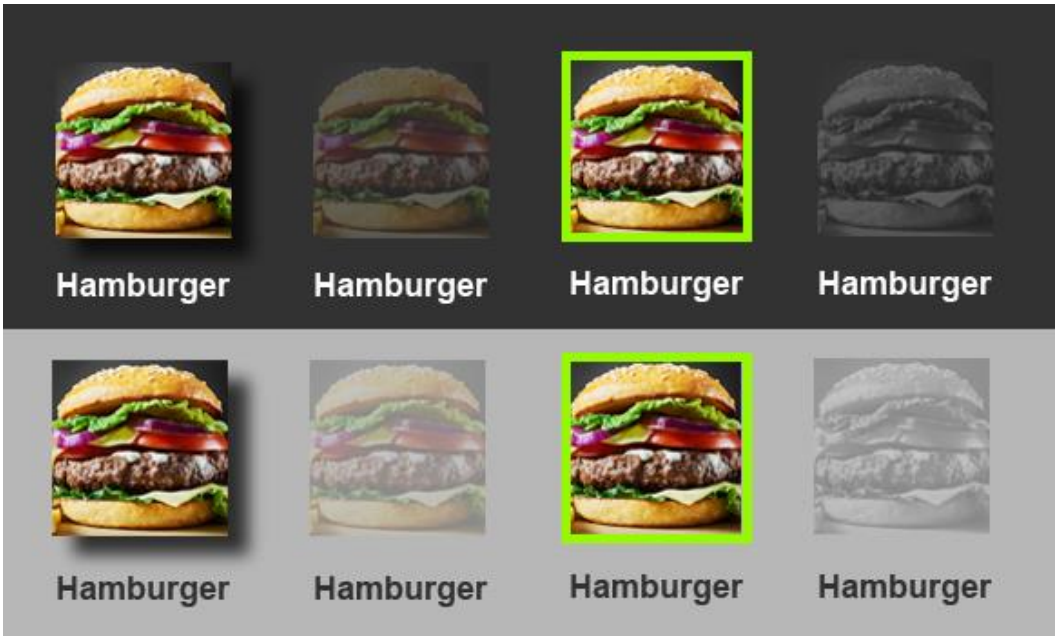
To visually indicate when a Square Button has been selected, the following graphic rules and behavior shall apply:

Principles:

- Reference: Haptics – Button Taps Page 10
- Button states and behaviors are described below. This includes for both Dark Mode and Light Mode screens
- Text remains unchanged when icons are pressed

4 Button States

Idle	Touched	Selected	Unavailable



Dark Mode

Light Mode

Imagery:
- 100% Opacity
- Drop Shadow

Imagery:
- 25% Opacity
- No Drop Shadow
- Duration: Momentary (ie. 200 milliseconds)

Imagery:
- 100% Opacity
- No Drop Shadow
- Green Border
- Duration: Until action is complete or deselected

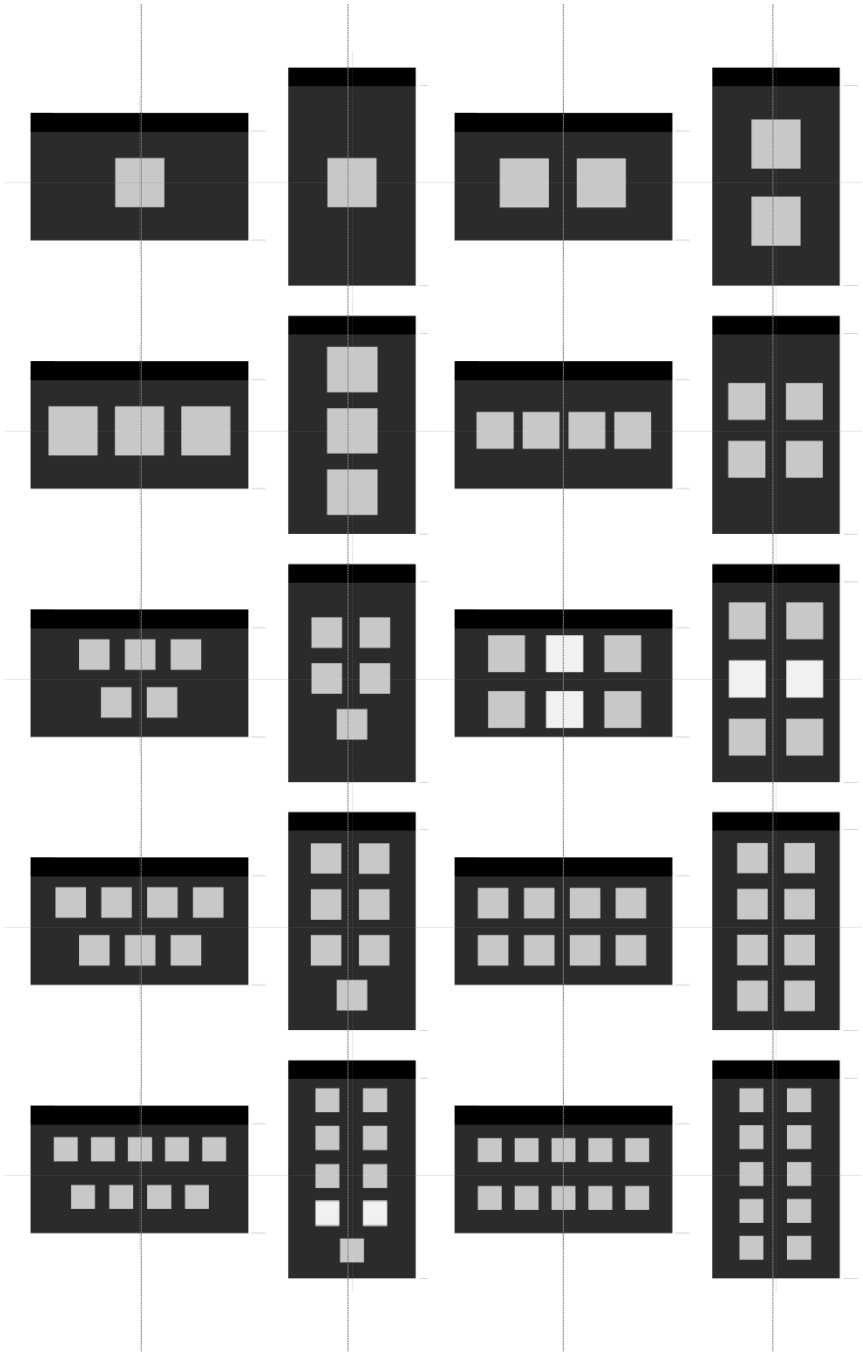
Imagery:
- 25% Opacity
- Desaturated
- No Drop Shadow
- Duration: Until user action is taken

Buttons Design – Square Buttons Alignment

Principles:

Alignment of buttons use “Formal Balance” and “Informal Balance” to achieve symmetry about the vertical centerline.

Odd number of buttons

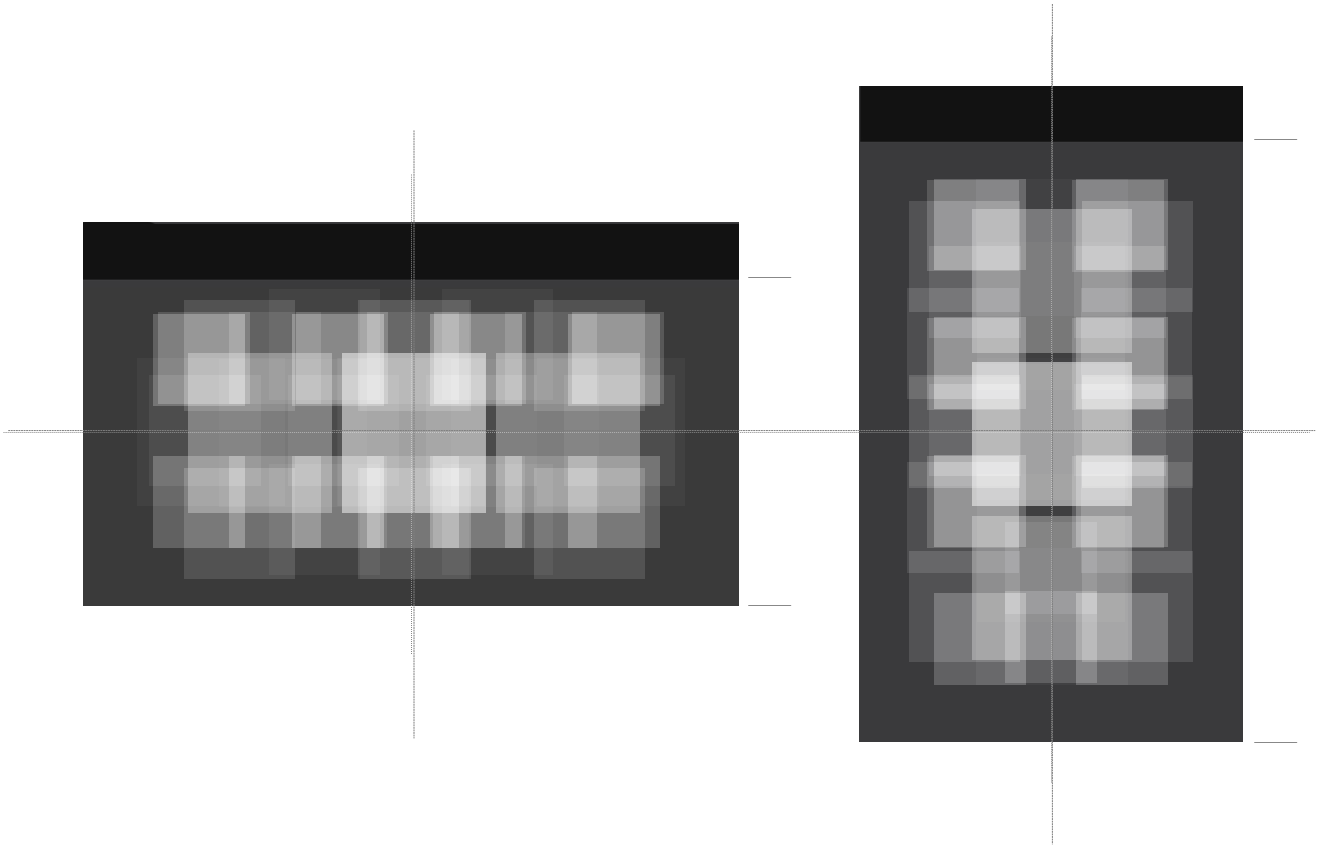


Even number of buttons

Buttons Design – Square Buttons Alignment

Principles:

When aligned, Square Buttons should have a symmetrical appearance on the touchscreen, as shown below.



The image above shows a composite of multiple screens with different Square Buttons layouts. The general positioning and appearance of Square Buttons should be centered on the screen.

Buttons Design – Square Buttons Alignment

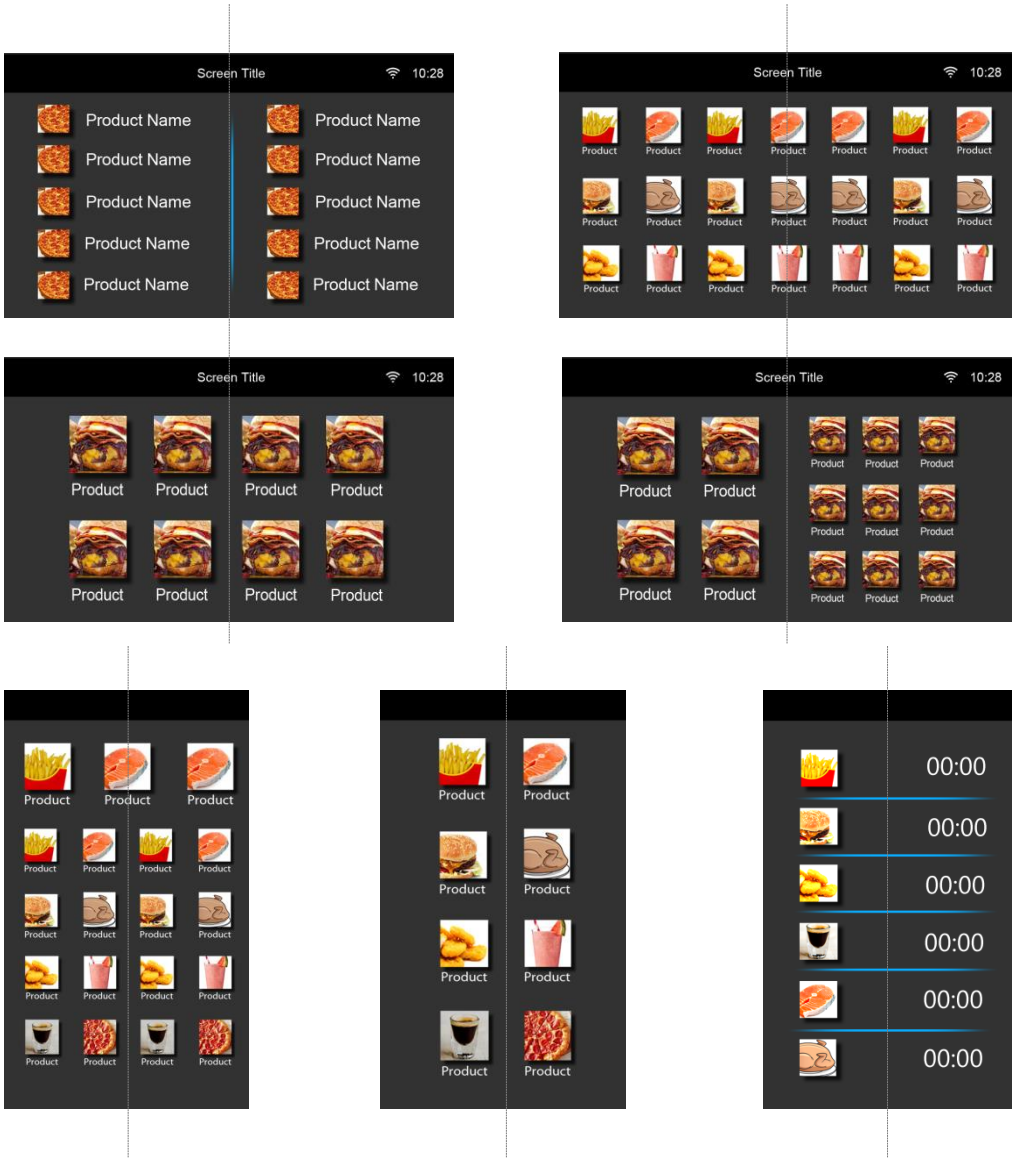
Purpose:

Examples of how Square Buttons are scaled and aligned in a grid format within the GUI screen are shown below.

Principles:

- Square Menu Buttons enable “gridding” and alignment
- Scaling varies with screen applications

Symmetry is maintained about the vertical centerline using “Formal Balance” and “Informal Balance”.



Buttons and Icons – Text Scaling and Wrapping

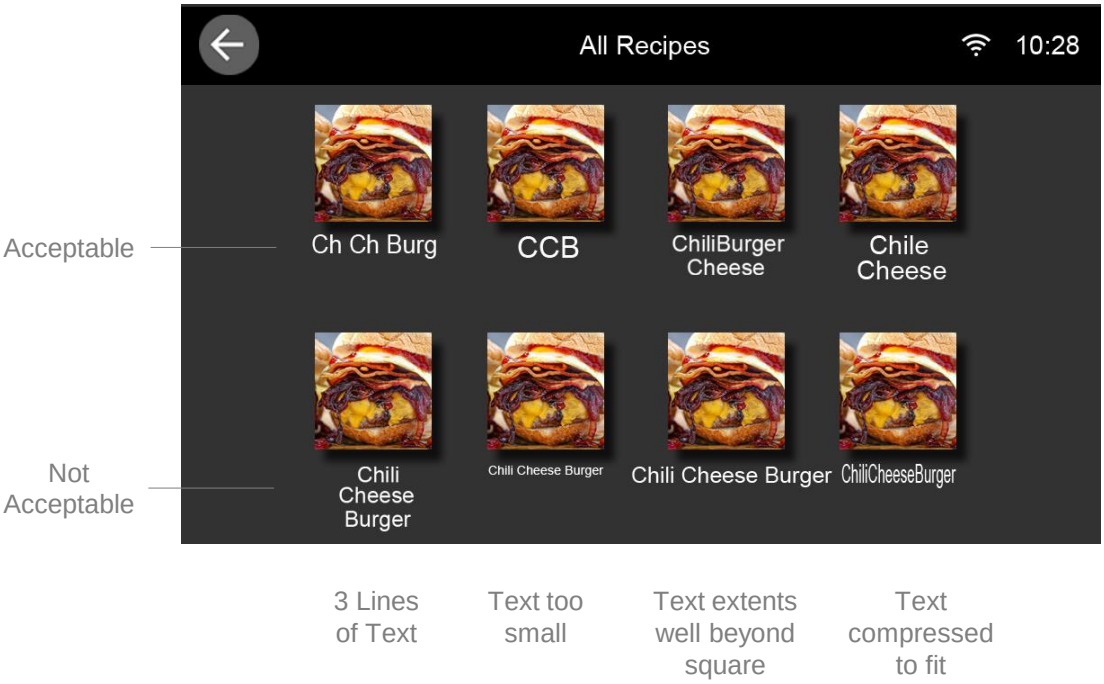
Purpose:

Provide latitude for text scaling and alignment with Square Buttons.

Principles:

- Minimize lengthy text / names by truncation or abbreviation
- If needed, text wrapping with two lines is acceptable – Center Alignment
- Text centered about the vertical or horizontal centerlines of Square Buttons depending application
- No “Reveal” buttons are used – too messy from a graphics standpoint

Noto Sans Condensed – Scaled to Application
Upper and Lower Case
White RGB 255-255-255



11. Widgets

Widgets - General

Purpose:

Widgets are a collection of graphical elements, each which facilitate specific user selections among equipment functions. These include: value entry - between binary functions,.

