CROWN HBF 36

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Introduction

The Crown HBF36 is a hydraulically powered, blank fed, plate and tray forming machine. Air cylinder actuated vacuum cups pull blanks from the blank magazine and transfer them into blank chutes. Chutes guide blanks into forming dies.

A hydraulic cylinder is indirectly attached to the reciprocating forming head. The forming section has adjustable head dwell and stroke capability. This allows the machine to be tailored to each specific product, resulting in optimum quality and production speeds. The forming section accepts dies of varying shut heights. 25 tons (220 Kn) of pressing capacity provides the required pressure for quality forming of deep draw products. The dies are installed and removed as a set to speed changeover.

An industrial PC supports the Operator Interface, Temperature Control, Motion Control, and Timing Logic.

Stationary and electrically interlocked guards insure operator safety.

Forming dies are mounted to common mounting plates to speed die installation and removal. After the individual dies are aligned for the first time and clamped in position on the die plate they can be removed and replaced as a unit without further alignment. To minimize die changeover times, a pair of die mounting plates is included with each set of forming dies. Dies are designed with the male die mounted to the lower die shoe allowing us to use the die ring to lift the product off of the male die half for ejection.

The counter-stacker unit presents individually counted and stacked product to the operator. The stack count is adjustable.

Machine Installation

Place the machine in a location allowing adequate space for operator and maintenance services. Reference the included floor plan drawings and machine specifications for machine component sizes, weights, and spacing.

After opening all the shipping crates and removing all packing, inspect the machine and all components for any physical damages or missing parts. Immediately report any damage to Peerless Machine and Tool Corp., Marion, IN., U.S.A. or Peerless Machine and Tool GmbH, Baesweiler, Germany.

Thoroughly clean all machine and die components. Many parts are treated with a rust and corrosion resistant coating. All coatings must be completely removed.

Once the machine is placed, level the machine in length and width using the finished edges of the forming base as reference. Maintain a 0.005" (0.1 mm) tolerance leveling the machine width. A variation of 1/16" (1.5mm) in length is acceptable. It is not necessary to secure the machine to the floor.

Use a quality air tool or motor oil to refill the air supply lubricator when necessary. Manually lubricate all points on the machine, feed, and stacker with a quality, general-purpose food grade grease intended for lubrication of anti-friction type bearings.

Install a pneumatic supply line to the machine filter, regulator, and lubricator unit. Note the air pressure and volume requirements on the machine specifications sheets to select a proper supply line size. An electrical switch senses air pressure. Then machine will not function with an inadequate air supply.

Install all loosely shipped guards and guard doors. Their locations should be plainly marked. Contact the Peerless Machine Service Department with any question of guard installation.

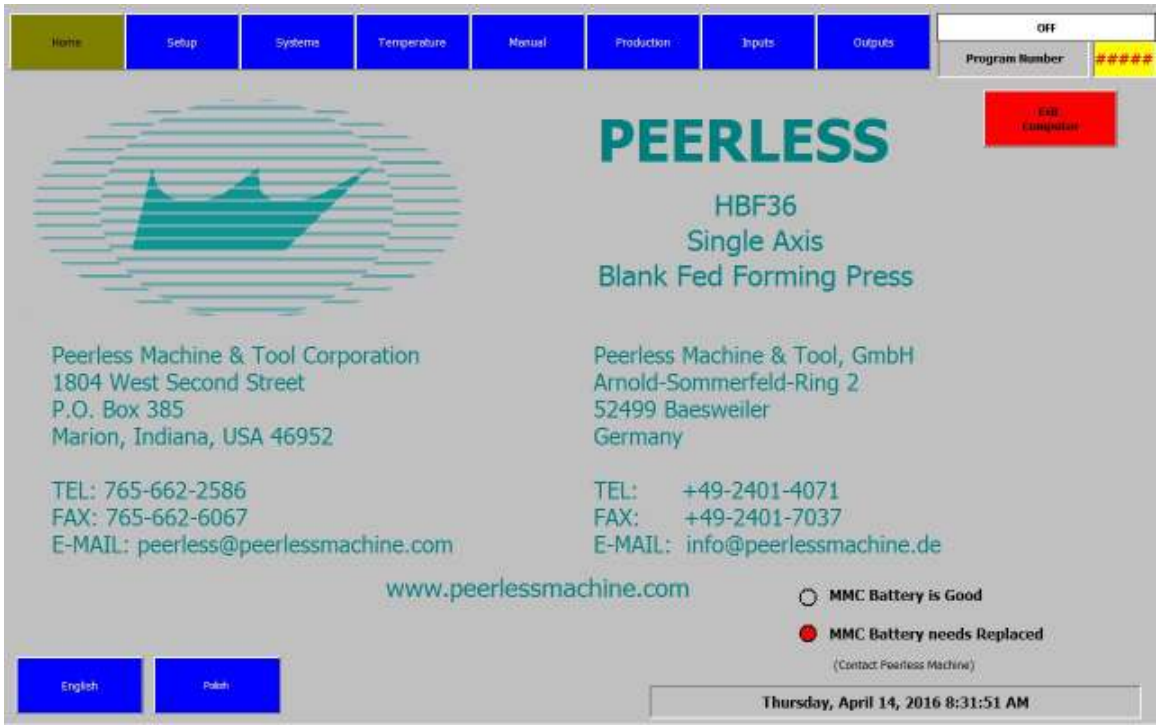
Install the electrical input service and ground cables. Size the input service cables to match the "Main Disconnect" switch capacity. Follow all national, state and local electrical codes during installation.

Read and understand the "Operating Procedures" and "Operator Controls" sections of this manual before attempting to operate the Crown HBF36 machine. Turn the input electrical disconnect switch ON. Crown HBF36 electrical controls and Touch Panel are supported by a Industrial Computer. The Computer has a separate electrical input service that is NOT interrupted when the input electrical service disconnect switch is OFF. Refer to the "Procedures for turning the Controls Computer OFF/ON" to turn the Computer electrical power OFF/ON. The Computer electrical power should only be turned OFF/ON by properly trained personnel. Verify all "Operator Controls" function correctly and the machine performs predictable following "Operating Procedures". Immediately discontinue efforts to start the machine if any control does not function properly or the machine performs unpredictably when following any "Operating Procedure". Turn the input electrical disconnect switch OFF and contact the Peerless Machine & Tool Service Department for instructions on how to proceed with "Controls" and "Procedures" testing.

CROWN HBF36 OPERATOR CONTROLS

The following descriptions explain operator control functions. Refer to the "Crown HBF36 Electrical Control Procedures" section of this manual for their proper use. Read and understand the "Operating Procedures" and "Operator Controls" sections of this manual before attempting to operate the Crown HBF36 machine.

Touch Panel "Page" selections are made with the screen choice selection buttons across the top of each "Page".



Touch Panel "Home" page

Name: Exit Computer

Press the Touch Panel "Exit Computer" key. A keyboard appears on the Touch Panel screen.

Press keyboard buttons to select password.

Press the keyboard "Enter" button. The keyboard and password prompt screens disappear.

Press the Touch Panel "Exit Computer" key.

Follow prompted commands.

Function: Many Crown HBF36 machine functions are controlled by a personal computer requiring a specific "shut down" procedure. Press the "Exit Computer" button to begin. Follow prompts on the Touch Panel screen to complete the "shut down" procedure. Refer to the "Procedure to turn the controls computer "Off" instructions of this manual for further instructions.

The current Date and Time are displayed in the lower right corner of the "Touch Panel Home page"

Name: MMC Battery is good

Function: A green indicator light indicates normal battery function.

Name: MMC Battery needs replaced

Function: A red indicator light indicates low battery function. The battery should be replaced immediately. Controls functions will fail if the battery s not replaced.

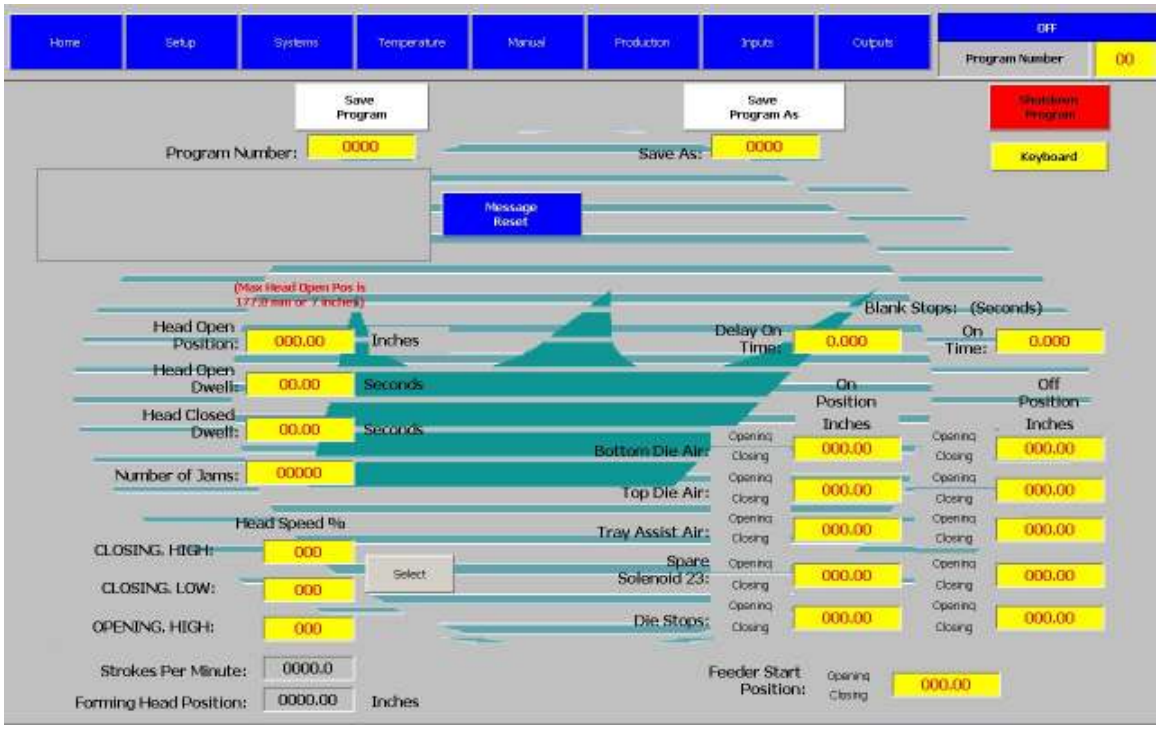
The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state **– Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Name: Manual

Press the Touch Panel white "Manual" key.

Function: The Operator Manual for the machine will be displayed. Scroll bars are provided for moving through the pages of the Operator Manual.



Touch Panel "Setup" page

The "Setup" page is normally password protected. The correct password must be entered to open the Touch Panel "Setup" page.

Press the Touch Panel "Setup" page key. A keyboard appears on the Touch Panel screen.

Press keyboard buttons to select password.

Press the keyboard "Enter" button. The keyboard and password prompt screens disappear.

Press the Touch Panel "Setup" page key. The "Setup" page appears.

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Name: Program Number

Function: Select a production program number for the library of stored programs. Press the "Save Program" button to change values to the newly selected program. A production program includes all "Setup" page values and Temperature, and Heat Timer values for the Touch Panel "Temperature" page. Changing any "Setup" value, entering a new "Program Number", and pressing the "Save Program" buttons in that order will create new programs. A valid "Program Number" value must be properly entered and saved to operate the machine.

To save an existing production program with a new identification number enter a new number in the "Save As" window and press the Touch Panel "Save Program As" button. The "Program Number" value will change to the newly entered "Save As" value.

Name: Head Speed

Function: Operators can select Head Speed options from 5% - 100% for head opening or closing motions. Normally, the 100% (Maximum speed) is preferable. In rare occasions head speed is reduced to form a difficult part shape. To aid in part formation there are two Head Closing Speed options. Use the "**Select**" push button to toggle between "**Closing. High**" and **"Closing.Low"** modes. In the Closing.High mode values can be entered from 100% to 5% of maximum head speed. In the Closing.Low mode values can be entered from 100% to 5% slowing head speed to approximately .2% of maximum.

Head speed is presented in percentages of "Maximum" speed. Observe the machine in production noting formed parts quality. Reduce head speed if all other adjustments fail to produce quality formed parts. Stop machine production. Press the yellow Touch Panel Head Speed Closing or Opening display window. Select Head Speed opening or closing values using the number keys that appear on the Touch Panel screen. Resume production again observing formed parts quality. Repeat the adjustment process to determine necessary head opening and closing speeds. To minimize the affect on production output select maximum allowable opening and closing speed values. "Head Speed" values must be properly entered and saved to operate the machine.

A **Message** / Fault window displays any current message or fault. "Messages" might indicate a "stop" button is depressed or a guard is open. Messages can be "reset" with the **"Message Reset"** button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screen. Examples of "Fault" conditions are shown on the Touch Panel "Fault" screen.

Name: Shutdown Program

Function: For Peerless technician use only. This button maybe used to close the operator interface software allowing access to the computer desktop screen.

Forming Head Position is displayed as reference to aid in establishing machine functions timing values. The forming head can be moved to a position, "Opening" or "Closing", where a function should occur. The displayed "Forming Head Position" value can be entered as a preliminary function "On" or "Off" value. Function values can be more precisely established observing the machine in production.

Name: Head Open Position

Function: In production the forming head motion will stop each machine cycle at the "Head Open" position. "Head Open Position" is selected with inputs on the Touch Panel "Setup" page. Position is presented as distance the head opens from the pre-determined "dies closed" position. For maximum production speed select a forming "Head Open Position" that opens the forming dies just enough to allow parts to freely escape the die area. Forming "Head Open Position" is normally a calculated value of twice the formed part depth plus .75 inch (19 mm). Begin with the calculated "Head Open Position". Observe the machine in production noting formed parts escaping the dies. Reduce the "Head Open Position" value. Press the Touch Panel "Save Program" button if you elect to save the new position value in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. Resume production again observing formed parts escaping the dies. Repeat the adjustment process to minimize the "Head Open Position" value. A valid "Head Open Position" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

Name: Head Open Dwell

Function: In production the forming head motion will stop each machine cycle at the "Head Open" position. "Head Open Dwell" is a time value selected with inputs on the Touch Panel "Setup" page. For maximum production speed select a forming "Head Open Dwell" that holds the forming dies open just long enough to allow parts to freely escape the die area. Begin with a "Head Open Dwell" value of .6 second for paper blank lengths to 12 inches (30.5 cm) or 1 second for blank lengths over 12 inches (30.5 cm). Observe the machine in production noting formed parts escaping the dies. Reduce the "Head Open Dwell". Press the Touch Panel "Save Program" button if you elect to save the new dwell value in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. Continue to observe formed parts escaping the dies. Repeat the adjustment process to minimize "Dwell" time. A valid "Head Open Dwell" value must be properly entered and saved to operate the machine.

Name: Keyboard

Function: This button is used in the event that the on screen keyboard would not open when an input field is selected to change a value for operating the machine. Press the yellow keyboard button to open the on screen keyboard. This button can be found on the "Setup" page or the "Temperature" page where most data is input to the control.

Name: Head Closed Dwell

Function: "Head Closed Dwell" is the amount of time formed parts are held in the dies under pressure. Values are selected with inputs on the Touch Panel "Setup" page. Part depth, paper quality and moisture, and die temperature are some of the many factors that affect "Head Closed Dwell" time. Formed parts to 1 inch (25 mm) depth may require .5 second dwell, 1.5 inches (38 mm) deep parts .8 second, 2 inches (50 mm) 1 second, and 3 inches (76 mm) 1.5 seconds. Observe the machine in production noting formed parts quality and size. Reduce the "Dwell" value. Press the Touch Panel "Save Program" button if you elect to save the new dwell value in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. Resume production again observing formed parts quality. Repeat the adjustment process to minimize "Dwell" time. A valid "Head Closed Dwell" value must be properly entered and saved to operate the machine.

Name: Number of Jams

Function: The "Number of Jams" is the maximum number of machine production cycles the jam detection system will allow without sensing a passing part. If the "Number of Jams" value is exceeded the forming and feed systems will stop at the completion of their next cycle. The jam detection system must be "On" enabling the sensors on the stacker to detect passing parts. Press the Touch Panel "Save Program" button if you elect to save the new "Number of Jams" value in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. A valid "Number of Jams" value must be properly entered and saved for jam detection functions.

Name: Blank Stops

Function: Blank stops rise to hold cut blanks in the "blank chute" for timed release into the open forming dies. "Delay On Time" and "On Time" values are expressed in seconds. The Blank Stop timing sequence starts as the forming head closes. Adjust the "Delay On Time" value to retract releasing parts into the forming dies. A short time will retract the Blank Stop cylinders during Head Closed Dwell. Longer time values will retract the cylinders while the forming head is opening. "Delay On Time" value limits are 0 to 2.2 seconds. Once the Blank Stop Cylinders have been retracted, the period of time they remain retracted is controlled by the Blank Stops "On Time" value. The timer begins when the Blank Stops are retracted. Blank Stops rise to hold cut blanks when the timer expires. "On Time" value limits are from 0 to 1 second. Press the Touch Panel "Save Program" button if you elect to save the new Blank Stops "Delay On Time" value and "On Time" value in the existing program for future use. Valid values must be properly entered and saved to operate the machine.

Name: Bottom Die Air

Function: "Bottom Die Air" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". At the "On Position" command the "Bottom Die Air" turns "On" to free parts from the opening forming dies. "On" position commands require an "Opening" or "Closing" selection and a "Position" value. "Bottom Die Air" flow stops at the "Off Position" command. "Off" position commands require an "Opening" or "Closing" selection and a "Position" value. "Die air" flow should be the minimum required to free the formed part as the dies open. Air volumes are independently adjustable with needle valves located on the operator side of the machine. Press the Touch Panel "Save Program" button if you elect to save the new "Bottom Die Air" values in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. A valid "Bottom Die Air" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

Name: Top Die Air

Function: "Top Die Air" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". At the "On Position" command the "Top Die Air" turns "On" to free parts from the opening forming dies. "On" position commands require an "Opening" or "Closing" selection and a "Position" value. "Top Die Air" flow stops at the "Off Position" command. "Off" position commands require an "Opening" or "Closing" selection and a "Position" value. "Die air" flow should be the minimum required to free the formed part as the dies open. Air volumes are independently adjustable with needle valves located on the operator side of the machine. Press the Touch Panel "Save Program" button if you elect to save the new "Top Die Air" values in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. A valid "Top Die Air" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

Name: Die Stops

Function: "Die Stops" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". At the "On Position" command the "Die Stops" lower to allow formed parts to escape the forming dies. "On" position commands require an "Opening" or "Closing" selection and a "Position" value. "Die Stops" rise to stop incoming blanks positioning them correctly on the forming dies at the "Off Position" command. "Off" position commands require an "Opening" or "Closing" selection and a "Position" value. Press the Touch Panel "Save Program" button if you elect to save the new "Die Stops" values in the existing program for future use. A valid "Die Stops" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

Name: Tray Assist Air

Function: "Tray Assist Air" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". At the "On Position" command the "Tray Assist Air" turns "On" to speed part ejection from the open forming dies. "On" position commands require an "Opening" or "Closing" selection and a "Position" value. "Tray Assist Air" flow stops at the "Off Position" command. "Off" position commands require an "Opening" or "Closing" selection and a "Position" value. "Assist air" flow should be great enough to blow the formed part from the forming die without causing the part to turn over or jam in the part slides or guides. Air volumes are independently adjustable with needle valves located on the operator side of the machine. Press the Touch Panel "Save Program" button if you elect to save the new "Tray Assist Air" values in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. A valid "Tray Assist Air" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

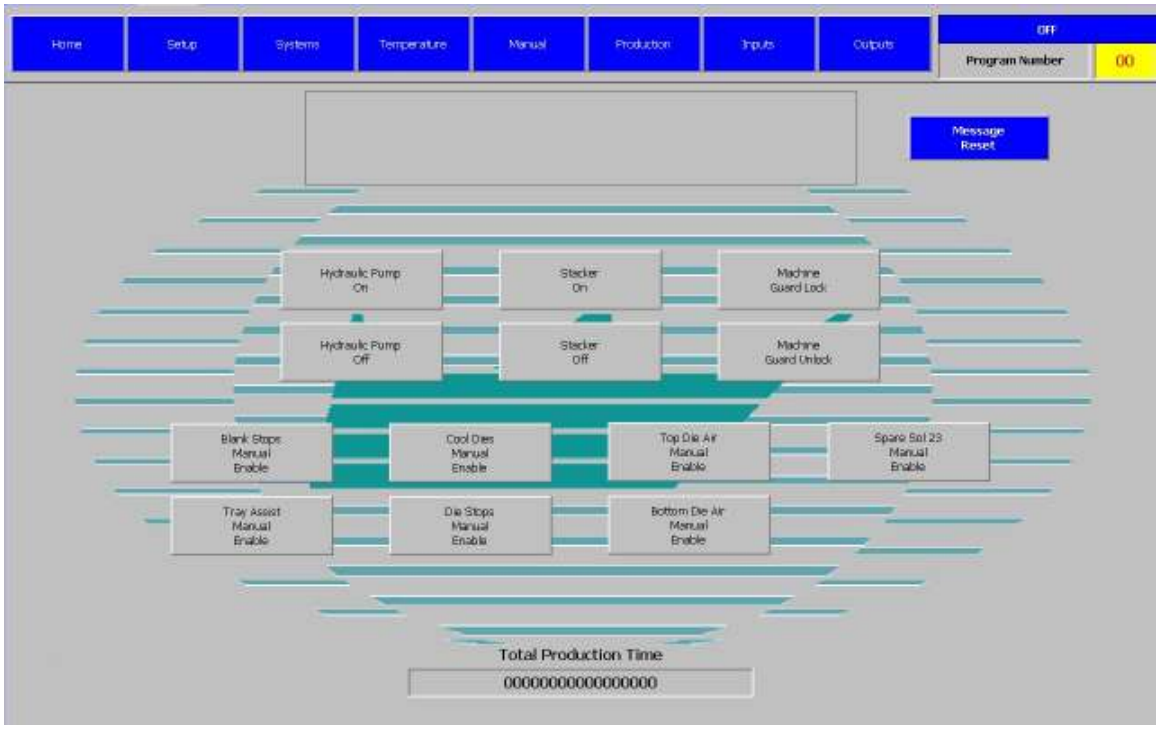
Name: Spare Sol 23

Function: "Spare sol 23" is used for customer specified pneumatically controlled optional functions. "Spare sol 23" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". At the "On Position" command, "Spare sol 23" turns "On". "On" position commands require an "Opening" or "Closing" selection and a "Position" value. At the "Off Position" command, "Spare sol 23" turns "Off". "Off" position commands require an "Opening" or "Closing" selection and a "Position" value. Press the Touch Panel "Save Program" button if you elect to save the new "Spare sol 23" values in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. If an incorrect value is entered a message will be displayed in the message window.

Name: Feeder Start Position

Function: "Feeder Start Position" values are expressed in distance of Forming Head open position (from "dies closed" position) as the head is "Opening" or "Closing". The blank feeder begins a new cycle each time a "Start" position command is received. "Feeder Start Position" commands require an "Opening" or "Closing" selection and a "Position" value. The feeder cycle completes to place a blank at the extended blank stop cylinder insuring a blank is waiting in position when the forming dies open and the blank stop retracts. Press the Touch Panel "Save Program" button if you elect to save the new "Feeder Start Position" value in the existing program for future use. Enter a new "Program Number" and press the "Save Program As" button to create a program with the new value. A valid "Feeder Start Position" value must be properly entered and saved to operate the machine. If an incorrect value is entered a message will be displayed in the message window.

Machine speed is displayed in **"Strokes Per Minute"**. Machine speed is calculated periodically during production.



Touch Panel "Systems" page

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

A **Message** / Fault window displays any current message or fault. "Messages" might indicate a "stop" button is depressed or a guard is open. Messages can be "reset" with the **"Message Reset"** button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screen. Examples of "Fault" conditions are shown on the Touch Panel "Fault" screen.

Name: Hydraulic Pump On

Function: The Hydraulic Pump cannot be turned "On" unless all guards are closed and all "Stop" and "Emergency Stop" buttons released. Press the "Hydraulic Pump On" Touch Panel button to start the hydraulic pump. Solenoid operated hydraulic valves holding the forming head in position will open a few seconds after the pump starts. The machine will then respond to forming head motion commands.

Name: Hydraulic Pump Off

Function: Press the "Hydraulic Pump Off" Touch Panel button to turn the Hydraulic Pump off. A solenoid operated hydraulic valve opens to drain the accumulators each time the hydraulic pump is turned off.

Name: Stacker On

Function: Press the "Stacker On" Touch Panel button to power the stacker motor. The stacker conveyor motor will immediately start. The discharge cylinders will move on command from the part stack counter or the stacker "Manual Discharge" button.

Name: Stacker Off

Function: Press the "Stacker Off" Touch Panel button to turn "Off" electrical power to the stacker conveyor motor.

Name: Blank Stops Manual Enable / disable

Function: The "Blank Stops" manual button toggles between enable (on) and disable (off). Momentarily depress the "Blank Stops" enable button to disable the "Blank Stops" function. Momentarily depress the "Blank Stops" disable button to enable the "Blank Stops" function. "Blank Stops" manual must be disabled to run the machine in Production mode.

Name: Tray Assist Air Manual Enable / disable

Function: The "Tray Assist Air" manual button toggles between enable (on) and disable (off). Momentarily depress the "Tray Assist Air" enable button to disable the "Tray Assist Air" function. Momentarily depress the "Tray Assist Air" disable button to enable the "Tray Assist Air" function. "Tray Assist Air" manual must be disabled to run the machine in Production mode.

Name: Cool Dies Manual Enable / disable

Function: The "Cool Dies" manual button toggles between enable (on) and disable (off). Momentarily depress the "Cool Dies Manual" enable button to disable the "Cool Dies Manual" function. Momentarily depress the "Cool Dies Manual" disable button to enable the "Cool Dies Manual" function. Use the "Cool Dies Manual" function to turn the "Tray Assist Air" and "Bottom Die Air" valves "On" to cool overheated forming dies. "Cool Dies Manual" must be disabled to run the machine in Production mode.

Name: Die Stops Manual Enable / disable

Function: The "Die Stops" manual button toggles between enable (on) and disable (off). Momentarily depress the "Die Stops" enable button to disable the "Die Stops" function. Momentarily depress the "Die Stops" disable button to enable the "Die Stops" function. "Die Stops" manual must be disabled to run the machine in Production mode.

Name: Top Die Air Manual Enable / disable

Function: The "Top Die Air" manual button toggles between enable (on) and disable (off). Momentarily depress the "Top Die Air" enable button to disable the "Top Die Air" function. Momentarily depress the "Top Die Air" disable button to enable the "Top Die Air" function. "Top Die Air" manual must be disabled to run the machine in Production mode.

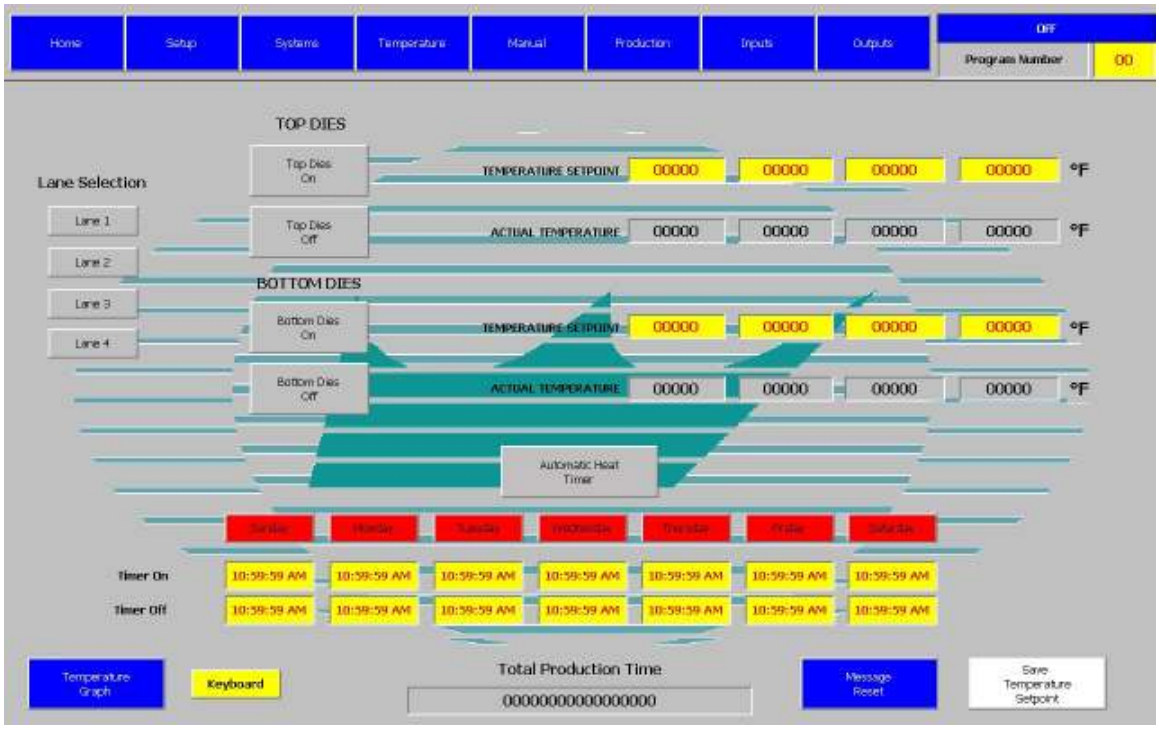
Name: Bottom Die Air Manual Enable / disable

Function: The "Bottom Die Air" manual button toggles between enable (on) and disable (off). Momentarily depress the "Bottom Die Air" enable button to disable the "Bottom Die Air" function. Momentarily depress the "Bottom Die Air" disable button to enable the "Bottom Die Air" function. "Bottom Die Air" manual must be disabled to run the machine in Production mode.

Name: Spare Sol 23 Manual Enable / disable

Function: The "Spare Sol 23" manual button toggles between enable (on) and disable (off). Momentarily depress the "Spare Sol 23" enable button to disable the "Spare Sol 23" function. Momentarily depress the "Spare Sol 23" disable button to enable the "Spare Sol 23" function. "Spare Sol 23" manual must be disabled to run the machine in Production mode.

"Total Production Time" is the cumulative time the machine has been in "Production". The timer is reset to zero by pressing the "Production Reset" button on the Touch Panel "Production" page. "Total Production Time" is displayed here and on the Touch Panel "Production" and "Temperature" pages.



Touch Panel "Temperature" page

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Name: Keyboard

Function: This button is used in the event that the on screen keyboard would not open when an input field is selected to change a value for operating the machine. Press the yellow keyboard button to open the on screen keyboard. This button can be found on the "Setup" page or the "Temperature" page where most data is input to the control.

Name: Top Dies On

Function: Pressing the "Top Dies On " Touch Panel button enables the chosen "Top" forming dies based on the Lanes selected. Refer to the "Lane Selection" instructions in this manual.

Name: Top Dies Off

Function: Pressing the "Top Dies Off" Touch Panel button disables the chosen "Top" forming dies based on the Lanes selected. Refer to the "Lane Selection" instructions in this manual.

Name: Bottom Dies On

Function: Pressing the "Bottom Dies On" Touch Panel button enables the chosen "Bottom" forming dies based on the Lanes selected. Refer to the "Lane Selection" instructions in this manual.

Name: Bottom Dies Off

Function: Pressing the "Bottom Dies Off" Touch Panel button disables the chosen "Bottom" forming dies based on the Lanes selected. Refer to the "Lane Selection" instructions in this manual.