Examples:

- Buttons
- Toggles
- Sliders
- Radio Buttons
- Check-Off Squares
- Data Entry Fields
- Progress Rings and Bars
- Keypads and QWERTY
- Tabs
- Arrows
- Stages and Screen Location Dots
- Pop-Overs / Pop-Ups

Principles:

- Simple design using color principles Reference Color Palette Pages 18-20
- Incorporates at least 2 of 3 ways of communicating status : Position, Color, Text

https://www.nngroup.com/articles/toggle-switch-guidelines/?lm=top-10-application-design-mistakes&pt=article

https://www.nngroup.com/articles/checkboxes-vs-radio-buttons/

Widgets - Toggles

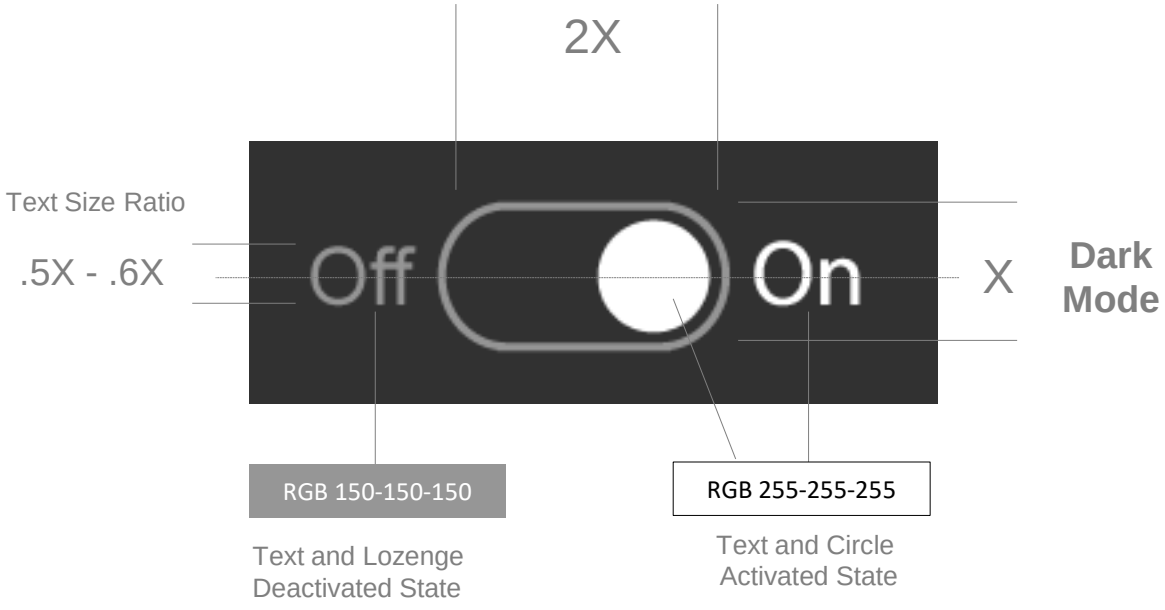
Purpose:

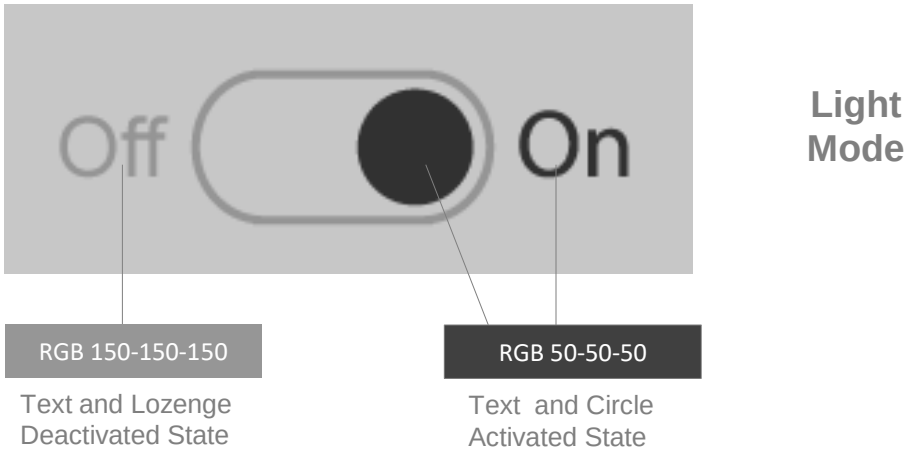
Toggles provide the user a quick means of enabling or disabling between binary values; when only two choices are available: (eg. On / Off, Activate / Deactivate, AM/ PM, Fahrenheit / Celsius)

When selected, Toggles provide immediate input without having to “Submit” or “Enter” or “Confirm” the action.

Principles:

- Single word / text located on either side of lozenge shape - on horizontal centerline
- “Deactivated Side” - Text and Lozenge remain gray
- “Activated Side” - Text and Circle are white (for Dark Mode) or dark gray (for Light Mode)

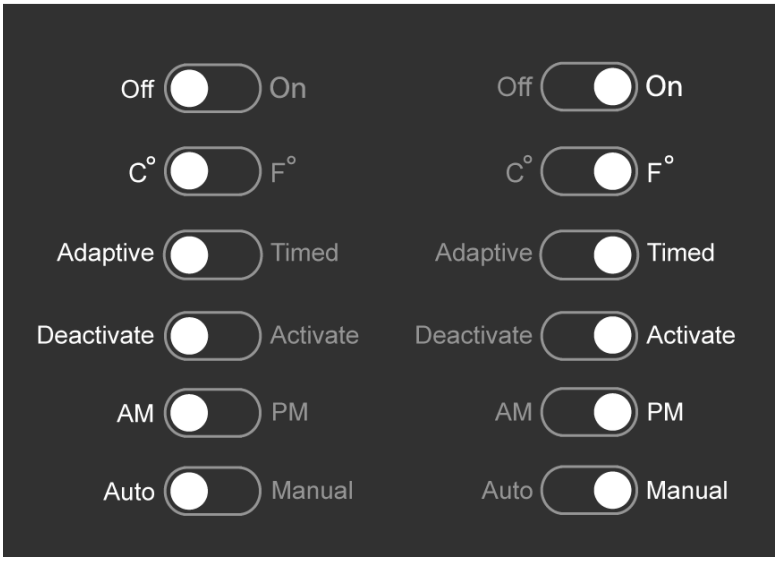




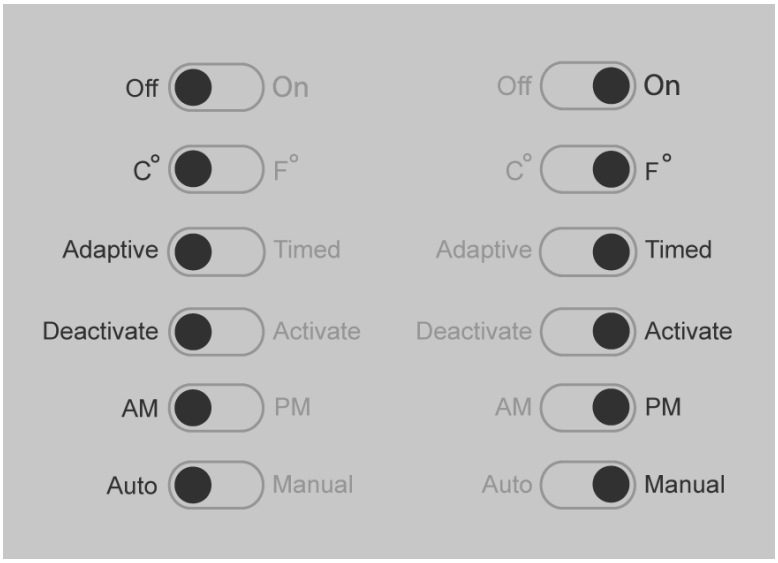
Widgets – Toggles – Examples

Principle:

Examples of Toggles with binary selections shown below.



Dark Mode



Light Mode

Widgets – Check Box

Purpose:

Check Boxes are used to select a binary value (ie. on / off), among multiple options that may be enabled at the same time. Unlike Toggles, once multiple choices have been selected, one must “Submit” or “Enter” or “Confirm” for the actions to take effect..

Example: Enabling multiple Languages – Reference Page 91.

Principles:

- Check Mark icon appears within square upon selection
- Color scheme changes upon selection as shown below

https://www.nngroup.com/articles/toggle-switch-guidelines/?lm=top-10-application-design-mistakes&pt=article

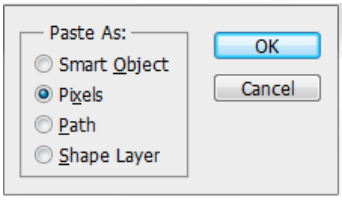
Widgets – Radio Buttons

Purpose:

Radio Buttons are used to select a binary value (ie. on / off), among multiple options, but where only one option is allowable at a time (mutually exclusive functions).

Like that of Check Boxes, one must “Submit” or “Enter” or “Confirm” for the action to take effect.

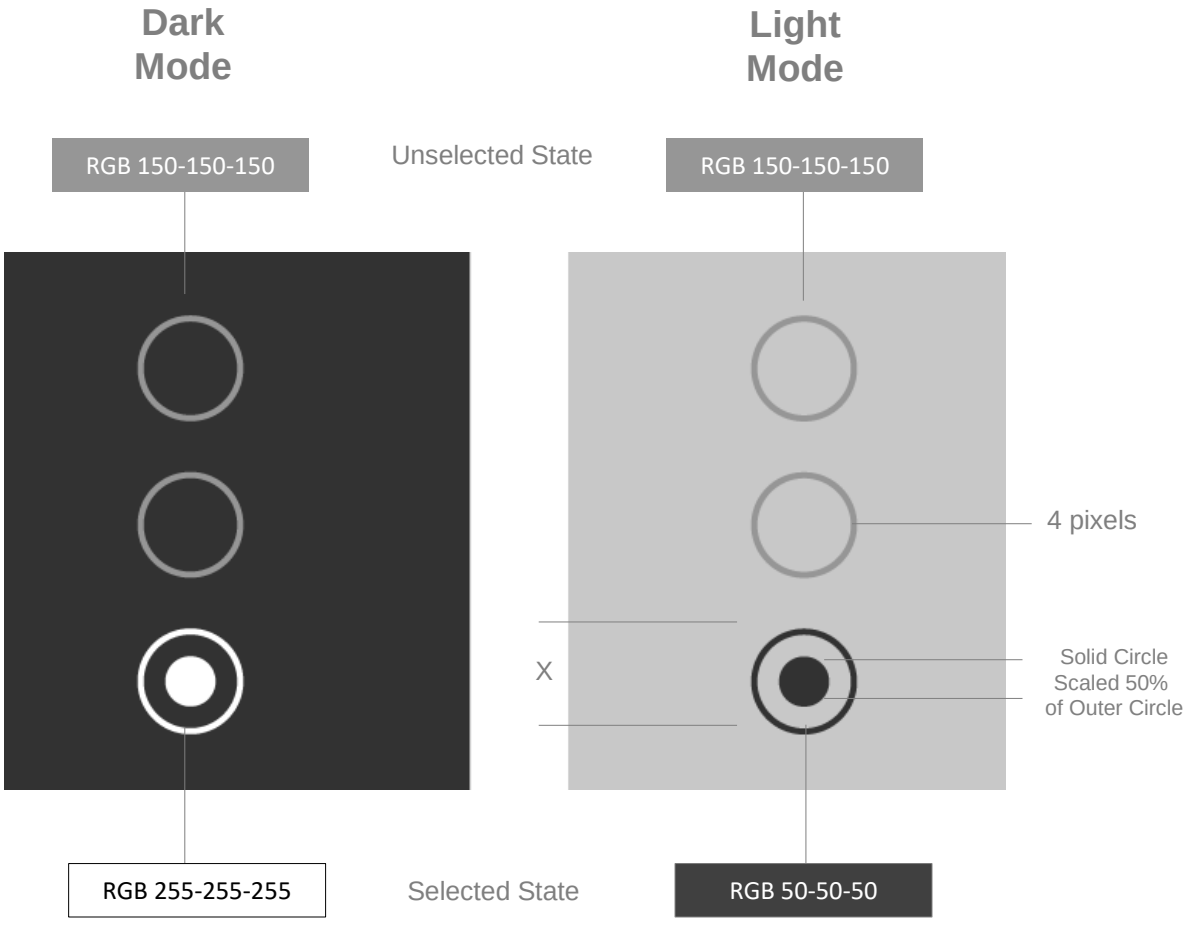
Example: Selecting a Cooking Mode or Preheat Mode



Example of Radio Buttons

Principles:

- Solid inner circle appears within outer circle upon selection
- Color scheme changes upon selection as shown below



https://www.nngroup.com/articles/toggle-switch-guidelines/?lm=top-10-application-design-mistakes&pt=article

Widgets – Toggles, Radio Buttons and Check Boxes

	Radio Buttons	Checkboxes	Single Checkbox	Toggle Switches
How many options are available?	Multiple	Multiple	1	1
How many selections can the user make?	1	0 – all	2 (on/off)	2 (on/off)
Is there a default option?	Yes	No	Yes	Yes
How would you describe the choices?	Mutually exclusive	Independent of each other	Mutually exclusive	Mutually exclusive
When does the selection take effect?	After a user clicks a submit button	After a user clicks a submit button	After a user clicks a submit button	Immediately

https://www.nngroup.com/articles/toggle-switch-guidelines/?lm=top-10-application-design-mistakes&pt=article

12. Sliders

Sliders

Purpose:

Sliders have two primary functions:

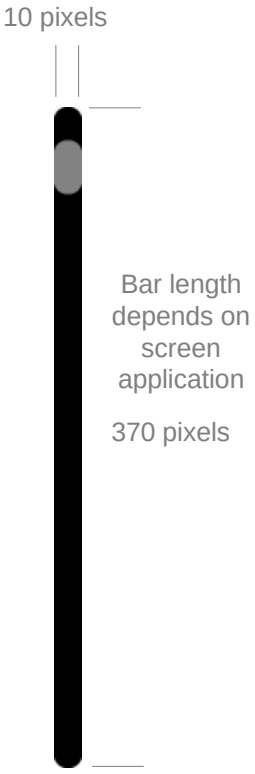
1. Passive - used as an indicator that the screen is able to be swiped and navigated to areas outside of view on the touchscreen. Indicated by lozenge shape
2. Active - used as a means for the user to select (dragging) among a range of values for equipment settings. Indicated by circle

   Note: Compare to Toggles that select between only two values.

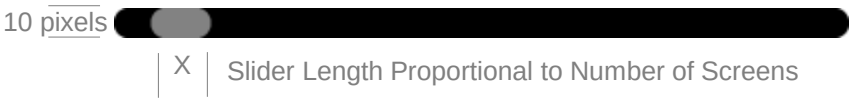
Principles:

- Reference: Haptics – Press and Slide -Page 10
- Dimensions and orientation based on application screen.
-

Active Slider

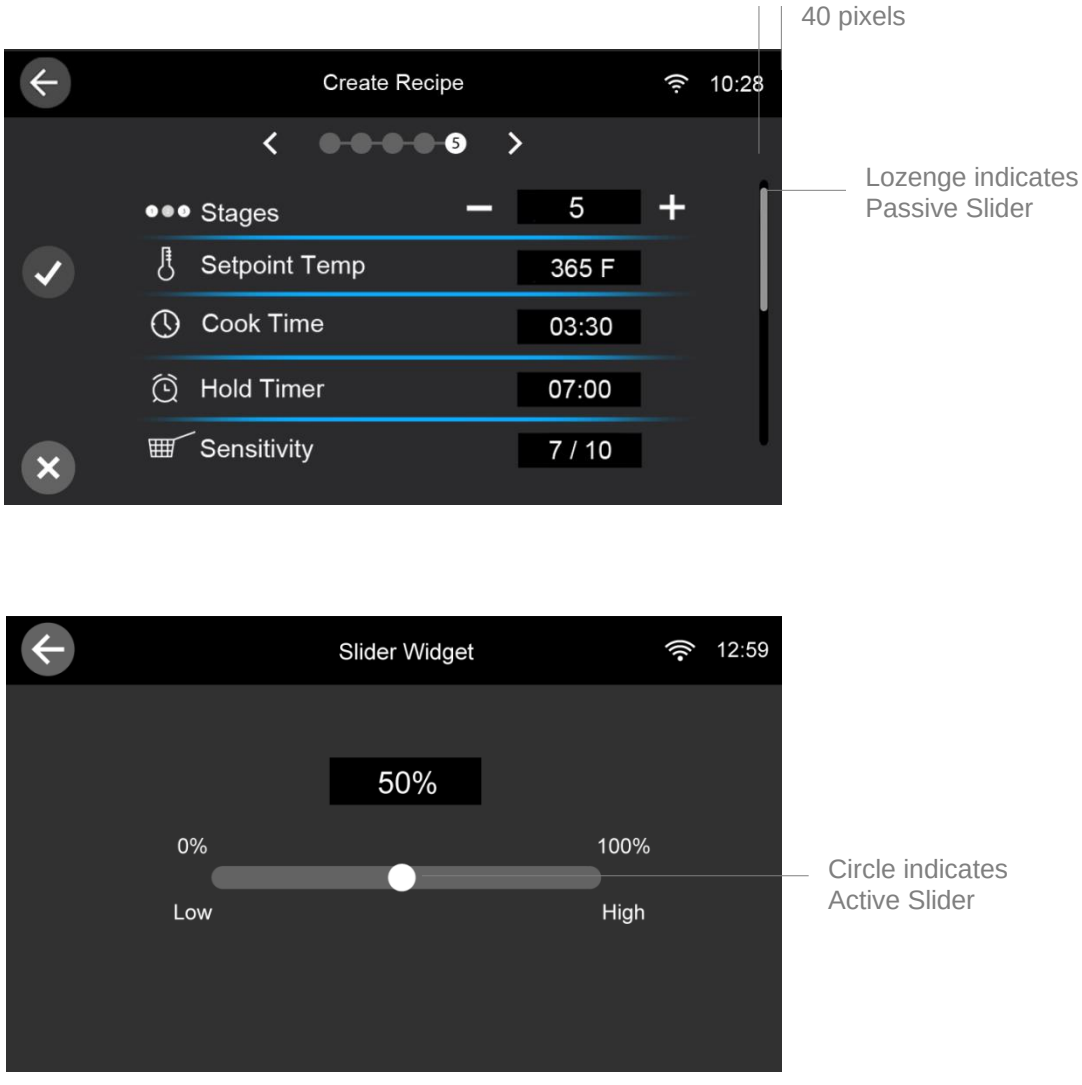


Passive Slider



Sliders - Examples

Examples of Slider application in GUI shown below:



13. Screen Dividers

(Multi Lanes, Zones and Shelves)

“Blue Streak”

Screen Dividers – “Blue Streak”

Purpose:

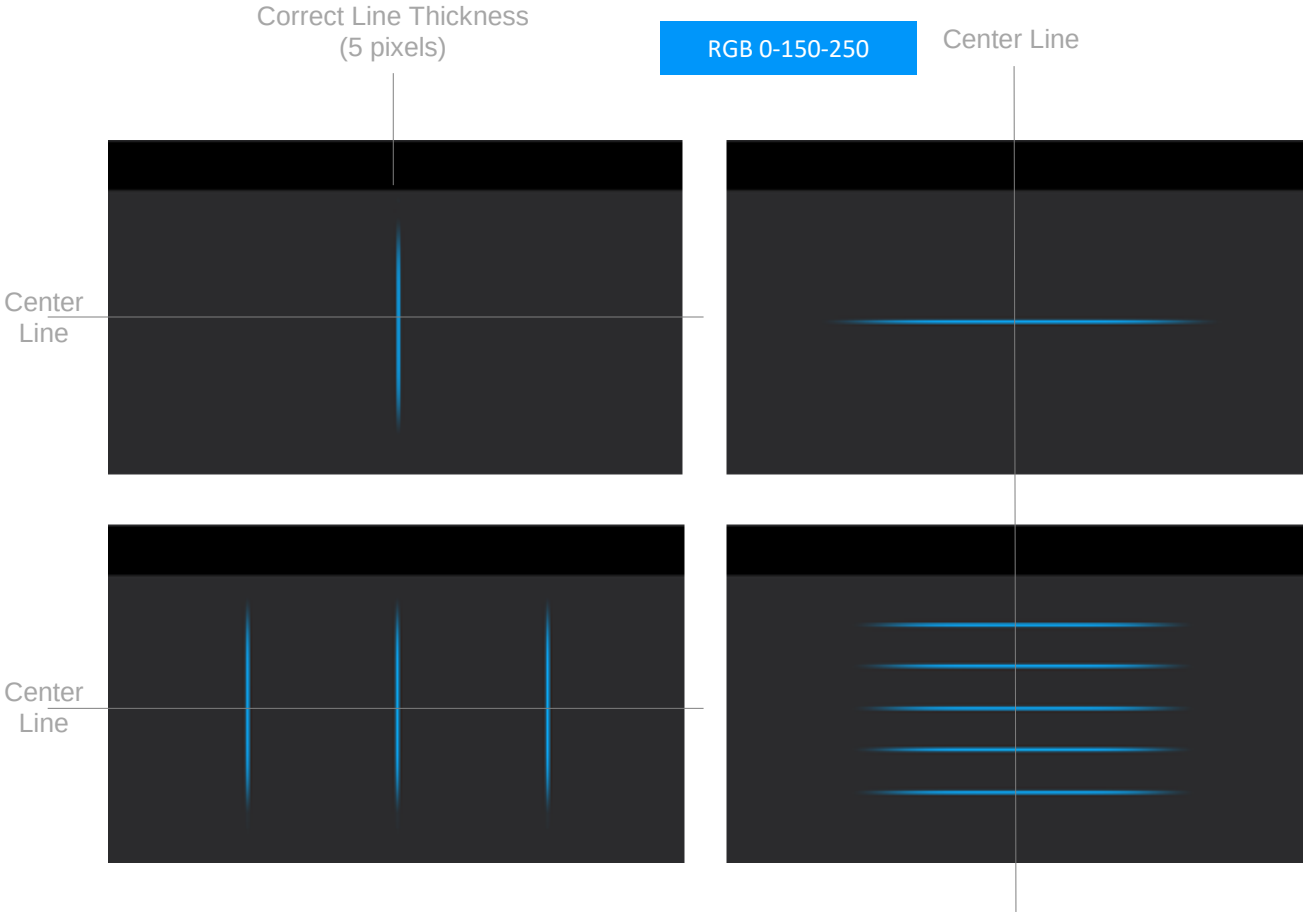
The “Blue Streak” is an homage to the blue “Swoosh” used on EasyTouch 2.0 and is a recurring design motif of Welbilt’s common GUI.

Static Mode: Used as a stylistic means of dividing GUI screens into sections, or as a visual representation of Zones, Lanes, Shelves and other partitioned areas of the equipment.

Dynamic Mode: Used as a graphical means to communicate Indefinite Time Progression – Reference Page 63

Principles:

- The Blue Streak is a thin (5 pixels) blue line (RGB 0-150-250) with faded out ends
- May be oriented vertically or horizontally, but not both at the same time
- Line weight is narrow (5 pixels)
- May be elongated to fit application



Note: Blue Streak centered on horizontal or vertical centerlines

Screen Dividers – “Blue Streak”

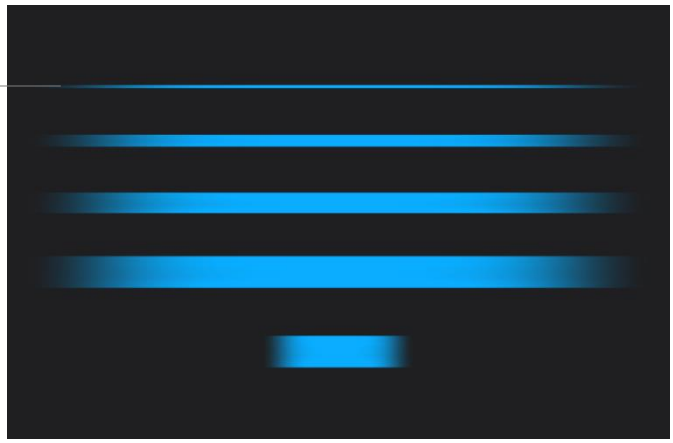
The Blue Streak is intended to be subtle and used sparingly, so as not to dominate screen content.

Principles:

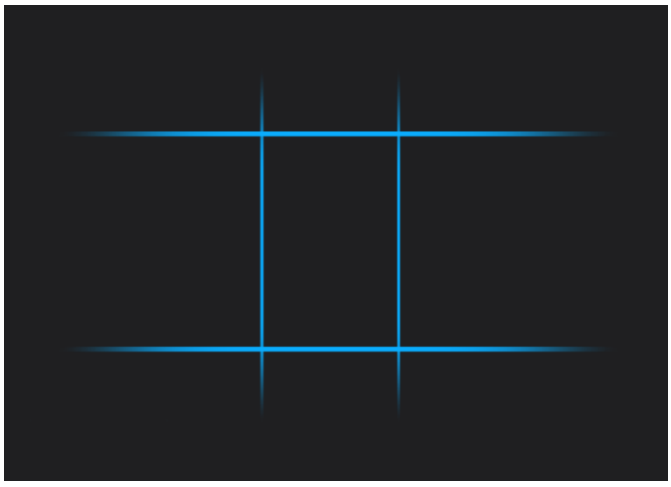
- Line Weight is kept thin
- Horizontal Blue Streak are centered on vertical centerline of screen
- Not used to “box-in” content
- Motif not to be over-used

The Blue Streak may be elongated to fit screen application

Correct Line Thickness (5 pixels)



Incorrect Line Thickness

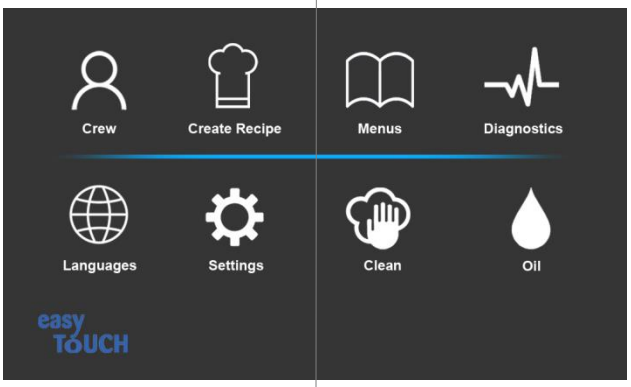


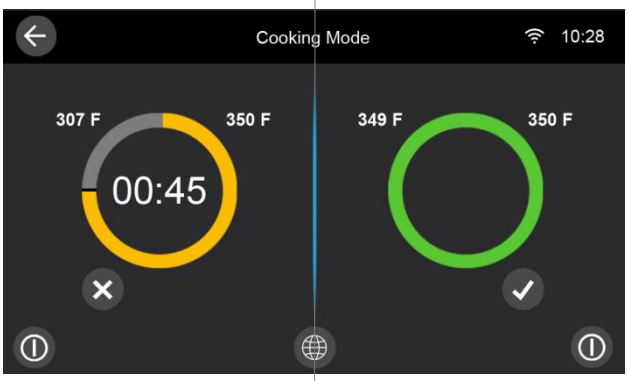
Crisscrossing not preferred

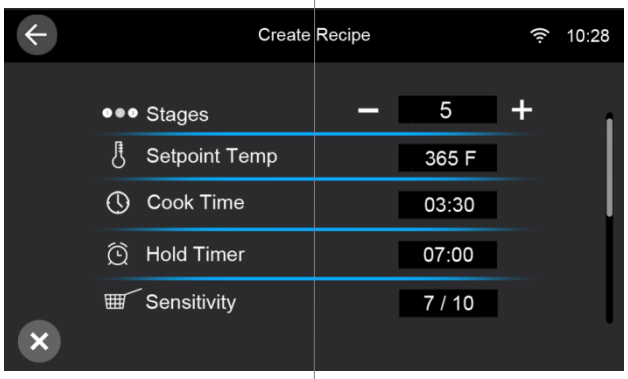
Screen Dividers – Examples

Examples of how the Blue Streak is used to divide the screen into sections are shown below. Note symmetry about vertical centerlines when used horizontally.

Center Line







Center Line

14. Progress Rings and Bars
and
Countdown Timers

Progress Rings and Bars – Additive versus Subtractive Progression

Principles

Progress Bars and Rings are used to visually communicate progression of a function or process, however they do not communicate the actual or remaining time of a function.

Both are graphically expressed as Rings or Bars and show progression - the "Progression Mode", by either "filling up" the bar or ring (Additive Progression), or by reducing the bar or ring (Subtractive Progression).

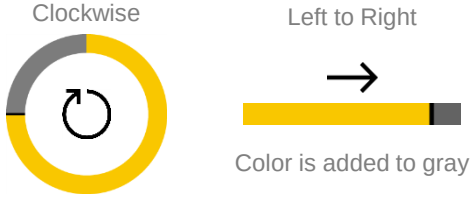
The difference depends on where one is in the overall cooking cycle or operations.

There are 3 distinct periods of time within the overall cooking operations: Before, During and After which use the following Progression Modes:

Period within Cooking Cycle

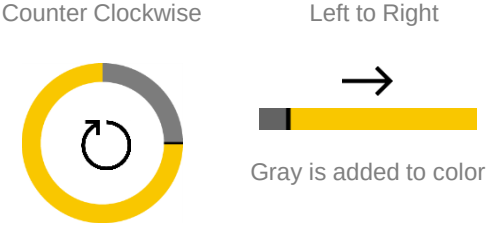
1. Before Cooking Operations (ie. Preheating / Melting / Thawing) – Temperature-based
2. During Cooking Operations : (ie. Cooking / Processing) – Time or Temperature-base

Additive Progression Mode



3a. After Cooking Operations: (ie. Holding) – Time-based
3b. After Cooking Operations: (ie. Cooling Down) – Temperature-based

Subtractive Progression Mode



Note: Progress Ring shown above used Determinate Time principles – described next page.

https://www.smashingmagazine.com/2016/12/best-practices-for-animated-progress-indicators/

https://blog.prototypr.io/expressing-time-in-ui-ux-design-5-rules-and-a-few-other-things-eda5531a41a7

https://blog.prototypr.io/guidelines-for-time-indication-and-progress-bars-in-user-interaction-design-4d5038084c84

Progress Rings and Bars - Determinative Time versus Indeterminate Time

Principles

Progress Rings and Bars are expressed in two ways, whether the waiting periods are known “Determinate”, or not known “Indeterminate”.

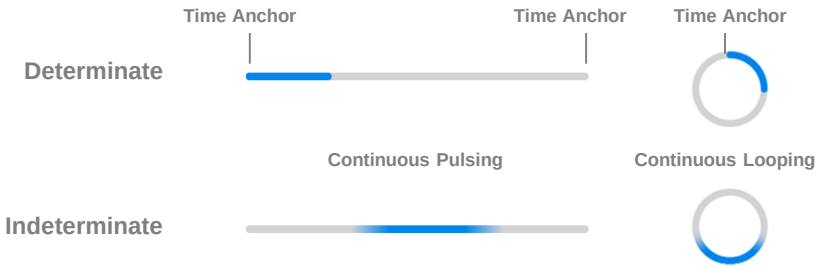
Determinate Time: When the duration of cooking cycles, processes or functions are generally known and finite *(but waiting time exceeds more than several seconds*)*, it is referred to as “Determinate” time.

- From UI / UX best practices, these are graphically expressed by animating progression using a ring or bar with a fixed starting point and ending point (Time Anchors) that the user can quickly visually reference.

Indeterminate Time: When the duration of a cycle, process or function is not well known *(and waiting time exceeds more than several seconds*)*, it is referred to as “Indeterminate” time.

- From UI / UX best practices, this is graphically represented by an animated revolving spinner, or a pulsating bar, but without Time Anchors or known duration or stopping point. It provides user feedback that the system is processing normally and hasn’t frozen or stalled while performing lengthy operations.

**Note: Lengthy operations is defined as taking more than 2-3 seconds.*



Modes of Operation versus Waiting Times

Indeterminate	1.	Before Cooking Operations: (ie. Preheating / Melting / Thawing) – Temperature-based
Determinate	2.	During Cooking Operations: (ie. Cooking / Processing) – Time or Temperature-base
Determinate	3.	3a. After Cooking Operations: (ie. Holding) – Time-base
Indeterminate	4.	3b. After Cooking Operations**:** (ie. Cooling Down) – Temperature-based

Indeterminate Time Graphics TBD
Could use a pulsating Blue Streak

https://www.smashingmagazine.com/2016/12/best-practices-for-animated-progress-indicators/

https://blog.prototypr.io/expressing-time-in-ui-ux-design-5-rules-and-a-few-other-things-eda5531a41a7

https://blog.prototypr.io/guidelines-for-time-indication-and-progress-bars-in-user-interaction-design-4d5038084c84

Progress Rings and Bars – Countdown Timers

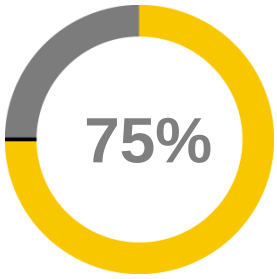
Principles:

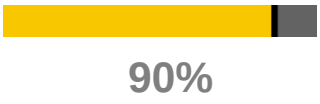
Countdown Timers communicate the remaining or waiting time in absolute terms before a function or operation is complete. It is expressed in Hours, Minutes, Seconds - as a clock 00:00:00 or 00:00, - starting with the set time and counting down to zero.

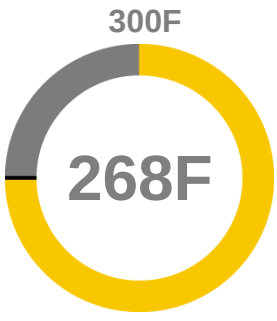
00:00:00 or 00:00

Countdown Timers and Progress Bars and Rings may be used together to communicate both relative time and absolute time so that the end-user can better prepare and utilize their time during food service operations.

In addition to Countdown Timers, one may include a Percentage of Completion or Temperature Progression to a Set Point, expressed as numerical values.







https://www.smashingmagazine.com/2016/12/best-practices-for-animated-progress-indicators/

https://blog.prototypr.io/expressing-time-in-ui-ux-design-5-rules-and-a-few-other-things-eda5531a41a7

https://blog.prototypr.io/guidelines-for-time-indication-and-progress-bars-in-user-interaction-design-4d5038084c84

Progress Rings and Bars – Color Progression

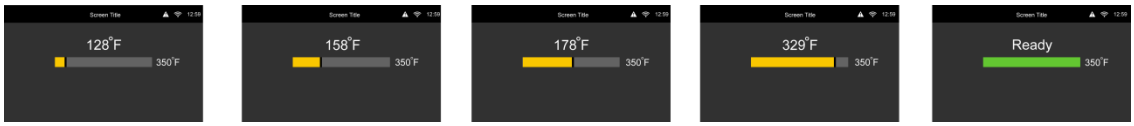
Principles:

Examples of Progression Bars showing Determinate Time status of operations are shown below.

Colors are applied based on principles of Escalating Urgency during the overall cook cycle to further communicate equipment conditions, or food status during the cook cycle.

Progression Modes

1. Before Operations (Preheating / Melting /Thawing)

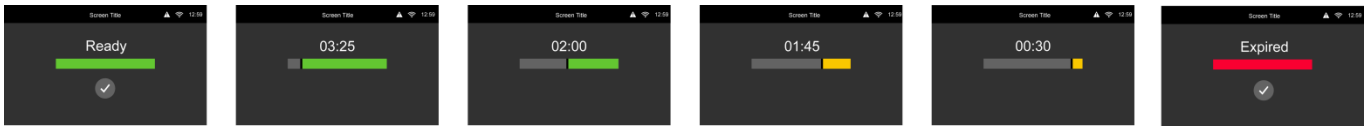


- Generally Temperature-based functions (Indeterminate)
- Additive Progression
- Amber (not ready) to Green (ready)

2. During Operations (Cooking / Processing)

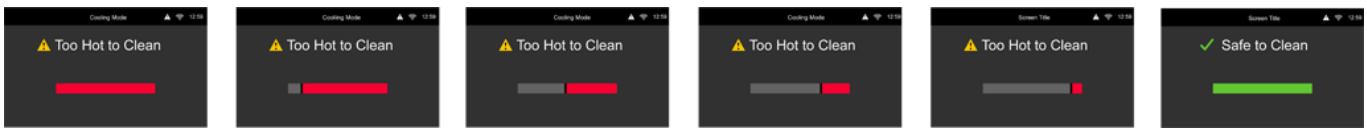
- Time or Temperature-based functions (Determinate)
- Additive Progression
- Green (ready) to Amber (pay attention) to Green (ready)

3a. After Operations (Holding)



- Time-based functions (Determinate)
- Subtractive Progression
- Green (ready) to Amber (pay attention) to Red (urgent attention)

3b. After Operations (Cooling Down)



- Temperature-based functions (Indeterminate)
- Subtractive Progression
- Red (urgent attention) to Green (ready)

Progress Rings and Bars – Circle Specs

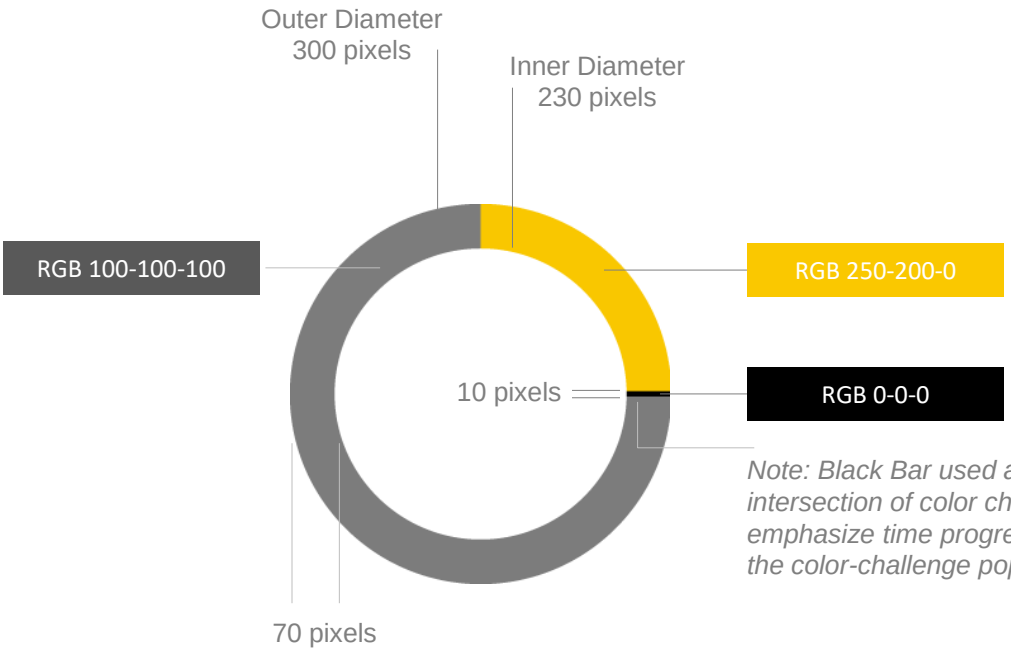
Purpose:

The dimensions shown below represent a standard “large” Progress Ring for use by itself on a single (non-split) screen. Scaling of the Ring will generally be smaller*, but specific scaling is dependent on screen application such as equipment with multiple lanes, vats or zones.

Note: Specific to 7” screens. 10” screen applications pending.

Principles:

- Scale of Progress Rings have been optimized for visibility on touchscreens across a range viewing distances: 2’ – 20’ without losing fidelity or readability.
- Progression of color change – Clockwise.