Name: Temperature Setpoint

Function: Thermocouples in each die half measure temperature. The controller regulates temperature at the prescribed setpoint. The setpoint for each die can be changed with push button entries on the Touch Screen. The actual die temperature for each die half is constantly displayed on the Lanes Selected. Dies to be heated are chosen with the "Top" and "Bottom" "On / Off" and the Lanes Selected on this page. Refer to the "Lane Selection" instructions in this manual. Temperature Setpoint values are saved as part of program operating conditions using the "Save Program" feature described in the "Touch Panel Setup Page" instructions of this manual. Using the "Save Temperature Setpoint" button at the bottom of this page will also save the programmed values.

Name: Automatic heat timer

Function: The die heat timer can be programmed to turn the die heat on with the machine unattended. Electrical power to the machine and controls computer must be on and the lanes to be operated need to be selected at the "Lane Selection" section of the "Touch Panel Temperature page". "Timer (die heat) on" and Timer (die heat) off" values and days of the week can be selected. The timer is capable of specifying different On / Off times each day. These values are not saved with other program values.

To enable the timer function:

Select the day(s) of the week the dies are to automatically turn "On" and "Off" by pressing the necessary Touch Panel buttons. Days of the week buttons change from Red / "Off" to Green when they are selected. Days of the week Touch Panel buttons toggle between "On" and "Off" each time they are pressed.

Input a time of day value in the "Timer on" and the "Timer Off" window for each day being used

Press the yellow "Timer on" selection window. A key screen appears.

Press number keys (1 through 12) to select an "hour" value

Press the "Up" arrow screen key to "shift" the key screen display values

Press the "Colon" screen key

Press number keys (00 through 59) to select a "minute" value

Press the "Up" arrow screen key to "shift" the key screen display values

Press the "A" or "P" key for A.M. or P.M. values

Press the "Enter" screen key

The screen key will disappear. The selected "Time of day" value will appear in the yellow "Timer on" selection window.

Press the yellow "Timer off" selection window. A key screen appears.

Press number keys (1 through 12) to select an "hour" value
Press the "Up" arrow screen key to "shift" the key screen display values

Press the "Colon" screen key

Press number keys (00 through 59) to select a "minute" value

Press the "Up" arrow screen key to "shift" the key screen display values

Press the "A" or "P" key for A.M. or P.M. values

Press the "Enter" screen key

The key screen will disappear. The selected "Time of day" value will appear in the yellow "Timer off" selection window.

Auto Heat Timer Usage:

Press the "Automatic Heat Timer" Touch Panel button. The button color changes from gray / "Off" to Green when the timer is "On". The "Automatic Heat Timer" Touch Panel button toggles between "On" and "Off" each time it is pressed.

Press the appropriate "Top Dies" and/or "Bottom Dies" Touch Panel button(s) to enable the "Top and/or "Bottom " die heat controls. Die heat will turn "On" and "Off" at selected timer values. When the "Automatic heat timer" is "On" die heat is governed by the "Timer "On / Off" values. When the "Automatic heat timer" is turned "Off" die heat will NOT turn "Off". The "Top Dies" and/or "Bottom Dies" MUST be must be turned "Off " with their corresponding Touch Panel buttons.

Lane Selection: "Note": One Lane must be selected to enable the Feeder Unit of this machine

Name: Lane 1

Function: When "Lane 1" button is selected (Green), the die heat, vacuum generators, blow off solenoid, stacker, counter and jam detection systems are all selected for lane 1. When the button is deselected (Gray) all these systems are disabled.

Name: Lane 2

Function: When "Lane 2" button is selected (Green), the die heat, vacuum generators, blow off solenoid, stacker, counter and jam detection systems are all selected for lane 2. When the button is deselected (Gray) all these systems are disabled.

Name: Lane 3

Function: When "Lane 3" button is selected (Green), the die heat, vacuum generators, blow off solenoid, stacker, counter and jam detection systems are all selected for lane 3. When the button is deselected (Gray) all these systems are disabled.

Name: Lane 4

Function: When "Lane 4" button is selected (Green), the die heat, vacuum generators, blow off solenoid, stacker, counter and jam detection systems are all selected for lane 4. When the button is deselected (Gray) all these systems are disabled.

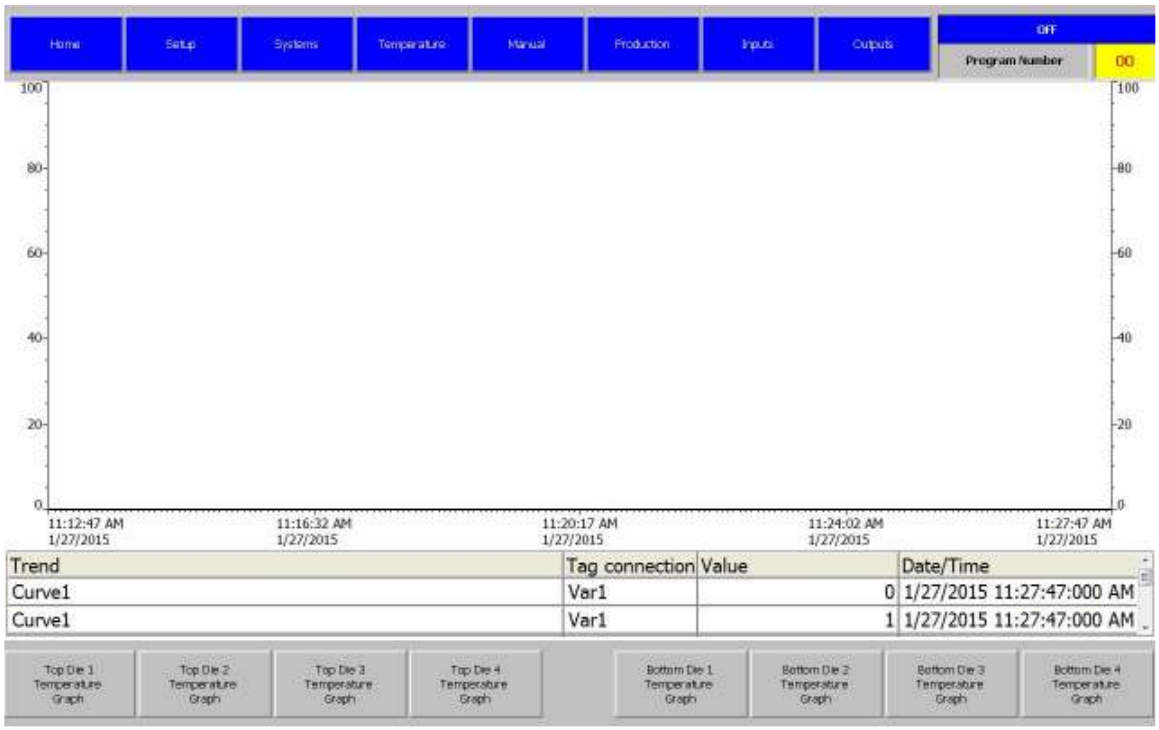
Name: Temperature Graph

Function: Pressing the "Temperature Graph" button displays a Touch Panel page where a graphic comparison of die setpoint and actual temperatures can be seen. Select the die positions to view with Touch Panel inputs on the "Temperature Graph" Touch Panel screen. See figure below.

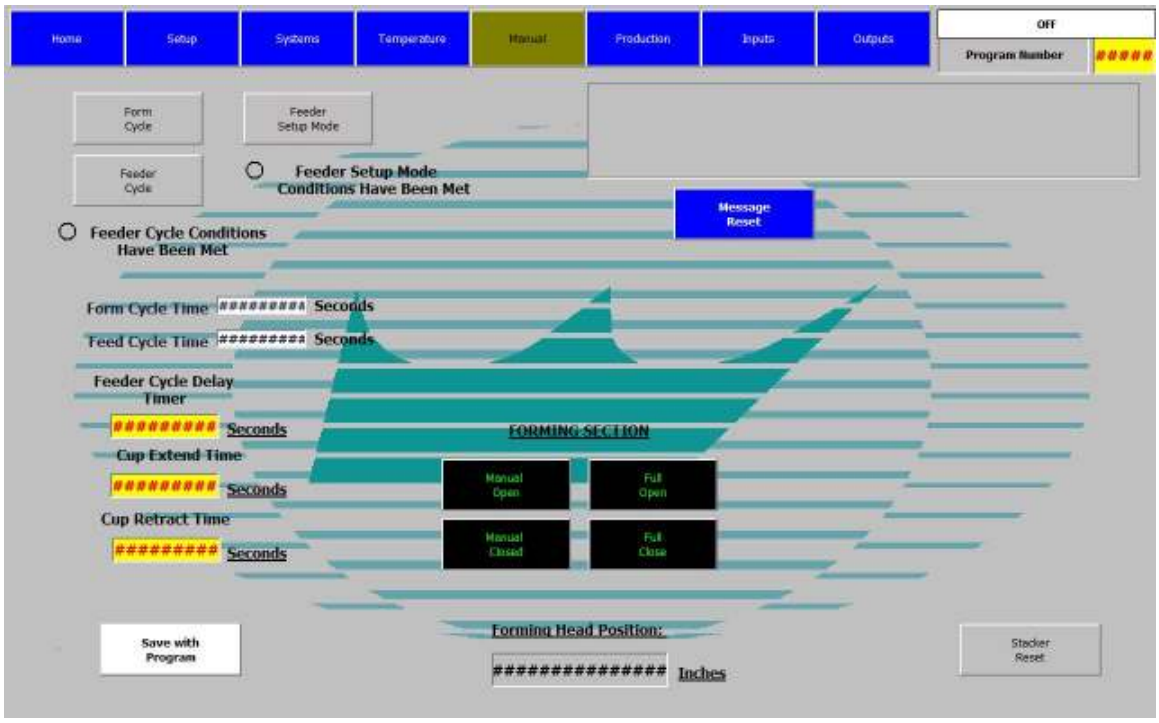
Name: Save Temperature Setpoint

Function: Press the "Save Temperature Setpoint" push button to store newly selected temperature settings in the selected program.

"Total Production Time" is the cumulative time the machine has been in "Production". The timer is reset to zero by pressing the "Production Reset" button on the "Touch Panel Performance page". "Total Production Time" is displayed here and on the Touch Panel "Production" and "Systems" pages.



Touch Panel "Temperature Graph" page



Touch Panel "Manual" page

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Name: Form Cycle

Function: With the forming heads in "Head Open" position momentarily depressing the "Form Cycle" button will initiate one forming head stroke. The forming head will again stop at the commanded "Head Open" position.

Name: Feed Cycle

Function: Momentarily depressing the "Feed Cycle" button will initiate one feed system stroke. Vacuum cup cylinders will extend to contact blanks in the feed magazine, retract with captured blanks, and rotate to release the blanks in the chute leading to the forming dies.

Name: Feeder Setup Mode

Function: In "Setup" mode Feed components can be moved manually to make necessary vacuum cup and blank chute positional adjustments.

From production mode:

Depress the Machine Stop button to halt machine motion.

The Feeder Setup Mode button will appear on the manual page.

Open the forming head to full open position using the Touch Panel "Manual Open" or "Full Open" buttons

Open the operator side forming head guard

Install the forming head safety block

Open required feed guards

Press the Feeder Setup Mode button to turn Feeder Setup Mode "On". The button will turn green.

Air supply to machine pneumatics will be shut off. Air pressure will be drained.

A message is displayed indicating that the machine cannot be operated in production mode until Feeder Setup Mode is "Off".

The Feeder Setup Mode indicator turns on green showing all conditions for Feeder Setup Mode have been met

The Operator may manually move the feeder components making necessary adjustments

A **Message** / Fault window displays any current message or fault. "Messages" might indicate a "stop" button is depressed or a guard is open. Messages can be "reset" with the **"Message Reset"** button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screen. Examples of "Fault" conditions are shown on the Touch Panel "Fault" screen.

Name: Home Machine

Function: The **"Home / dies closed"** position must be established each time the Machine main electrical disconnect switch or Computer disconnect switch is turned "Off" or forming dies have been exchanged.

Turn electrical disconnect switch (es) on.

Replace forming head "Stop Block" in its' safety interlock switch

Close all guard doors

Press the "Systems" Touch Panel page button

Press "Machine Guard Lock" button to lock guard doors

Press the "Hydraulic Pump On" to start the machine hydraulic system pump.

Depress the Touch Panel "Home Machine" button. The forming head will close until downward motion has completely stopped bearing force on the forming dies. The control system will recognize motion has stopped and record that value as the "dies closed" position. After a pause the head will open. When upward motion stops "Home Machine" procedure is complete.

Depress the Touch Panel "Go To Start Position". The forming head will open to the "Head Open Position" selected on the Touch Panel "Setup" page. When the forming head reaches "Head Open Position" the machine is ready for normal operation.

Name: Go To Start Position

Function: The **"Home / dies closed"** position must be established before the "Go To Start Position" function will accurately position the forming head. See "Home Machine" instructions above. With the **"Home / dies closed"** position established the forming head will move to its' commanded "Head Open Position" when the Touch Panel "Go To Start Position" button is momentarily depressed.

Name: Manual Open

Function: The hydraulic pump must be "On" to enable the "Manual Open" function. Refer to the "Touch Panel Systems Page" of this manual. Depressing the "Manual Open" button causes the hydraulic cylinder to move in the retract direction opening the forming head. Releasing the button stops forming head motion.

Name: Manual Close

Function: The hydraulic pump must be "On" to enable the "Manual Close" function. Refer to the "Touch Panel Systems Page" of this manual. Depressing the Forming Section "Manual Close" button causes the hydraulic cylinder to move in the extend direction closing the forming head. Releasing the button stops forming head motion.

Name: Full Open

Function: The hydraulic pump must be "On" to enable the "Full Open" function. Refer to the "Touch Panel Systems Page" of this manual. Depressing the Forming Section "Full Open" button causes the hydraulic cylinder to move in the retract direction opening the forming head to its' "Retracted" travel limit. At the "Retract" travel limit the cylinder can only be moved in the "Extend" direction closing the forming head.

Name: Full Close

Function: The hydraulic pump must be "On" to enable the "Full Close" function. Refer to the "Touch Panel Systems Page" of this manual. Depressing the Forming Section "Full Close" button causes the hydraulic cylinder to move in the extend direction closing the forming head to its' "Extend" travel limit. At the "Extend" travel limit the cylinder can only be moved in the "Retract" direction opening the forming head.

The **"Forming Head Position"** display on the Touch Panel indicates forming head position. The display can be used for positional reference and confirmation the forming head is motionless.

Name: Stacker Reset (Manual Discharge)

Function: Press the Touch Panel "Stacker Reset" button to reset the "Drop" and "Stack" counters to zero discharging any accumulated parts in the stacker "cans".

Blank Feeder Timing Setup:

The "Feeder On" push button must be enabled (Green) to operate the Blank Feeder Unit.

"Cup Extend", **"Cup Retract"**, and the "**Feeder Cycle Delay**" timers control the **"Blank Feeder Unit".** Values are operator adjustable. The Blank Feeder sequence begins with the feeder in its' "Start" position. The feeder unit is rotated toward the blank magazine. The vacuum cup cylinder is retracted from the blank magazine. At the "Feeder Start Position" command vacuum to selected "Lanes" cups is turned "On". Selected "Lanes" vacuum cylinders extend to contact blanks in the magazine. The "Cup Extend" timer starts. Selected "Lanes" vacuum cylinders begin to retract when the "Cup Extend" timer expires. The "Cup Retract" timer starts. The feeder unit begins to rotate away from the blank magazine when the "Cup Retract" timer expires. The **"Feeder Cycle Delay**" timer starts. Vacuum to selected "Lanes" cups is turned "Off". "Blow-off" air pressure to selected "Lanes" cups is turned "On". Blow-off" air pressure to selected "Lanes" cups is turned "Off" by machine control logic. Blanks slide to:Blank Stops". **"Feeder Cycle Delay**" timer expires. The feeder unit begins to rotate toward its' "Start" position.

Name : Cup Extend Time

Function : See Blank Feeder Sequence above. "Cup Extend Time" value limits are from 0.175 to 0.750 second.

Name : Cup Retract Time

Function : See Blank Feeder Sequence above. "Cup Retract Time" value limits are from 0.2 to 0.4 second.

Name : Feeder Cycle Delay Timer

Function : See Blank Feeder Sequence above. "Feed Cycle Delay Timer" value limits are from 0.050 to 0.350 second.

Name : Save with Program

Function: Press the "Save with Program" button to save the newly timer values with the selected program.

Name: Form Cycle Time

Function: Time elapsed during one complete cycle of the Forming axis.

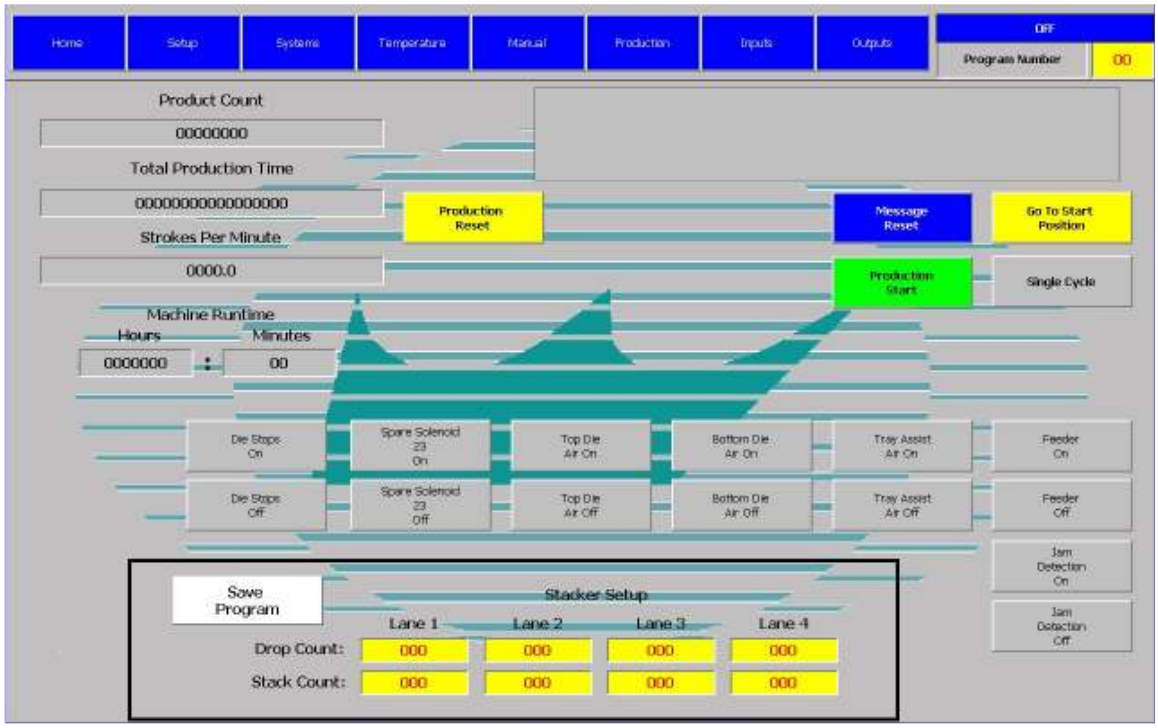
Name: Feed Cycle Time

Function: Time elapsed during one complete cycle of the Feed axis.

Description:

For proper synchronization between the Forming and Feed axes, the Feed cycle time must be less than or equal to the Form cycle time. If the Feed cycle time is greater than the Form cycle time, a message will be displayed to alert the operator that one of the following timer values need

modified to correct the condition: Feeder Cycle Delay Time, Cup Extend Time or the Cup Retract Time.



Touch Panel "Production" page

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

"Product Count" is displayed in total number of parts produced passing under the count eyes on the Stacker/Counter. "Product Count" is reset to zero by pressing the Touch Panel "Production Reset" button.

"Total Production Time" is the cumulative time the machine has been in "Production". The timer is reset to zero by pressing the "Production Reset" button. "Total Production Time" is displayed here and on the Touch Panel "Systems" and "Temperature" pages.

Pressing the Touch Panel **"Production Reset"** button resets the "Product Count" and "Total Production Time" displays to zero values.

Machine speed is displayed in **"Strokes Per Minute"**. Machine speed is calculated periodically during production.

A **Message** / Fault window displays any current message or fault. "Messages" might indicate a "stop" button is depressed or a guard is open. Messages can be "reset" with the **"Message Reset"** button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screen. Examples of "Fault" conditions are shown on the Touch Panel "Fault" screen.

Name: Go To Start Position

Function: The **"Home / dies closed"** position must be established before the "Go To Start Position" function will accurately position the forming head. See "Home Machine" instructions above. With the **"Home / dies closed"** position established the forming head will move to its' commanded "Head Open Position" when the Touch Panel "Go To Start Position" button is momentarily depressed.

Name: Production Start

Function: The "Forming" cylinder must be in its' "Start Position". The "Jam Detection" system must be "Reset". The "Feed " and "Stacker" must be "On". Refer to the "Touch Panel Systems Page" instructions in this manual for "Feed" and "Stacker" button functions. Other functions such as die "Heat", "Top Die Air", "Bottom Die Air", "Tray Assist Air", and "Jam Detection" may be "On". Refer to the Touch Panel "Temperature", "Systems" and "Production" pages instructions of this manual for their functions. All "Machine Stop" buttons must be released. When all conditions are satisfied the Touch Panel "Production Start" button will appear. Press and hold the "Production Start" Touch Panel button until machine begins motion. Release the "Production Start" Touch Panel button. The machine will cycle continuously until motion is stopped by a problem sensed by a cylinder controller fault, paper "Jam" or pressing a "Machine Stop" or "Emergency Stop" button.

Name: Single Cycle

Function: The "Single Cycle" button toggles between being enabled or disabled. The "Single Cycle" button is flashing green in color when enabled. When "Single Cycle" is enabled the machine will execute one complete production cycle each time the "Production Start" button is depressed.

The "Single Cycle" button is gray in color when disabled.

When "Single Cycle" is disabled the machine will begin continuous production when the "Production Start" button is depressed.

Name: Spare Solenoid 23 On

Function: Press the "Spare Solenoid 23 On" Touch Panel button to enable the "Spare Solenoid 23" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Spare Solenoid 23 Off

Function: Press the "Spare Solenoid 23 Off" Touch Panel button to disable the "Spare Solenoid 23" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Top Die Air On

Function: Press the "Top Die Air On" Touch Panel button to enable the "Top Die Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Top Die Air Off

Function: Press the "Top Die Air Off" Touch Panel button to disable the "Top Die Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Bottom Die Air On

Function: Press the "Bottom Die Air On" Touch Panel button to enable the "Bottom Die Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Bottom Die Air Off
Function: Press the "Bottom Die Air Off" Touch Panel button to disable the "Bottom Die Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Tray Assist Air On

Function: Press the "Tray Assist Air On" Touch Panel button to enable the "Tray Assist Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Tray Assist Air Off

Function: Press the "Tray Assist Air Off" Touch Panel button to disable the "Tray Assist Air" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Die Stops On

Function: Press the "Die Stops On" Touch Panel button to enable the "Die Stops" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Die Stops Off

Function: Press the "Die Stops Off" Touch Panel button to disable the "Die Stops" valve. Refer to the "Touch Panel Setup page" instructions in this manual for timing procedures.

Name: Jam Detection On

Function: Press the "Jam Detection On" Touch Panel button to enable the "Jam Detection" sensors. Appropriate sensors were selected with the "Lane Selection" procedure previously discussed with the "Temperature Page controls in this manual

Name: Jam Detection Off

Function: Press the "Jam Detection Off" Touch Panel button to disable the "Jam Detection" counters.

Name: Feeder On

Function: Press the "Feeder On" Touch Panel button to enable the "Blank Feeder".

Name: Feeder Off

Function: Press the "Feeder Off" Touch Panel button to disable the "Blank Feeder".

Name: Machine Runtime
Hours
Minutes

Function: This timer is the amount of time that the machine has run production. It displays the accumulated time in hours and minutes. The operator cannot reset this timer. Its purpose is for the customer to be able perform preventive maintenance based on the amount of time the machine has been running production.

There may be other "On – Off" Touch Panel controls for specific customer options.

Stacker/Counter Setup:

Individually counted and stacked parts from each production "Lane" are presented to the operator. Each "Lane" can have its' own "Drop" and "Stack" count values. Production "Lanes" are selected on the Touch Panel "Temperature" page. "Lane" 1 is on the left viewed from the stacker discharge looking toward the machine.

Name: Drop Count

Function: Formed parts are captured on a "false bottom" incorporated into the "stacker can" sides. At the selected "Drop Count" those formed parts are dropped vertically to form a "stack". The counted "stack" is then moved from the "Stacker cans" by the "discharge" cylinders. Press the Touch Panel "Save Program" button if you elect to save the new "Drop Count" value in the existing program for future use. A valid "Drop Count" value must be properly entered and saved to operate the stacker.

Name: Stack Count

Function: Formed parts are captured on a "false bottom" incorporated into the "stacker can" sides. At the selected "Drop Count" those formed parts are dropped vertically to form a "stack". The counted "stack" is then moved from the "stacker cans" by the "discharge" cylinders. The "Stack Count" value is the total number of parts collected in the "stacker cans". The "Stack Count" value must be an even multiple of the selected "Drop Count". Press the Touch Panel "Save Program" button if you elect to save the new "Stack Count" value in the existing program for future use. A valid "Stack Count" value must be properly entered and saved to operate the stacker.

Name: Save Program

Function: Pressing the "Save Program" button will save the values entered for the stacker setup with the program selected on the Touch Panel "Setup" page.

Additional Controls

Machine:

Name: Machine Stop

Function: Depressing any "Machine Stop" button will cause the forming head motion to stop at its' "Head Open" positions. Feed motion will stop after its' completed cycle. The "Machine Stop" button must be manually released before re-starting the machine.

Name: Emergency Stop

Function: Depressing any emergency stop button with the machine in production immediately turns the hydraulic pump, oil cooler, and stacker motors off and stops forming head motion. The Emergency Stop button must be manually released before re-starting the machine.

Name: Stacker Speed

Function: The "Stacker Speed" potentiometer controls stacker "conveyor" belt speed. Adjust speed to convey parts smoothly into the stacker "cans".

Stacker:

Name: Machine Stop

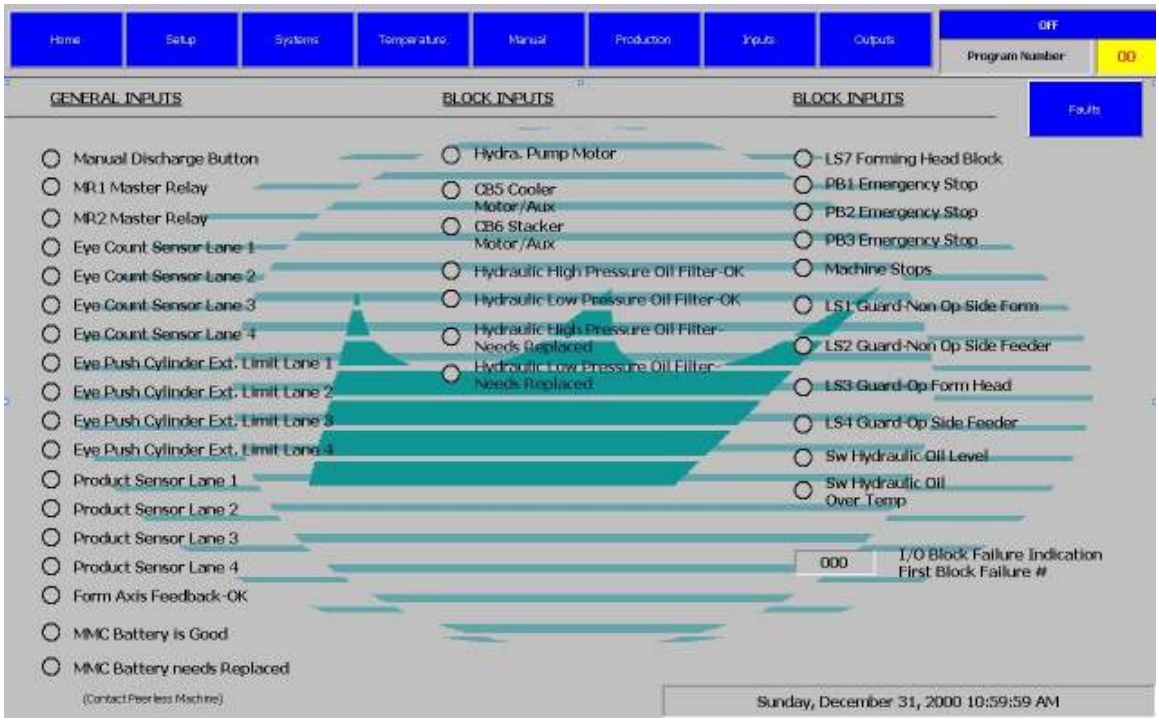
Function: Depressing any "Machine Stop" button will cause the forming head motion to stop at its' "Head Open" positions. Feed motion will stop after its' completed cycle. The "Machine Stop" button must be manually released before re-starting the machine.

Name: Emergency Stop

Function: Depressing any emergency stop button with the machine in production immediately turns the hydraulic pump, oil cooler, and stacker motors off and stops forming head motion. The Emergency Stop button must be manually released before re-starting the machine.

Name: Manual Discharge (Stacker Reset)

Function: Momentarily depressing the "Manual Discharge" button initiates one stacker cycle of opening and closing the "false bottoms", raising the "gate cylinders", conveying part stacks out of the "stacker cans", and lowering the "gate cylinders. "Drop" and "Stack" counters are reset to zero.



Touch Panel "Inputs" page

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Pressing the **"Faults"** button selects the "Faults" Touch Panel page.

General Inputs

Manual Discharge (Stacker Reset) Button

A gray status light indicates the Manual Discharge button is not depressed.

A green status light indicates the Manual Discharge button is depressed. See the "Additional Controls" section of this manual for the Manual Discharge operation.

MR1 Master relay

A green status light indicates the Master Relay is in its' closed condition. Master relay 1 has to be closed to operate the machine.

A red status light indicates Master Relay is in its' open condition. The machine will not operate with Master Relay 1 open.

An Emergency Stop button may be depressed.

Release all Emergency Stop buttons.

The Stacker cable connecting to the left side of the machine may be disconnected.

Insert the stacker cord plug into its' receptacle and latch the plug securely.

Replace faulty relay.

MR2 Master relay

A green status light indicates all machine guards are closed and the Master Relay is in its' closed condition. Master relay 2 has to be closed to operate the machine.

A red status light indicates the Master Relay is in its' open condition. The machine will not operate with Master Relay 2 open.

One or more machine guards are open.

Refer to individual guard status lights to determine which guard(s) is (are) open.

Close open guards.

Replace faulty relay.

Eye Count Sensor Lane 1

A gray status light indicates the stacker eye is not recognizing a part below it.

A green status light indicates the stacker eye is recognizing a part below it. Jam, Drop and Stack counters increment up 1 number each time a part is recognized.

Have a qualified electrician test, repair, or replace affected components.

Eye Count Sensor Lane 2

A gray status light indicates the stacker eye is not recognizing a part below it.

A green status light indicates the stacker eye is recognizing a part below it. Jam, Drop and Stack counters increment up 2 number each time a part is recognized.

Have a qualified electrician test, repair, or replace affected components.

Eye Count Sensor Lane 3

A gray status light indicates the stacker eye is not recognizing a part below it.

A green status light indicates the stacker eye is recognizing a part below it. Jam, Drop and Stack counters increment up 3 number each time a part is recognized.

Have a qualified electrician test, repair, or replace affected components.

. Eye Count Sensor Lane 4

A gray status light indicates the stacker eye is not recognizing a part below it.

A green status light indicates the stacker eye is recognizing a part below it. Jam, Drop and Stack counters increment up 4 number each time a part is recognized.

Have a qualified electrician test, repair, or replace affected components.

Eye Push Cylinder Ext. Limit Lane 1

A gray status light indicates the push cylinder has not reached its' extension limit.