Note: Speed and granularity of progression based on application

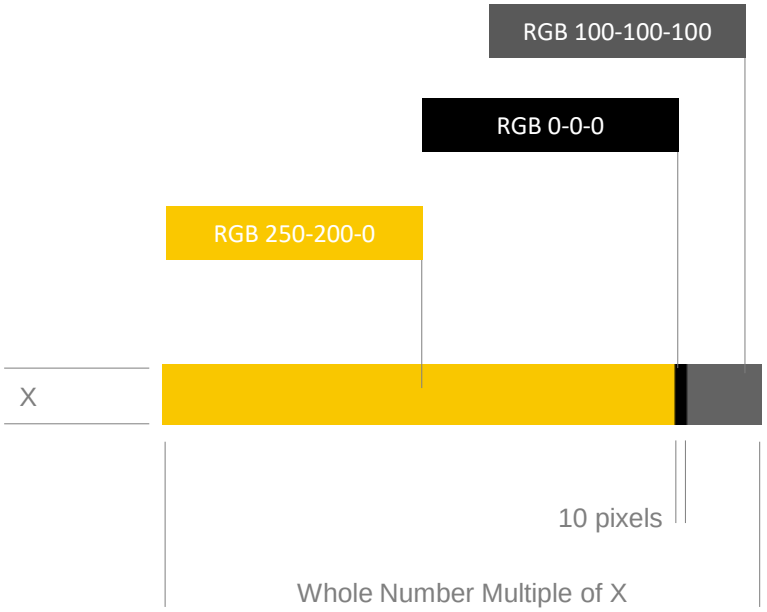
Progress Rings and Bars – Bar Specs

Principles:

Scaling and proportions of the Progression Bar are application specific and may be embodied in a number of variations.

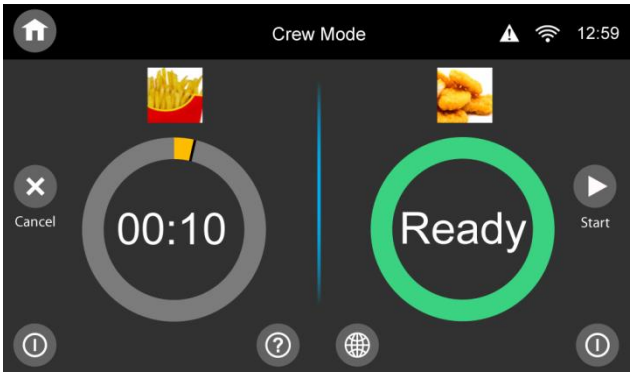
A proportioning scheme is provided where: Width of the bar is a whole number multiple of its height. 1:4, 1:8, 1:10, etc.

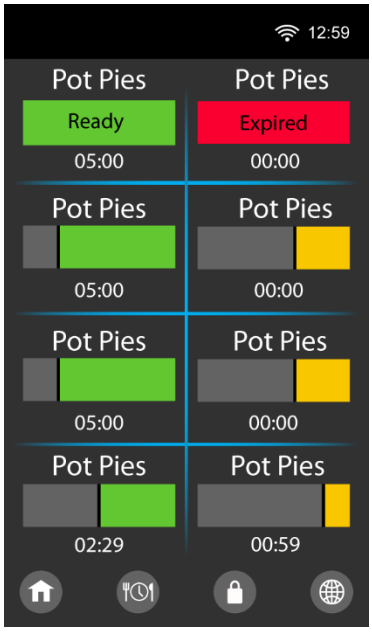
- Optimized for visibility on touchscreens across a range viewing distances: 2’ – 20’without losing fidelity or readability.

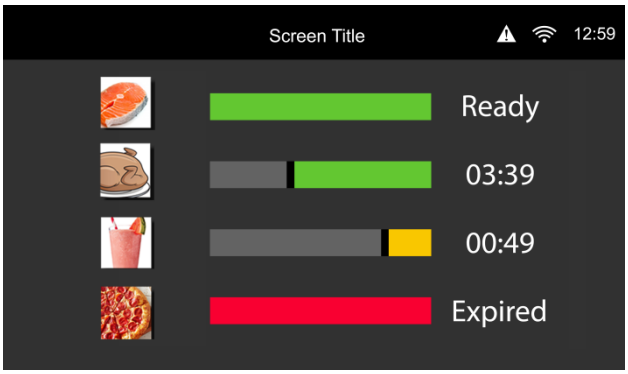


Note: Width of Black Stripe 10 pixels remains constant regardless of Timer Bar scaling.

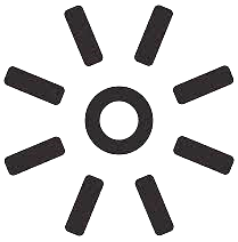
Progress Rings and Bars – Examples







15. Flashing



Flashing - Behavior

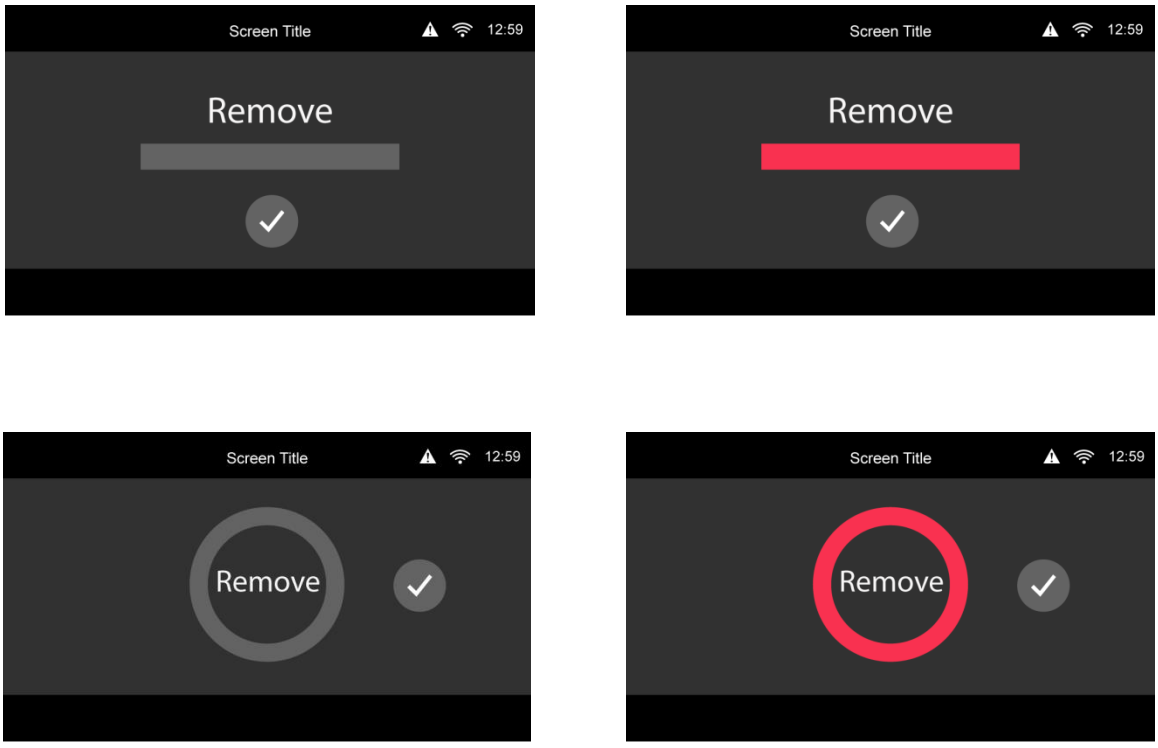
Purpose:

Flashing – (“Blinking” or “Beat Frequency”) of graphical elements (ie. Countdown Timers, Prompts) are used as an “Attention Grabber” to communicate that user interaction is immediately needed with the equipment.

Flashing Frequency expressed as: Flashes per Second - 1 FPS = 1 Hz

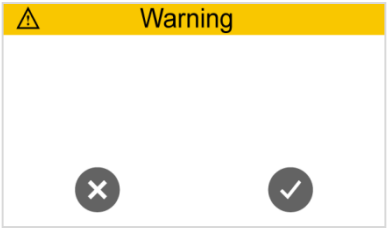
Principles:

- Follows Paradigm of Escalating Urgency
    - Slow Blinking means less urgency - 2 Flashes per Second (2 Hz)
    - Fast Blinking means most urgent - 4 Flashes per Second (4 Hz)
- Use with only Amber (Slow) and Red (Fast)
- Reference color Palette Page 18-20
- When used in conjunction with sounds, the sound is synched with flashing frequency



Blinking

16. Pop-Over Messaging and Pop Up Windows



Pop-Over Messaging versus Pop-Up Windows

Purpose:

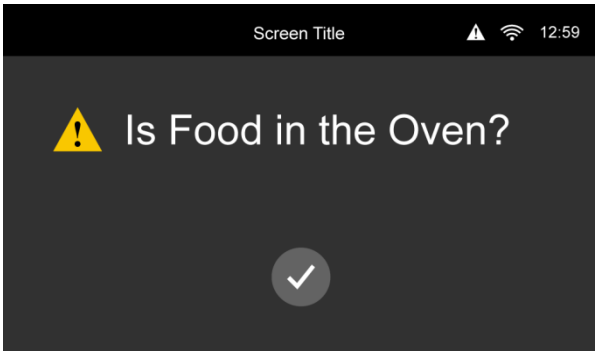
Pop-Ups were created as a mode of advertising as the internet and WWW evolved. They have expanded their function within user interfaces to provide (important) messages, or as a means of communicating information that requires user input or interaction during interface. They convey information that is related, yet subordinate to the main page content, blocking access to the main window until a user interacts with it.

While useful as a “last-minute” reminder of information, over-use of Pop-Ups can interrupt work flow and cause user frustration. Therefore, Pop-up windows should be reserved for use in secondary screens (ie. Commissioning or Service Screens), and not used as prompts or messaging during normal work flows (ie. During Crew Mode or Press & Go).

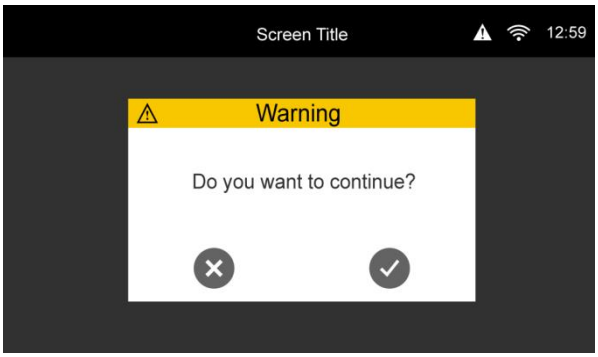
A Pop-Over is a transient view of information that is displayed on a content screen. The information may be momentary where no user interaction is required (ie “Recipe Saved”) or, may be displayed until a user selects a single action — complete, confirm or cancel.

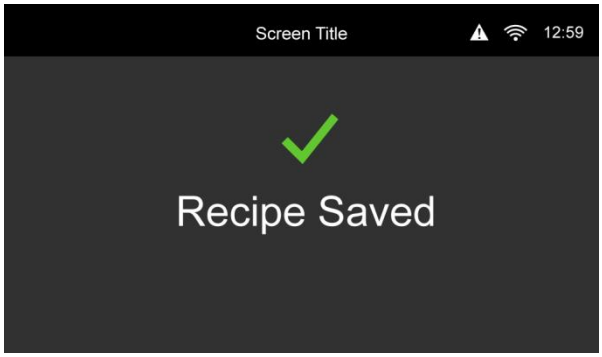
This type of messaging and prompting during normal operations is preferred, and should be “embedded” within user work flow screens as a normal progression of touchscreen interaction.

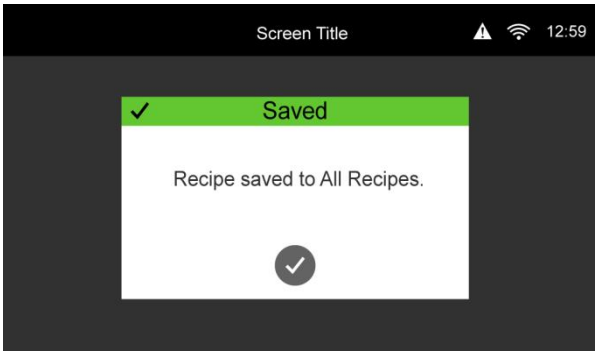
Pop-Over - embedded in Work Flow Screen



Pop-Up in Work Flow Screen







Sources:
https://uxdesign.cc/pop-up-popover-or-popper-a-quick-look-into-ui-terms-cb4114fca2a
https://usabilitygeek.com/pop-ups-vs-usability-conversions-bounce-rates

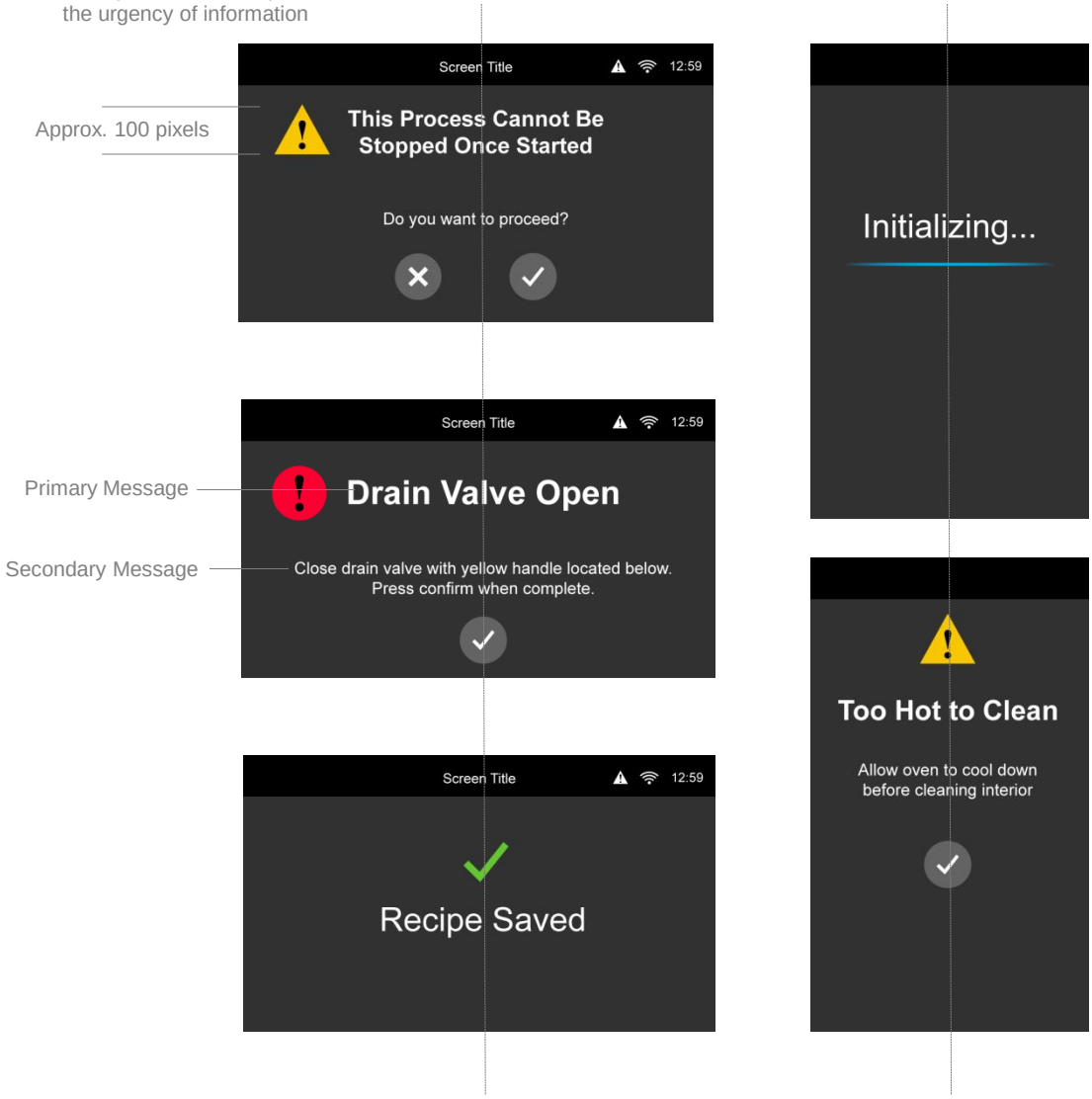
Pop-Over Messaging - Examples

Principles:

- Messages and Prompts (Text Strings) are centered about the vertical centerline of the screen
- Icons or buttons located beneath text string – centered about the vertical centerline of screen
- Transient Conditions:
  - Momentary message with no user action required
  - Message remains displayed until user interaction

.

Icons may be used to emphasize the urgency of information



Text and information positioned center-high within center of screen

- Primary Message in Upper and Lower Case – **Bold Font**
- Secondary Message as a sentence – Regular Font

https://usabilitygeek.com/pop-ups-vs-usability-conversions-bounce-rates/

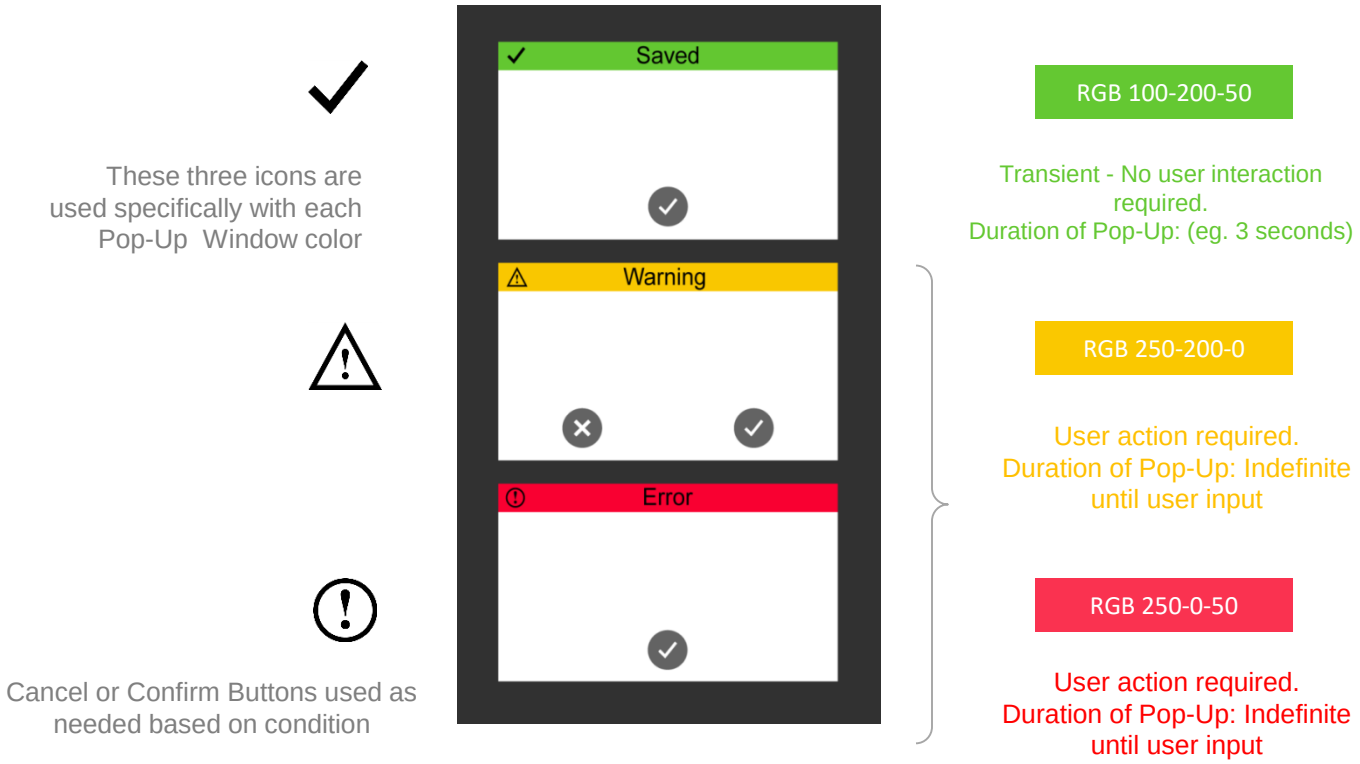
Pop-Up Windows – Function and Behavior

Principles:

Pop-Ups are used within secondary user screens such as performing diagnostics or during operations that are not part of the main work flow screens.