A green status light indicates the push cylinder has reached its' extension limit. Push cylinder 1 solenoid valve turns off to reverse cylinder direction when the extension limit sensor is recognized.

Have a qualified electrician test, repair, or replace affected components

Eye Push Cylinder Ext. Limit Lane 2

A gray status light indicates the push cylinder has not reached its' extension limit.

A green status light indicates the push cylinder has reached its' extension limit. Push cylinder 2 solenoid valve turns off to reverse cylinder direction when the extension limit sensor is recognized.

Have a qualified electrician test, repair, or replace affected components.

Eye Push Cylinder Ext. Limit Lane 3

A gray status light indicates the push cylinder has not reached its' extension limit.

A green status light indicates the push cylinder has reached its' extension limit. Push cylinder 3 solenoid valve turns off to reverse cylinder direction when the extension limit sensor is recognized.

Have a qualified electrician test, repair, or replace affected components.

Eye Push Cylinder Ext. Limit Lane 4

A gray status light indicates the push cylinder has not reached its' extension limit.

A green status light indicates the push cylinder has reached its' extension limit. Push cylinder 4 solenoid valve turns off to reverse cylinder direction when the extension limit sensor is recognized.

Have a qualified electrician test, repair, or replace affected components

Product Sensor Lane 1

A gray status light indicates the blank feed vacuum cup has not secured a blank from the magazine. A Message indicating blanks are not being removed from the magazine will appear in the Message / Fault window displays. Messages can be "reset" with the "Message Reset" button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screens.

Verify vacuum cup condition and adjustments.

Replace vacuum cup

Adjust vacuum cup position.

Verify adequate vacuum level.

Clean or replace vacuum filter

Adjust vacuum level.

Verify correct feeder timing sequence.

Refer to feed adjustment instructions in this manual.

A green status light indicates the blank feed vacuum cup has secured a blank from the magazine.

Product Sensor Lane 2

A gray status light indicates the blank feed vacuum cup has not secured a blank from the magazine. A Message indicating blanks are not being removed from the magazine will appear in the Message / Fault window displays. Messages can be "reset" with the "Message Reset" button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screens.

Verify vacuum cup condition and adjustments.

Replace vacuum cup

Adjust vacuum cup position.

Verify adequate vacuum level.

Clean or replace vacuum filter

Adjust vacuum level.

Verify correct feeder timing sequence.

Refer to feed adjustment instructions in this manual.

A green status light indicates the blank feed vacuum cup has secured a blank from the magazine.

Product Sensor Lane 3

A gray status light indicates the blank feed vacuum cup has not secured a blank from the magazine. A Message indicating blanks are not being removed from the magazine will appear in the Message / Fault window displays. Messages can be "reset" with the "Message Reset" button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screens.

Verify vacuum cup condition and adjustments.

Replace vacuum cup

Adjust vacuum cup position.

Verify adequate vacuum level.

Clean or replace vacuum filter

Adjust vacuum level.

Verify correct feeder timing sequence.

Refer to feed adjustment instructions in this manual.

A green status light indicates the blank feed vacuum cup has secured a blank from the magazine.

Product Sensor Lane 4

A gray status light indicates the blank feed vacuum cup has not secured a blank from the magazine. A Message indicating blanks are not being removed from the magazine will appear in the Message / Fault window displays. Messages can be "reset" with the "Message Reset" button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screens.

Verify vacuum cup condition and adjustments.

Replace vacuum cup

Adjust vacuum cup position.

Verify adequate vacuum level.

Clean or replace vacuum filter

Adjust vacuum level.

Verify correct feeder timing sequence.

Refer to feed adjustment instructions in this manual.

A green status light indicates the blank feed vacuum cup has secured a blank from the magazine.

Form Axis Feedback - OK

A green status light indicates Forming Axis feedback communication is established.
A red status light indicates Forming Axis feedback communication is interrupted.

Contact the Peerless Service Department if feedback communication is interrupted.

MMC Battery Is Good

A green indicator light indicates normal battery function.

MMC Battery Is Bad

A red indicator light indicates low battery function. The battery should be replaced immediately. Controls functions will fail if the battery s not replaced.

Block Inputs:

Hydr.Pump Motor.

A green status light indicates the Hydraulic Pump motor circuit breaker is closed – normal operating state.

A red status light indicates the Hydraulic Pump motor circuit breaker is open. The motor will not start with the circuit breaker open.

Have a qualified electrician test, repair, or replace affected components.

CB5 Cooler Motor / Aux.

A green status light indicates the Hydraulic Oil Cooler motor circuit breaker is closed – normal operating state.

A red status light indicates the Hydraulic Oil Cooler motor circuit breaker is open. The motor will not start with the circuit breaker open.

Have a qualified electrician test, repair, or replace affected components.

CB6 Stacker Motor / Aux.

A green status light indicates the Stacker Delivery Conveyor motor circuit breaker is closed – normal operating state.

A red status light indicates the Stacker Delivery Conveyor motor circuit breaker is open. The motor will not start with the circuit breaker open.

Have a qualified electrician test, repair, or replace affected components.

High Pressure Oil Filter-OK

A green status light indicates the Hydraulic High Pressure Oil Filter is in a normal condition for machine operation.

Hydraulic Low Pressure Oil Filter-OK

A green status light indicates the Hydraulic Low Pressure Oil Filter is in a normal condition for machine operation.

Hydraulic High Pressure Oil Filter-Needs Replaced

A red status light indicates the Hydraulic High Pressure Oil Filter is contaminated and needing replaced. A message will also be displayed in the message windows found on the HMI. For more information and parts, contact Peerless Machine.

Hydraulic Low Pressure Oil Filter-Needs Replaced

A red status light indicates the Hydraulic Low Pressure Oil Filter is contaminated and needing replaced. A message will also be displayed in the message windows found on the HMI. For more information and parts, contact Peerless Machine.

Block Inputs:

LS7 Forming Head Block

The forming head "Stop" block rests in a limit switch above the operator forming section guard.

A green status light indicates the "Stop" block is correctly inserted in its' switch.

A red status light indicates the "Stop" block is removed from, or incorrectly inserted into, its' switch. The machine will not operate until the "stop" block is correctly inserted in its' switch.

Correctly insert the stop block in its' switch.

Replace faulty switch.

PB1 Emergency Stop, Touch Panel Enclosure

A green status light indicates the "E-Stop" push button on the operator Touch Panel enclosure has not been depressed.

A red status light indicates the "E-Stop" push button on the operator Touch Panel enclosure is depressed. The machine will not operate with an "E-stop" button depressed.

Release the "E-Stop" button.

PB2 Emergency Stop, Opposite Operator feed frame

A green status light indicates the "E-Stop" push button on the Opposite Operator side, feed frame, has not been depressed.

A red status light indicates the "E-Stop" push button on the Opposite Operator side, feed frame, is depressed. The machine will not operate with an "E-stop" button depressed.

Release the E-Stop" button.

PB3 Emergency Stop, located on the Stacker

A green status light indicates the "E-Stop" push button on the stacker has not been depressed.

A red status light indicates the "E-Stop" push button on the stacker is depressed. The machine will not operate with an "E-stop" button depressed.

Release the "E-Stop" button.

Machine Stops

A green status light indicates no Machine Stops are depressed. The machine will not operate in Production or Manual modes with a Machine Stop button depressed.

A red status light indicates a "Machine Stop" button is depressed. The machine will not operate in Production or Manual modes with a Machine Stop button depressed.

Release the "Stop" button.

LS1 Guard - Non Op. (right) Side Form

Non Op. (right) Side Forming guard covers the end of the forming head on the opposite operator (right) side of the machine.

A green status light indicates the guard is closed.
A red status light indicates the guard is open. The machine will not operate with a guard open.

Close the guard door.

Replace faulty switch.

LS2 Guard - Non Op. (right) Side Feeder

Non Op. (right) Side Feeder guard covers the blank feed mechanism on the opposite operator (right) side of the machine.

A green status light indicates the guard is closed.
A red status light indicates the guard is open. The machine will not operate with a guard open.

Close the guard door.

Replace faulty switch.

LS3 Guard - Op. (left) Form Head

Operator (left) Side Forming guard covers the end of the forming head on the operator (left) side of the machine.

A green status light indicates the guard is closed.
A red status light indicates the guard is open. The machine will not operate with a guard open.

Close the guard door.

Replace faulty switch.

LS4 Guard - Op. (left) Side Feeder

Operator (left) Side Feeder guard covers the blank feed mechanism on the operator (left) side of the machine.

A green status light indicates the guard is closed.
A red status light indicates the guard is open. The machine will not operate with a guard open.

Close the guard door.

Replace faulty switch.

Sw Hydraulic Oil Level

A green status light indicates oil level is OK. The machine will operate normally.
A red status light indicates oil level is low. The machine may operate abnormally.

A message will be displayed if the oil level is low.

Add oil necessary to raise level to operating level.

Sw Hydraulic Oil Over Temp

A gray status light indicates oil temperature is OK. The machine will operate normally.
A red status light indicates oil temperature is high. The machine will continue to operate normally.

A message will be displayed if the oil temperature is high.

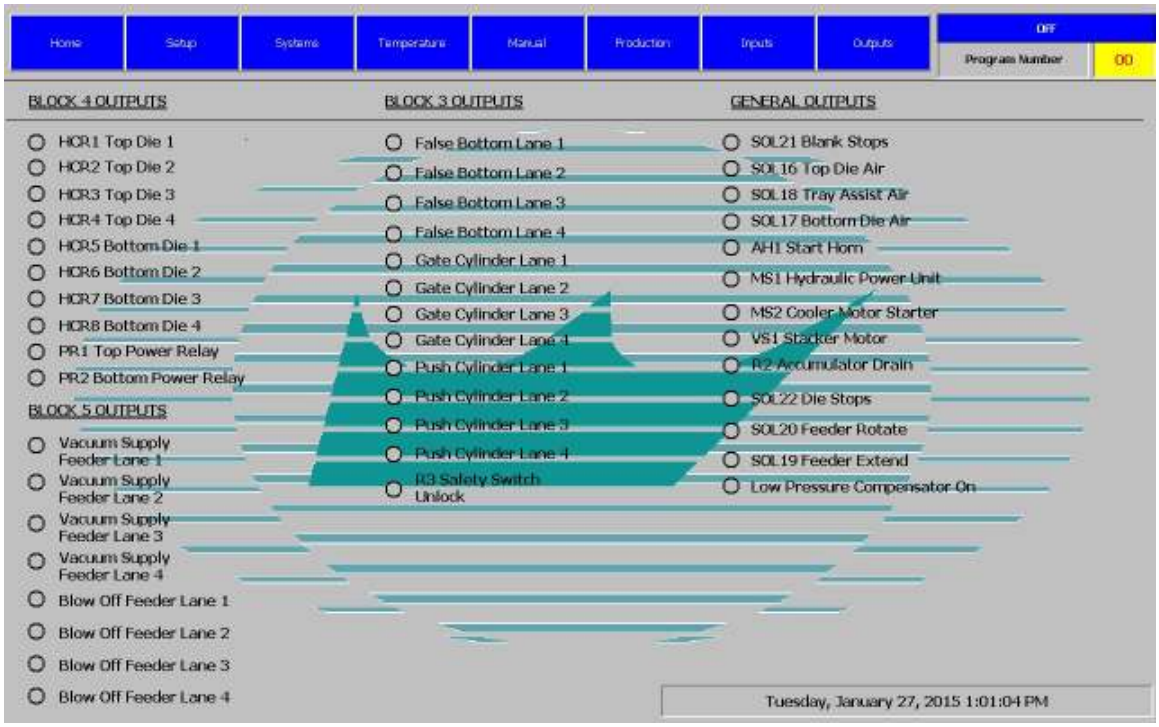
Take corrective measures to ensure proper cooling of the hydraulic oil..

I/O Block Failure Indication (First Block Failure #)

This display window is for Machine Control Input/Output Block Module Diagnostics.

If there is a machine failure and a value is being displayed, the value shown is the first Machine Control Input/Output Block Module that is producing an error.

Example: 3 would indicate and error on block module 3. Contact Peerless for further assistance.



Touch Panel "Outputs" page

Block 4 Outputs

HCR1 Top Die 1

A gray status light indicates the top die 1 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the top die 1 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR2 Top Die 2

A gray status light indicates the top die 2 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the top die 2 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR3 Top Die 3

A gray status light indicates the top die 3 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the top die 3 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR4 Top Die 4

A gray status light indicates the top die 4 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the top die 4 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR5 Bottom Die 1

A gray status light indicates the bottom die 1 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the bottom die 1 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR6 Bottom Die 2

A gray status light indicates the bottom die 2 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the bottom die 2 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR7 Bottom Die 3

A gray status light indicates the bottom die 3 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the bottom die 3 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

HCR8 Bottom Die 4

A gray status light indicates the bottom die 4 is "off" or heated to, or above, its' temperature setpoint.

A green status light indicates the bottom die 4 is "on" heating to its' temperature setpoint.

Have a qualified electrician test, repair, or replace affected components.

PR1 Top Power Relay

A green status light indicates the Top Die Heat Power Relay 1 is closed – normal operating state. All selected heaters should operate normally.

A gray status light indicates the Top Die Heat Power Relay 1 is open. Top Die Heat Power Relay 1 opens when heaters are significantly beyond their setpoint. Electrical power to all top die heaters is "Off" when Power Relay 1 is open.

Have a qualified electrician test, repair, or replace affected components.

PR2 Bottom Power Relay

A green status light indicates the Bottom Die Heat Power Relay 2 is closed – normal operating state. All selected heaters should operate normally.

A gray status light indicates the Bottom Die Heat Power Relay 2 is open. Bottom Die Heat Power Relay 2 opens when heaters are significantly beyond their setpoint. Electrical power to all bottom die heaters is "Off" when Power Relay 2 is open.

Have a qualified electrician test, repair, or replace affected components.

Block 3 Outputs

False Bottom Lane 1

A gray status light indicates the False Bottom Lane 1 air valve solenoid is "off".

A green status light indicates the False Bottom Lane 1 air valve solenoid is "on" to open the stacker can "false bottoms". The stacker can "false bottoms" open to drop parts to the stacker discharge cylinder.

Have a qualified electrician test, repair, or replace affected components.

False Bottom Lane 2

A gray status light indicates the False Bottom Lane 2 air valve solenoid is "off".

A green status light indicates the False Bottom Lane 2 air valve solenoid is "on" to open the stacker can "false bottoms". The stacker can "false bottoms" open to drop parts to the stacker discharge cylinder.

Have a qualified electrician test, repair, or replace affected components.

False Bottom Lane 3

A gray status light indicates the False Bottom Lane 3 air valve solenoid is "off".

A green status light indicates the False Bottom Lane 3 air valve solenoid is "on" to open the stacker can "false bottoms". The stacker can "false bottoms" open to drop parts to the stacker discharge cylinder.

Have a qualified electrician test, repair, or replace affected components.

False Bottom Lane 4

A gray status light indicates the False Bottom Lane 4 air valve solenoid is "off".

A green status light indicates the False Bottom Lane 4 air valve solenoid is "on" to open the stacker can "false bottoms". The stacker can "false bottoms" open to drop parts to the stacker discharge cylinder.

Have a qualified electrician test, repair, or replace affected components.

Gate Cylinder Lane 1

A gray status light indicates Gate Cylinder Lane 1 air valve solenoid is "off".

A green status light indicates Gate Cylinder Lane 1 air valve solenoid is "on" to open. The stacker Gate opens to allow counted parts to be advanced to the operator for removal.

Have a qualified electrician test, repair, or replace affected components.

Gate Cylinder Lane 2

A gray status light indicates Gate Cylinder Lane 2 air valve solenoid is "off".

A green status light indicates Gate Cylinder Lane 2 air valve solenoid is "on" to open. The stacker Gate opens to allow counted parts to be advanced to the operator for removal.

Have a qualified electrician test, repair, or replace affected components.

Gate Cylinder Lane 3

A gray status light indicates Gate Cylinder Lane 3 air valve solenoid is "off".

A green status light indicates Gate Cylinder Lane 3 air valve solenoid is "on" to open. The stacker Gate opens to allow counted parts to be advanced to the operator for removal.

Have a qualified electrician test, repair, or replace affected components.

Gate Cylinder Lane 4

A gray status light indicates Gate Cylinder Lane 4 air valve solenoid is "off".

A green status light indicates Gate Cylinder Lane 4 air valve solenoid is "on" to open. The stacker Gate opens to allow counted parts to be advanced to the operator for removal.

Have a qualified electrician test, repair, or replace affected components.

Push Cylinder Lane 1

A gray status light indicates Push Cylinder Lane 1 air valve solenoid is "off".

A green status light indicates Push Cylinder Lane 1 air valve solenoid is "on" to push counted part stacks to the machine operator.

Have a qualified electrician test, repair, or replace affected components.

Push Cylinder Lane 2

A gray status light indicates Push Cylinder Lane 2 air valve solenoid is "off".

A green status light indicates Push Cylinder Lane 2 air valve solenoid is "on" to push counted part stacks to the machine operator.

Have a qualified electrician test, repair, or replace affected components.

Push Cylinder Lane 3

A gray status light indicates Push Cylinder Lane 3 air valve solenoid is "off".

A green status light indicates Push Cylinder Lane 3 air valve solenoid is "on" to push counted part stacks to the machine operator.

Have a qualified electrician test, repair, or replace affected components.

Push Cylinder Lane 4

A gray status light indicates Push Cylinder Lane 4 air valve solenoid is "off".

A green status light indicates Push Cylinder Lane 4 air valve solenoid is "on" to push counted part stacks to the machine operator.

Have a qualified electrician test, repair, or replace affected components.

R3 Safety Switch Unlock

A gray status light indicates the Safety Switch Unlock relay is "Off". Guards are locked.

A green status light indicates the Safety Switch Unlock relay is "On". Guards are unlocked.

Block 5 Outputs

The Feeder Unit utilizes vacuum generators with a blow off solenoid for the Pic and Place transfer of part blanks from the blank magazine to the blank chutes. Each vacuum generator assembly is enabled or disabled with the selection of lanes found on the "Temperature" page. The "Outputs" page has an indicator for each lanes Vacuum and Blow Off solenoids.

Vacuum Supply Feeder (Lane 1, Lane 2, Lane 3, Lane 4)

A gray status light indicates no electrical power to the blank feeder vacuum supply valve solenoid.

A green status light indicates electrical power to the blank feeder vacuum supply valve solenoid.

Blow Off Feeder (Lane 1, Lane 2, Lane 3, Lane 4)

A gray status light indicates no electrical power to the blank feeder blow off air supply valve solenoid.

A green status light indicates electrical power to the blank feeder blow off air supply valve solenoid.

General Outputs

Sol 21 Blank Stops

A gray status light indicates the Blank Stops air valve solenoid is "off".

A green status light indicates the Blank Stops air valve solenoid is "on". Refer to the Touch Panel "Setup" page instructions of this manual for Blank Stops air valve timing adjustments.

Have a qualified electrician test, repair, or replace affected components.

Sol 16 Top Die Air

A gray status light indicates the Top Die Air valve solenoid is "off".

A green status light indicates the Top Die Air valve solenoid is "on". Refer to the Touch Panel "Setup" page instructions of this manual for Top Die Air valve timing adjustments.

Have a qualified electrician test, repair, or replace affected components.

Sol 18 Tray Assist Air

A gray status light indicates the Tray Assist Air valve solenoid is "off".

A green status light indicates the Tray Assist Air valve solenoid is "on". Refer to the Touch Panel "Setup" page instructions of this manual for Tray Assist Air valve timing adjustments.

Have a qualified electrician test, repair, or replace affected components.

Sol 17 Bottom Die Air

A gray status light indicates the Bottom Die Air valve solenoid is "off".

A green status light indicates the Bottom Die Air valve solenoid is "on". Refer to the Touch Panel "Setup" page instructions of this manual for Bottom Die Air valve timing adjustments.

Have a qualified electrician test, repair, or replace affected components

AH1 Start Horn

A gray status light indicates the Start Horn is "off".

A green status light indicates the Start Horn is "on". The Start Horn sounds a few seconds each time the "Form Cycle", "Home Machine", "Go To Start Position", "Production Start", "Full Open", "Full Closed", or "Single Cycle" button is depressed. While the Horn is sounding there will be a delay in motion until the horn stops.

Have a qualified electrician test, repair, or replace affected components.

MS1 Hydraulic Power Unit

A gray status light indicates the Hydraulic Pump Motor starter coil is "off". Press the "Hydraulic Pump Off" Touch Panel button to turn the Hydraulic Pump Motors "off".

A green status light indicates the Hydraulic Pump Motor starter coil is "on". Press the "Hydraulic Pump On" Touch Panel button to turn the Hydraulic Pump Motors "on".

Have a qualified electrician test, repair, or replace affected components.

MS2 Cooler Motor Starter

A gray status light indicates the Hydraulic Cooler Motor starter coil is "off". The Hydraulic Cooler Motor turns "off" and "on" with the "Hydraulic Pump" Touch Panel buttons.

A green status light indicates the Hydraulic Cooler Motor starter coil is "on". The Hydraulic Cooler Motor turns "off" and "on" with the "Hydraulic Pump" Touch Panel buttons.

Have a qualified electrician test, repair, or replace affected components.

VS1 Stacker Motor

A gray status light indicates the Stacker Motor Variable Speed Drive is "off". Press the "Stacker Off" Touch Panel button to turn the Stacker Motor "off".

A green status light indicates the Stacker Motor Stacker Motor Variable Speed Drive is "on". Press the "Stacker On" Touch Panel button to turn the Stacker Motor "on".

Have a qualified electrician test, repair, or replace affected components.

R2 Accumulator drain

A gray status light indicates the Hydraulic accumulator solenoid is "off". Hydraulic oil in the accumulator will drain to the oil reservoir when the solenoid is "off". A flow control valve in the drain line regulates flow rate to the reservoir.

A green status light indicates the Hydraulic accumulator valve is "on". The Hydraulic accumulator valve must be "on" to operate the machine.

Have a qualified electrician test, repair, or replace affected components.

Sol 22 Die Stops

A gray status light indicates the Die Stops Air valve solenoid is "off".

A green status light indicates the Die Stops Air valve solenoid is "on

Have a qualified electrician test, repair, or replace affected components.

Sol 20 Feeder Rotate

A gray status light indicates the Feeder Rotate Air valve solenoid is "off".

A green status light indicates the Feeder Rotate Air valve solenoid is "on

Have a qualified electrician test, repair, or replace affected components.

Sol 19 Feeder Extend

A gray status light indicates the Feeder Extend Air valve solenoid is "off".

A green status light indicates the Feeder Extend Air valve solenoid is "on

Have a qualified electrician test, repair, or replace affected components

Low Pressure Compensator On

The hydraulic pump motors start at a low system pressure with the Low Pressure Compensator "on". A green status light indicates the Low Pressure Compensator is "on".

A gray status light indicates the Low Pressure Compensator is "off" with the hydraulic system at normal operating pressure.

Have a qualified electrician test, repair, or replace affected components

Touch Panel "Faults" page

The Touch Panel "Faults" page is meant as a diagnostic aid when the machine does not respond appropriately to commands on conditions. A fault message should direct a technician to likely problem causes.

The Machine Status indicator in the upper right corner of the Touch Panel screen displays the current machine state – **Off, Fault, Manual, Stopped, or Production.**

The numerical display below the Machine Status indicator represents the current production **"Program Number"** selected.

Faults history is displayed on the Faults Touch Panel screen. A **"Fault"** might indicate a drive is not "ready" or an over-heated forming die. "Messages" may also indicate a "stop" button is depressed or a guard is open. Messages can be "reset" with the **"Message Reset"** button on the Touch Panel "Setup", "Systems", Manual", "Temperature", "Faults" or "Production" screen.

Faults Page

PC to MMC Time Synchronization

Name: MMC Time:

Function:
Displays the current time that is running in the machine control.

Name: PC Time:

Function:
Displays the current time that is running in the machine PC.

Name: Synchronize Time

Function:
Momentarily pressing the Synchronize Time button will load the time shown in the PC Time window into the machine control. The MMC Time will then show the updated value. It is best to press the button as soon as the PC time seconds roll over from 59 seconds to 60 seconds. This will provide the most accurate setting. If the auto heat timer is not working at the correct times this procedure needs to be done. The day-light-savings time change can cause MMC time to be off by one hour requiring this procedure to be done.

Crown HBF36 Machine Control Operating Procedures

The "Operating Procedures" describe a number of procedures a person will use in operating a Peerless Crown HBF36 Machine. Refer to the Crown HBF36 "Operator Controls" section of this manual for operator controls locations and functions. Read and understand the "Operating Procedures" and "Operator Controls" sections of this manual before attempting to operate the Crown HBF36 machine.

Forming Die Installation / Removal

A new forming dies assembly consists of dies, mounting plates, air distribution manifolds, and end caps. Air hoses from the forming dies are connected to distribution manifolds. The manifolds are marked to identify their use. Thoroughly clean all parts of the die assembly.

For these instructions we assumed Controls Computer and Machine Main Electrical Disconnect Switch are off.

Turn the Computer input electrical service disconnect switch on the Main Electrical Enclosure On.

Turn the Machine input electrical service disconnect switch on the Main Electrical Enclosure On after the touch panel screen appears

Touch Panel "Home" page is displayed

Close all open guards

Release any depressed "Machine Stop" button

Release any depressed "Emergency Stop" buttons

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump On" button.

Press the "Manual" Touch Panel page button

Open the Forming head to its' maximum Open position by depressing the Forming section "Manual Open" Touch Panel button. Motion stops when the Forming head reaches its' physical maximum open position.

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump Off" button. Oil will drain from the Hydraulic Accumulator

Open the Forming Die Access doors

Insert the forming head stop block between the forming head and forming base resting on the head guide pin cover.

Attach the forming die loading rack to the lower forming die shoe. The die loading rack can be assembled to mount on either side of the machine.

Thoroughly clean the top of the forming base and underside of the forming head.

Position the forming dies assembly on the die rack.

Slide the forming die assembly into the machine.

Install and tighten the lower forming die mounting plate bolts. The flat head bolts position the die plate as the bolts tighten.

Replace the forming head "Stop Block" on its' switch.

Close the Forming Die Access doors

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump On" button.

Press the "Manual" Touch Panel page button

Close the Forming head to its' maximum closed position by depressing the Forming section "Manual Close" Touch Panel button. Motion stops when the Forming head closes tightly on the forming dies.

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump Off" button. Oil will drain from the Hydraulic Accumulator

Open the Forming Die Access doors

Remove the die mounting plate end caps.

Install and tighten all upper die mounting plate bolts. The outer, flat head bolts position the die plate as the bolts tighten.

Install all temperature sensing thermocouples matching thermocouple receptacle numbers and die positions. Die position 1 is the left side of the machine as you stand at the stacker discharge facing the machine. Adjust the thermocouple adapter nut along the spring on the thermocouple end until pressure is evident at the nut with the thermocouple tip seated in the forming die.

Plug forming dies into receptacles matching receptacle and die positions. Die and receptacle position 1 is the left side of the machine as you stand at the stacker discharge facing the machine.

Attach all required air hoses connecting the forming die distribution manifolds to their respective air sources on the machine.

Note the routing of all air hoses and thermocouple wiring to insure they do not interfere with moving machine or die components.

Adjust the die draw ring air cylinder pressure. Pressures of 20 – 50 P.S.I. (1.5 – 3.5 Bar) are normal. When pressure is too low scores in the blanks will not "gather" uniformly. Paper folds are unevenly distributed. When pressure is too high blanks may stretch out of shape distorting formed part shape or, in more extreme cases, tear the paper blank.

Press the "Temperature" Touch Panel page button

Select Forming die temperature. Generally, papers with no plastic laminate require temperatures in the 325 degree Fahrenheit (165 degrees Celsius) range on both die halves. Laminated papers are usually limited to die temperatures of 150 degrees Fahrenheit (65 degrees Celsius) on the die half contacting the plastic. The die half contacting the paper can be heated to approximately 375 degrees Fahrenheit (190 degrees Celsius). In all cases we prefer to heat the dies to the paper temperature limit to optimize formation and production speed.

Press the displayed "Temperature Set Point" value for a required die position. A keypad will be displayed to allow the desired temperature selection. Press the number keys and "Enter" to choose the forming die temperature. Repeat the temperature selection process for all necessary forming die positions. Press the "Top (Upper)"or "Bottom (Lower)" Dies button to power the selected forming dies. Press the "On" or "Off" button to turn all "Top" or "Bottom" forming dies electrical power "On" or "Off". The "Number of Dies" selection will activate the appropriate die temperature controller positions when the die heat is turned On.

Remove the forming dies in the reverse order of installation.

Blank Chute and Feed Adjustments

For these instructions we assumed Controls Computer and Machine Main Electrical Disconnect Switch are on. Hydraulic pump is off. Machine is motionless. All guards are closed and locked.

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump On" button.

Press the "Manual" Touch Panel page button

Open the Forming head to its' maximum Open position by depressing the Forming section "Manual Open" Touch Panel button. Motion stops when the Forming head reaches its' physical maximum open position.

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump Off" button. Oil will drain from the Hydraulic Accumulator

Press "Machine Guard Unlock" button to unlock guard doors.

Open all guard doors.

Insert the forming head stop block between the forming head and forming base resting on the head guide pin cover.

Adjust the forming die end of the blank chute guides aligning the blank chute and forming die guide edges. Set blank chute guides parallel to machine side frames.

The forming die end of the blank chute should be set 1/8 - 1/4 inch (3-6 mm) above the forming die slide height.

Threaded bolts at each end of the blank chute frame permit height adjustment.

Basically center the blank support rail (if required) between the two blank chute guides.

Attach the blank stop cylinders to contact the blank as near center as possible.

Adjust feed blank magazine sides to align with blank chute guides. Allow blank size + 1/16 inch (1.5 mm) between blank magazine sides.

Position 2 "lugs" on each blank magazine side at approximately 25% and 75% of blank length from bottom of feed magazine to hold blanks in magazine. On many rectangular blanks "lugs" are positioned at each end of the blank's flat sides. "Lugs" extend inward of the magazine sides 1/8 to 3/16 inch (3 – 4.5 mm).

Turn off and drain the machine air supply with the selector switch on the air filter / regulator unit above the main electrical controls enclosure. With no air pressure the feed system moves freely to visually position vacuum cups.

Position vacuum cups across machine width on the blank magazine sides center. Position cups vertically just above the lower blank "lugs". Generally, one vacuum cup per blank is required for blanks to 12 inches (305 mm) length. Add a second cup positioned just below the upper "lugs" for larger blanks.

Vacuum cups should slightly compress when the feed system cylinder extends cups to contact blanks in the magazine. Adjust cup compression with the threaded vacuum cup mount.

Part Slide and Stacker adjustments

Parts are discharged from the forming dies into a multi-lane, adjustable slide. Slide positions, and quantities are varied to match product requirements. Air jets and gravity urge the finished product onto the motor driven, inclined belts of the stacker conveyor. Belt velocity is regulated with a variable speed motor adjusted with the potentiometer at the Touch Panel enclosure.

As each plate / tray is released at the end of the powered conveyor, it free falls onto a pair of retractable lugs. One lug supports each side of the part. An adjustable stop cylinder properly positions each part in feed direction. A proximity switch senses and counts each part as it falls into position. As parts are stacked on the lugs, complete, counted stacks are moved toward the operators' position at the end of the stacker. At a preset count value the stacking lugs retract. Generally, we would accumulate parts on the lugs until the stack height approaches the conveyor belt height.

When the lugs retract, parts drop vertically onto delivery slides. After the pre-selected number of stacks have been dropped onto the delivery slides, the plate / tray stop cylinder retracts and the push cylinders advance the complete, counted stacks to the operator.