Three types of Pop-Up Windows are used following principles of escalating urgency as described below:

1. Confirmation: Green - Verification that a function or action was successfully completed (ie. “Recipe Saved”, “Download Successful”)
2. Cautionary: Amber - Used to caution or prompt the user for a response before continuing an action or operations– Requires user interaction / confirmation (ie. “Once Function is started, it may not be interrupted”).
3. Warning: Red - Used to communicate danger or that an error or fault condition may occur (ie. “Motor Failure - Calibration Unsuccessful”)



Note: Cancel Button is located left of the Confirm Button

https://usabilitygeek.com/pop-ups-vs-usability-conversions-bounce-rates/

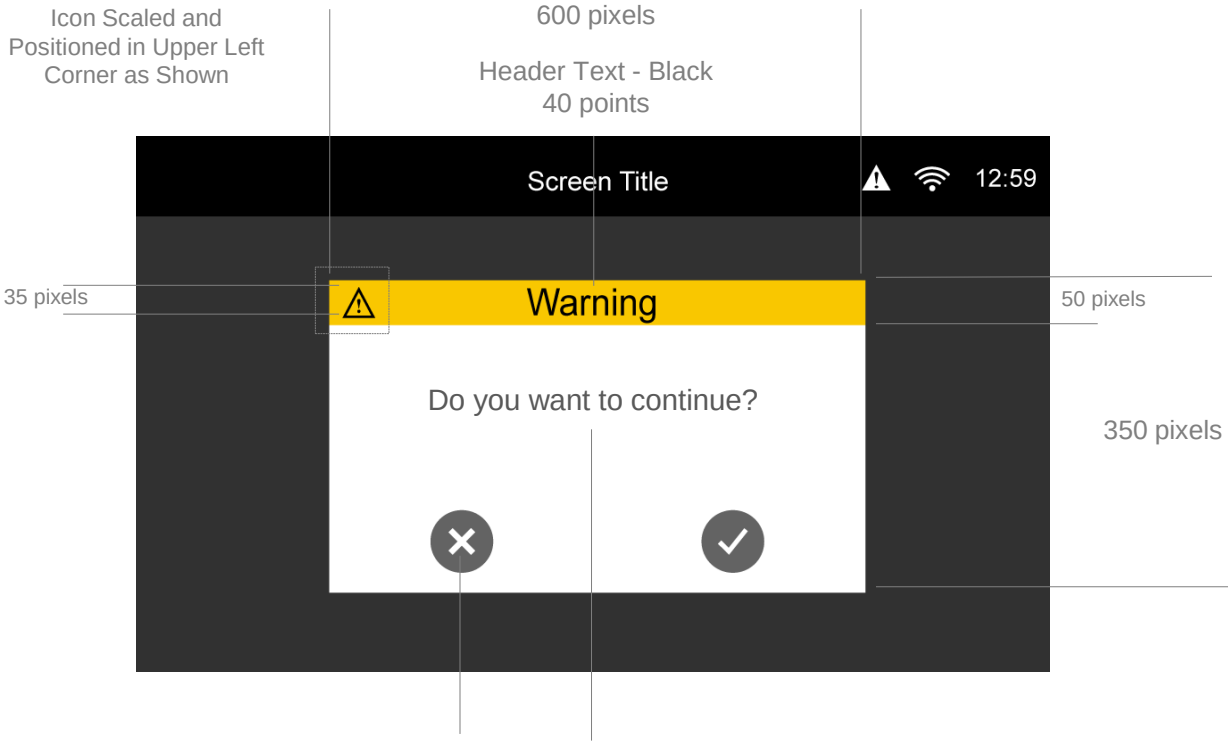
Pop-Up Windows – Single Screen

Purpose:

For single screen applications, Pop-Up dimensions are shown below.

Principles:

- Pop-Up Window is centered on the user screen
- Color usage follows the Paradigm of Escalating Urgency –
- Graphical content behind Pop-Up Windows fades to 20% - Reference Page 80



Note: Cancel Button is located left of the Confirm Button

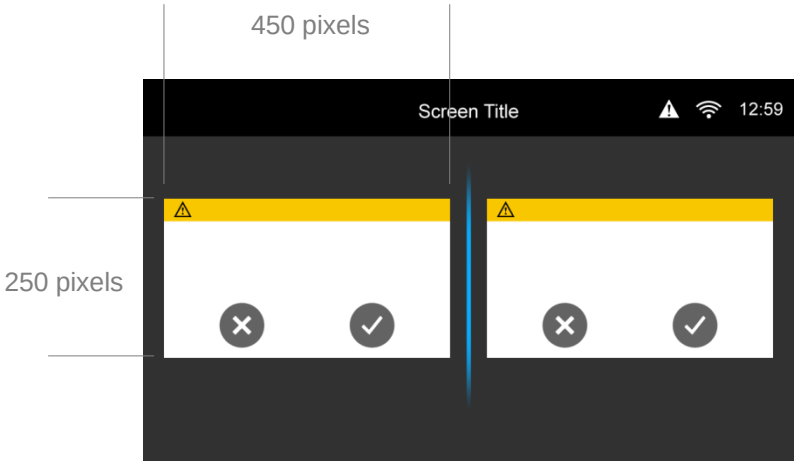
Pop-Up Windows – Split / Vertical Screen

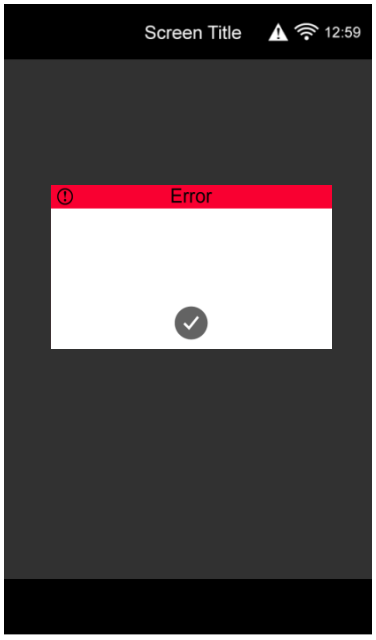
Purpose:

Pop-Up dimensions for split screen or vertical screen applications are shown below.

Principles:

- Pop-Up Windows are centered within the “half screen” of a subdivide screen





17. Data Entry Fields

Data Entry Fields

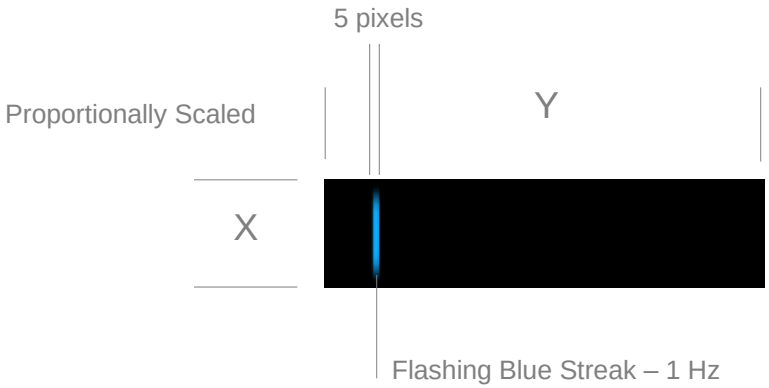
Purpose:

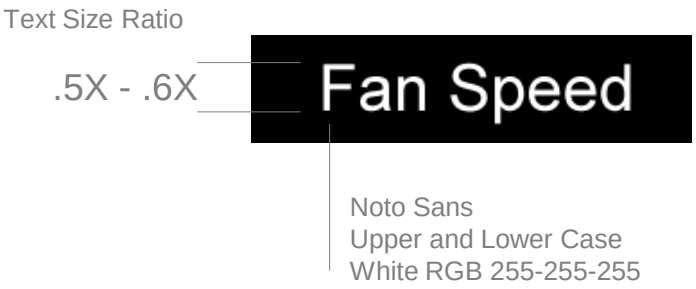
1. Data Entry Fields indicate to the user that values (alpha-numeric) within the field are editable. They are a selectable “Target” in all screens to enter values (except when used with QWERTY and Keypad)

2. Provide standard graphical format and behavior for the fields

Principles:

- Black rectangle proportionally scaled to application within screen
- “Blue Streak” (Blinking) is used to indicate the field is empty and ready for input
- Values already inputted into the fields (ie Default Settings) are also editable
- Text and Numbers within data field flow from left to right





Text too small | Text correctly scaled | Text too large

https://uxplanet.org/the-anatomy-of-input-field-c3ef863e01d7

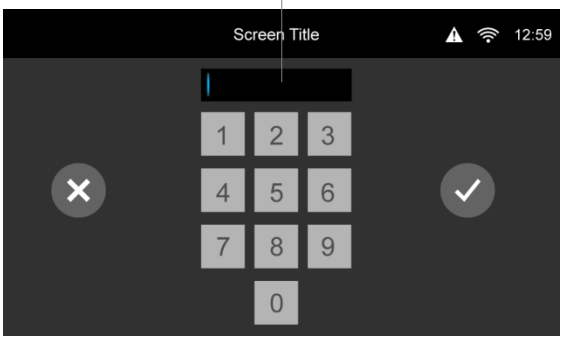
Data Entry Fields - Examples

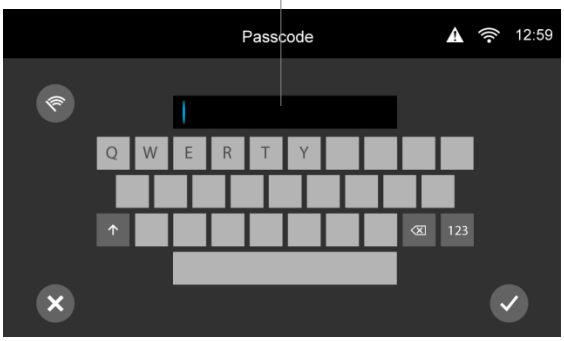
Examples of how the Data Entry Field that are Selectable and Non-Selectable based on the specific application screens shown below.

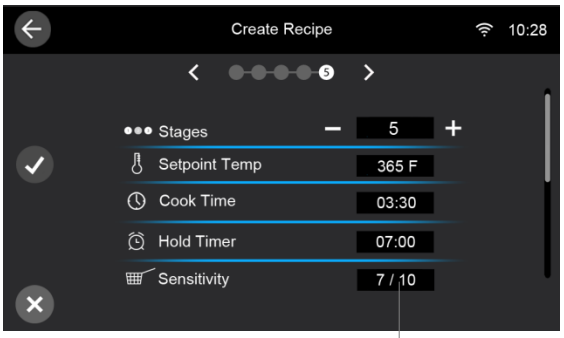
QWERTY and Keypad

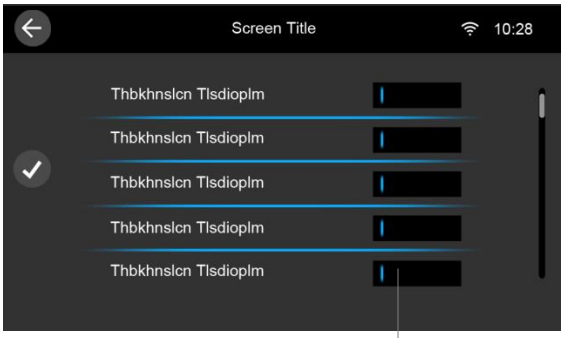
Data Entry Field
(Non-Selectable)

Data Entry Field
(Non-Selectable)







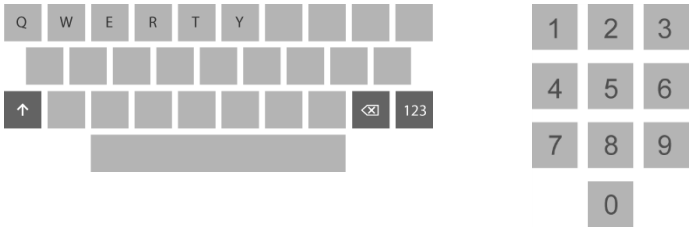


Data Entry Field
(Selectable)

Data Entry Field
(Selectable)

Application Screens

18. QWERTY and 3x4 Keypad



QWERTY Board

Purpose:

Provide a standardized format for QWERTY boards for horizontal and vertical screen applications.

Principles:

- QWERTY boards are scalable for screen application
- Uses square gray buttons as shown below

Note: Cancel Button is located left of the Confirm Button

https://docs.microsoft.com/en-us/previous-versions/windows/desktop/dnacc/guidelines-for-keyboard-user-interface-design#assigning-shortcut-keys

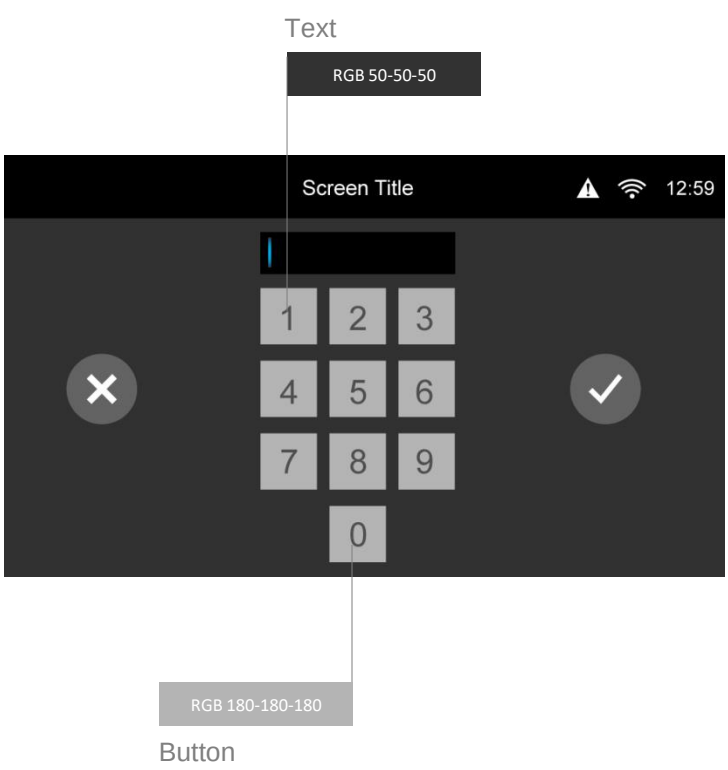
3 x 4 Keypad

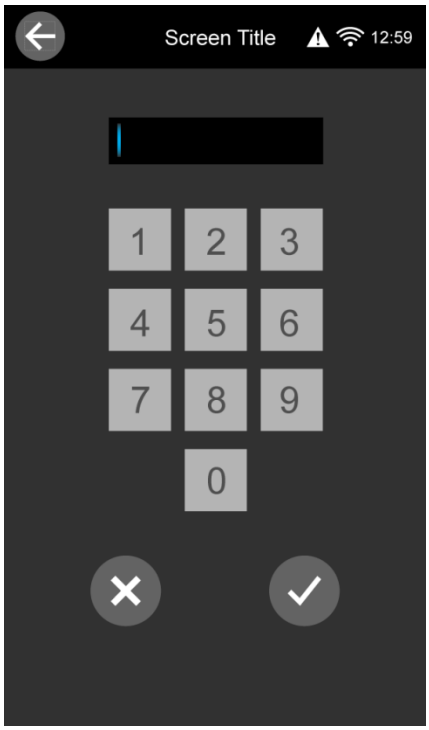
Purpose:

Provide a standardized format for 3x4 Keypads for horizontal and vertical screen applications.

Principles:

- 3x4 Keypads are scalable for screen application
- Uses square gray buttons as shown below





Note: Cancel Button is located left of the Confirm Button

19. Sounds

Sounds – Functions

Purpose:

Sounds (* “Earcons”) are used to provide audio feedback or alerts about the condition or state of the equipment. Sounds are “layered” onto the GUI and are played at appropriate times during use of the equipment to indicate status, when user interaction is required with the food or equipment, or simply to confirm when buttons are pressed on the touchscreen.

Principles:

- National Standards for frequencies commonly used in weather advisories and warnings.
- Sounds incorporate principles of Escalating Urgency - Reference Page 18
- Sounds may be user configured for varying environments (ie. Back of House versus Front of House) but are limited to a range of sounds
- Specific sounds are reference next page.

In general, there are 6 conditions “occasions” in which sounds are needed across equipment categories:

Sound Occasion	Description	Urgency Level
Warnings / Faults / Errors / Dangerous Conditions	Any impending equipment component movements or component malfunctions, detrimental to user or equipment (ie. Platen Moving, Valve Open, Belt Stuck)	Critical or High-Urgency - Requires immediate user interaction
Alerts / Prompts / Pop-Ups / Notifications	General non-critical events (ie. Shake Basket, Remove Product, Add Cheese)	Some Urgency - Requires user interaction during normal operations
Cycle Completed	General non-critical events (ie. Cook Cycle, Wash Cycle, Melt / Thaw Cycle)	Low Urgency - User interaction eventually required
Haptic / Audio Feedback	General button taps, data entry	None
Confirmation of Event	Used to confirm an event successfully took place (ie. Recipe Saved, Settings Entered)	None
Start-Up of Equipment	Used to confirm that the equipment has been turned on	None

*Source: https://www.osti.gov/biblio/5475406

Sumikawa, D.A. *Guidelines for the integration of audio cues into computer user interfaces*. United States: N. p., 1985. Web.

Source: Messages in the EAS are composed of four parts: Specific Area Message Encoding (SAME) header, an attention signal (1050 Hz for NOAA Weather Radio, 853 Hz and 960 Hz together for commercial broadcast stations), an audio announcement, and a SAME end-of-message marker. For NOAA Weather Alerts, SAME uses NWR-SAME Codes to relay specific alerts, such as tornado warnings, and hurricane advisories.

SAME is an AFSK (Audio Frequency Shift-Keying) protocol used in North America to send digitally encoded information about alerts, advisories, and warnings. Canada and Mexico both utilize SAME in some fashion for weather and disaster alerts The SAME FSK signal itself is 1200Hz wide with a 260Hz shift. Each individual bit lasting 1920 µs (1.92 ms) each, giving a bit rate of 520.8333 bits per second

Sounds - Behavior

Purpose:

In addition to functional purposes, sounds have been “designed” to create a signature Welbilt GUI experience for users. When applied consistently across equipment categories, users will have a shared sense of equipment functions and conditions by sound alone.

Principles:

- Communicate equipment conditions by sound: tonality, frequency, pitch, amplitude

Sound Occasion	Description	Urgency Level
Warnings / Faults / Errors / Dangerous Conditions	Any impending equipment component movements or component malfunctions, detrimental to user or equipment (ie. Platen Moving, Valve Open, Belt Stuck)	Critical or High-Urgency - Requires immediate user interaction
Alerts / Prompts / Pop-Ups / Notifications	General non-critical events (ie. Shake Basket, Remove Product, Add Cheese)	Some Urgency - Requires user interaction during normal operations
Cycle Completed	General non-critical events (ie. Cook Cycle, Wash Cycle, Melt / Thaw Cycle)	Low Urgency - User interaction eventually required
Haptic / Audio Feedback	General button taps, data entry	None
Confirmation of Event	Used to confirm an event successfully took place (ie. Recipe Saved, Settings Entered)	None
Start-Up of Equipment	Used to confirm that the equipment has been turned on	None

Section to be Developed

Reference: http://www.howmusicworks.org/103/Sound-and-Music/Amplitude-and-Frequency

20. Tabs

Tabs

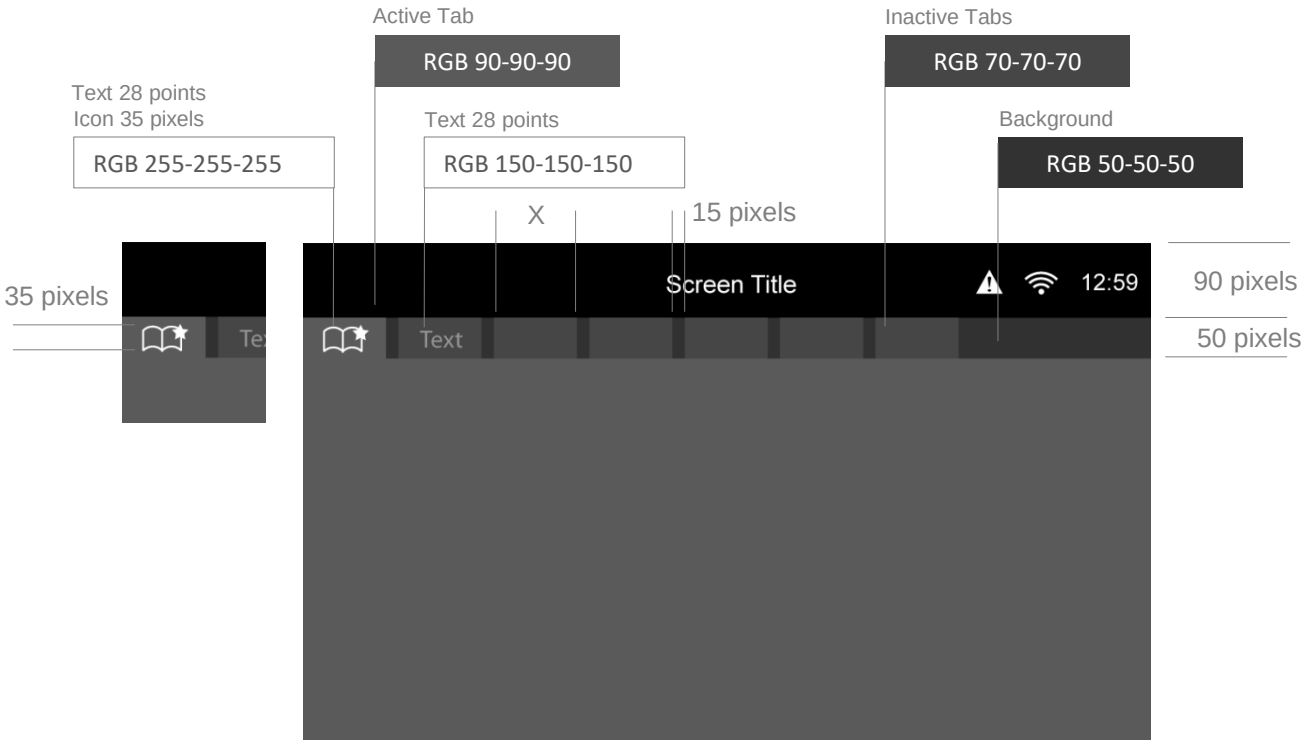
Purpose:

Tabs are used to navigate among a series of “subscreens” of a particular function or user screens where additional information and content is available within a One Button Press, but still remains within original screen functions or work flows.

Examples: Setting weekly functions

Principles:

- Tabs are a real-world metaphor of Card Catalogues or Index Cards where tabs are used to segregate content among like topics
- Practical maximum of 7-8 tabs – otherwise its better to swipe to new screens
- Active Tab is Light Gray (RGB 90-90-90) with White Text
- Inactive Tabs are Medium Gray (RGB 70-70-70) with Gray Text (RGB 150-150-150)
- Tabs may use Text, Icons or Numbers



Note: Width of Tabs are determined by the number of Tabs. Tabs use the same the proportional scaling as Timer Bars where the width of the Tab is a whole number multiple of its height: 1:2. 1:3, 1:4, etc.

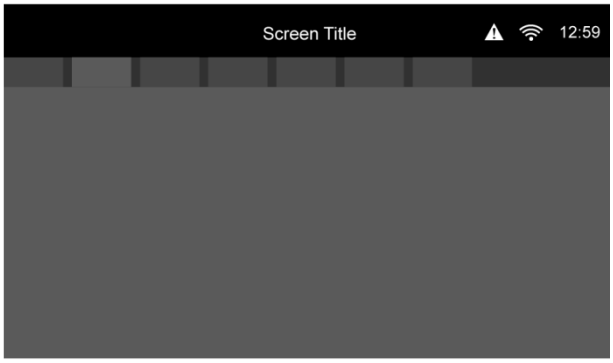
Tabs - Example

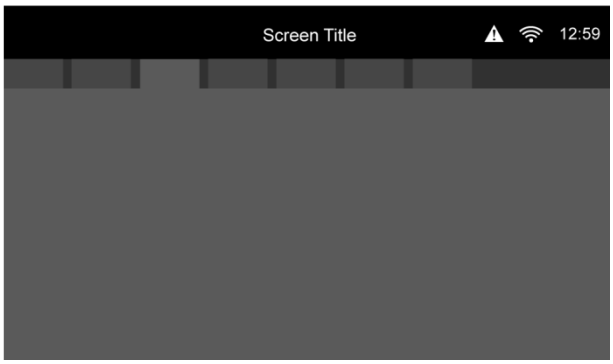
Purpose:

Example of how Tabs are used are shown below.

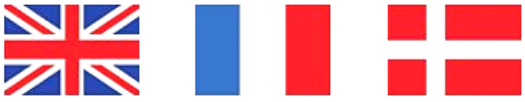
Principles:

Any number of Tabs may be added or deleted…how?





21. Languages



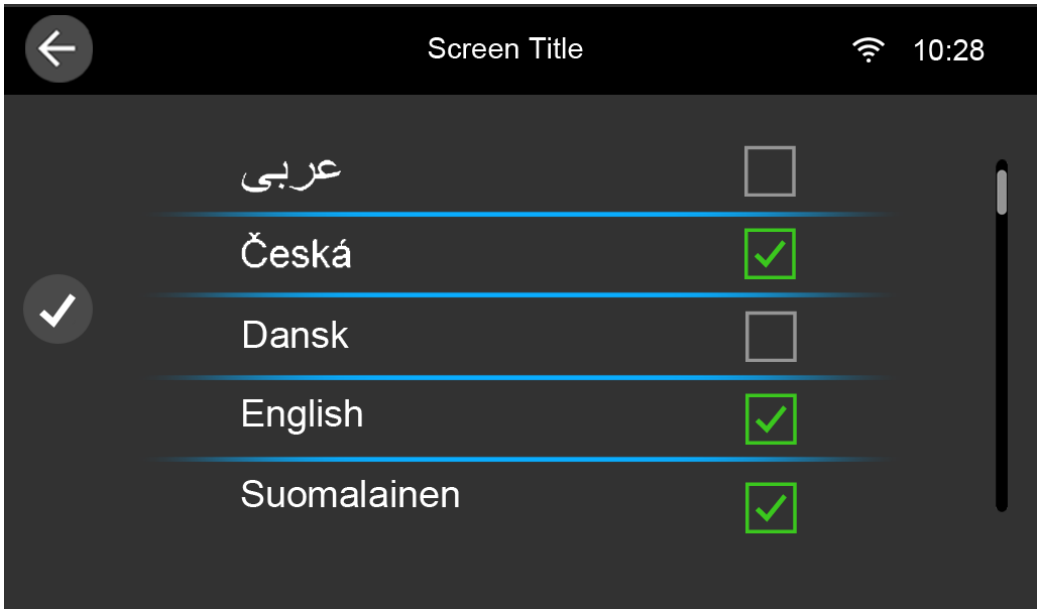
Languages

Purpose:

Provide a consistent means of selecting languages that are displayed on the touchscreen.

Principles:

- Languages are written in their native tongue
- No flags are used (ie. Arabic is not country specific)
- Check Boxes are used to select among list of languages



22. Stages / Steps / Segments

Stages / Steps / Segments

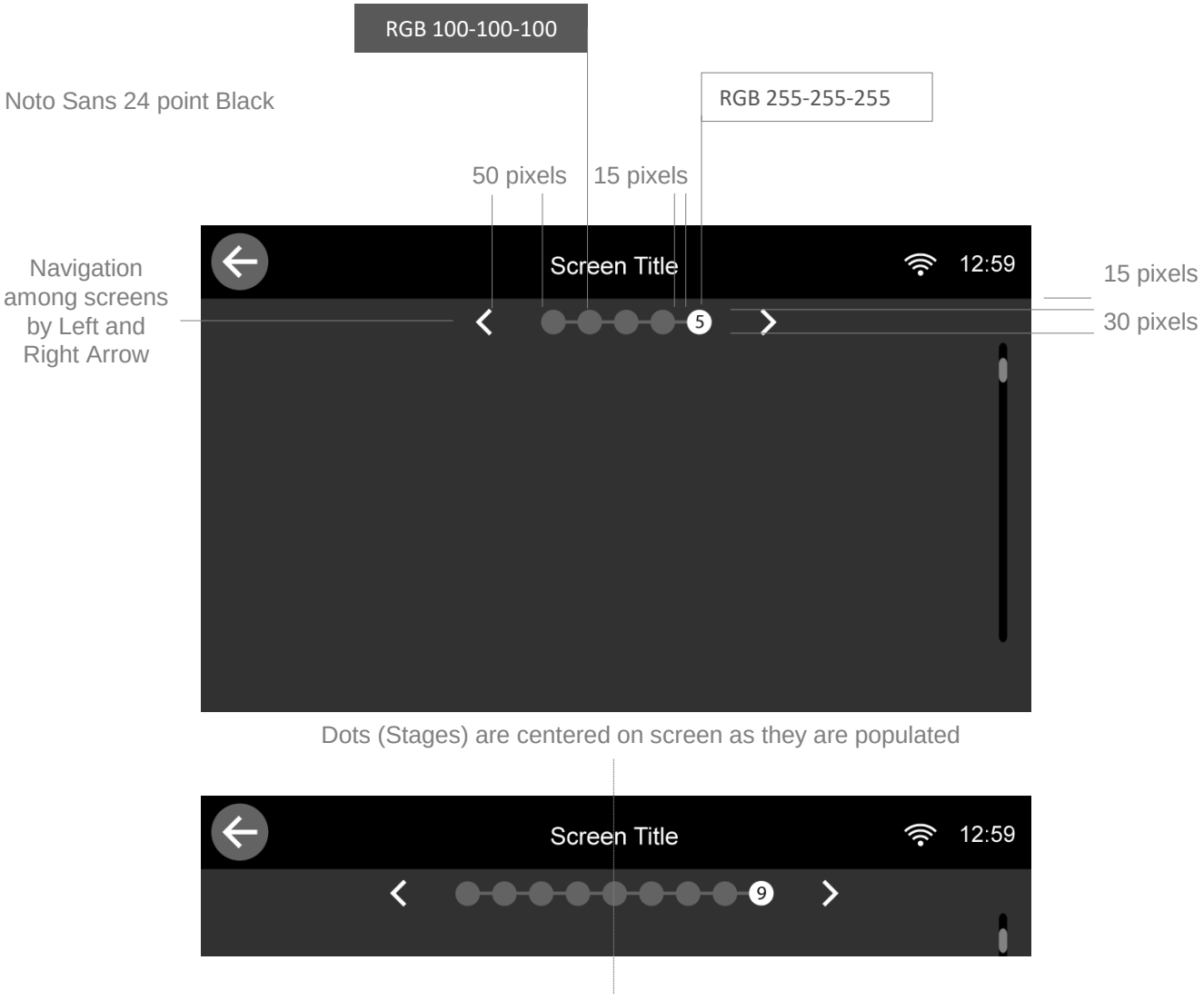
Purpose:

Stages (aka. Steps or Segments) are a means of dividing an entire cook cycle into multiple steps where each step control various equipment parameters at different times. When Stages are used in Recipe Creation, they are expressed as a series of dots connected by a central line. The active Stage is expressed as a white dot with a black number, while inactive stages are gray.

Principles:

Behavior: The method for adding and deleting steps is outlined in the Recipe Creation Section of this document.

Note: White Dot and Arrows (RGB 255-255-255) used for Dark Mode screens. Dark Dot and Arrows (RGB 50-50-50) used for Light Mode screens. All other Dots use Gray RGB 100-100-100. Reference previous page.



23. Videos

Videos

Purpose:

Video or movie clips may be embedded in the GUI to facilitate user training, cleaning, maintenance, trouble-shooting and service functions.

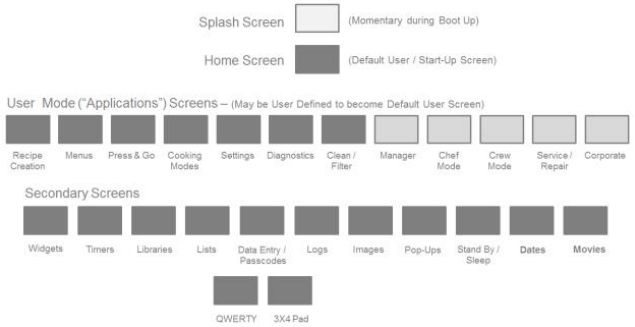
Principles:

Keep it short and sweet…

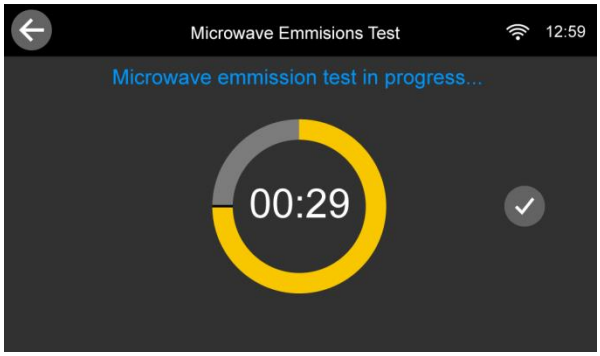
SECTION TO BE DEVELOPED

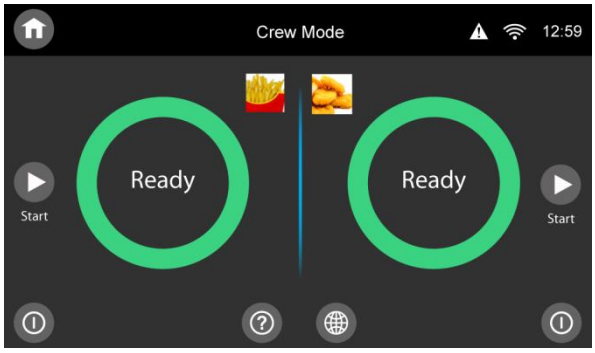
Videos must have sound (Convotherm)

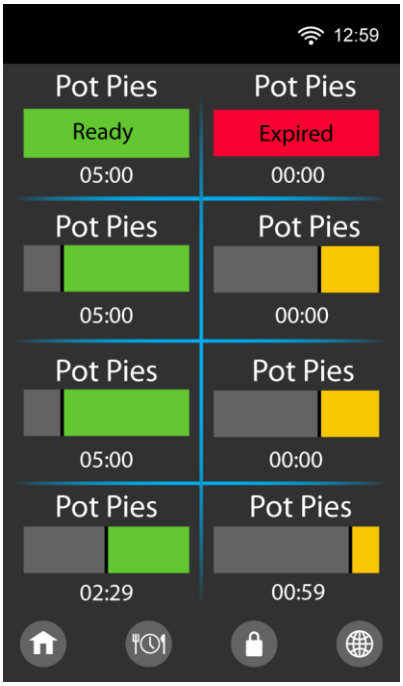
24. Screen Types
(Examples)

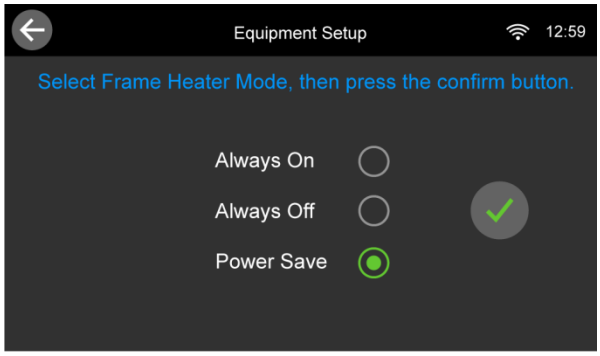


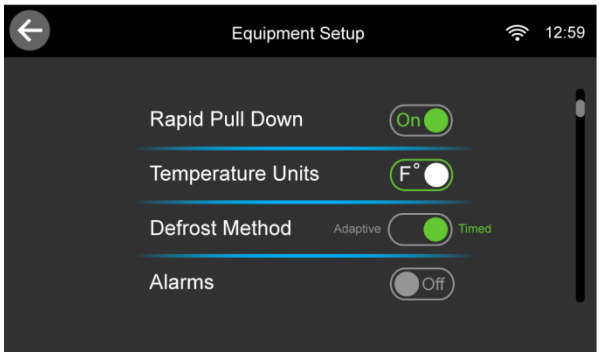
Screen Types - Examples











25. Start-Up / Splash Screen

Start-Up Screen (aka “Splash / Momentary” Screen)

Purpose:

The Start-Up Screen provides visual confirmation that the equipment (touchscreen and software) are in the process of booting up. During this brief period of time, marketing and basic equipment information may be displayed.

Principles:

- Create a “Marketing Moment” with visually exciting imagery…Movie GIF
- May contain the following information:
  - Product Name
  - Model Number
  - Serial Number
  - Software Revision
  - Manufacturing Date
  - Service Telephone Number
  - *Copyright*

Example Behavior:

- Remain visible for 3 seconds - as the equipment boots up, before disappearing to the next screen
- A “Tap to Hold” function shall be incorporated to prolong the view of the screen for those interested in equipment information.
- The Start-Up screen may provide marketing opportunities to create “Pizazz” during display.

26. Home Screen

Home Screen (aka. Main Menu Screen)

Purpose:

All Welbilt GUIs will incorporate a Home Screen. The Home Screen is analogous to the Home Screen on computers or smartphones and provides a means to organize navigational shortcuts to equipment functions .

Principles: Familiarity by Precedent

Behavior:

- The Home Screen may be customized to suit the preferences of the user. (How?)
- Passcode Protection
- Customer Logos and Colors

Note: *All Welbilt equipment will use the Home Screen as the Default User Screen upon equipment start-up.*

However, the user may select an alternative default screen (eg. Chef Mode, Recipe Creation) to become the default User Screen once the equipment is booted up.

Reference Pages 82-83 for Start Up Sounds

Laptop Computers

Smartphones

Bank ATMs

Home Screen (aka. Main Menu Screen)

Purpose: The Home Screen provides a navigational reference to select among a variety of user and equipment functions. It is a common element of all Welbilt touchscreens.