Remove stacker from machine

Position the guides on the part slide aligning the forming die guide and entry end of part slide edges.

The part slide height should be set 1/8 - 1/4 inch (3-6 mm) lower than the forming die slide. The slide mounting frame permits height adjustment.

Position the exit end of the part slides approximately one formed part width plus ¼ inch (6 mm) apart. Taper each guide equally from entry to exit end.

Install stacker in machine

Align the exit end of the part slide guide edges and forming die end of the stacker guides.

Clamp the stacker guides in position parallel to the stacker sideframes.

Align the stacker end of the stacker guides and the stacker "can" inside edges.

Clamp the stacker "cans" in position parallel to the stacker sideframes.

Position stacker delivery belts to nearly contact the stacker guides. A center belt(s) can be added if necessary.

Position the stacker proximity switch to recognize formed parts as they pass below it.

Note the position of the stacker guides as the stacker is moved into its' production position. The stacker guides must be outside the edges of the part slide from the forming dies to the stacker to prevent interference as parts are directed onto the stacker delivery belts.

To begin production after forming dies installation and blank chute, feed, and stacker adjustments

Replace the forming head "Stop Block" on its' switch.

Close all guard doors

Press the "Setup" Touch Panel page button

Select a production program using the "Program Number" Touch Panel functions

Press the "Systems" Touch Panel page button

Press "Machine Guard Lock" button to lock guard doors.

Turn on the machine air supply with the selector switch on the air filter / regulator unit above the main electrical controls enclosure.

Press "Hydraulic Pump On" button.

Press "Stacker On" button.

Press the "Manual" Touch Panel page button

Depress and hold the Touch Panel "Home Machine" button until forming head downward motion has completely stopped. The control system will recognize motion has stopped and record that value as the "dies closed" position.

Depress the Touch Panel "Go To Start Position". The forming head will open to the "Head Open Position" selected on the Touch Panel "Setup" page. When the forming head reaches "Head Open Position" the machine is ready for normal operation.

Press the "Production" Touch Panel page button

Turn "On" the required "Spare", "Top Die Air", "Bottom Die Air", "Tray Assist Air", and "Jam Detection" systems

Press and hold the "Production Start" button depressed until the motion warning horn turns off and machine motion starts. The machine will not start if the "Production Start" button is released before motion begins.

Closely monitor the machine operation noting the blank feeder efficiency and product flow smoothness through the machine. Follow the above guidelines and "Setup" page instructions to make any final adjustments necessary to improve the machines' performance.

Note the formed part quality. All scores or folds in each part should be equally compressed. Adjust as required. Move the male forming die half away from any tight spots when aligning forming dies.

If adjustments are necessary

Press a "Machine Stop" button. Head motion will stop with the machine at the commanded "Head Open" position.

Turn "Off" the required "Spare", "Top Die Air", "Bottom Die Air", "Tray Assist Air", and "Jam Detection" systems

Release the depressed "Machine Stop" button.

Press the "Manual" Touch Panel page button

Open the Forming head to its' maximum Open position by depressing the Forming section "Manual Open" Touch Panel button. Motion stops when the Forming head reaches its' physical maximum open position.

Press the "Systems" Touch Panel page button

Press "Stacker Off" button.

Press "Hydraulic Pump Off" button. Oil will drain from the Hydraulic Accumulator

Open guard doors

Insert the forming head stop block between the forming head and forming base resting on the head guide pin cover.

Make necessary adjustments

Replace the forming head "Stop Block" on its' switch.

Close all guard doors

Press "Machine Guard Lock" button to lock guard doors.

Press "Hydraulic Pump On" button.

Press "Stacker On" button.

Press the "Manual" Touch Panel page button

Depress the Touch Panel "Go To Start Position". The forming head will open to the "Head Open Position" selected on the Touch Panel "Setup" page. When the forming head reaches "Head Open Position" the machine is ready for normal operation.

Press the "Production" Touch Panel page button

Turn "On" the required "Spare", "Top Die Air", "Bottom Die Air", "Tray Assist Air", and "Jam Detection" systems

Press and hold the "Production Start" button depressed until the motion warning horn turns off and machine motion starts. The machine will not start if the "Production Start" button is released before motion begins.

Closely monitor the machine operation noting the blank feeder efficiency and product flow smoothness through the machine. Follow the above guidelines and "Setup" page instructions to make any final adjustments necessary to improve the machines' performance.

Note the formed part quality. All scores or folds in each part should be equally compressed. Adjust as required. Move the male forming die half away from any tight spots when aligning forming dies.

Repeat adjustment procedures until machine performs satisfactorily.

Contact the Peerless Machine Service Department with any questions.

Computer Power Up / Down Procedures

CrownHBF36 electrical controls and Touch Panel are supported by an Industrial Computer. The Computer has a separate electrical input service that is NOT interrupted when the input electrical service disconnect switch is Off. Follow "Procedures for turning the Controls Computer Off / On" to turn the Computer electrical power Off / On. The Computer electrical power should only be turned Off / On by properly trained personnel.

Procedure to turn the controls computer "Off"

Follow "Operator Controls" and "Machine Control Operating Procedures" in this manual to stop machine production

Press the "Manual" Touch Panel page button

Follow "Operator Controls" and "Machine Control Operating Procedures" in this manual to open the forming dies at least 3 –5 inches (8 – 13 cm) to limit heat transfer from the normally hotter female forming die halves to the normally cooler male forming die halves.

Press the "Systems" Touch Panel page button

Press "Hydraulic Pump Off" button. Oil will drain from the Hydraulic Accumulator

Turn selected functions of Spare, Top Die Air, Bottom Die Air, Tray Assist Air, and Jam Detection systems Off. Refer to the "Operator Controls" and "Machine Control Operating Procedures" in this manual for further instructions.

Turn the Machine input electrical service disconnect switch on the Main Electrical Enclosure Off.

Press the "Home" Touch Panel page button. Press the "Exit Computer" button. The "Exit Computer" button is password protected. The correct password must be entered to use the "Exit Computer" button.

When the computer shut - down sequence is complete a prompt on the Touch Panel screen will acknowledge the Computer can be turned "Off"

Turn the computer Off

Turn the Computer input electrical service disconnect switch on the Main Electrical Enclosure Off.

Procedure to turn the controls computer "On"

Turn the Computer input electrical service disconnect switch on the Main Electrical Enclosure On.

Turn the Machine input electrical service disconnect switch on the Main Electrical Enclosure On after the touch panel screen appears

Refer to the "Operator Controls" and "Machine Control Operating Procedures" in this manual to begin machine production

Peerless Machine & Tool Corporation

HBF36 - Parts Manual

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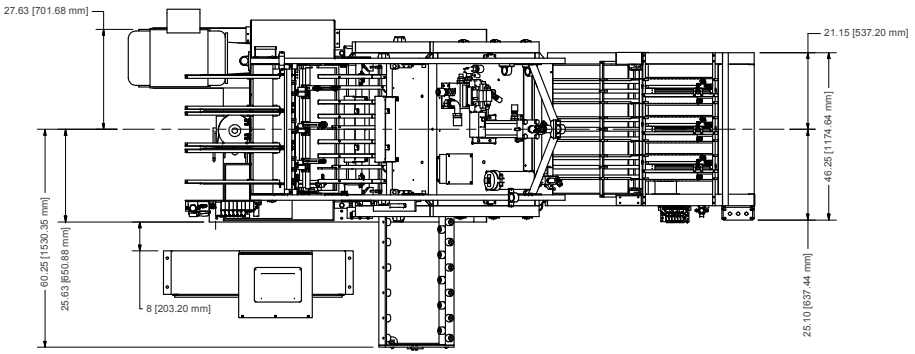
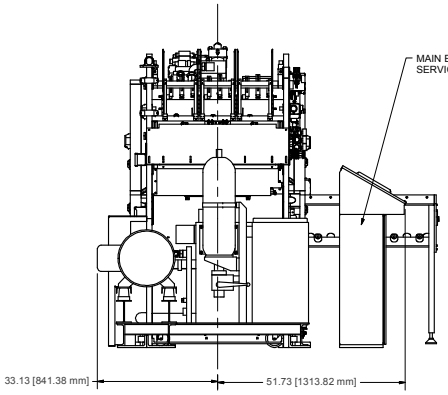
Peerless Machine & Tool Corporation

HBF36 – Replacement Filters

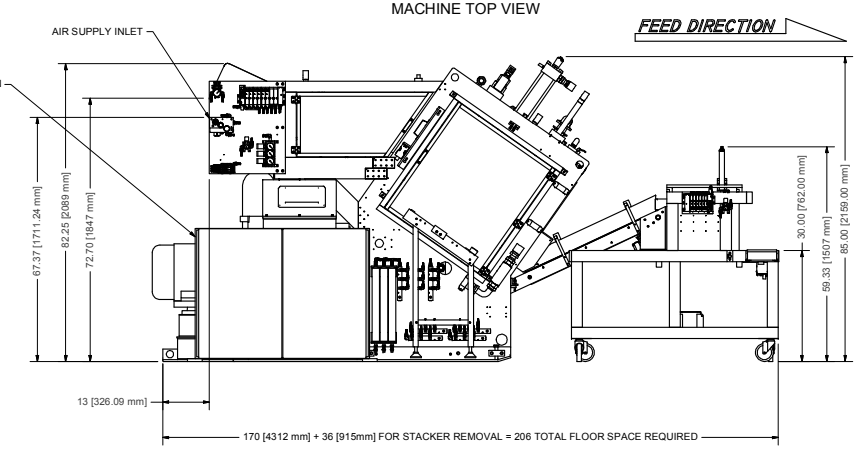
		Part Number
1.	Hydraulic Oil Reservoir Breather Cap	298046
2.	Return Filter (Fixed To Power Unit)	298047
3.	Low Pressure Filter (Fixed To Power Unit)	298048
4.	High Pressure Filter (Right Side of Machine Side Frame)	298049



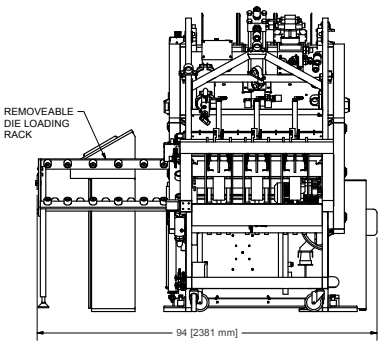
MACHINE TOP VIEW



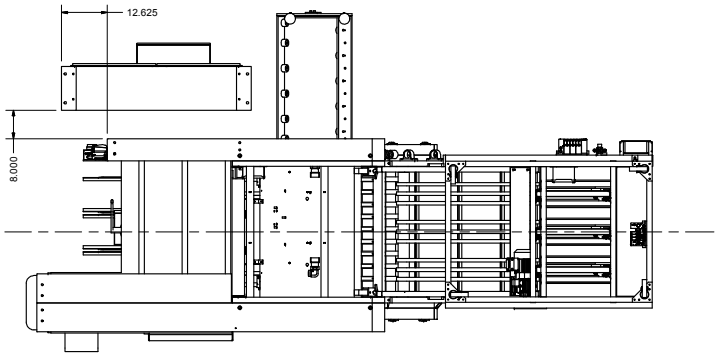
MACHINE BACK VIEW



MACHINE LEFT VIEW



MACHINE FRONT VIEW



MACHINE BOTTOM VIEW

SERIAL #XX-XX

NOTE: ALLOW 36" [915 mm] BEHIND STACKER FOR REMOVAL

PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MACHINE ASSEMBLY - 730H - 3 WIDE	730H000001

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

SCALE	DRAWN BY	DATE
1:12	TCS	11/20/2008

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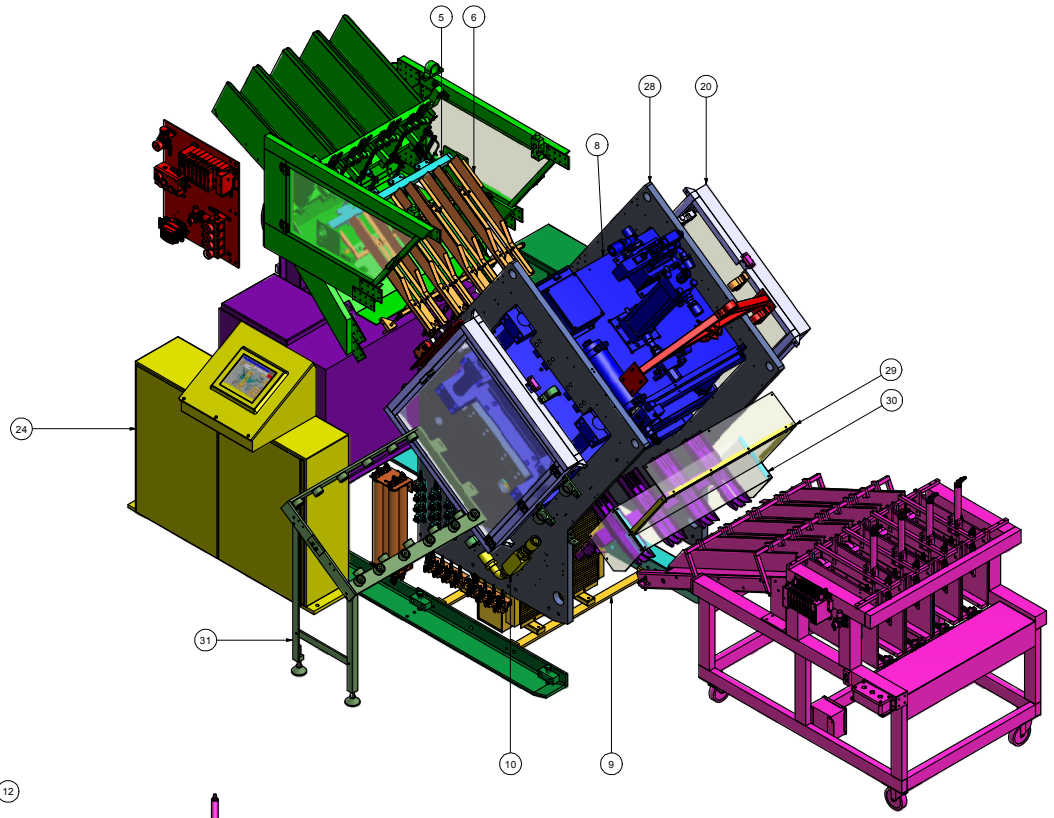
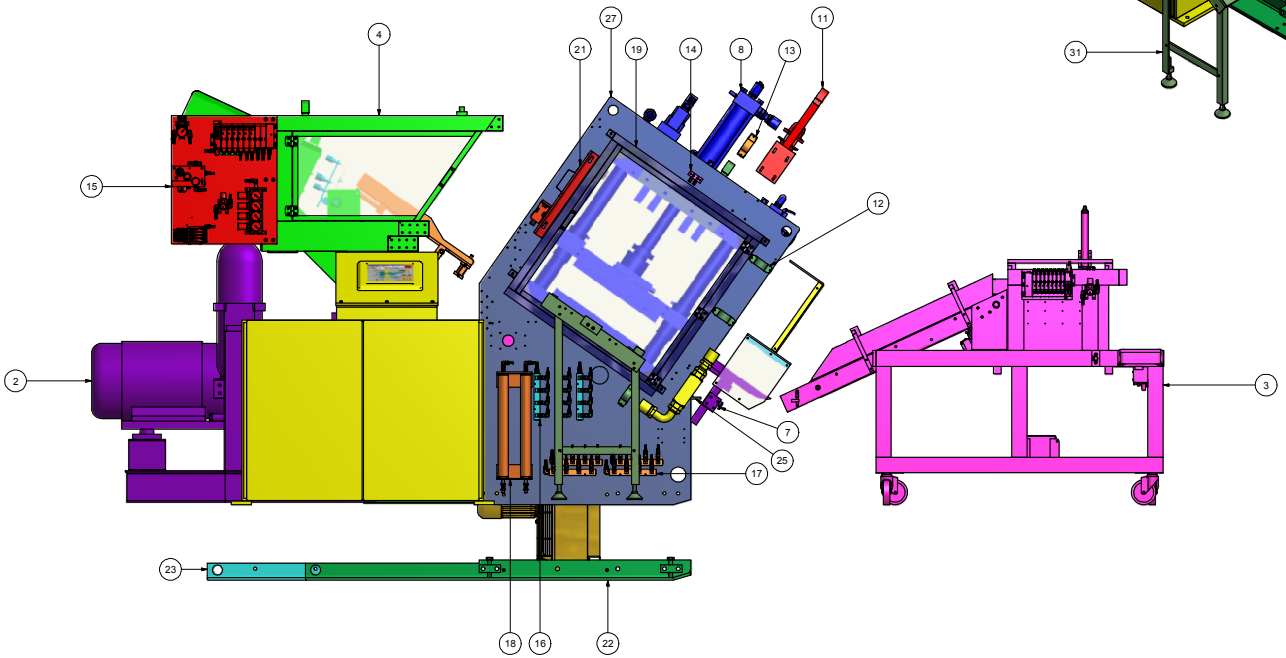
CAD LOCATION

Z:\730H\730H DRAWINGS\730H000001C.idw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	105062	ELECTRICAL BOX
2	1	251013	HYDRAULIC POWER UNIT
3	1	730H000102	STACKER ASSEMBLY - 730H - 4-WIDE
4	1	730H000502	FEED FRAMEWORK ASSEMBLY - 730H - 4 WIDE OPERATION
5	1	730H000507	FEED ASSEMBLY - 730H
6	1	730H000508	BLANK CHUTE ASSEMBLY - 730H - 4-WIDE
7	1	730H000509	OUTGOING PART CHUTE ASSEMBLY - 730H - 4-WIDE
8	1	730H000601	FORMING HEAD/BASE ASSEMBLY - 730H - MACHINES #21 TO PRESENT
9	1	730H000704	HEAT EXCHANGER ASSEMBLY - 730H
10	1	730H000705	CHECK VALVE ASSEMBLY - 730H - HYDRAULIC RETURN LINE
11	1	730H000707	HYDRAULIC CYLINDER CAP HOSE MOUNTING BRACKET ASSEMBLY - 730H
12	4	730H000709	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
13	1	730H000710	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
14	2	730H000801	FORMING HEAD BUSHING GREASE MANIFOLD ASSEMBLY - 730H
15	1	730H000902	PNEUMATIC PANEL ASSEMBLY - 730H - 4 WIDE
16	3	730H000915	DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE
17	4	730H000916	AUXILIARY DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE
18	1	730H000918	FORMING DIE RING PNEUMATIC RESERVOIR ASSEMBLY- 730H - 4-WIDE
19	1	730H001001	FORMING SECTION LEFT GUARD ASSEMBLY - 730H
20	1	730H001002	FORMING SECTION RIGHT GUARD ASSEMBLY - 730H
21	1	730H001003	FORMING SECTION SAFETY BLOCK ASSEMBLY - 730H
22	1	730H001101	LEFT SKID ASSEMBLY - 730H
23	1	730H001102	RIGHT SKID ASSEMBLY - 730H
24	1	730H001401	MAIN ELECTRICAL BOX ASSEMBLY - 730H
25	2	730H010113	STACKER STOP BLOCK POSITIONING PIN MOUNT - 730H
26	1	730H100701	HYDRAULIC POWER UNIT PUMP COVER - 730H
27	1	730H110601	SIDEFRAME - LEFT - 730H
28	1	730H110602	SIDEFRAME - RIGHT - 730H
29	1	730H110608	OUTGOING UPPER PART GUARD - 730H
30	1	730H110609	OUTGOING LOWER PART GUARD - 730H
31	1	730H120001	DIE LOADING RACK - 730H





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MACHINE ASSEMBLY - 730H - 4 WIDE	730H000002

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:12	SMC	2/21/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000002A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

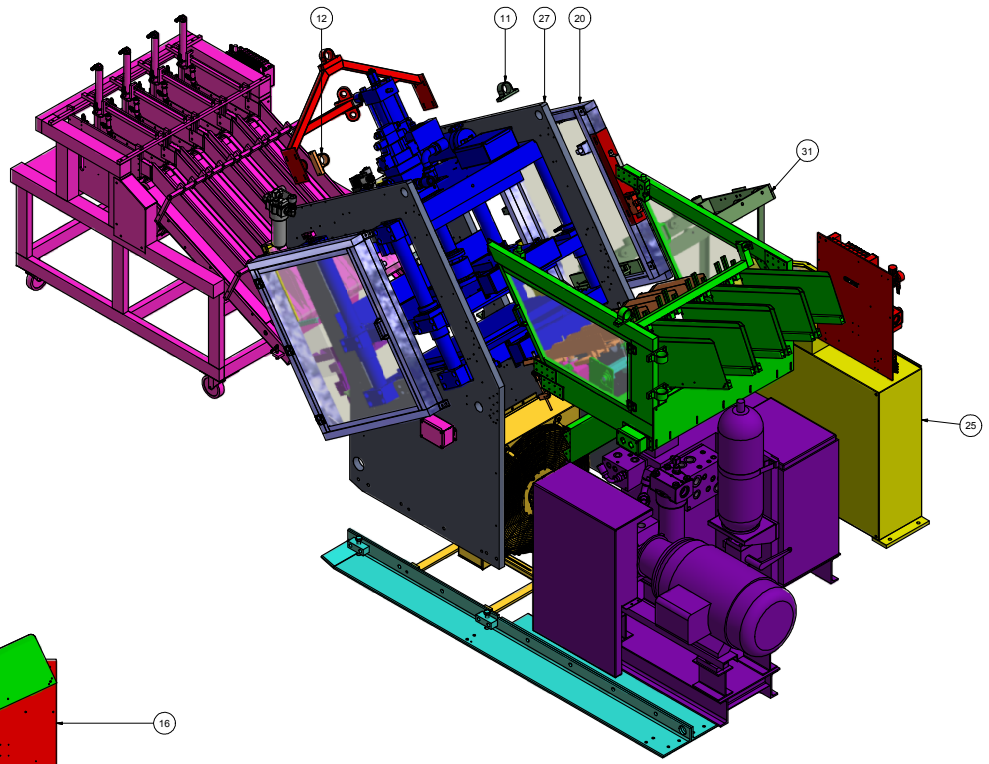
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

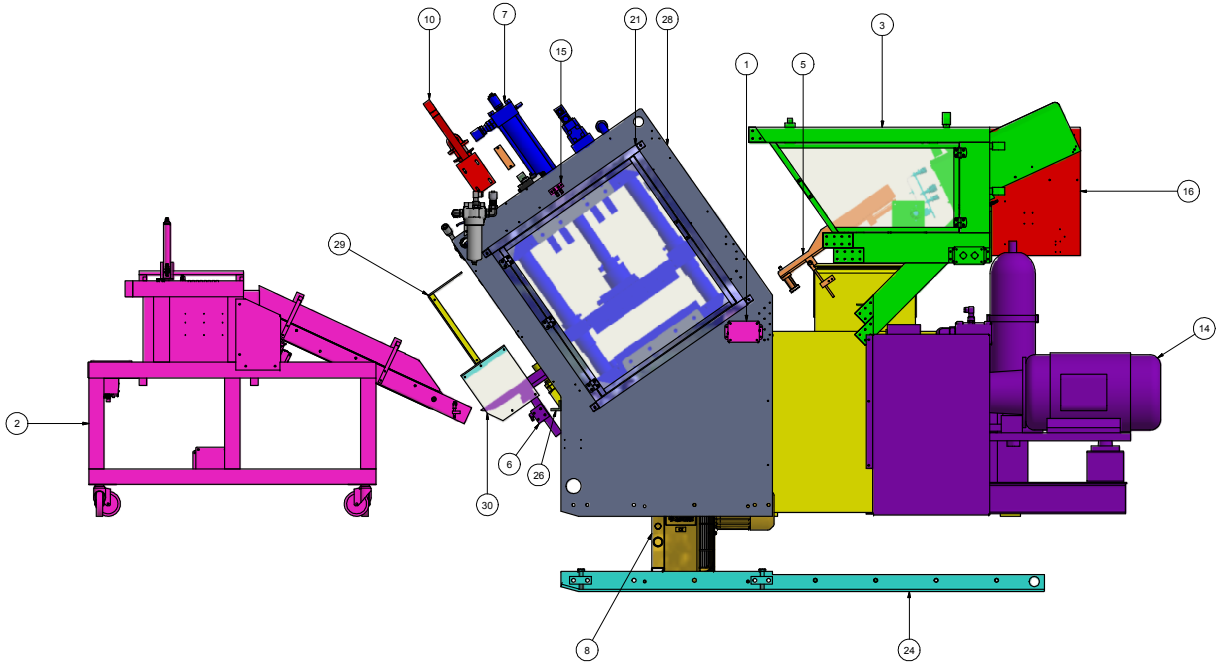
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	105062	ELECTRICAL BOX
2	1	730H000102	STACKER ASSEMBLY - 730H - 4-WIDE
3	1	730H000502	FEED FRAMEWORK ASSEMBLY - 730H - 4 WIDE
4	1	730H000507	FEED ASSEMBLY - 730H - 4 WIDE
5	1	730H000508	BLANK CHUTE ASSEMBLY - 730H - 4-WIDE
6	1	730H000509	OUTGOING PART CHUTE ASSEMBLY - 730H - 4-WIDE
7	1	730H000601	FORMING HEAD/BASE ASSEMBLY - 730H - MACHINES #21 TO PRESENT
8	1	730H000704	HEAT EXCHANGER ASSEMBLY - 730H
9	1	730H000705	CHECK VALVE ASSEMBLY - 730H - HYDRAULIC RETURN LINE
10	1	730H000707	HYDRAULIC CYLINDER CAP HOSE MOUNTING BRACKET ASSEMBLY - 730H
11	4	730H000709	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
12	1	730H000710	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
13	1	730H000711	HIGH PRESSURE FILTER AND MOUNT
14	1	730H000713	POWER UNIT ASSEMBLY - 730H
15	2	730H000801	FORMING HEAD BUSHING GREASE MANIFOLD ASSEMBLY - 730H
16	1	730H000902	PNEUMATIC PANEL ASSEMBLY - 730H - 4 WIDE
17	3	730H000915	FORMING DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE
18	4	730H000916	AUXILIARY DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE
19	1	730H000918	FORMING DIE RING PNEUMATIC RESERVOIR ASSEMBLY- 730H - 4-WIDE
20	1	730H001001	FORMING SECTION LEFT GUARD ASSEMBLY - 730H
21	1	730H001002	FORMING SECTION RIGHT GUARD ASSEMBLY - 730H
22	1	730H001003	FORMING SECTION SAFETY BLOCK ASSEMBLY - 730H
23	1	730H001101	LEFT SKID ASSEMBLY - 730H
24	1	730H001102	RIGHT SKID ASSEMBLY - 730H
25	1	730H001401	MAIN ELECTRICAL BOX ASSEMBLY - 730H
26	2	730H010113	STACKER STOP BLOCK POSITIONING PIN MOUNT - 730H
27	1	730H110601	SIDEFRAME - LEFT - 730H
28	1	730H110602	SIDEFRAME - RIGHT - 730H
29	1	730H110608	OUTGOING UPPER PART GUARD - 730H
30	1	730H110609	OUTGOING LOWER PART GUARD - 730H
31	1	730H120001	DIE LOADING RACK - 730H





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MACHINE ASSEMBLY - 730H - 4 WIDE	730H000002

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:12	SMC	2/21/2014

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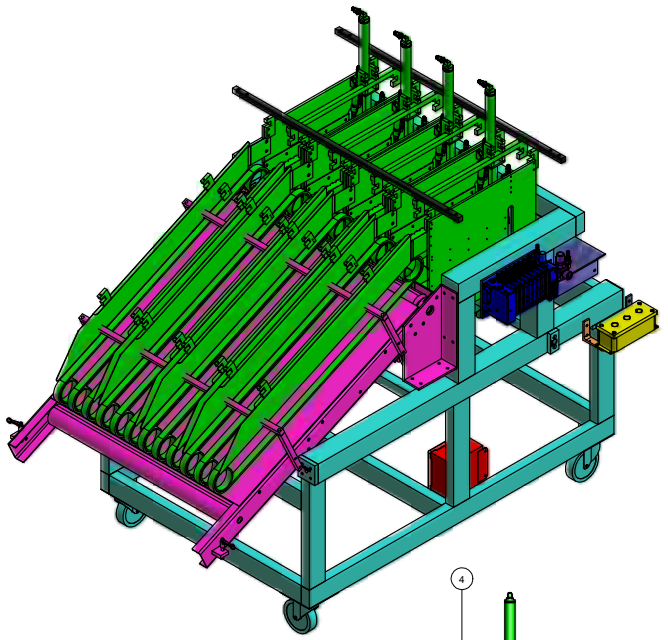
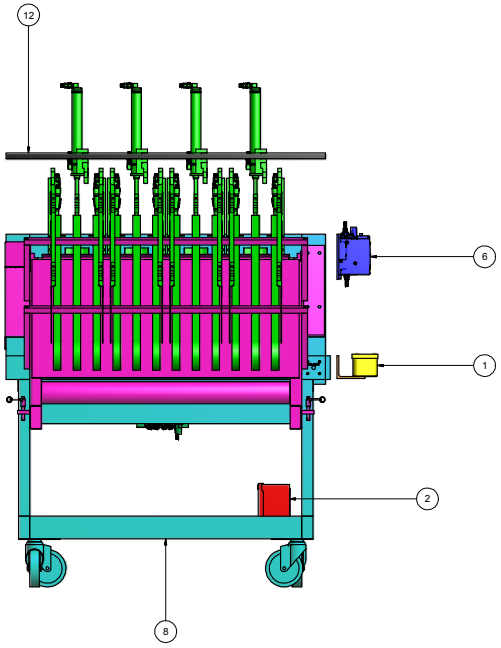
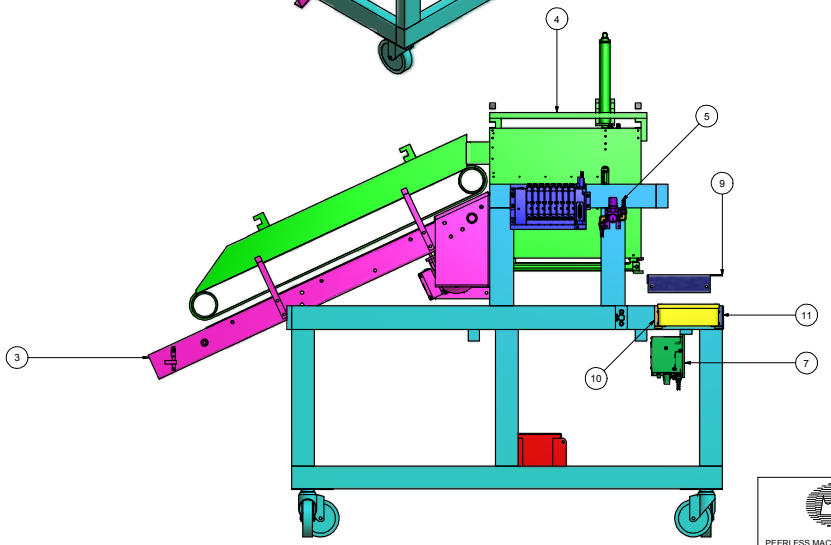
CAD LOCATION

Z:\730H\730H DRAWINGS\730H000002B.idw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	105036	ELECTRICAL BOX
2	1	105063	ELECTRICAL BOX
3	1	730H000104	STACKER INCLINE CONVEYOR ASSEMBLY - 730H
4	4	730H000105	STACKER PRODUCT LANE ASSEMBLY - 730H
5	1	730H000924	STACKER PNEUMATIC REGULATOR ASSEMBLY - 730H
6	1	730H000925	STACKER UPPER PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4-WIDE
7	1	730H000926	STACKER LOWER PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4-WIDE
8	1	730H010101	STACKER FRAMEWORK - 730H
9	1	730H010106	STACKER PRODUCT OUTPUT TABLE - 730H
10	1	730H010107	STACKER ELECTRICAL BOX MOUNT - 730H - LEFT
11	1	730H010111	STACKER ELECTRICAL BOX MOUNT - 730H
12	2	730H010201	STACKER CAN SUPPORT BAR - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER ASSEMBLY - 730H - 4-WIDE	730H000102

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:8	SMC	2/18/2014

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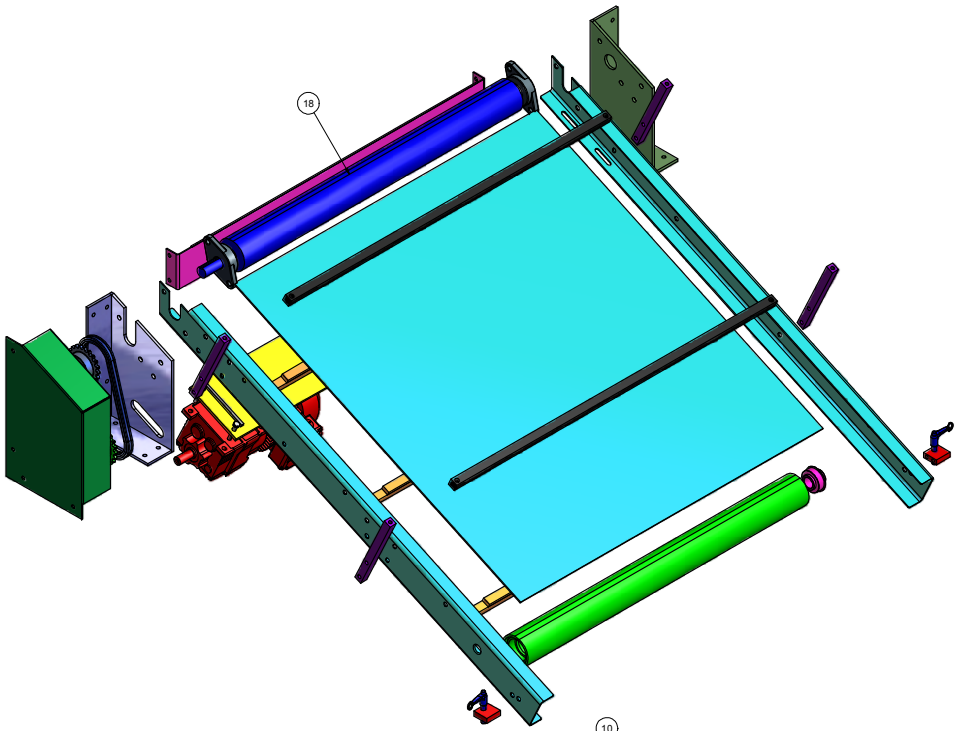
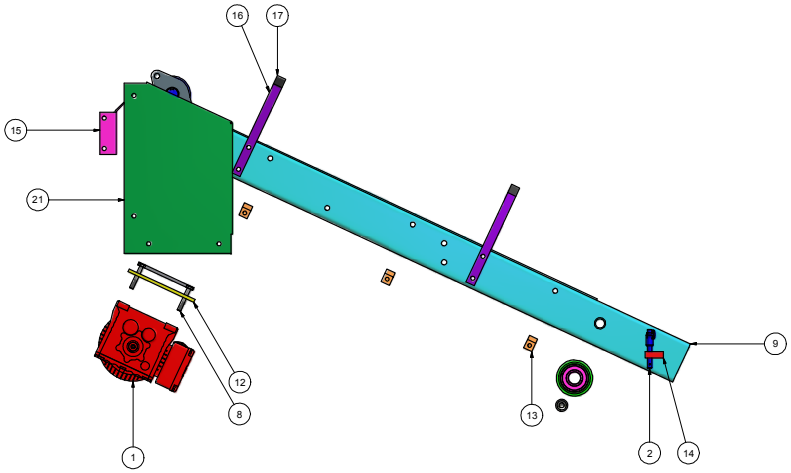
CAD LOCATION
Z:\730H\730H DRAWINGS\730H000102A.idw

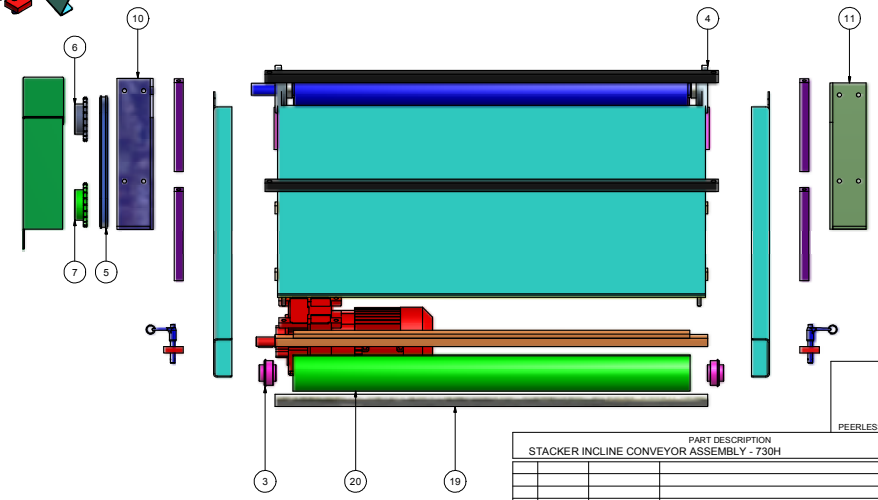
REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.
ALL BENDS 90 UNLESS SPECIFIED.
ALL WELDS CONTINUOUS UNLESS SPECIFIED.
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	161140	ELECTRIC MOTOR
2	2	433249	QUICK RELEASE PIN
3	2	605018	BEARING
4	2	606036	BEARING - 2-BOLT FLANGE
5	1	635002	ROLLER CHAIN #40
6	1	635039	SPROCKET
7	1	635050	SPROCKET
8	2	724S010310	STACKER MOTOR MOUNT BOLT - 724S
9	1	730H010102	STACKER CONVEYOR INCLINE - 730H
10	1	730H010103	STACKER CONVEYOR RIGHT SUPPORT - 730H
11	1	730H010104	STACKER CONVEYOR LEFT SUPPORT - 730H
12	1	730H010105	STACKER INCLINE MOTOR MOUNT - 730H
13	3	730H010110	STACKER INCLINE SPACER BAR - 730H
14	2	730H010112	STACKER STOP BLOCK - 730H
15	1	730H010114	STACKER CAN BACKSTOP - 730H
16	4	730H010203	STACKER LANE DIVIDER SUPPORT BAR MOUNT - 730H
17	2	730H010204	STACKER LANE DIVIDER SUPPORT BAR - 730H
18	1	730H010401	STACKER INCLINE DRIVE SHAFT - 730H
19	1	730H010402	STACKER INCLINE CROWN PULLEY SHAFT SUPPORT - 730H
20	1	730H010403	STACKER INCLINE CROWN PULLEY SHAFT - 730H
21	1	730H100101	STACKER DRIVE GUARD - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER INCLINE CONVEYOR ASSEMBLY - 730H	730H000104

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:5	SMC	2/11/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000104A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

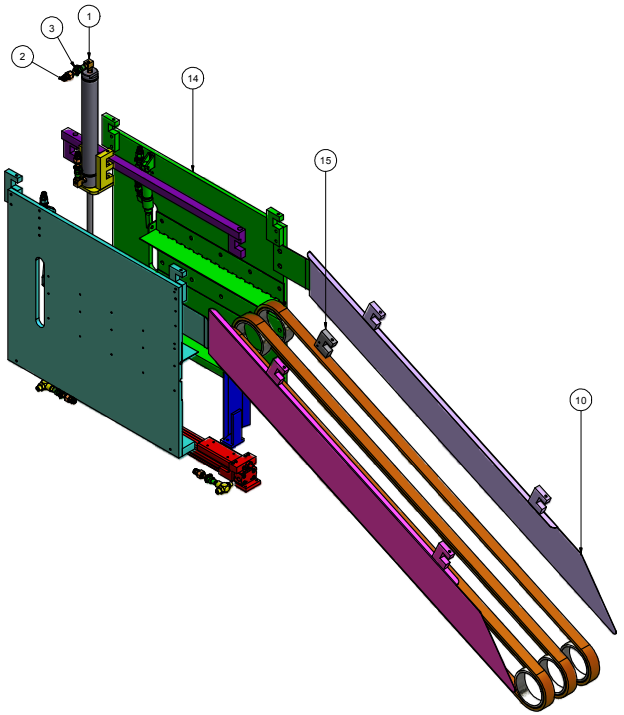
ALL BENDS 90 UNLESS SPECIFIED.

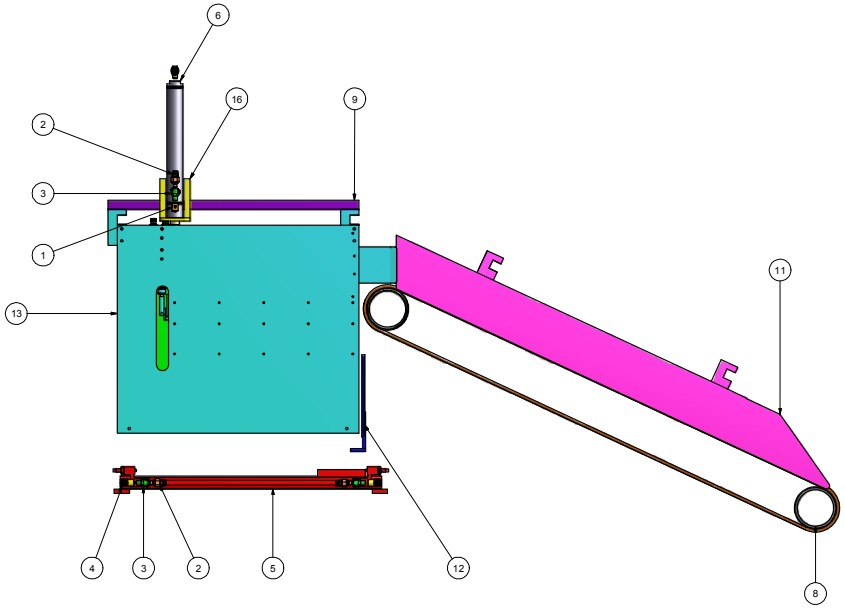
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

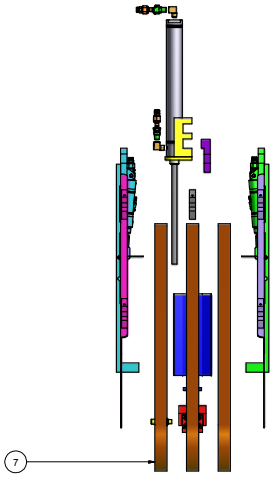
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	302008	STREET ELBOW - 90°
2	4	302558	QUCK COUPLER BODY - ACETAL
3	4	302559	QUICK COUPLER INSERT - ACETAL
4	2	328003	FLOW CONTROL - RIGHT ANGLE
5	1	332115	PNEUMATIC CYLINDER - RODLESS
6	1	332311	PNEUMATIC CYLINDER
7	3	633043	CONVEYOR BELT
8	6	724S010204	STACKER CROWN PULLEY - 724S
9	1	724S010303	STACKER TRAY STOP CYLINDER SUPPORT BAR - 724S
10	1	730H010205	STACKER LANE DIVIDER - 730H - LEFT
11	1	730H010206	STACKER LANE DIVIDER - 730H - RIGHT
12	1	730H010304	STACKER CAN PUSHOUT - 730H
13	1	740S000303	STACKER CAN RIGHT ASSEMBLY - 740S - 30"/38" IND. LANE OUTPUT
14	1	740S000304	STACKER CAN LEFT ASSEMBLY - 740S - 30"/38" IND. LANE OUTPUT
15	1	740S010325	STACKER ELECTRONIC COUNT EYE MOUNT - 740S
16	1	740S010401	STACKER CAN GATE CYLINDER TWO LEVEL MOUNT - 740S







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER PRODUCT LANE ASSEMBLY - 730H	730H000105

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:5	SMC	2/12/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000105A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

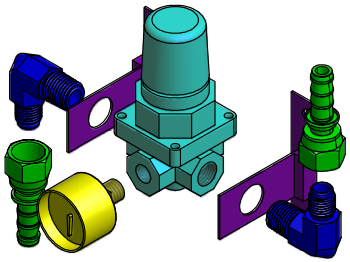
ALL BENDS 90 UNLESS SPECIFIED.

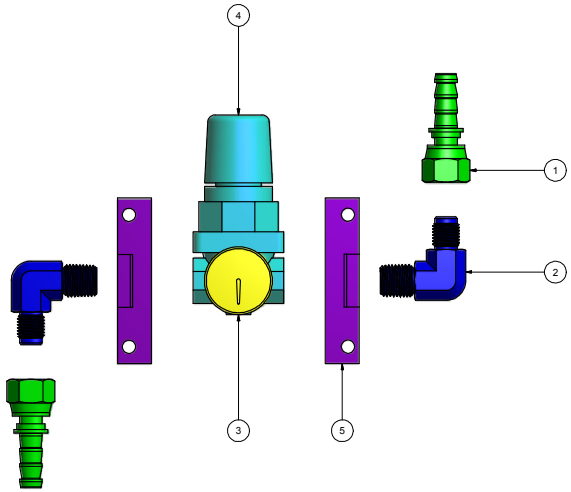
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

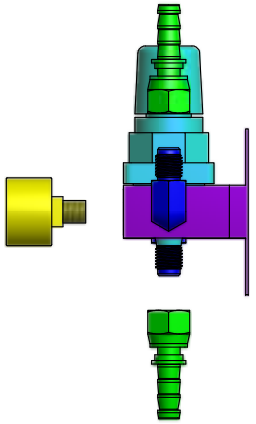
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	302040	SWIVEL - FEMALE
2	2	302062	ELBOW - MALE
3	1	341004	PRESSURE GAUGE
4	1	341010	REGULATOR - PNEUMATIC
5	2	341011	WALL BRACKET MTG KIT FOR 341010 REGULATOR







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER PNEUMATIC REGULATOR ASSEMBLY - 730H	730H000924

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/12/2014

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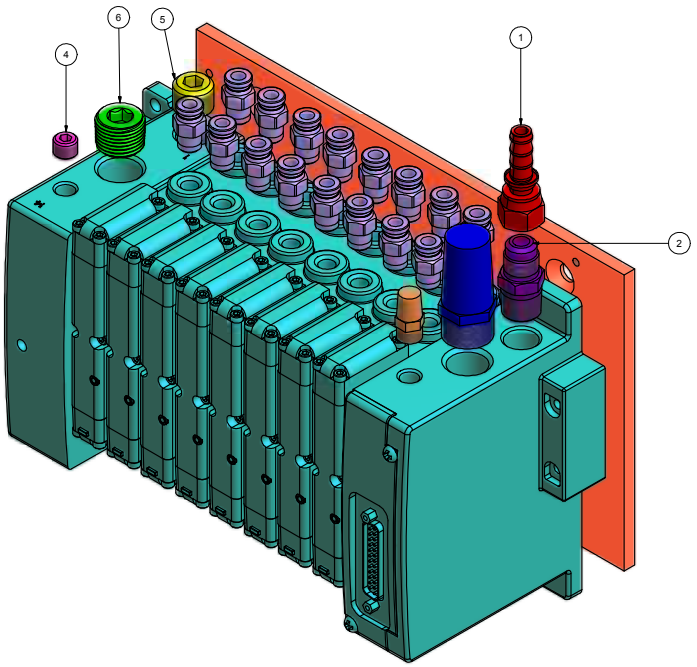
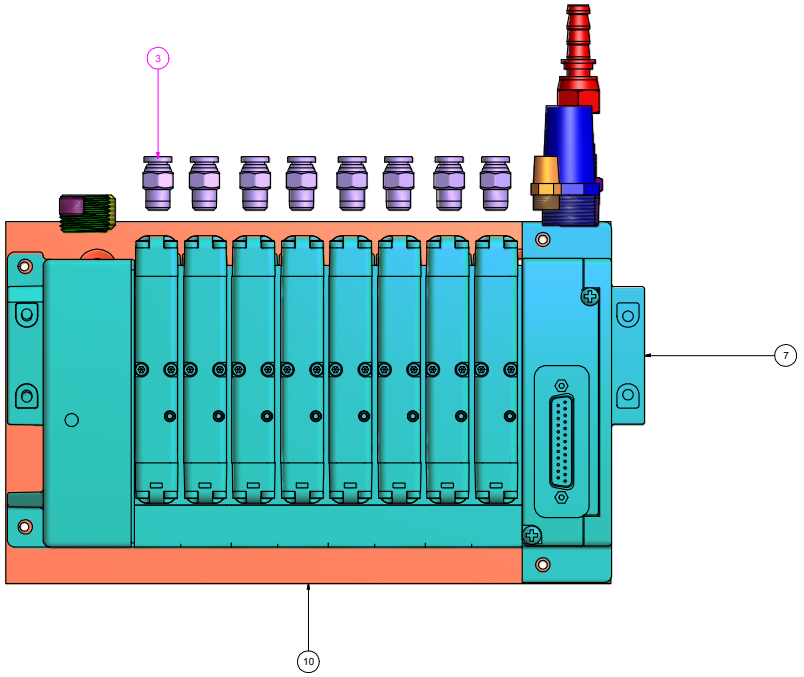
CAD LOCATION
Z:\730H\730H DRAWINGS\730H000924A.idw

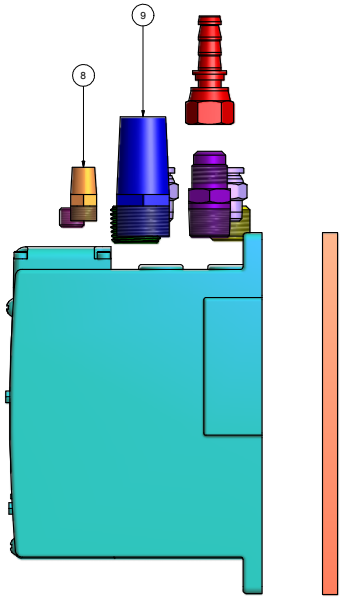
REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.
ALL BENDS 90 UNLESS SPECIFIED.
ALL WELDS CONTINUOUS UNLESS SPECIFIED.
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	302040	SWIVEL - FEMALE
2	1	302049	CONNECTOR - MALE
3	16	302186	CONNECTOR - MALE
4	1	313047	PIPE PLUG
5	1	313052	PIPE PLUG
6	1	313058	PIPE PLUG
7	1	314032	PNEUMATIC MANIFOLD ASSEMBLY - 8 VALVES
8	1	328004	MUFFLER
9	1	328005	MUFFLER
10	1	730H010115	STACKER UPPER PNEUMATIC MANIFOLD MOUNT - 730H - 4 WIDE OPERATION







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER UPPER PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4-WIDE	730H000925

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	3/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000925A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

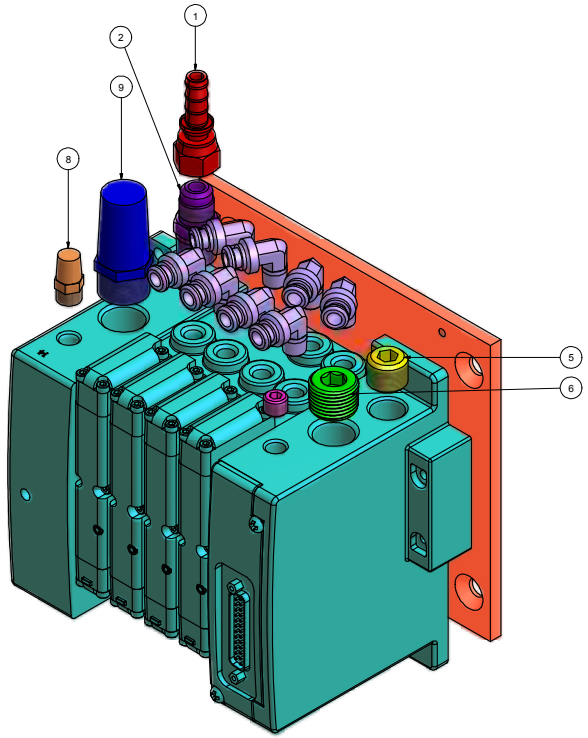
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

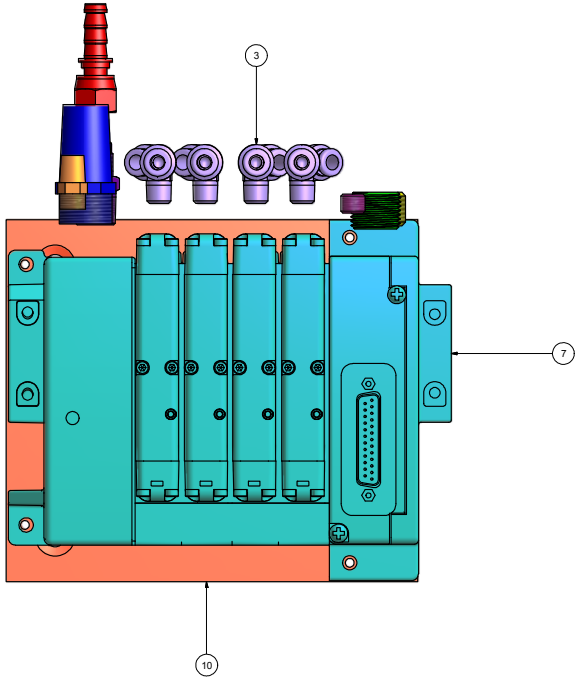
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

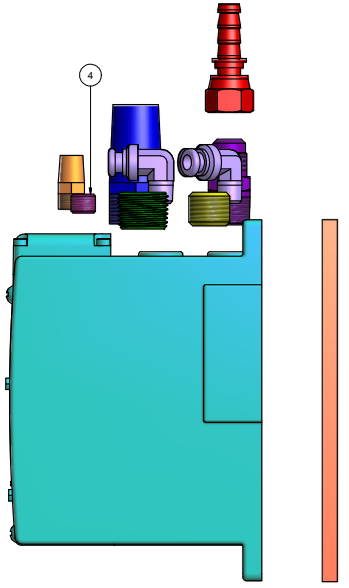
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	302040	SWIVEL - FEMALE
2	1	302049	CONNECTOR - MALE
3	8	302273	ELBOW - MALE SWIVEL
4	1	313047	PIPE PLUG
5	1	313052	PIPE PLUG
6	1	313058	PIPE PLUG
7	1	314033	PNEUMATIC MANIFOLD ASSEMBLY - 4-VALVES
8	1	328004	MUFFLER
9	1	328005	MUFFLER
10	1	730H010109	STACKER LOWER PNEUMATIC MANIFOLD MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER LOWER PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4-WIDE	730H000926

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	3/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000926A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

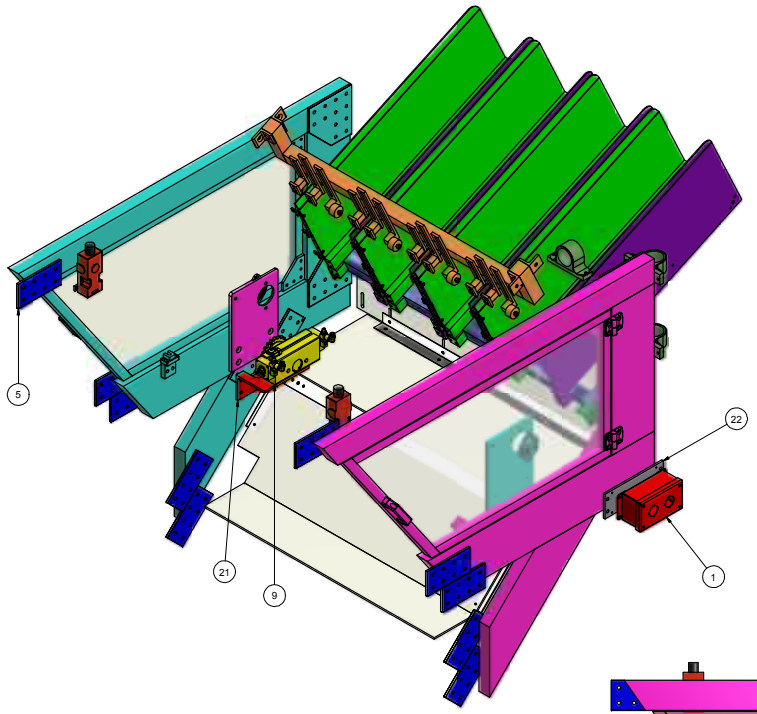
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

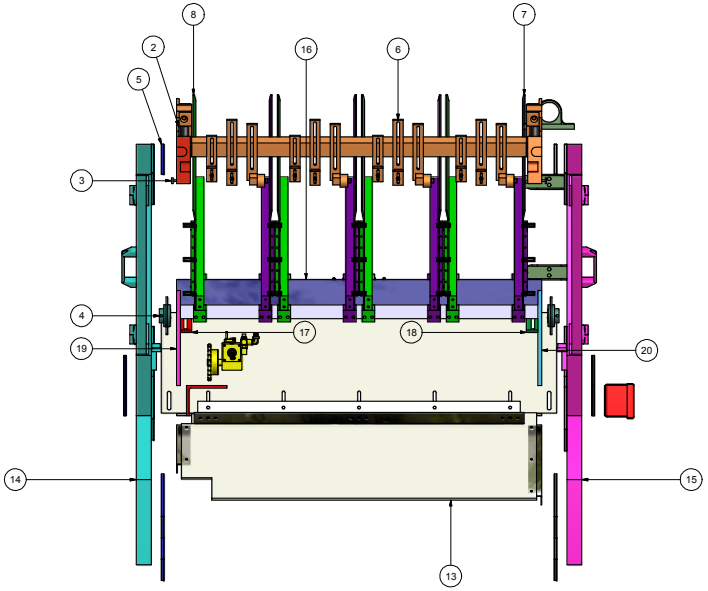
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

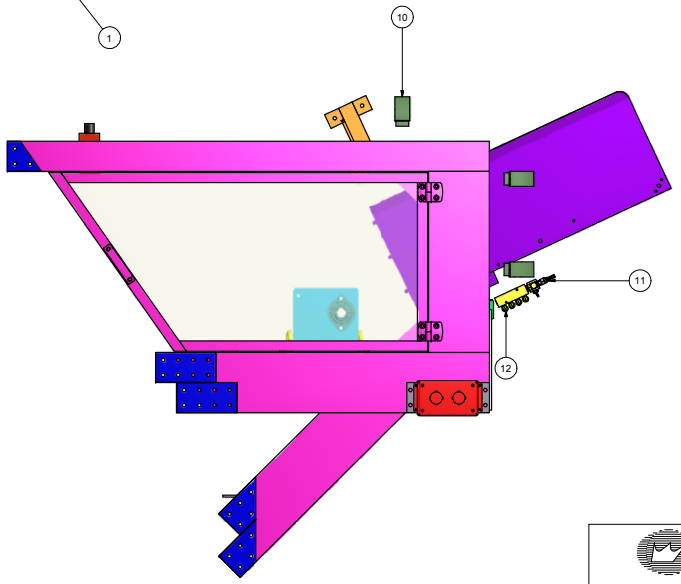
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	105035	ELECTRICAL BOX
2	2	183001	SAFETY SWITCH - LOCKING
3	2	183002	SAFETY SWITCH KEY
4	2	606066	BEARING - 2 BOLT FLANGE
5	10	691046	MOUNTING BRACKET
6	1	730H000514	BLANK MAGAZINE ADJUSTABLE LUG MOUNT ASSEMBLY - 730H - 4 WIDE
7	4	730H000518	BLANK MAGAZINE RIGHT SIDEWALL ASSEMBLY - 730H
8	4	730H000519	BLANK MAGAZINE LEFT SIDEWALL ASSEMBLY - 730H
9	1	730H000521	FEED ACTUATOR ASSEMBLY - 730H
10	3	730H000709	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
11	1	730H000919	FEEDER VACUUM ROUTING MANIFOLD ASSEMBLY - 730H
12	2	730H000921	FEEDER EXTEND CYLINDER ROUTING MANIFOLD ASSEMBLY - 730H
13	1	730H100105	FEED LOWER GUARD - 730H
14	1	730H110501	FEED LEFT FRAMEWORK - 730H
15	1	730H110502	FEED RIGHT FRAMEWORK - 730H
16	1	730H110503	BLANK MAGAZINE SUPPORT BEAM - 730H
17	1	730H110504	BLANK MAGAZINE SUPPORT BEAM LEFT BRACKET - 730H
18	1	730H110505	BLANK MAGAZINE SUPPORT BEAM RIGHT BRACKET - 730H
19	1	730H110509	FEED LEFT MOUNTING PLATE - 730H - MACHINE #20-PRESENT
20	1	730H110510	FEED RIGHT MOUNTING PLATE - 730H - MACHINE #20-PRESENT
21	1	730H110511	FEED ACTUATOR MOUNT - 730H - MACHINE #20-PRESENT
22	1	730H140501	FEED ELECTRICAL BOX MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FEED FRAMEWORK ASSEMBLY - 730H - 4 WIDE OPERATION	730H000502

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:6	SMC	2/18/2014

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CAD LOCATION
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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

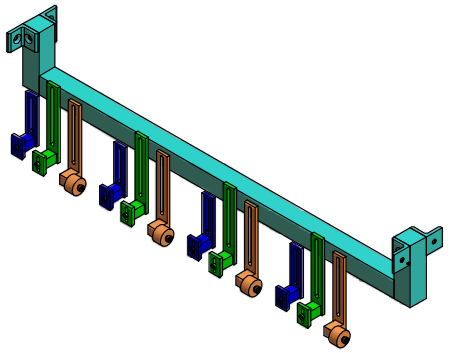
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

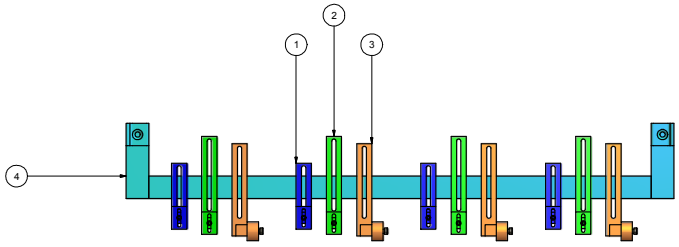
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

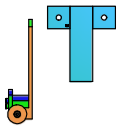
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	730H000515	BLANK MAGAZINE ADJUSTABLE LUG BRACKET ASSEMBLY - 730H
2	4	730H000516	BLANK MAGAZINE UPPER ADJUSTABLE LUG BRACKET ASSEMBLY - 730H
3	4	730H000517	BLANK MAGAZINE ROLLER BRACKET ASSEMBLY - 730H
4	1	730H050106	BLANK MAGAZINE UPPER ADJUSTABLE LUG BRACKET MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
BLANK MAGAZINE ADJUSTABLE LUG MOUNT ASSEMBLY - 730H - 4 WIDE	730H000514

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
	SMC	2/21/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000514A.idw

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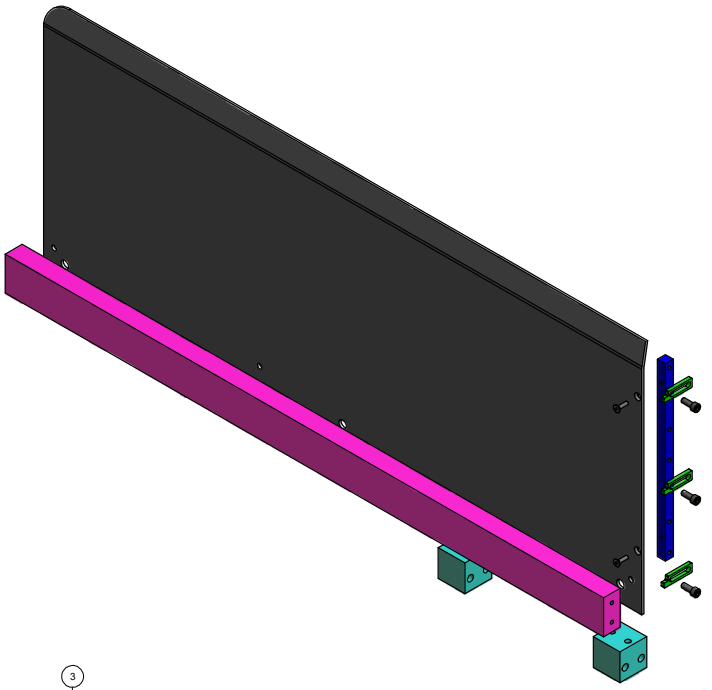
ALL BENDS 90 UNLESS SPECIFIED.