Principles:
- User configurable (Can populate which icons are present)
- Background color change (within range)

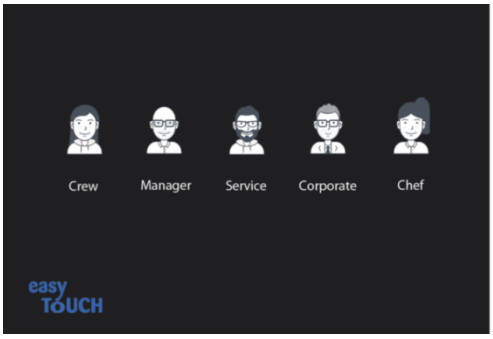
Two+ basic configurations of the Home Screen:

- User Types: Navigation to equipment functions based on user types. (ie. Crew Members, Chefs, Managers, Service/Repair, Corporate). Implication is deciding which functions belong with which user type.

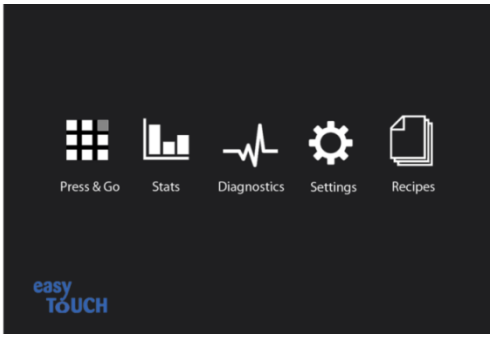
- Functions / Task Based: Navigation to equipment functions based on specific uses. (ie. Settings, Diagnostics, Recipe Development, Cleaning, Menus…) This is more akin to computers and smartphones.

- Hybrid: Combination of User Types and Functions (currently used among Welbilt GUIs)

User Type / Role-Based:

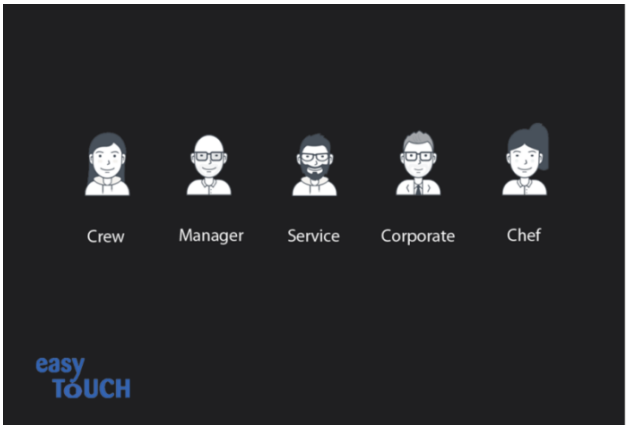


Functions / Task Based:



User Type versus Task-Based Screen Functions and Navigation

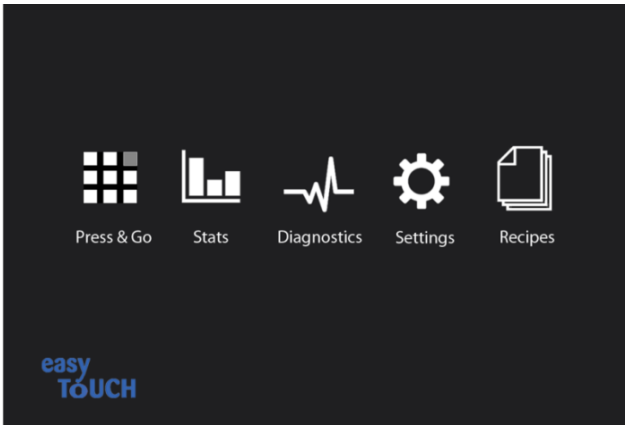
User Type / Role-Based (“Actors”)



Exercise:

- Describe the specific functions by User Type
- Who has access to what and why
- Which screens are needed and why
- Access privileges levels
- Is it a Customer Requirement versus Welbilt Standard

Functions / Task Based



Exercise:

- Describe the functions (next set of screens)
- Access privileges
- Who has access and why

Need Resolution

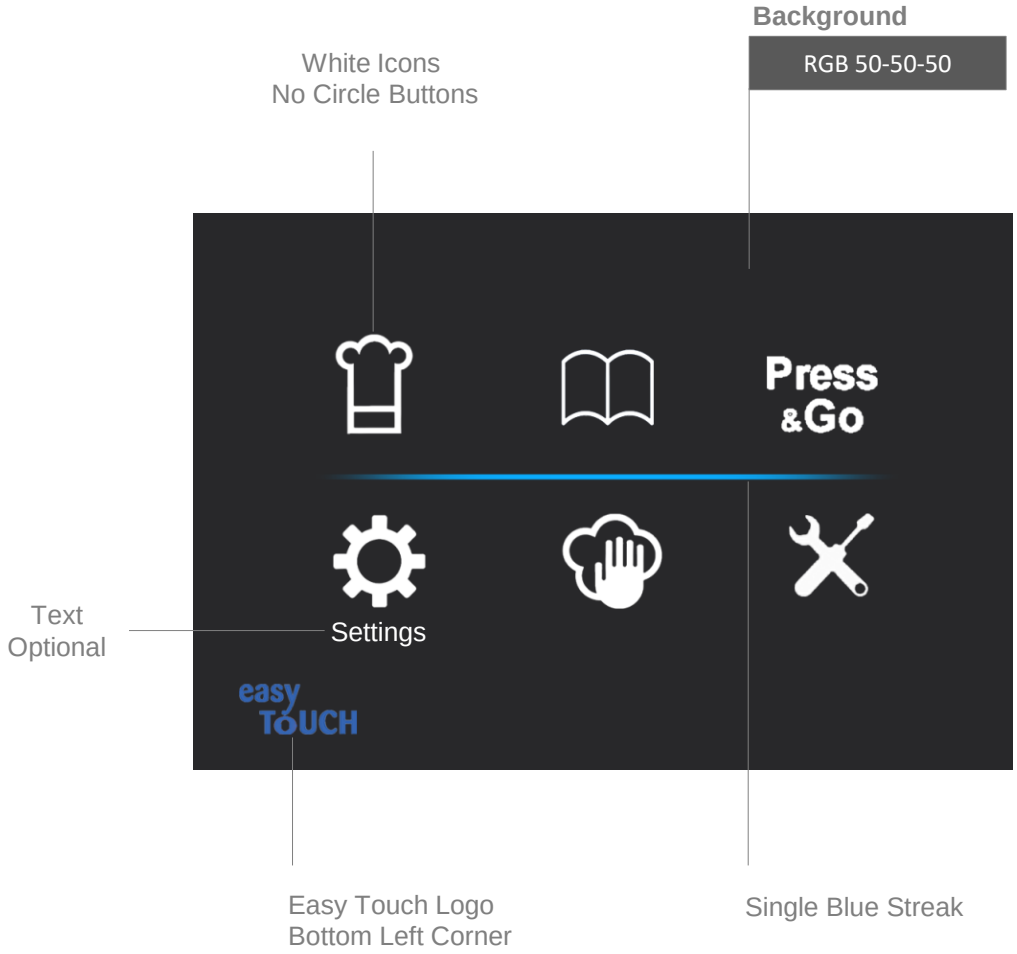
Home Screen (aka. Main Menu Screen)

The standard Home Screen is shown below.

Basic Rules:

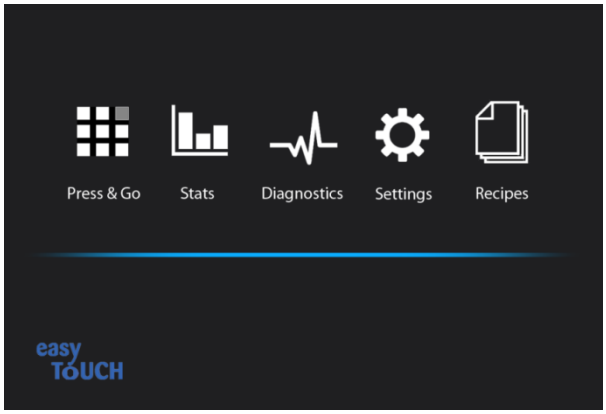
- Gray Background – White Icons
- No Anchor Points (ie. Head / Footer Bars)
- No “Home Icon” needed to indicate that this ***is*** the Home Page
- Only time when Icons don’t require circles to indicated they are selectable functions - Buttons
- Only time when EasyTouch is displayed
- Some customization by Brand or customer (ie. Able to configure Home Page with specific icons)

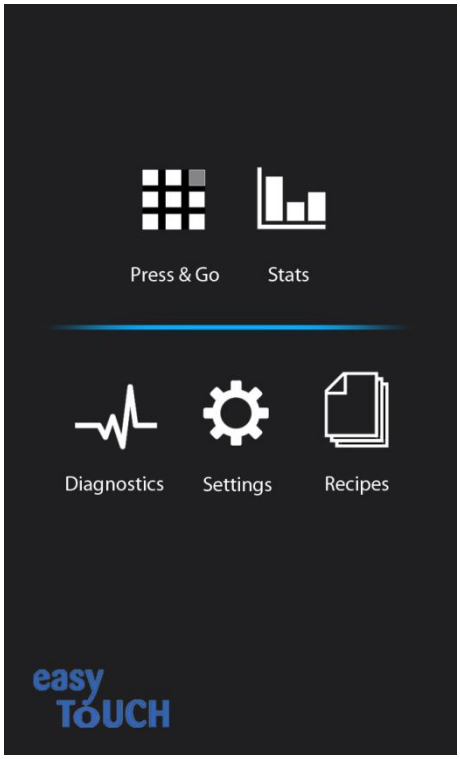
- “Blue Streak” line is a recurring motif to provide screen separation and delineation - it is introduced on the Home Screen to accustom the user

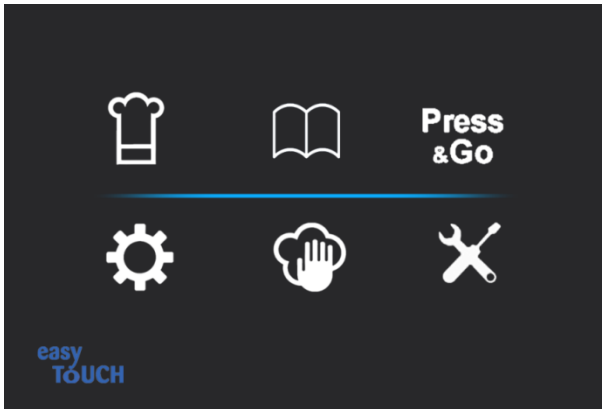


Home Screen - Examples

Examples of Home Screen shown below:







27. Appendix

Glossary of Terms and Definitions

Screen Types	Definition
Start-Up / Splash Screen	The Start-Up Screen provides visual confirmation that the equipment (touchscreen and software) are in the process of booting up.
Default User Screen	A Default Screen is any screen or series of screens that the user may configure to be displayed on the touchscreen once the equipment has fully booted up.
Main Screen	Main Screen is an ambiguous term to describe any number of screens that are frequently used.
Home Screen	Home Screen provides a means to organize navigational shortcuts to equipment functions. It is analogous to the Home Screen on a computer or smartphone.
All Recipes	All Recipes is the "Master" list of all recipes stored on board the GUI / appliance. Every recipe created or down-loaded to the GUI are stored in the All Recipes group.
Modes	
User Mode	User Mode is an ambiguous term to describe any number of functions and/or screens that are frequently used by the user.
Press and Go	Press and Go is an operational mode of the equipment where a limited number of product selections are available to initiate a cooking cycle of a product. No recipe creating or editing functions are available.
Chef's Mode	Same as Recipe Creation.
Manual Mode	Same as Recipe Creation. The user is able to input equipment parameters and "run" the equipment. This may or may not include Saving the Recipe.
Crew Mode	Same as Press and Go. User mode in which a limited number of products are available for the user to select during operations.
Quick Service Mode	Same as Press and Go and Crew Mode. A limited number of products are available for the user to select during operations.
Full Service Mode	Same as Recipe Creation. All equipment functions are available to the user.
Recipe Creation	Recipe Creation is the process and series of screens in which a user enters values and equipment settings to cook the food product. Once created, a recipe may be tested before it is saved to the All Recipes group.
General	
Behavior	A UX term describing the principle of how software responds to user inputs.
Blinking (aka. Flashing)	Flashing of graphical elements is used to draw the user's attention and that interaction with the food or equipment is needed.
Button	A graphical element (aka. Target) that is "pressable" or selectable by the user. These are also known targets.
Check Box	Check Boxes are used to select a binary value (ie. on / off), among multiple options that may be enabled at the same time.
Cook Book (aka. Menus, Groups, Sub-Groups, Category)	Any group of Recipes.
Cook Cycle	The total duration of cooking (processing) a food product.
Cooking	The term "cooking" is used to generically described any processing of foods - regardless of being hot or cold foods, liquid or solid foods.
Cooking Profiles (aka. Recipes, Equipment Settings, Cooking Profile, Cooking Parameters)	User-configured equipment settings (parameters) used to cook the food. It is essentially the program for the equipment to cook the food.
Data Entry Field	A graphic element used to indicate that alpha numerical values may be selected and edited.
Daypart	A specific group of Recipes or product options used at specific times of the day.
Digital Assets	Any graphical content (ie. images, icons, widgets, backgrounds) used in the GUI. These are typically vector-based graphics to enable scaling across different screen sizes.
Discernable Difference	A UX design principle of creating sufficient graphical contrast to allow the widest range of viewing.
Docking Bar (aka. Header, Footer, Side Bars)	A UX design term used to describe specific locations on the screen where information, icons and buttons are placed.
Escalating Urgency	A principle of equipment usage where time-based functions become increasingly urgent and require user interaction, as the process nears completion.
Font	Describes the style of typography used in text.
Formal / Informal Balance	A design term used to describe an arrangement of graphical elements that are not symmetrically placed, but still have a visual balance on a touchscreen.
Gestures	Specific finger movements used when interfacing with the touchscreen. Different gestures invoke different functions and behaviors of targets on the touchscreen.
GUI	Graphical User Interface - An interface that allows users to interact with electronic devices via a touchscreen. It incorporates both Graphical aspects and UI (Behavior) aspects of the user interface.
Haptics	Any form of interaction with the touchscreen involving touch with the fingers.
Heuristics	A UX design principle where the user is able to "discover" a process or means of navigation by visual clues on the GUI.
Icon	Any symbol or graphic representation of a function used on a screen.
Menu (aka. Cook Book, Favorites, Sub Groups)	Any collection of Recipes.
Menu (aka. Cook Book, Groups, Sub-Groups)	Any group of Recipes.
Paradigm	Term used to describe the way something is done. A model or exemplar of undertaking a function or process in the GUI.
Parameters (aka. Equipment Settings, Cooking Profile, Recipe)	Parameters are numerical values (settings) used to control the cooking process (ie. Time, Temperature, Steam, Microwave, Spindle Speed, Gap Settings, etc.).
Pixel	"Pixel" is short for Picture Element and is the smallest unit by which a display screen is divided. Screen sizes are measure in pixels (ie. 1024 x 600).
Pop-Ups (aka. Pop-Up Windows)	Pop-Up windows appear on the touchscreen to provide important messages about equipment status, or as a Prompt that requires immediate user input or interaction during equipment operations.
Progress Ring / Bar	A graphic element used to indicate time progression during equipment functions (ie. Warming up, Cooking, Holding).
Progressive Disclosure	A UX design principle of providing only the minimal graphical content to the user in order to perform a function. This is to prevent "information overload".
Prompts (User Prompts)	Messages and alerts that automatically appear on the GUI to notify the user that interaction with the food or equipment are needed. These are user-defined when creating Recipes.
Radio Button	Radio Buttons are used to select a binary value (ie. on / off), among multiple options, but where only one option is allowable at a time (mutually exclusive functions).
Recipe Creation	The process by which users enter values and equipment settings used to cook the food. Once created, a recipe may be tested before saving it to the All Recipes group.
Recipes (aka. Cooking Profiles, Equipment Settings, Cooking Parameters)	User-configured equipment settings (parameters) used to cook the food. It is essentially the program for the equipment to cook the food.
RGB	Color specification indicating Red, Green Blue intensity using a scale of 0 - 255. This is used primarily for HTML, Apps and other screen-based applications.
Screen	General term used to describe the display and contents of the touchscreen.
Screen Divider (aka. Blue Streak)	A graphic element used to partition the touchscreen into sections.
Screen Real Estate	A UX design term used to describe the physical area in which graphical content is populated onto the touchscreen.
Scrolling	Scrolling is a haptic gesture used to navigate within the same screen functions.
Slider	1. A graphic element that indicates that the screen is able to be swiped and navigated to areas outside of view on the touchscreen. 2. used as a means for the user to select (dragging) among a range of values.
Sounds	Sounds provide audio feedback on equipment status or alert the user during operations.
Stages / Segments / Steps	Divisions of a Cook Cycle where different equipment settings are used during different times within the cook cycle.
Swiping	Swiping is a haptic gesture used to navigate among multiple screens or functions.
Tabs	Tabs are a navigation element that allow users to access different parts of an individual page with related content.
Target	A UX design term to describe any graphic on the GUI that is able to be activated or selected by touch (ie Buttons, Icons, Widgets, etc.).
Toggle	Toggles are a Widget that provide the user a quick means of enabling or disabling between binary values; when only two choices are available (ie on / off).
Widget	Any graphical element that provides the user a direct means to set values or indicate status within the GUI.
Work Flow	Term used to describe specific equipment functions, parameters and behaviors for controlling the equipment via the GUI interface (ie. Recipe Development, Menu Management, Lane Assignment).

Library of Icons and Meanings

Purpose:

Welbilt Icons and their meanings are shown below and on subsequent pages. Most Icons will have only one meaning or definition of use, but others may have multiple meanings based on context, equipment type or application screen.