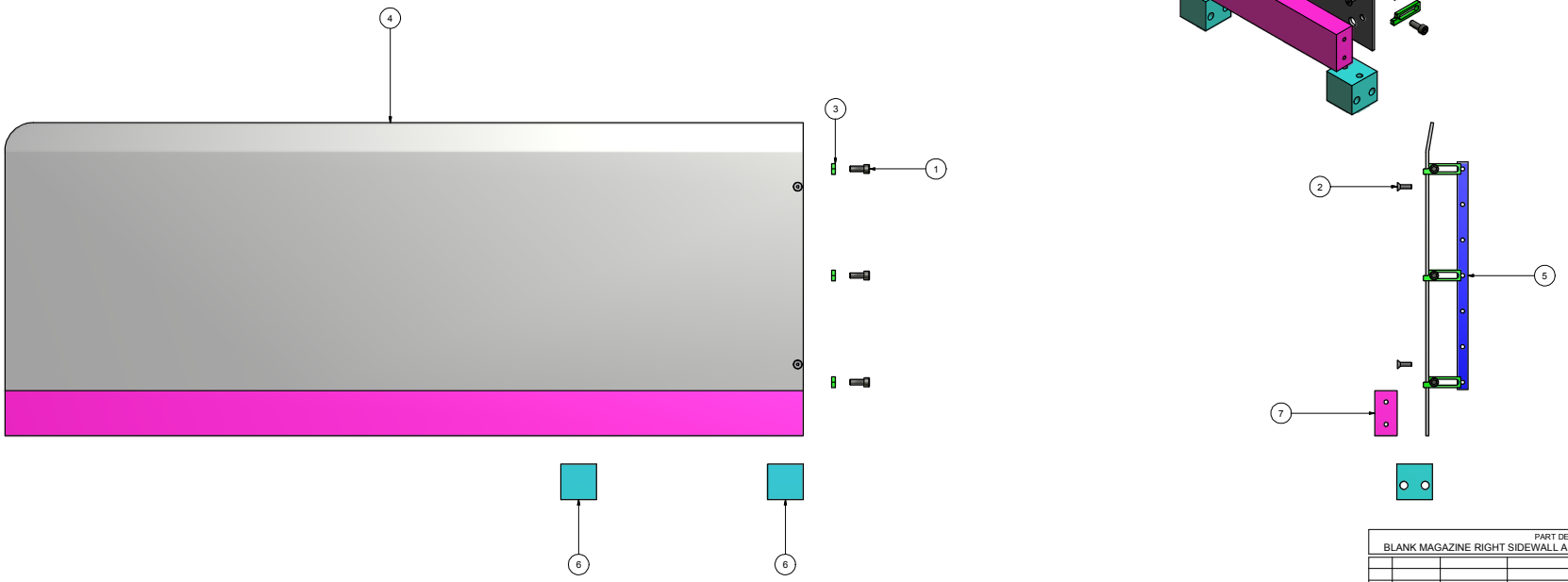
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	424116	SOCKET HEAD CAP SCREW
2	2	440520	MACHINE SCREW
3	3	691021	LUG CLIP
4	1	730H050103	BLANK MAGAZINE SIDEWALL - 730H - RIGHT
5	1	730H050104	BLANK MAGAZINE SIDEWALL LUG BRACKET - 730H
6	2	730H050122	BLANK MAGAZINE SIDEWALL MOUNT CLAMP - 730H
7	1	730H050124	BLANK MAGAZINE SIDEWALL MOUNT - 730H





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
BLANK MAGAZINE RIGHT SIDEWALL ASSEMBLY - 730H	730H000518

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	1/9/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000518A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

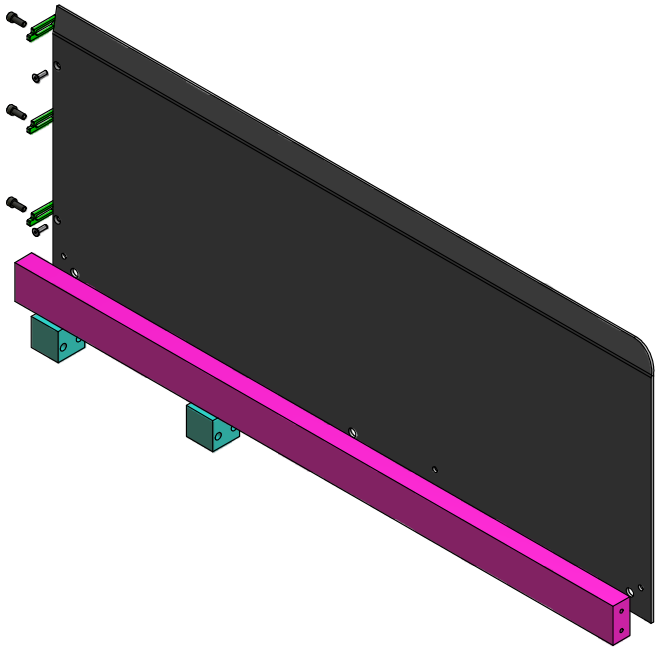
ALL BENDS 90 UNLESS SPECIFIED.

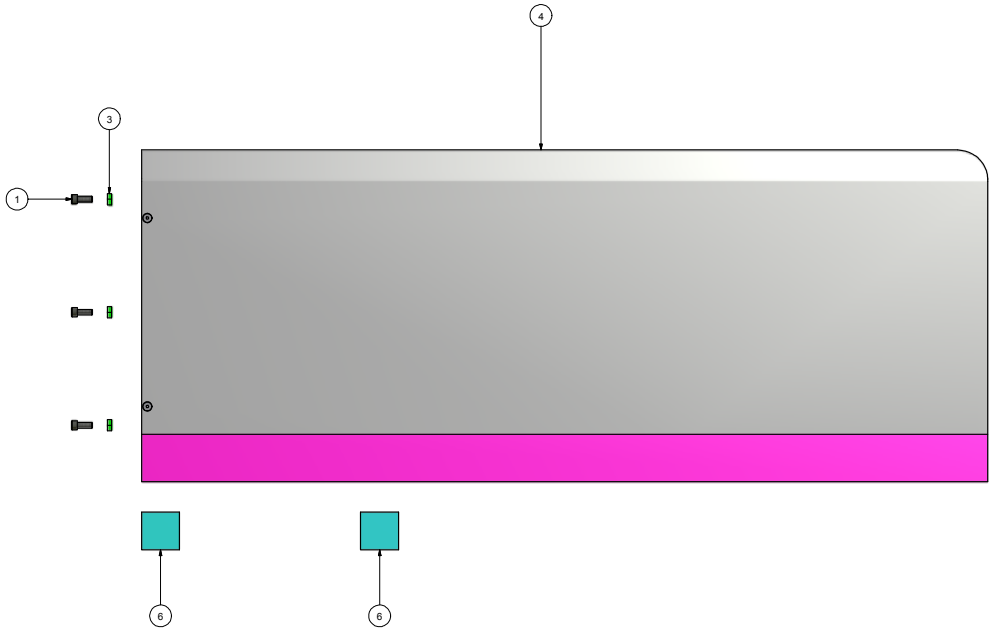
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

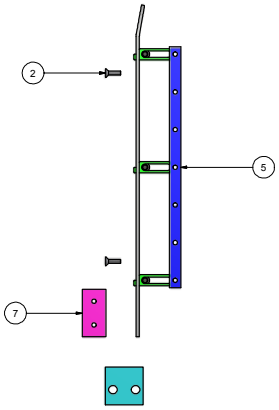
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	424116	SOCKET HEAD CAP SCREW
2	2	440520	MACHINE SCREW
3	3	691021	LUG CLIP
4	1	730H050102	BLANK MAGAZINE SIDEWALL - 730H - LEFT
5	1	730H050104	BLANK MAGAZINE SIDEWALL LUG BRACKET - 730H
6	2	730H050122	BLANK MAGAZINE SIDEWALL MOUNT CLAMP - 730H
7	1	730H050124	BLANK MAGAZINE SIDEWALL MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
BLANK MAGAZINE LEFT SIDEWALL ASSEMBLY - 730H	730H000519

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	1/9/2014

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CAD LOCATION
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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

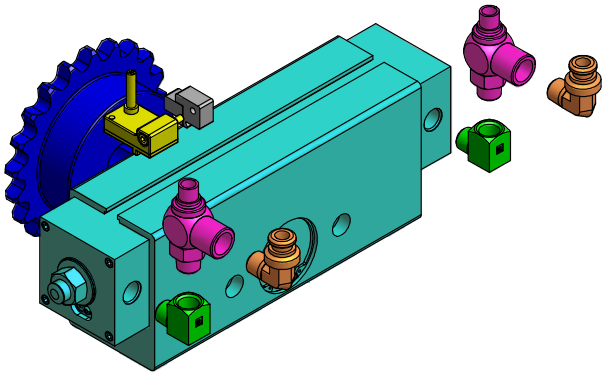
ALL BENDS 90 UNLESS SPECIFIED.

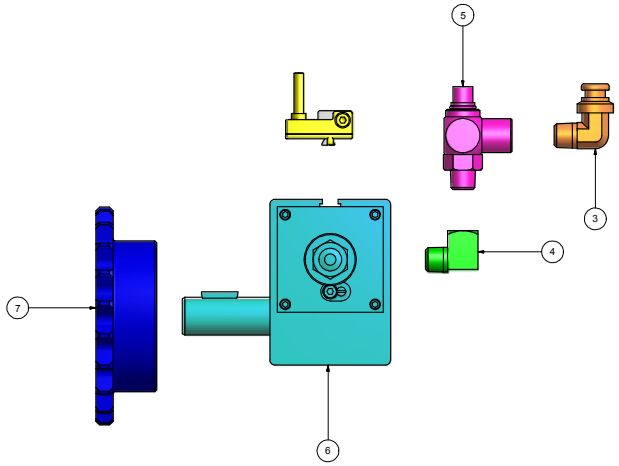
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

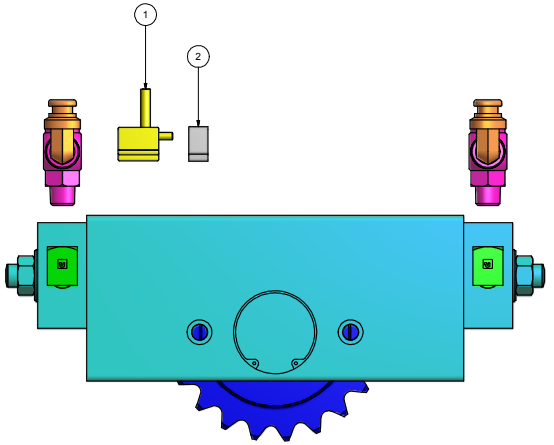
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	150054	SENSOR
2	1	150067	SENSOR MOUNTING BRACKET
3	2	262037	GREASE FITTING - SWIVEL ELBOW
4	2	302008	STREET ELBOW - 90°
5	2	328003	FLOW CONTROL - RIGHT ANGLE
6	1	333001	PNEUMATIC ROTARY ACTUATOR
7	1	635054	SPROCKET







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FEED ACTUATOR ASSEMBLY - 730H	730H000521

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/27/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000521A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

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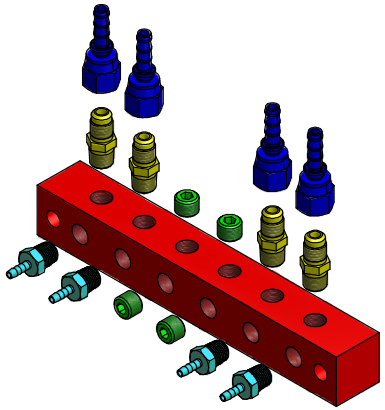
ALL BENDS 90 UNLESS SPECIFIED.

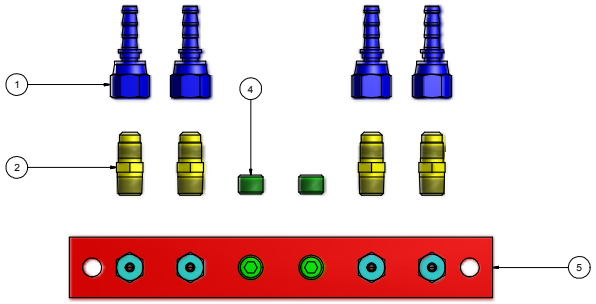
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

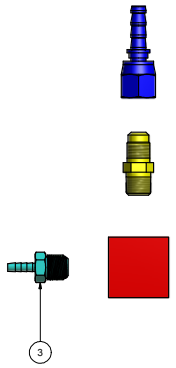
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	302039	SWIVEL - FEMALE
2	4	302044	CONNECTOR - MALE
3	4	302707	HOSE BARB
4	4	313047	PIPE PLUG
5	1	314031	MANIFOLD - 6 PORT - 90 DEG







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FEEDER VACUUM ROUTING MANIFOLD ASSEMBLY - 730H	730H000919

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	1/9/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000919A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

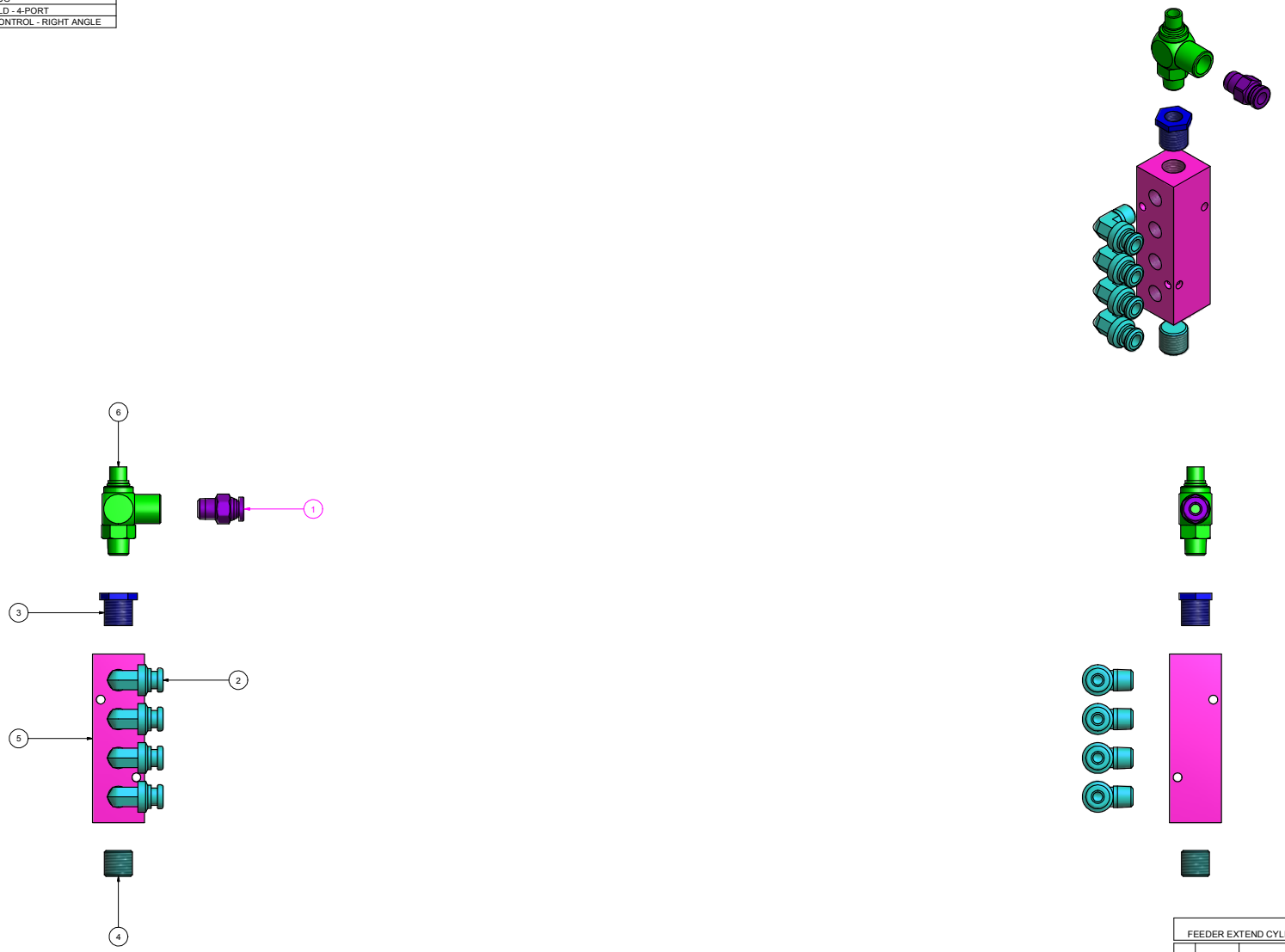
ALL BENDS 90 UNLESS SPECIFIED.

ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	302186	CONNECTOR - MALE
2	4	302273	ELBOW - MALE SWIVEL
3	1	313001	REDUCING BUSHING
4	1	313050	PIPE PLUG
5	1	314010	MANIFOLD - 4-PORT
6	1	328003	FLOW CONTROL - RIGHT ANGLE



PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FEEDER EXTEND CYLINDER ROUTING MANIFOLD ASSEMBLY - 730H	730H000921

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/27/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000921A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

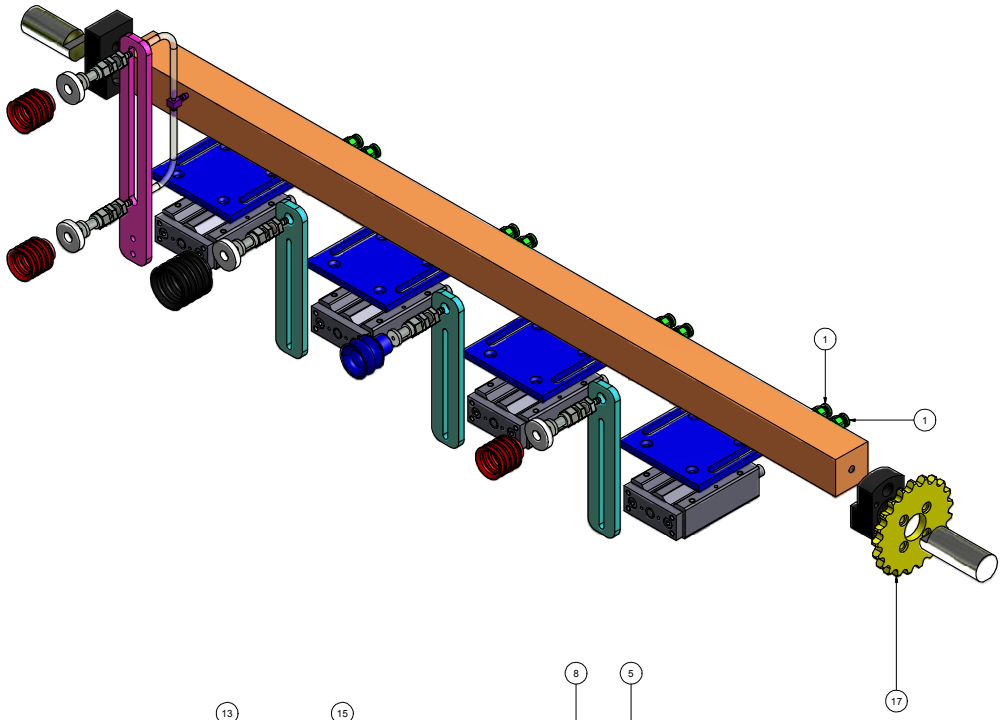
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

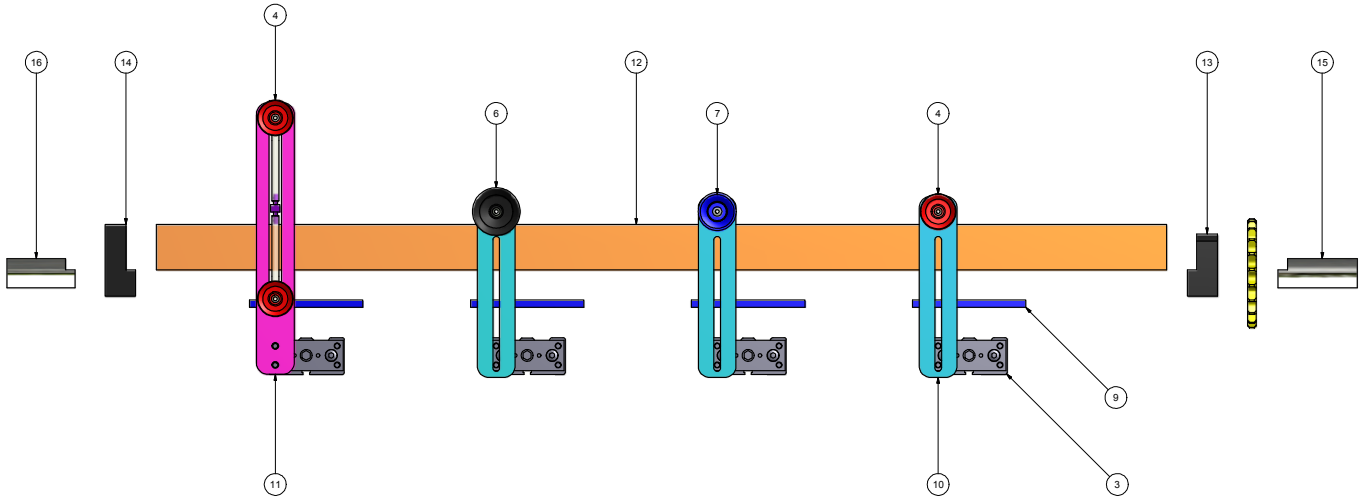
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

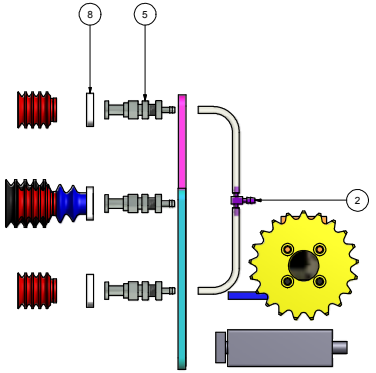
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	302572	CONNECTOR - MALE
2	1	302708	TEE BARB
3	4	331031	PNEUMATIC CYLINDER
4	3	363011	VACUUM CUP
5	5	363013	VACUUM CUP STEM
6	1	363016	VACUUM CUP
7	1	363017	VACUUM CUP
8	4	471428	WASHER
9	4	730H050213	FEED EXTEND CYLINDER MOUNTING BRACKET - 730H - MACHINE #7 TO PRESENT
10	3	730H050217	FEED VACUUM CUP MOUNTING BRACKET - 730H - SMALL BLANKS
11	1	730H050218	FEED VACUUM CUP MOUNTING BRACKET - 730H - LARGE BLANKS NEW FEED
12	1	730H050219	FEED ROTATION CROSS BAR - 730H - MACHINE #20 TO PRESENT
13	1	730H050220	FEED ROTATION LEFT BRACKET - 730H - MACHINE #20-PRESENT
14	1	730H050221	FEED ROTATION RIGHT BRACKET - 730H - MACHINE #20 TO PRESENT
15	1	730H050222	FEED ROTATION LEFT SHAFT - 730H - MACHINE #20-PRESENT
16	1	730H050223	FEED ROTATION SHAFT RIGHT - 730H - MACHINE #20 TO PRESENT
17	1	730H050224	FEED ROTATION SPROCKET - 730H - MACHINE #20 TO PRESENT

NOTE: PEERLESS OFFERS THREE DIFFERENT VACUUM CUPS THAT VARY IN SIZE AND MATERIAL. ALSO A DUAL VACUUM CUP MOUNTING BRACKET IS AVAILABLE FOR LARGER BLANK SIZES.







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FEED ASSEMBLY - 730H	730H000507

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	2/18/2014

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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

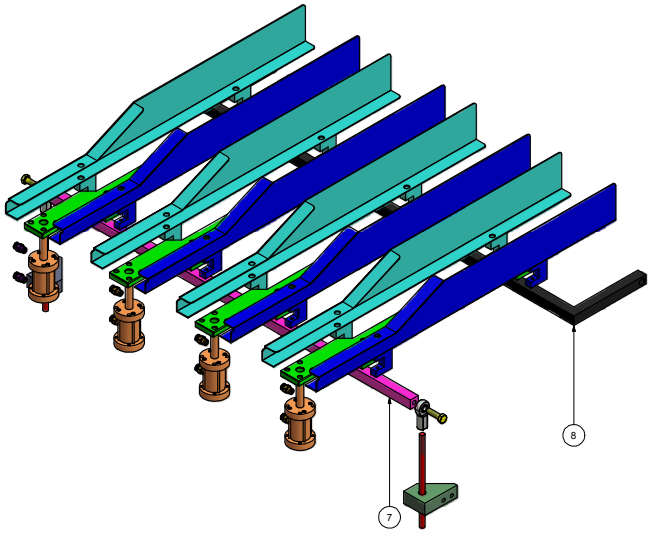
ALL BENDS 90 UNLESS SPECIFIED.

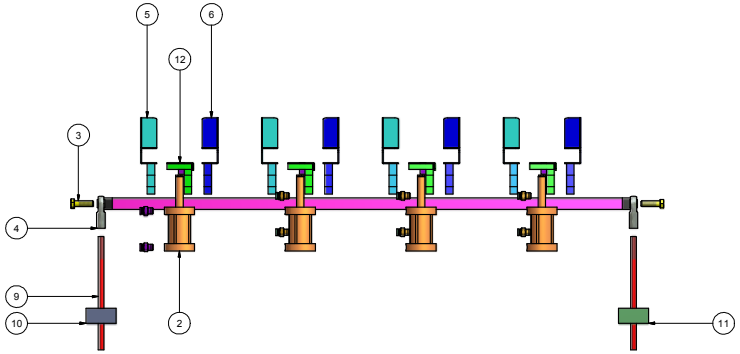
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

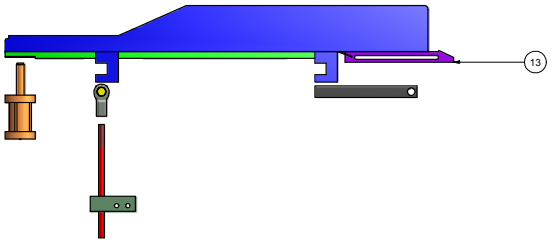
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	302186	CONNECTOR - MALE
2	4	331024	PNEUMATIC CYLINDER
3	2	410344	HEX HEAD CAP SCREW
4	2	609003	ROD END
5	4	730H050301	BLANK CHUTE - 730H - LEFT
6	4	730H050302	BLANK CHUTE - 730H - RIGHT
7	1	730H050303	BLANK CHUTE LOWER SUPPORT BAR - 730H
8	1	730H050304	BLANK CHUTE UPPER SUPPORT BAR - 730H
9	2	730H050305	BLANK CHUTE SUPPORT POST - 730H
10	1	730H050307	BLANK CHUTE SUPPORT BRACKET - 730H - LEFT
11	1	730H050308	BLANK CHTUE SUPPORT POST BRACKET - 730H - RIGHT
12	4	730H050309	BLANK CHUTE - 730H - CENTER W/ BLANK STOP CYLINDER MOUNT
13	4	730H050310	BLANK CHUTE CENTER RAIL EXTENSION - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
BLANK CHUTE ASSEMBLY - 730H - 4-WIDE	730H000508

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/18/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000508A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

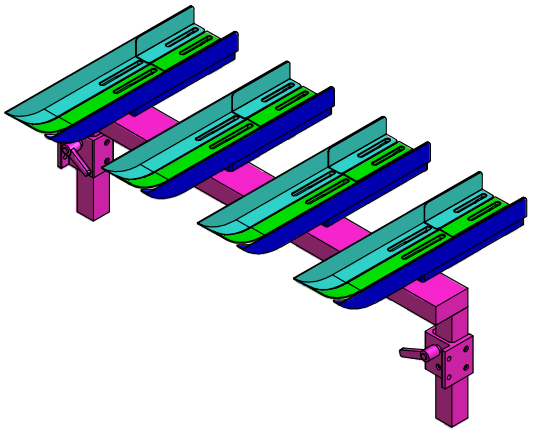
ALL BENDS 90 UNLESS SPECIFIED.

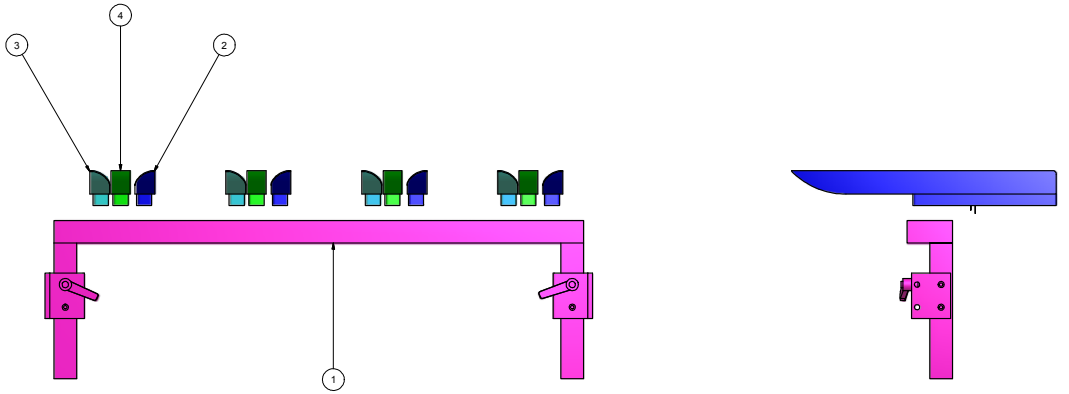
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	730H050401	OUTGOING PART SLIDE MOUNT - 730H
2	4	730H050402	OUTGOING PART SLIDE - 730H - RIGHT
3	4	730H050403	OUTGOING PART SLIDE - 730H - LEFT
4	4	730H050404	OUTGOING PART SLIDE - 730H - CENTER





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
OUTGOING PART CHUTE ASSEMBLY - 730H - 4-WIDE	730H000509

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/18/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000509A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

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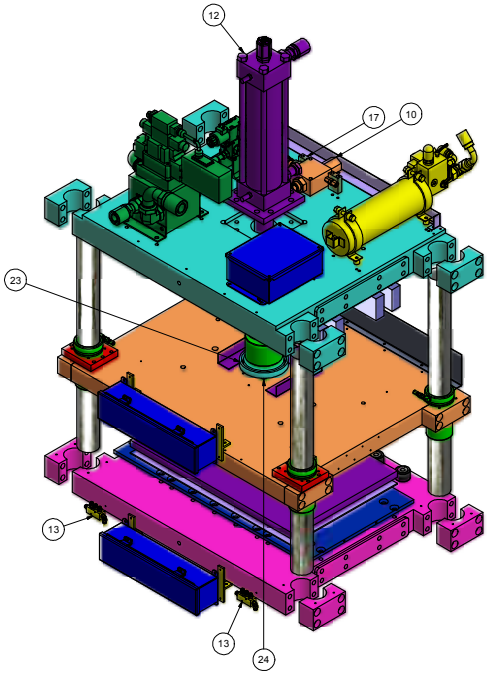
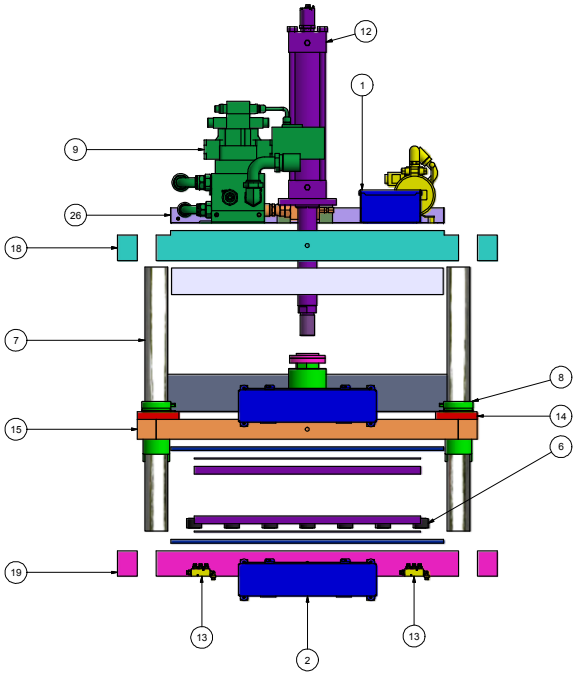
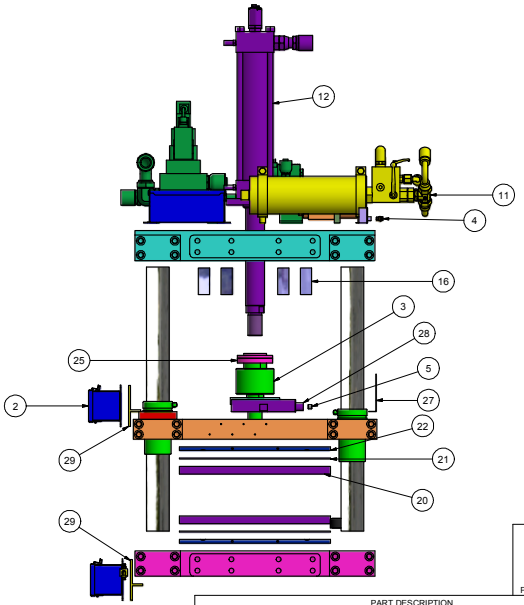
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	105007	ELECTRICAL BOX
2	2	105133	ELECTRICAL BOX
3	1	238003	HYDRAULIC ROD END COUPLER
4	1	302186	CONNECTOR - MALE
5	1	313050	1/4 NPT PLUG
6	7	611033	CAM FOLLOWER
7	4	621063	GUIDE PIN
8	4	730H000605	FORMING HEAD GREASE BUSHING ASSEMBLY - 730H
9	1	730H000701	HYDRAULIC MANIFOLD ASSEMBLY - 730H
10	1	730H000703	COUNTERBALANCE VALVE ASSEMBLY - 730H
11	1	730H000706	HYDRAULIC ACCUMULATOR ASSEMBLY - 730H
12	1	730H000708	HYDRAULIC CYLINDER ASSEMBLY - 730H
13	2	730H000920	BLANK STOP MANIFOLD ASSEMBLY - 730H
14	2	730H060107	FORMING HEAD BUSHING ADJ MOUNT - 730H - MACHINE #21 TO PRESENT
15	1	730H060108	FORMING HEAD - 730H - W/ ADJ. BUSHINGS - MACHINE #21 TO PRESENT
16	4	730H060203	FORMING CYLINDER BASE BEAM - 730H
17	2	730H060204	COUNTER BALANCE VALVE MOUNTING BLOCK - 730H
18	1	730H060205	FORMING CYLINDER BASE - 730H - MACHINE #19 TO PRESENT
19	1	730H060302	FORMING BASE -730H - MACHINE #19 TO PRESENT
20	2	730H060401	DIE INSULATION TEMPLATE - 730H
21	2	730H060402	DIE STAINLESS PLATE TEMPLATE - 730H
22	2	730H060403	DIE MOUNTING PLATE TEMPLATE - 730H
23	1	730H060602	FORMING HEAD ALIGNMENT COUPLER ANTI-ROTATION BRACKET - 730H
24	1	730H060603	FORMING HEAD ALIGNMENT COUPLER SPACER - 730H
25	2	730H060604	FORMING CYLINDER ANTI-ROTATION BRACKET - 730H
26	1	730H100702	FORMING CYLINDER HEAD OIL CATCH - 730H
27	1	730H110701	FORMING HEAD DUST GUARD - 730H
28	1	730H110702	FORMING CYLINDER DRIP PAN - 730H
29	4	730H140601	FORMING DIE HEATER ELECTRICAL BOX MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING HEAD/BASE ASSEMBLY - 730H - MACHINES #21 TO PRESENT	730H000601

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:8	SMC	1/8/2014

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CAD LOCATION
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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

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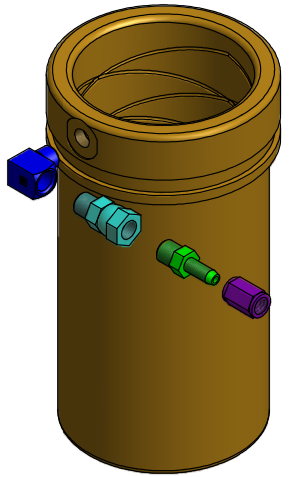
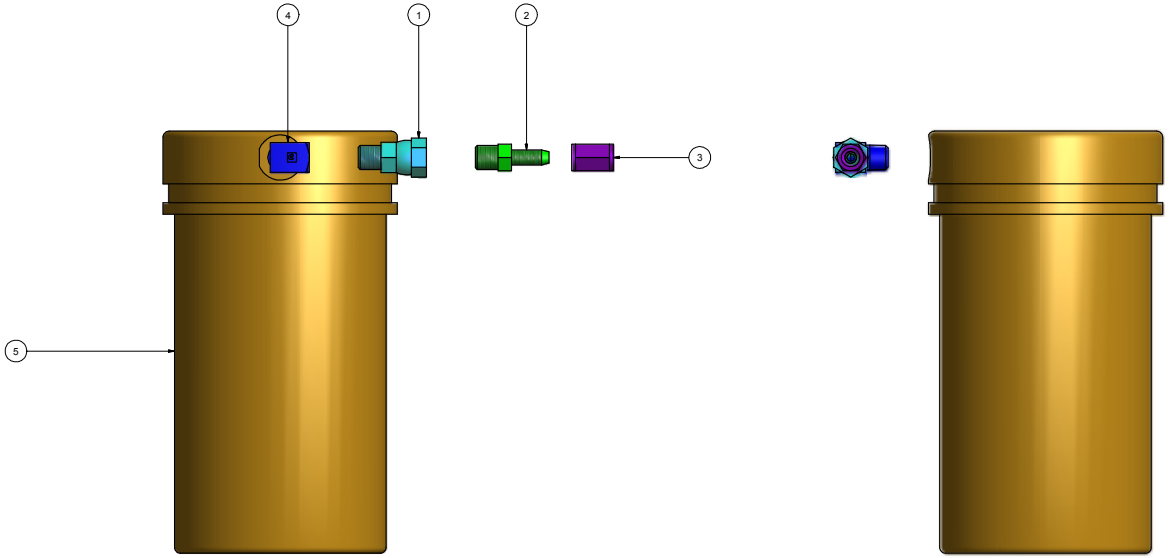
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	261013	STRAIGHT GREASE SWIVEL
2	1	262002	GREASE FITTING - STRAIGHT HOSE STUD
3	1	262003	GREASE FITTING - FEMALE COUPLING NUT
4	1	302008	STREET ELBOW - 90°
5	1	730H060502	FORMING HEAD GREASED BUSHING - 730H





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING HEAD GREASE BUSHING ASSEMBLY - 730H	730H000605

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	3/5/2014

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CAD LOCATION
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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

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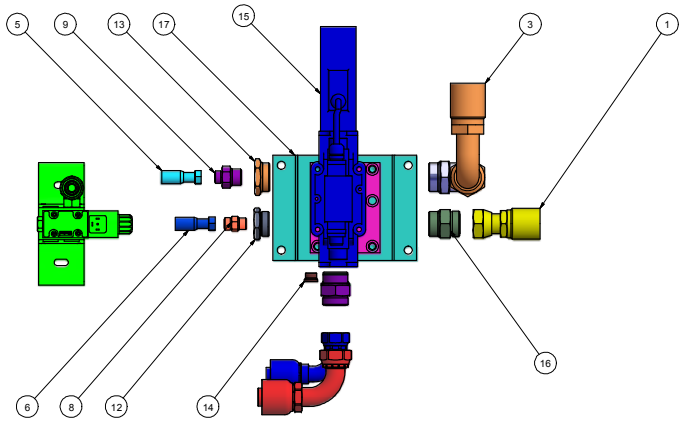
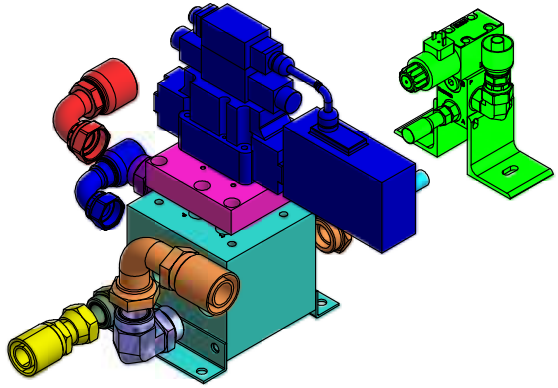
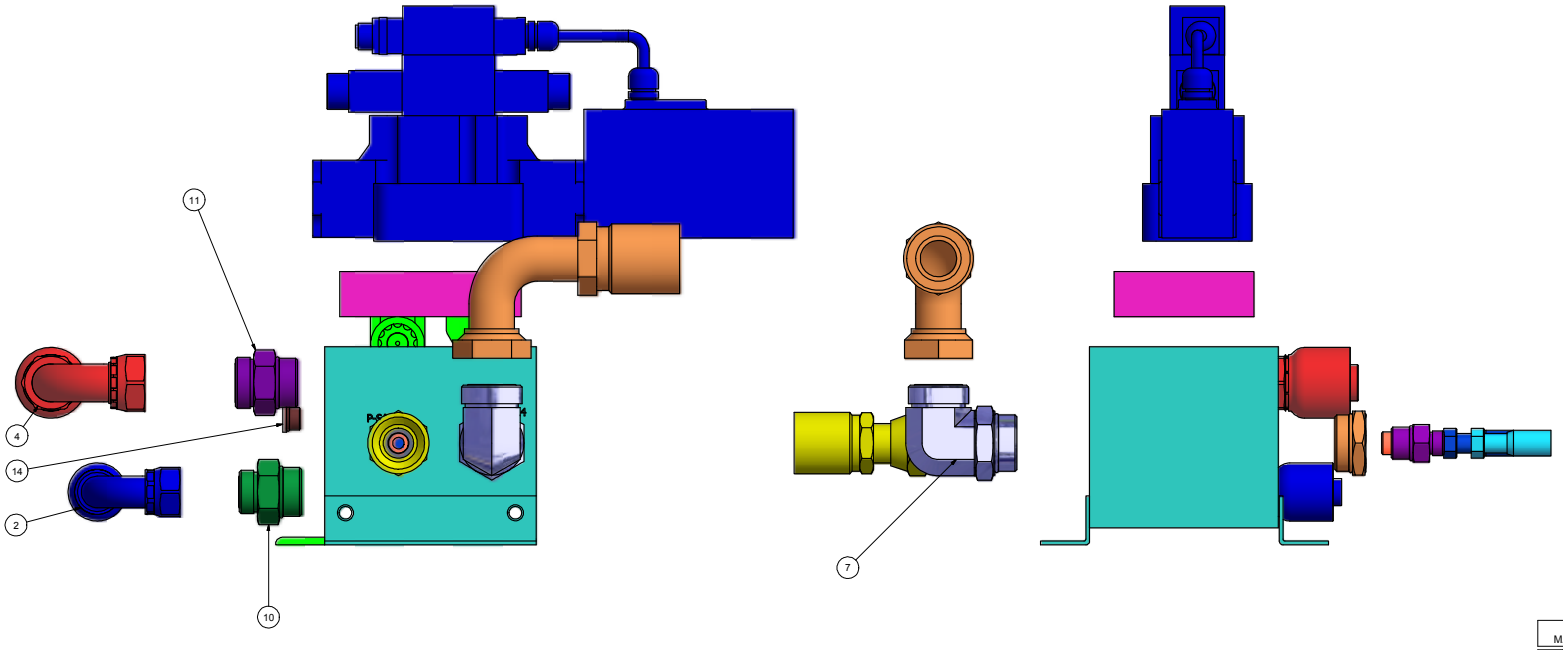
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207048	HOSE ASSEMBLY
2	1	207050	HOSE ASSEMBLY
3	1	207053	HOSE ASSEMBLY
4	1	207065	HOSE ASSEMBLY
5	1	207095	HOSE ASSEMBLY
6	1	207099	HOSE ASSEMBLY
7	1	213030	ELBOW
8	1	213063	CONNECTOR - STRAIGHT
9	1	213066	CONNECTOR
10	1	213078	CONNECTOR - STRAIGHT
11	1	213079	CONNECTOR - STRAIGHT
12	1	213104	REDUCER
13	1	215269	REDUCER
14	1	215511	PLUG
15	1	221048	PROPORTIONAL CONTROL VALVE
16	1	223014	PORT FITTING CHECK VALVE
17	1	228015	HYDRAULIC MANIFOLD
18	1	228038	SUBPLATE
19	1	730H000712	SECONDARY VALVE MANIFOLD ASSEMBLY - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MAIN HYDRAULIC MANIFOLD ASSEMBLY - 730H	730H000714

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	1/8/2014

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ALL BENDS 90 UNLESS SPECIFIED.

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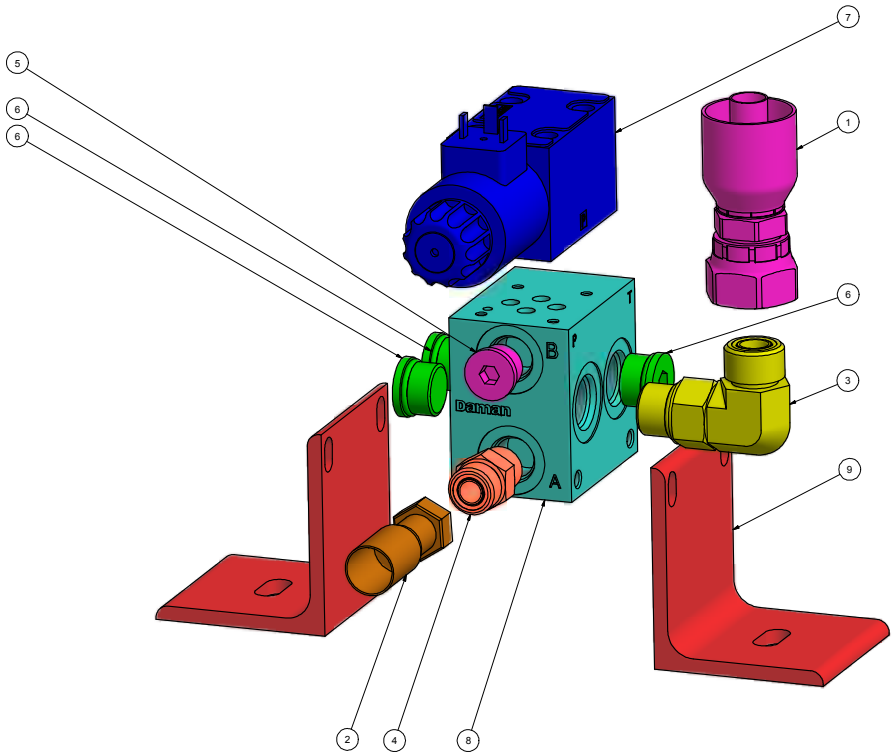
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207097	HOSE ASSEMBLY
2	1	207099	HOSE ASSEMBLY
3	1	213021	ELBOW
4	1	213063	CONNECTOR - STRAIGHT
5	1	215511	PLUG
6	3	215512	PLUG
7	1	221045	DIRECTIONAL VALVE
8	1	228037	D03 Standard Flow Parallel Circuit-Manifold
9	1	730H079901	DIRECTIONAL VALVE MANIFOLD SUPPORT



PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
SECONDARY VALVE MANIFOLD ASSEMBLY - 730H	730H000712

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	PDL	1/14/2016

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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

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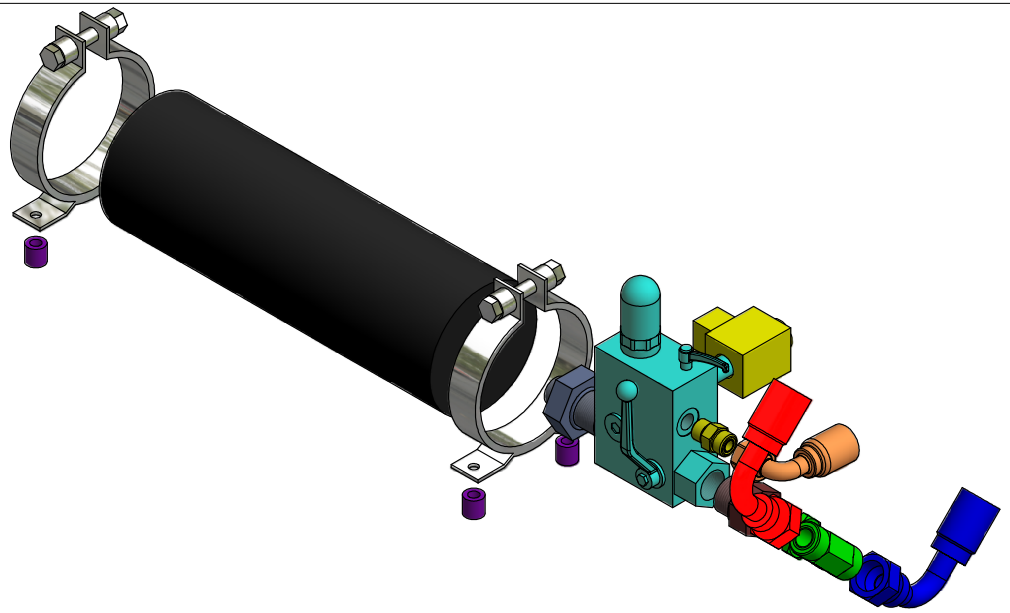
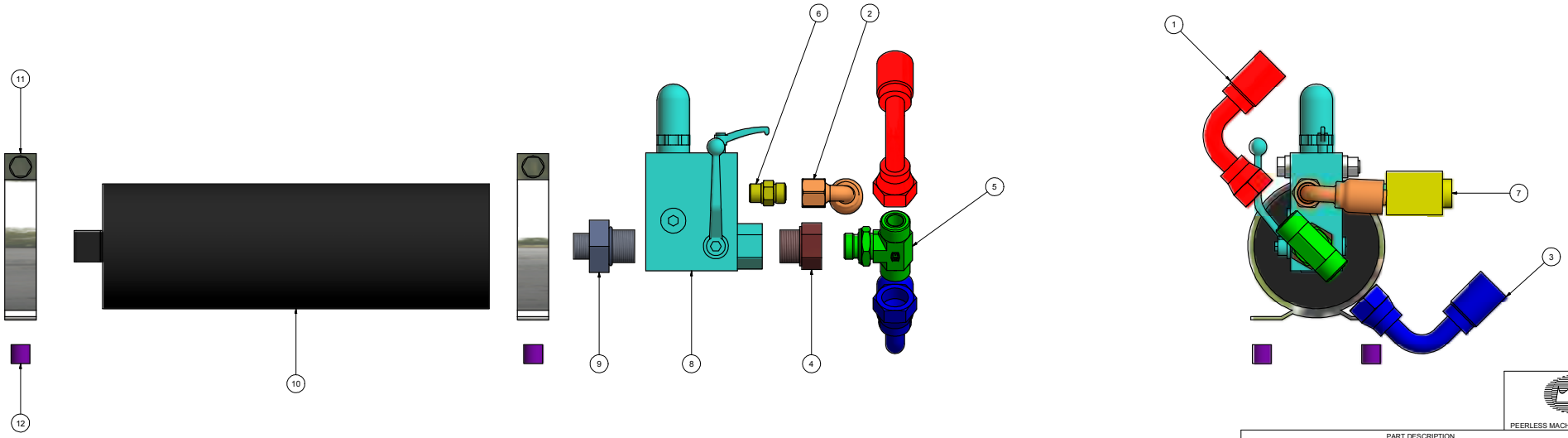
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207072	HOSE ASSEMBLY
2	1	207095	HOSE ASSEMBLY
3	1	207096	HOSE ASSEMBLY
4	1	215671	REDUCER COUPLING
5	1	215931	BRANCH TEE - ORFS/ORFS/BSPP-ORR
6	1	215932	CONNECTOR - STRAIGHT
7	1	221015	SOLENOID COIL
8	1	221021	ACCUMULATOR SAFETY UNLOAD VALVE
9	1	221022	ADAPTER COUPLING FOR 221021
10	1	291003	PISTON ACCUMULATOR
11	2	292124	CLAMP STRAP - ACCUMULATOR
12	4	692822	SPACER





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HYDRAULIC ACCUMULATOR ASSEMBLY - 730H	730H000706

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	3/5/2014

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CAD LOCATION
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REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

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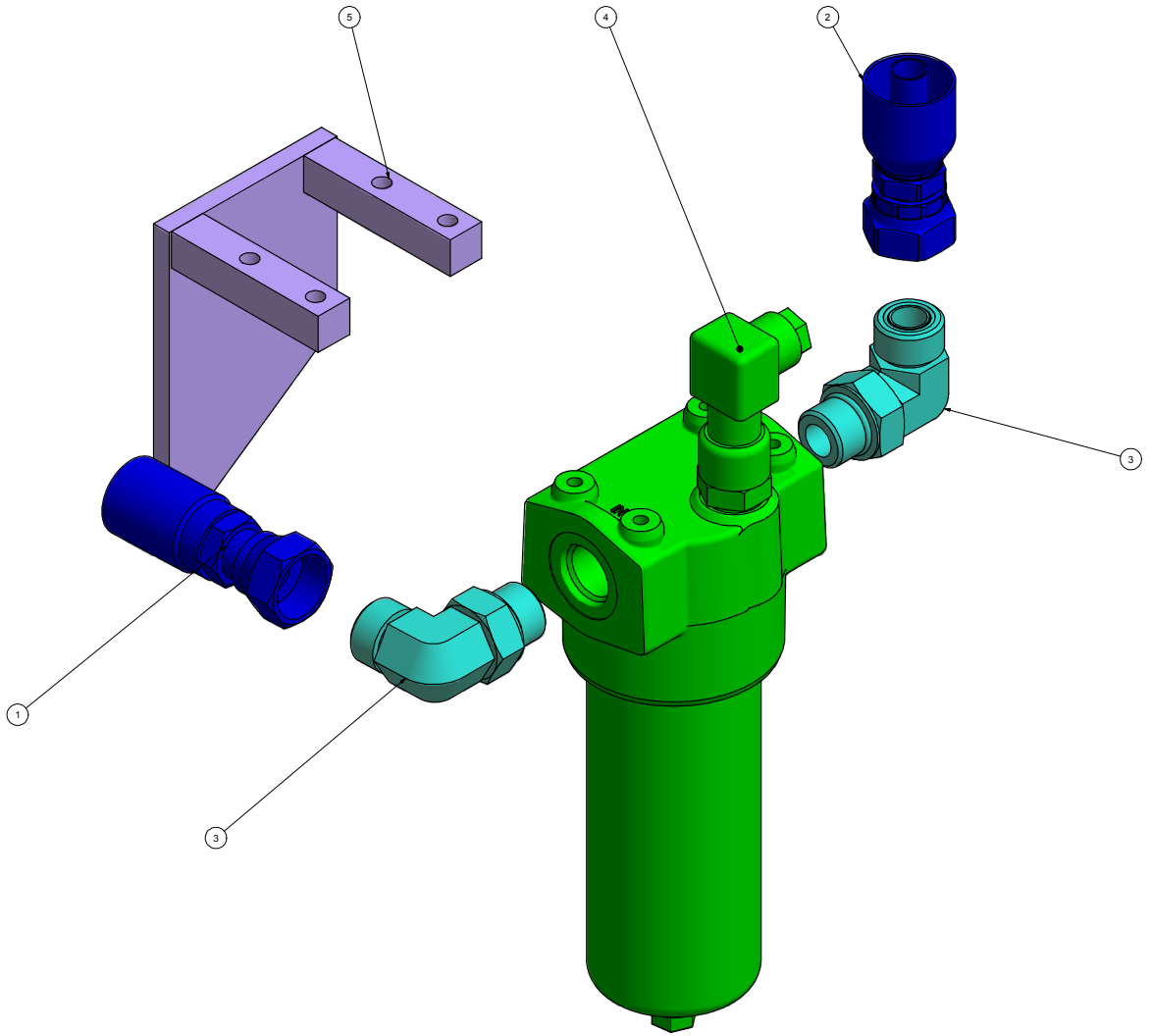
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207096	HOSE ASSEMBLY
2	1	207097	HOSE ASSEMBLY
3	2	213019	ELBOW
4	1	298045	HIGH PRESSURE FILTER
5	1	730H079903	HIGH PRESSURE FILTER MOUNT - 730H



PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HIGH PRESSURE FILTER AND MOUNT	730H000711

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	PDL	12/9/2015

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000711.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

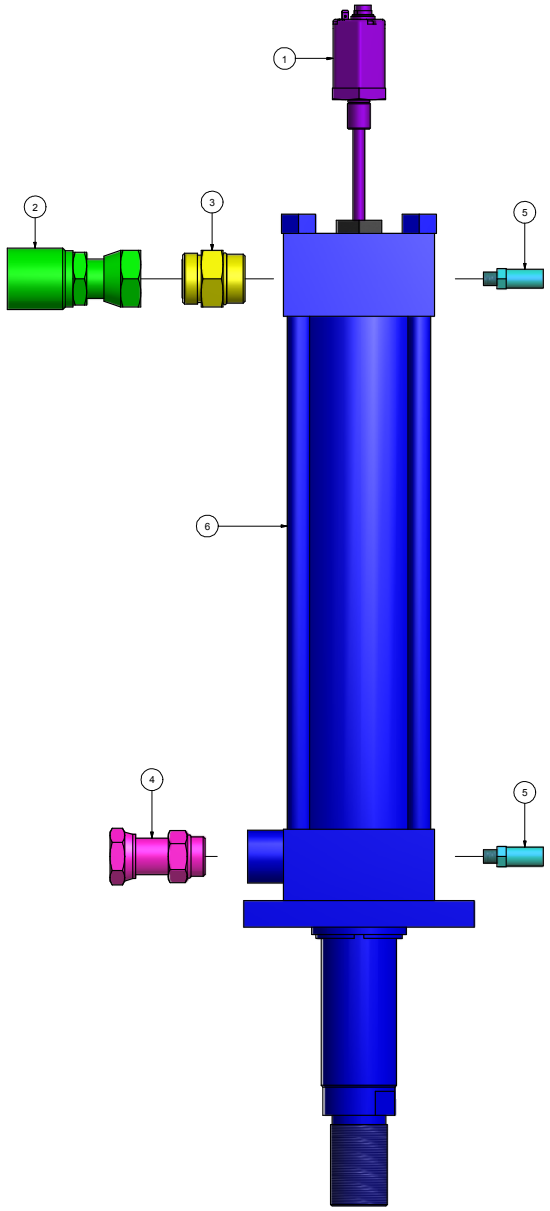
ALL BENDS 90 UNLESS SPECIFIED.

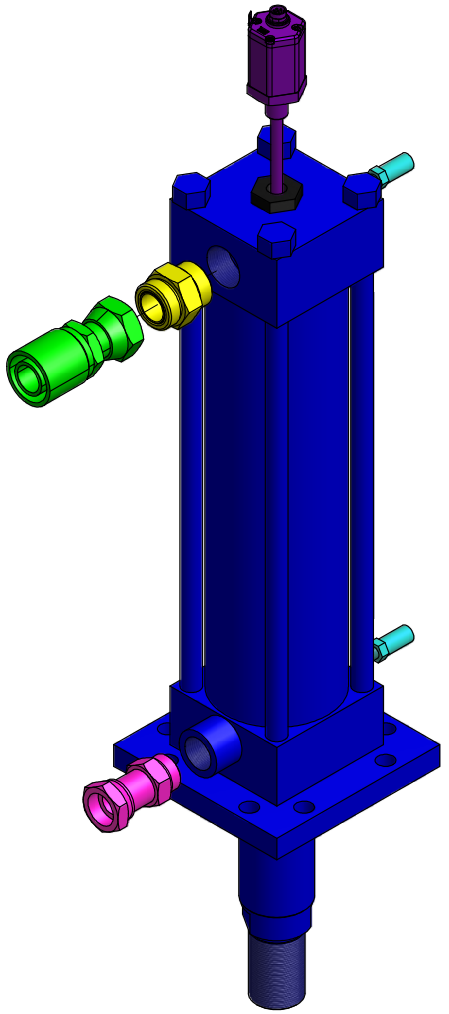
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	150156	LINEAR TRANSDUCER
2	1	207065	HOSE ASSEMBLY
3	1	213079	CONNECTOR - STRAIGHT
4	1	213236	CONNECTOR - STRAIGHT
5	2	215040	DIAGNOSTIC PORT NIPPLE
6	1	231010	4.00 BORE HYDRAULIC CYLINDER





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HYDRAULIC CYLINDER ASSEMBLY - 730H	730H000708

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	TCS	3/18/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000708A.idw

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

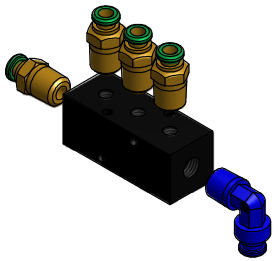
ALL BENDS 90 UNLESS SPECIFIED.

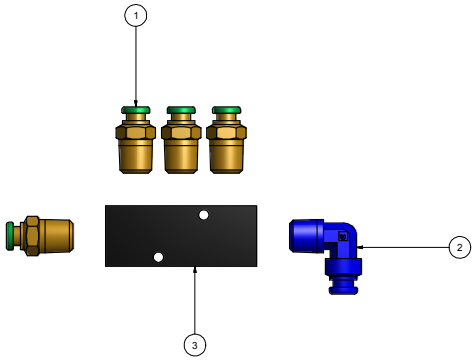
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	302187	CONNECTOR - MALE
2	1	302274	ELBOW - MALE SWIVEL
3	1	314017	MSI# M10-125-3





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
BLANK STOP MANIFOLD ASSEMBLY - 730H	730H000920

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	10/17/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000920A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

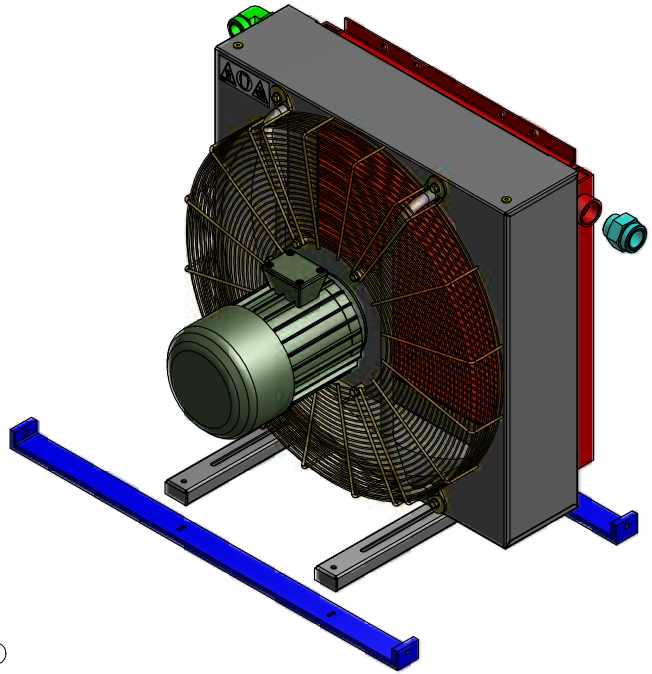
ALL BENDS 90 UNLESS SPECIFIED.