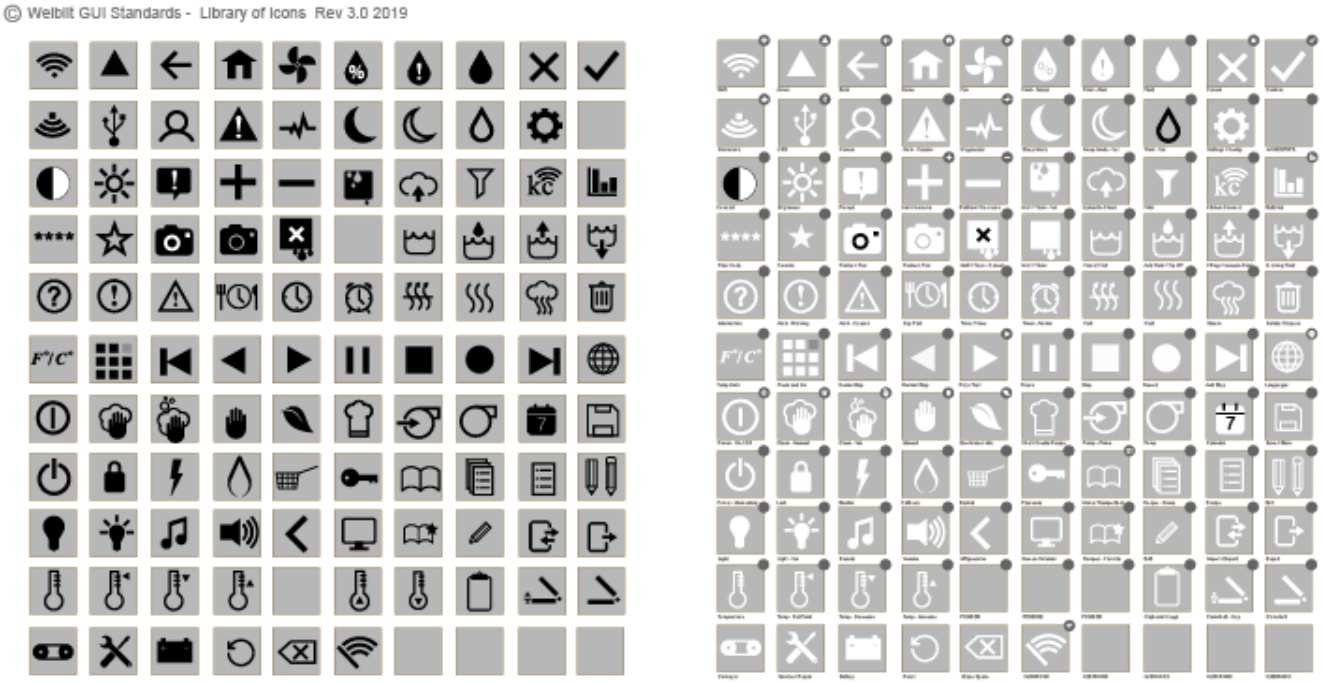
Examples:

- Droplet Icon – Indicates a “Fluid” or “Liquid” and also “Levels” (ie. Oil or Water)
- Heat Icon – Indicates a general “Heating” function (ie. Heating of Oil, Radiant, Dry)
- Drain Icon – Indicates draining or a fluid (ie. Oil or Water)

Principles:

- Icon usage, meaning and intent is supported by use of Text below the Icon
- Icons based on ISO and Industry standards

Manager



Note: All icons and digital assets are available in vector formats (.ai and .svg). Location TBD

Library of Icons and Meanings

12	Activate (same as Start)		Used to initiate an action or function – Note Triangle Icon used specifically during Recipe Creation
13	Alarm (same as Countdown Timer)		Used to select alarm-based or countdown timer functions
14	Automatic		
15	Back		Used to navigate to previous screens
16	Basket		Used to select a specific fryer basket
17	Brightness		Used to control the brightness of touchscreen
18	Calendar		Used to program or select dates
19	Calibrate / Calibration		Used to enter calibration mode or select calibration / adjustment functions
20	Cancel (same as Stop)		Used to cancel or stop a function or operation
21	Caution		Used to indicate caution. Compare to Warning or Error icon
22	Chef Mode (same as Manual Mode / Recipe Creation)		Used to create recipes
23	Clamshell (Same as Platen)		Used to select platen functions
24	Clean (same as Wash)		Used to select or initiate cleaning functions
25	Clear (erase)		Used to erase / clear a program or recipe
26	Clock (same as Time / Timer)		Used to set the duration of a function or timing functions
27	Confirm (same as Enter)		Used to confirm a function is selected
28	Configure		Used to configure basic equipment functions – usually a one-time setting
29	Connections (USB)		Used to navigate to or select communications / connectivity functions
30	Contrast		Used to control the contrast of a touchscreen
31	Convection (Same as Heat / Radiant)		Used to indicate heat functions
32	Conveyor		Used to select or initiate conveyor functions
33	Cook Mode		Used to select
34	Cook Sensitivity		Used to increase / decrease frying time base on load size
35	Cook Book (same as Menu)		Used to indicate or select a collection of recipes
36	Cook and Hold		Used to select or enter cook and hold functions
37	Cooking Profiles (same as Recipe)		Used to navigate to, or select cooking programs / recipe functions

Library of Icons and Meanings

38	Cool Down (Lower Temperature)		Used to select or initiate cooling functions
39	Create New (Recipe)		Used to create new recipe / cooking parameters
40	Cup		Used to Select Cup Size
41	Data (Statistics)		Used to navigate to or select data information
42	Day / Time *AM / PM*		Used to select or enter date and time functions
43	Day Part		Used to select or preset a range of menu / recipe options
44	Decrease / Decrement		Used to reduce or decrease functions
45	Delete / Discard		Used to discard programs / recipes
46	Development Mode (same as Create Recipe)		Used to create recipes / programs
47	Diagnostics		Used to navigate or access equipment diagnostic functions
48	Directional – Left		Used to indicate direction of action or function
49	Directional – Right		
50	Directional – Down		
51	Direction – Up		
52	Download (Data)		Used to initiate or select downloading of data / recipes
53	Drain / Empty		Used to initiate draining of a vat
54	Dry / Drying (same as Heat)		Used to indicate heating functions
55	Edit (Recipe / Menu)		Indicates editing functions – Recipe and Menus shown respectively
56	Electric		Used as an indicator for electrical functions
57	Energy Savings Mode (Standby / Eco Mode)		Used to put equipment into an idle mode or low energy state
58	Enter (Same as Confirm)		Used to confirm a selected function
59	Error (same as Fault)		Used to identify that an error or fault has occurred. Compare with Caution
60	Fan / Blower		Used to select fan or blower functions

Library of Icons and Meanings

61	Fault (same as Error)		Fault Modes should be spelled out to the User
62	Favorites (Recipe)		Used to indicate or select popular recipes / cook functions
63	Fill		Used to indicate or activate filling functions. Compare to Top-Off
64	Filter		Used to select or initiate filter functions
65	Fluid (same as Liquid)		Used to indicate liquid functions (ie Oil, Water, Moisture)
66	Forward (Move Right)		Used to indicate direction of movement or function
67	Gap / Gap Setting		Used to access, adjust or set the gap distance
68	Gas		Used to indicate gas or flame
69	General (same as Information)		Used to access or navigate to general equipment functions and information
70	Heater		Used to select or initiate heating functions
71	Heating / Raising Temperature		Used to indicate temperature functions are increasing
72	Help		Used to access general equipment and user information
73	Home (Screen)		Used to access or navigate to the Home (main) screen
74	Humidity (same as Moisture)		Used to indicate moisture functions
75	Image / Picture / Photo		Used to access library of images
76	Import / Export		Used to initiate uploading / downloading recipes and cooking parameters
77	Increase (Plus Sign)		Used to increase / increment functions
78	Information (same as General)		Used to access or navigate to data of equipment
79	Inventory (same as Level)		Used to access (liquid) inventory or level
80	Lane (assignment)		Used to select or assign a specific area of equipment for processing food
81	Language		Used to select language functions
82	Left		Used to indicate direction of movement or function
83	Level (same as Inventory)		Used to access inventory or level functions
84	Light		Used to activate lighting functions
85	Load (same as import / export)		Used to upload / download recipes or recipes. Compare with Download from Cloud
86	Log Out		Used to initiate log-out process

Library of Icons and Meanings

87	Lock		Used to indicate a function or access to a function is locked or passcode protected
88	Lower		Used to indicate direction of fucnction (ie lower a component or temperature)
89	Low Level (same as Inventory)		What is the context for this function?
90	Maintenance (same as Repair and Service)		Used to access maintenance, repair or service functions
91	Manager Mode / Functions		Used to indicate User Types
92	Manual (Mode)		Used to initiate or select manual mode / operations of equipment
93	Menu (same as Cook Book)		Used to select or access a collection of recipes
94	Menu (Daily) Same as Daypart		Used to indicate recipes for daypart
95	Melting (same as Thaw)		Used to initiate melt or thaw functions
96	Microwave		Used to select or activate microwave functions
97	Moisture (same as Humidity and Water)		Used to select or activate water / steam functions
98	Oil (same as Fluid)		Used to select or activate fluid functions
99	Passcode	****	Used to indicate a function is passcode protected and must be unlocked to access functions of equipment
100	Pause		Used to temporarily stop functions
101	Performance (Same as Equipment Statistics)		Used to indicate general equipment statistics of use
102	Photo / Picture (Same as Image)		
103	Platen (same as Clamshell)		Used to select or initiate the platen
104	Polish (same as Filter)		Used to access or initiate filtering functions
105	Power (Gas versus Elec) Different per CE		Used to activate the power to equipment
106	Power Consumption		Used to access power consumption data (same as equipment statistics?)
107	Prime		Used to prime fluids into a pump or system
108	Probe		Used to select or activate (temperature) sensing using a probe
109	Program (Same as Recipe)		Used to access or initiate programs, cooking profiles, recipes
110	Prompt		Indicator that equipment needs user inputs
111	Pump		Used to select or activate pumping functions
112	Radiant (Heat)		Used to indicate heating functions

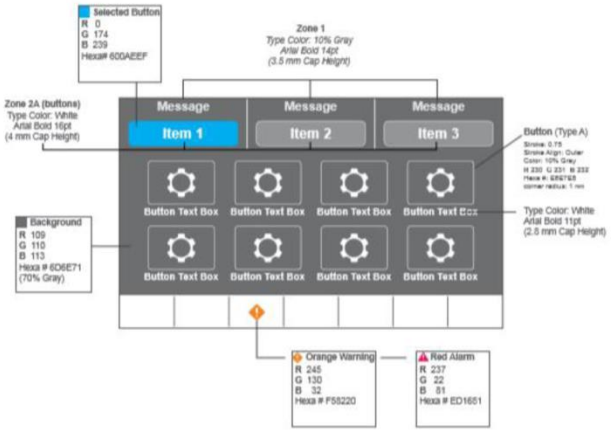
Library of Icons and Meanings

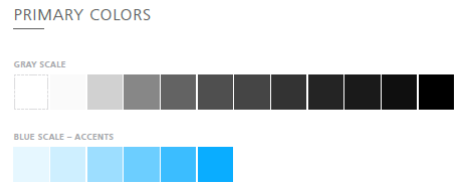
114	Regenerate / Retherm		Used to initiate a specific oven program(s)
115	Recipes (Same as Program)		Used to access or initiate programs, cooking profiles, recipes
116	Repair (same as Maintenance and Service)		Used to acess Repair, Maintenance and Service functions
117	Reset		Used to reset settings or parameters
118	Rinse (same as Spray)		Used to select or initiate spraying or rinsing functions
119	Save		Used to save programs or recipes into master library
120	Screen		Used to select or adjust screen functions
121	Scroll Down		Used to indicate more screen content is available and swipe direction
122	Scroll Left		
123	Scroll Right		
124	Scroll Up		
125	Service (same as Tools, Repair, Maintenance)		Used to acess Repair, Maintenance and Service functions
126	Service Log (Equipment Statistics?)		Used to access or navigate to service and maintenance data (Do we need a specific icon for this?
127	Set / Set Point		Used to program target temperature
128	Settings (same as Configuration)		Used to access or navigate to settings functions
129	Simmer		Used to initiate simmer mode (lower temperature) Why does this need an icon...can't we use temp or heat icon with arrows?
130	Sleep / Idle Mode / Standby		Used to select or initiate low energy states
131	Sound		Used to select or navigate to sound functions
132	Speed		Used to select or adjust the speed of components (where is this used?)
133	Spray / Sprits (Rinse, Wash?)		Used to indicate liquid spray functions
134	Standby Mode (Energy Savings Mode)		Used to put the equipment into a low energy state
135	Stage / Stages		Used to indicate Stages, Steps or Segmented recipe is being used
136	Start (same as Initiate and Activate)		Used to initiate an action or function - Note Triangle Icon used specifically during Recipe Creation
137	Statistics		Used to access equipment data (eg performance, usage, cycles, orders)
138	Steam		Used to select or activate steam functions

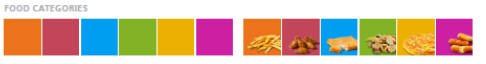
Library of Icons and Meanings

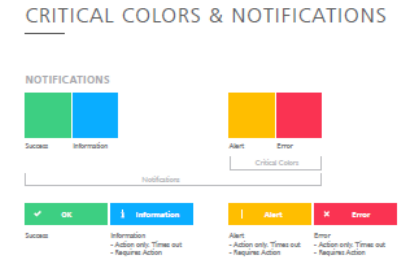
139	Stop (same as Cancel)		Used to stop an action or function – Note Square Icon used specifically during Recipe Creation
140	Temperature		Used to select or adjust temperature functions
141	Temperature Scale		Used to access or select between Celsius or Fahrenheit
142	Test		Used to initiate a function without saving parameters to memory (eg. Recipe Creation / Editing)
143	Time / Timer / Alarm		Used to select, initiate or adjust time functions
144	Tools (same as Utilities)		Used to access or navigate to equipment utility functions
145	Top Off (Fill)		Used filling or topping off fluids. Compare with Fill
146	Training		Used to access training materials
147	Trash (same as Delete)		Used to delete programs, cook profiles and recipes
148	Tray Timer		Used to activate or access tray timing functions
149	Upload (to Cloud)		Used to upload programs and recipes to the cloud
150	Usage (Counter)		Used to access / navigate to data about equipment usage
151	USB Stick / Port		Used to indicate USB port
152	User Mode		Used to indicate specific User Type
153	Utilities (same as Tools, Service, Maintenance)		Used to acess Repair, Maintenance and Service functions
154	Vat		Used to select or initiate a specific vat of a fryer. May be used with Arrows to indicate
155	Vent		Used to initiate venting functions (ie. cool-down mode, ventilation)
156	Volume		Used to access and adjust volume settings – Compare to Sounds
157	Wake Up (Same as Clock?)		Used to activate equipment once it is in sleep, idle or low energy states
158	Warning / Error		Used to indicate dangerous equipment condition – Compare with Caution
159	Wash (same as Clean)		Used to select or initiate cleaning functions
160	Wi-Fi		Used to access or initiate equipment communications
161	Zone		Used to select or initiate specific cooking areas within equipment
162			
163			
164			

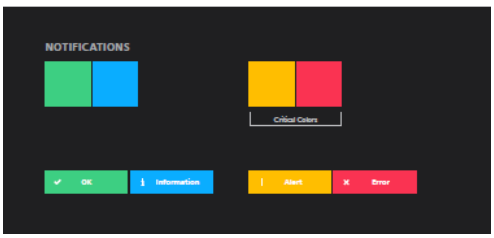
Color Palette Exploration and Rationalization

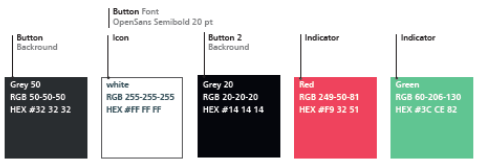








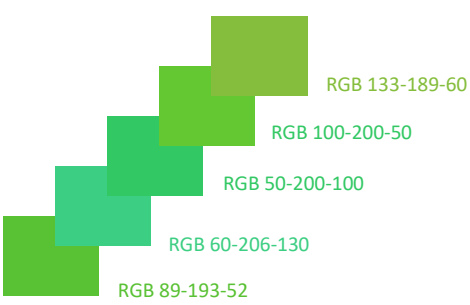


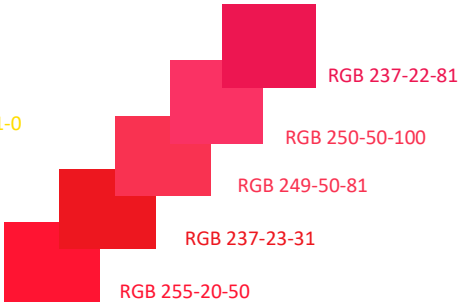


RGB	greyscale/color	HEX (Web)	examples of usage
0 - 0 - 0	Black	#000000	active / clickable (light mode), background (dark mode)
51 - 51 - 51	80%	#333333	pendign progress (dark mode only)
102 - 102 - 102	60%	#666666	inactive / clickable, letterings, icon fillings
179 - 179 - 179	30%	#B3B3B3	pending steps, icon fillings
217 - 217 - 217	15%	#D9D9D9	header pop-up-screen, unfnishe progress (circle)
235 - 235 - 235	8%	#EBEBEB	background light mode only
255 - 255 - 255	White	#FFFFFF	background pop-up-screen, negative icons
237 - 23 - 31	Red	#ED171F	stop, „warm"
255 - 204 - 0	Yellow	#ffcc00	active step, preparation, call to action
89 - 193 - 52	Green	#59C134	finished step, start
0 - 105 - 204	Blue	#0069CC	„cold", kitchen connect
237 - 139 - 0	Orange	#ED8B00	BAKE

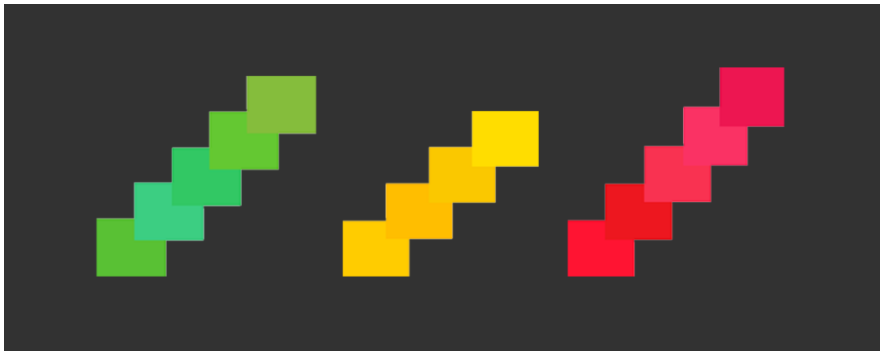
Color Palette Exploration and Rationalization

Comparison of colors by McDonald's, Imago, Hilleman and Welbilt for GUI applications.

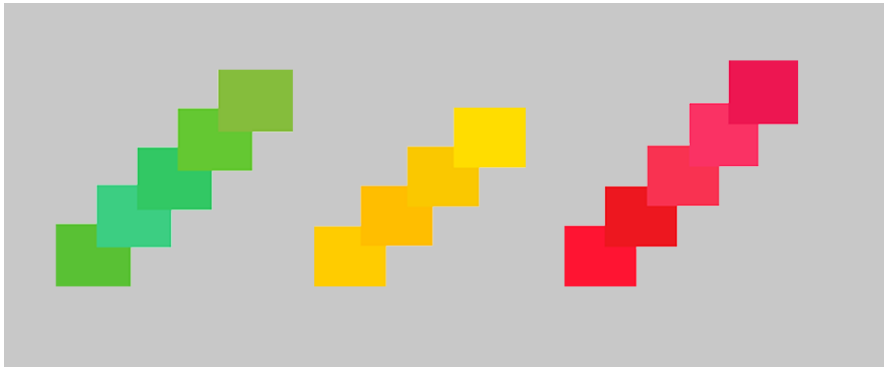


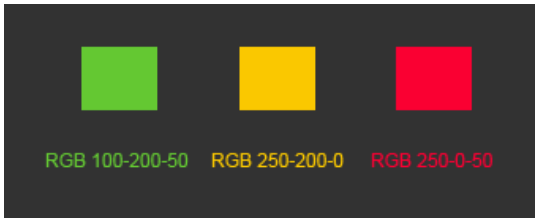


Dark Mode



Light Mode





Tactile vs Haptic feedback

Posted on April 6, 2014 by Manjunath Bhat

Tactile Feedback is *a type of* Haptic Feedback. Haptic feedback is generally divided into two different classes: Tacticle and Kinesthetic. The difference between the two is quite complex, but at a high level:

Kinesthetic: The things you feel from sensors in your muscles, joints, tendons. Weight, stretch, joint angles of your arm, hand, wrist, fingers, etc. Imagine holding a coffee-mug in your hand. Kinesthetic feedback tells your brain the approximate size of the mug, it's weight, and how you are holding it relative to your body.

Tactile: The things you feel in your 'fingers' etc., or on the surface. The tissue (for example in your fingers), has a number of different sensors embedded in the skin and right underneath it. They allow your brain to feel things such as vibration, pressure, touch, texture etc.

Haptic Feedback is a combination of both Tactile and Kinesthetic Feedback.

http://www.quora.com/Robotics/What-is-the-difference-between-tactile-feedback-and-haptic-feedback