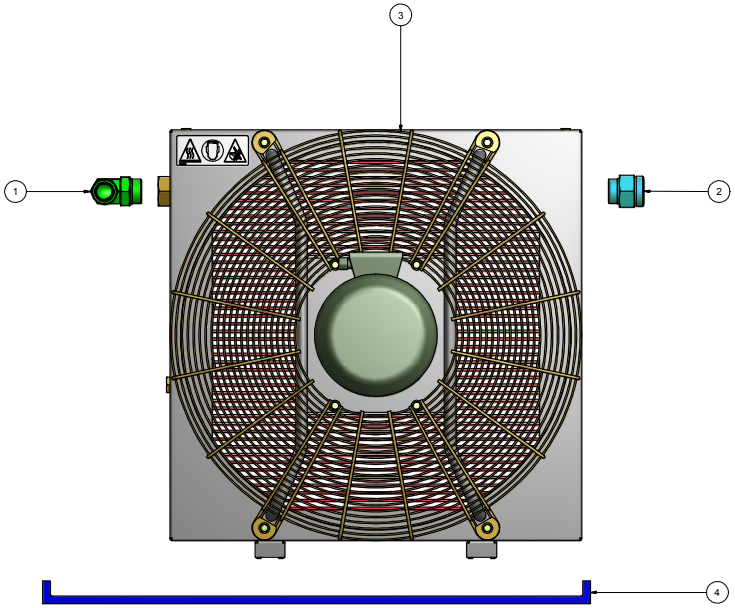
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

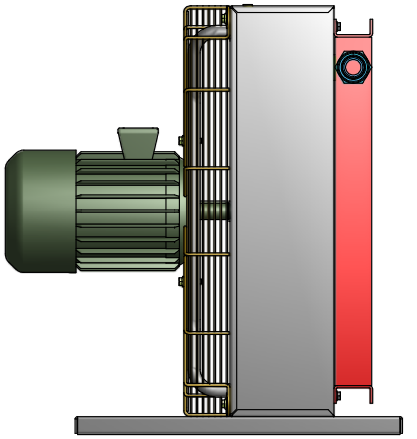
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	213027	ELBOW
2	1	213083	CONNECTOR - STRAIGHT
3	1	243010	HYDRAULIC OIL COOLER
4	2	730H110607	HEAT EXCHANGER MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HEAT EXCHANGER ASSEMBLY - 730H	730H000704

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/7/2014

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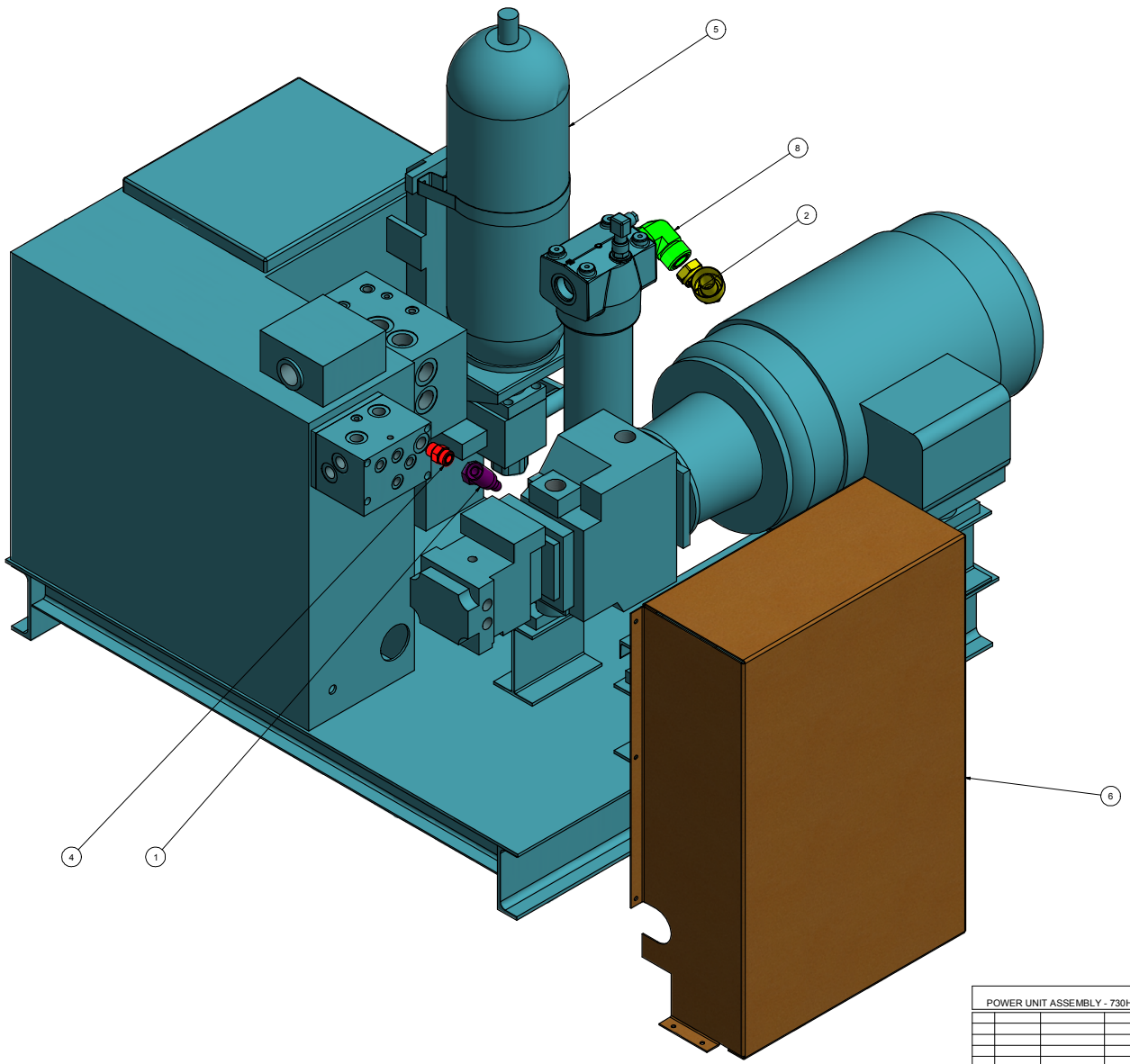
CAD LOCATION
Z:\730H\730H DRAWINGS\730H000704A.idw

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.
ALL BENDS 90 UNLESS SPECIFIED.
ALL WELDS CONTINUOUS UNLESS SPECIFIED.
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207072	HOSE ASSEMBLY
2	1	207098	HOSE ASSEMBLY
4	1	213071	CONNECTOR - STRAIGHT
5	1	251016	HYDRAULIC POWER UNIT
6	1	730H100701	HYDRAULIC POWER UNIT PUMP COVER - 730H
8	1	213029	ELBOW



PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
POWER UNIT ASSEMBLY - 730H	730H000713

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	PDL	2/18/2016

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000713.idw

REV	ECO	CHANGE MADE	DRN	CHK	DATE
1		LOCATION OF FILTER CHANGED	PL		4/19/16

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

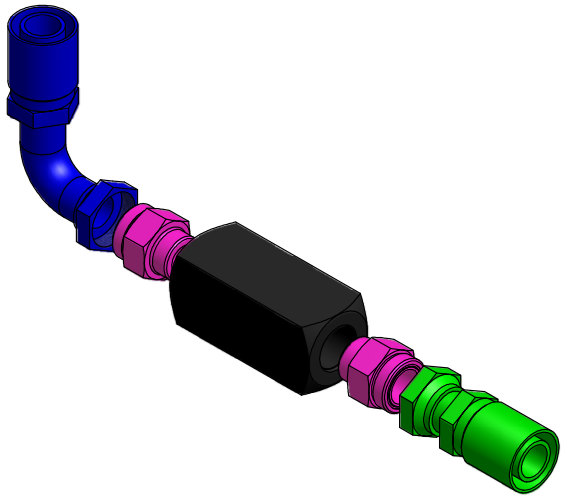
ALL BENDS 90 UNLESS SPECIFIED.

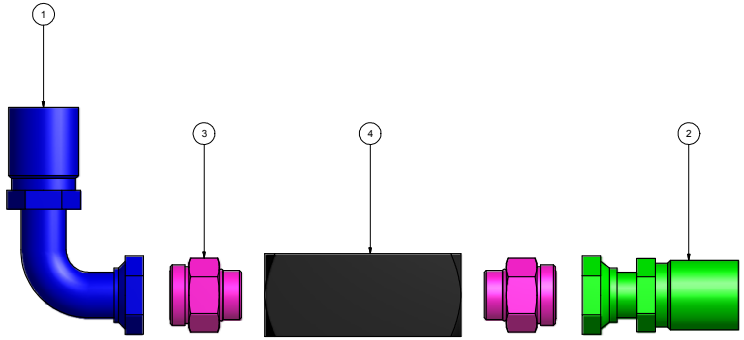
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

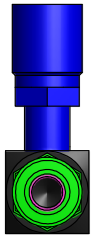
REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	207055	HOSE ASSEMBLY
2	1	207079	HOSE ASSEMBLY
3	2	213083	CONNECTOR - STRAIGHT
4	1	223001	CHECK VALVE - 65 PSI







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
CHECK VALVE ASSEMBLY - 730H - HYDRAULIC RETURN LINE	730H000705

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/19/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000705A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

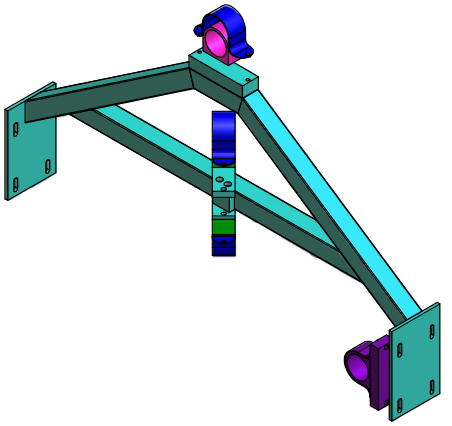
ALL BENDS 90 UNLESS SPECIFIED.

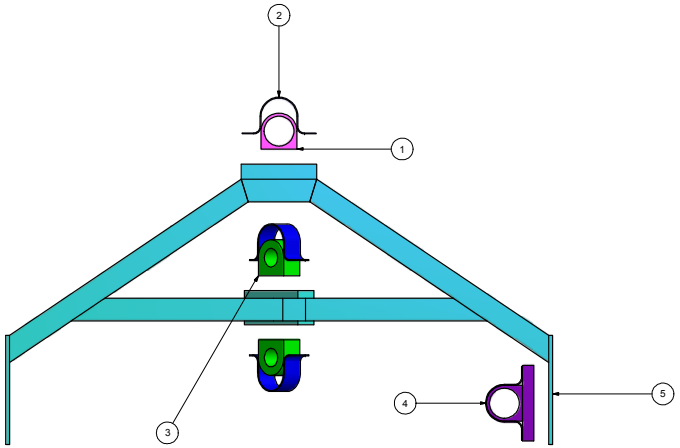
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

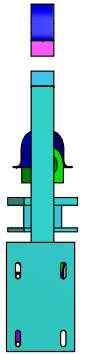
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	292118	CLAMP INSERT
2	3	292119	CLAMP STRAP
3	2	292125	CLAMP INSERT
4	1	730H000710	HYDRAULIC CLAMP INSERT ASSEMBLY - 730H
5	1	730H110622	HYDRAULIC CYLINDER CAP HOSE MOUNTING BRACKET - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HYDRAULIC CYLINDER CAP HOSE MOUNTING BRACKET ASSEMBLY - 730H	730H000707

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	3/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000707A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

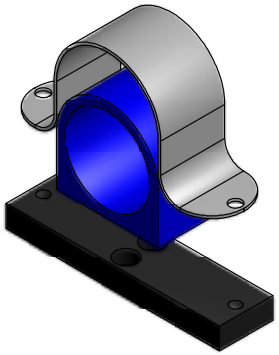
ALL BENDS 90 UNLESS SPECIFIED.

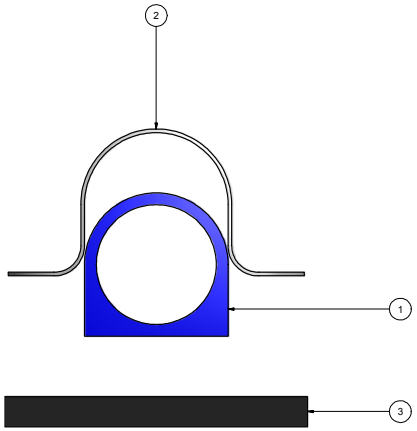
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

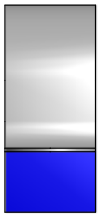
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	292118	CLAMP INSERT
2	1	292119	CLAMP STRAP
3	1	730H110611	HYDRAULIC HOSE MOUNT BRACKET - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
HYDRAULIC CLAMP INSERT ASSEMBLY - 730H	730H000709

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	6/26/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000709A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

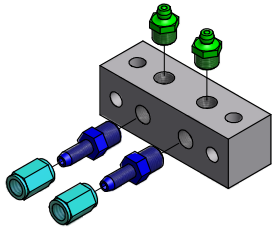
ALL BENDS 90 UNLESS SPECIFIED.

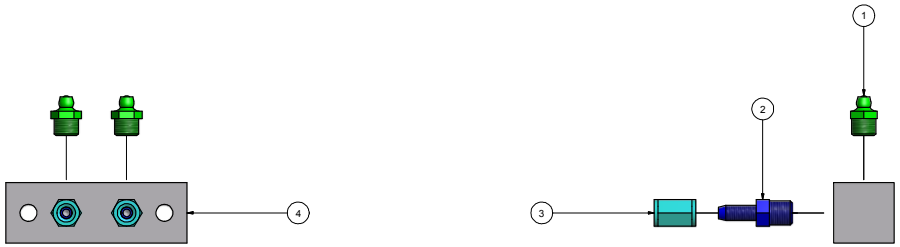
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	261024	STRAIGHT GREASE ZERK
2	2	262002	GREASE FITTING - STRAIGHT HOSE STUD
3	2	262003	GREASE FITTING - FEMALE COUPLING NUT
4	1	314023	MANIFOLD - 2 PORT 90 DEG





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING HEAD BUSHING GREASE MANIFOLD ASSEMBLY - 730H	730H000801

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	3/19/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000801A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

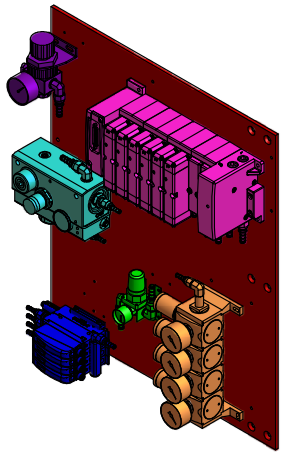
ALL BENDS 90 UNLESS SPECIFIED.

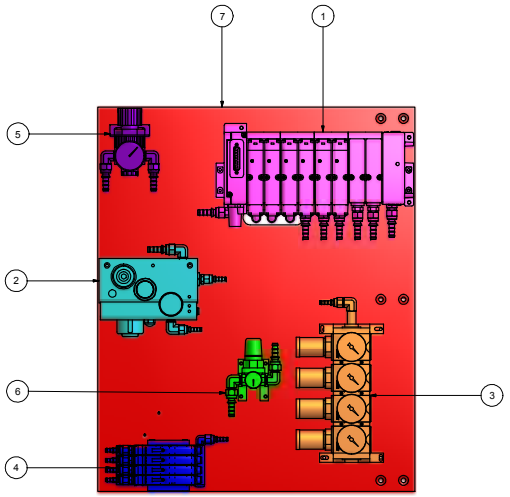
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

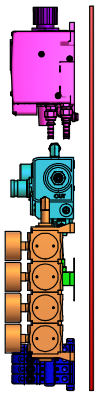
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	730H000904	MAIN MACHINE PNEUMATIC VALVE ASSEMBLY - 730H
2	1	730H000905	PNEUMATIC FILTER/REGULATOR ASSEMBLY - 730H
3	1	730H000908	FORMING DIE RING REGULATOR ASSEMBLY - 730H
4	1	730H000909	VACUUM GENERATOR ASSEMBLY - 730H
5	1	730H000910	PNEUMATIC REGULATOR ASSEMBLY - 730H
6	1	730H000924	STACKER PNEUMATIC REGULATOR ASSEMBLY - 730H
7	1	730H090704	PNEUMATIC PANEL - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
PNEUMATIC PANEL ASSEMBLY - 730H - 4 WIDE	730H000902

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	1/9/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000902A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

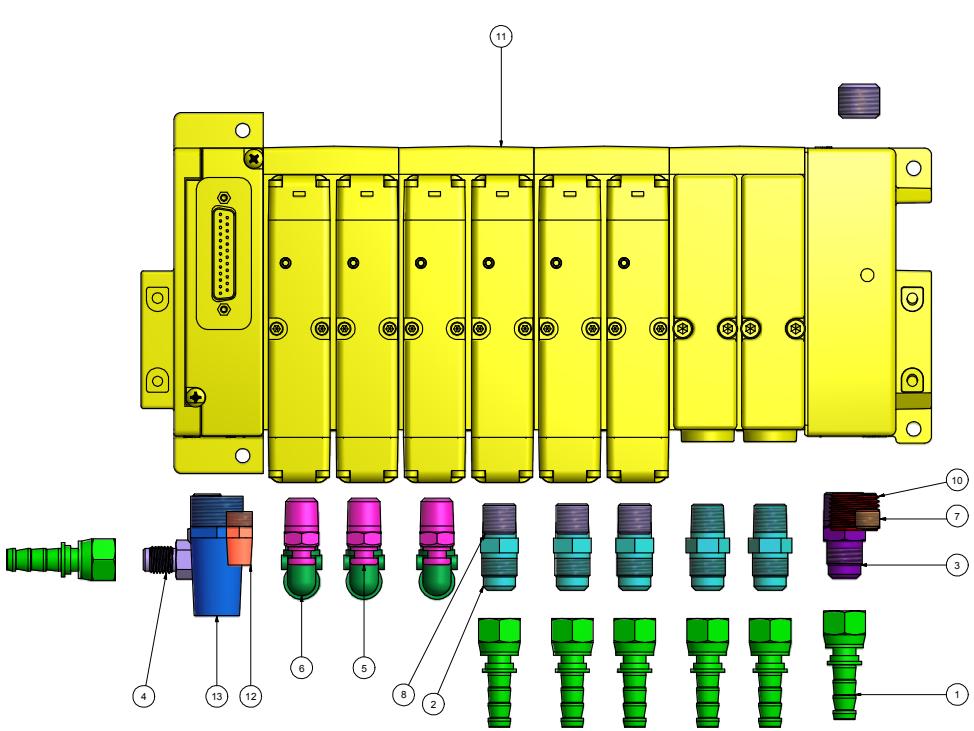
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

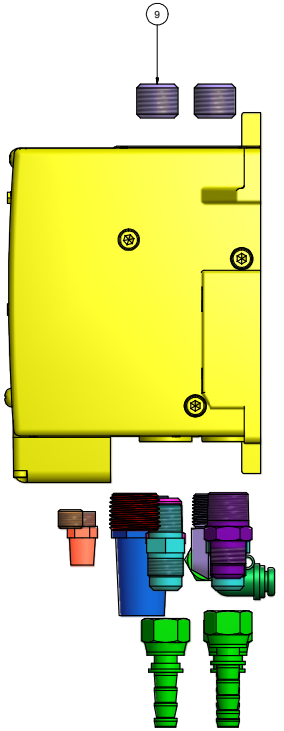
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	9	302040	SWIVEL - FEMALE
2	7	302046	CONNECTOR - MALE
3	1	302049	CONNECTOR - MALE
4	1	302062	ELBOW - MALE
5	3	302187	CONNECTOR - MALE
6	3	302302	ELBOW - MALE SWIVEL
7	1	313047	PIPE PLUG
8	3	313050	PIPE PLUG
9	2	313052	PIPE PLUG
10	1	313058	PIPE PLUG
11	1	314027	PNEUMATIC MANIFOLD ASSEMBLY - 8 VALVES
12	1	328004	MUFFLER
13	1	328005	MUFFLER





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MAIN MACHINE PNEUMATIC VALVE ASSEMBLY - 730H	730H000904

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/6/2014

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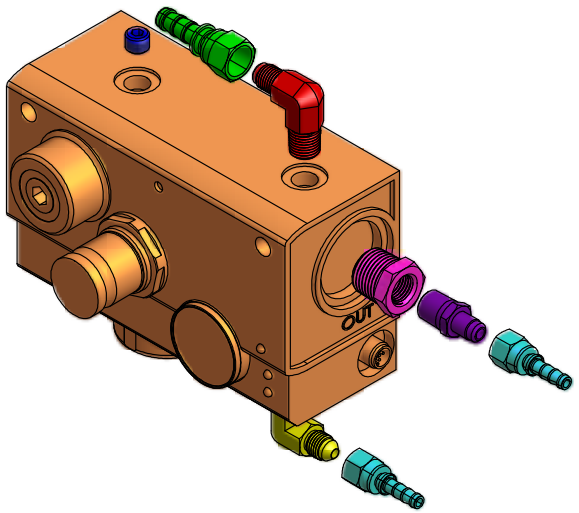
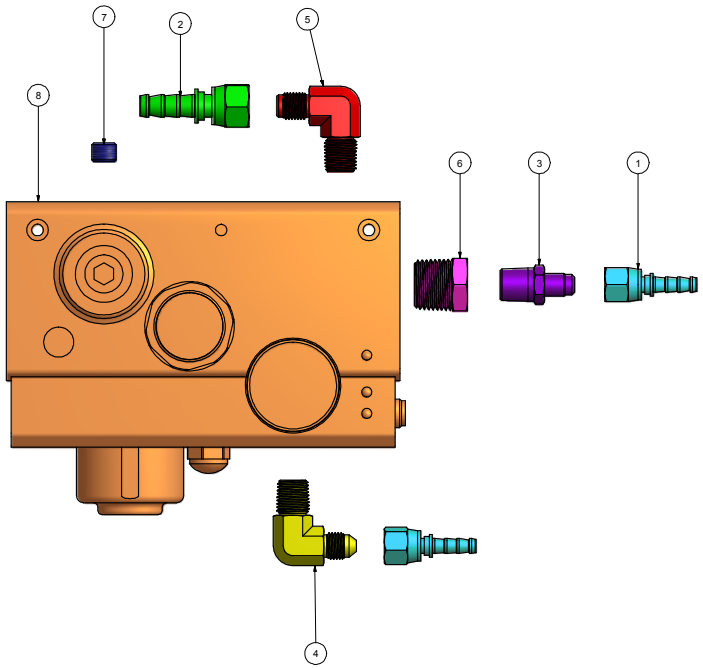
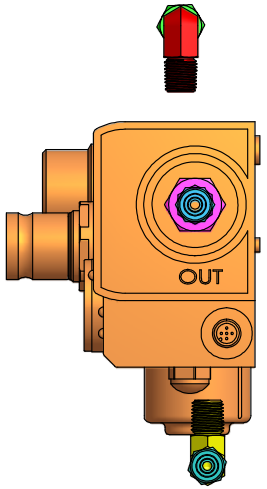
CAD LOCATION

Z:\730H\730H DRAWINGS\730H000904A.idw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	302039	SWIVEL - FEMALE
2	1	302040	SWIVEL - FEMALE
3	1	302045	CONNECTOR - MALE
4	1	302061	ELBOW - MALE
5	1	302062	ELBOW - MALE
6	1	313005	REDUCING BUSHING
7	1	313047	PIPE PLUG
8	1	342005	FILTER / REGULATOR







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
PNEUMATIC FILTER/REGULATOR ASSEMBLY - 730H	730H000905

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000905A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

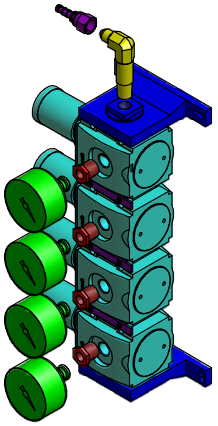
ALL BENDS 90 UNLESS SPECIFIED.

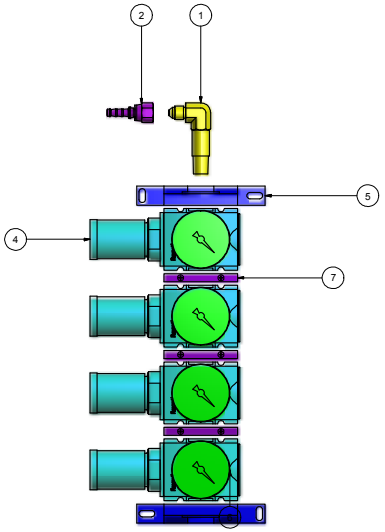
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

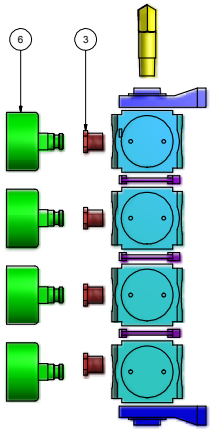
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	214527	ELBOW - LONG MALE
2	1	302039	SWIVEL - FEMALE
3	4	313001	REDUCING BUSHING
4	4	341025	REGULATOR - PNEUMATIC PRESSURE
5	2	341026	REGULATOR END PLATE
6	4	341027	GAUGE
7	4	341028	REGULATOR CONNECTOR







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING DIE RING REGULATOR ASSEMBLY - 730H	730H000908

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:2	SMC	2/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000908A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

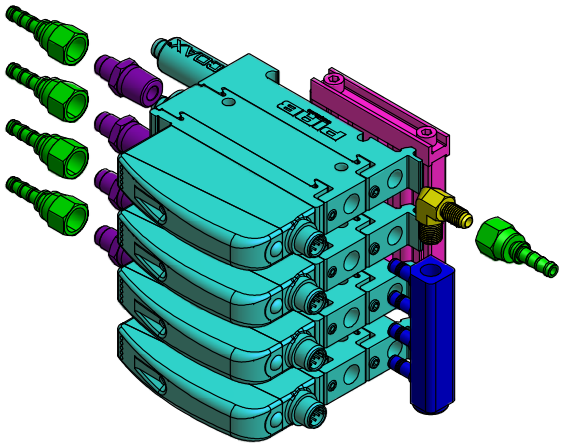
ALL BENDS 90 UNLESS SPECIFIED.

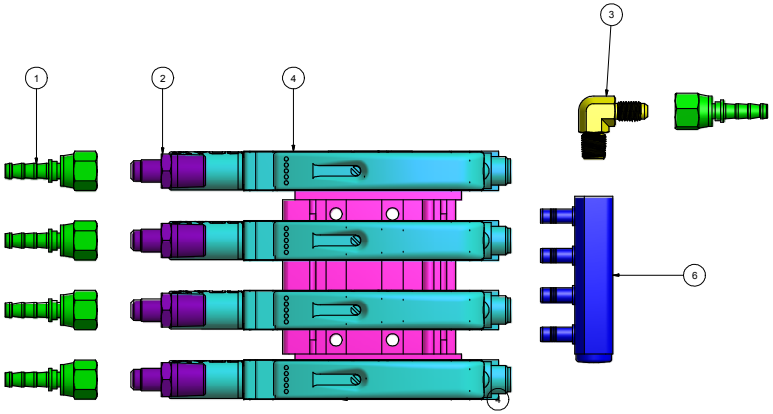
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	5	302039	SWIVEL - FEMALE
2	4	302045	CONNECTOR - MALE
3	1	302060	ELBOW - MALE
4	4	362014	VACUUM GENERATOR
5	1	362016	MOUNTING RAIL- 4 WIDE
6	1	362018	COMMON INLET ADAPTER - 4-WIDE





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
VACUUM GENERATOR ASSEMBLY - 730H	730H000909

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000909A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

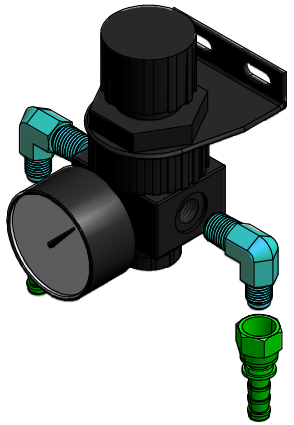
ALL BENDS 90 UNLESS SPECIFIED.

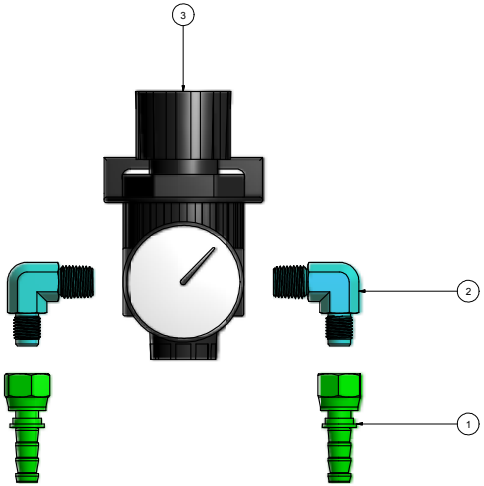
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

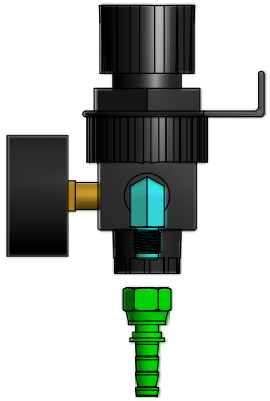
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	302040	SWIVEL - FEMALE
2	2	302062	ELBOW - MALE
3	1	341013	REGULATOR - PNEUMATIC W/ GUAGE







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
PNEUMATIC REGULATOR ASSEMBLY - 730H	730H000910

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000910A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

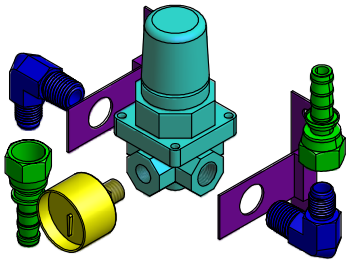
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

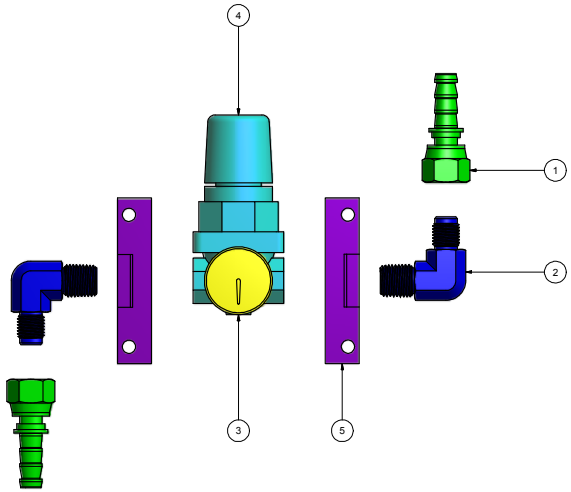
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

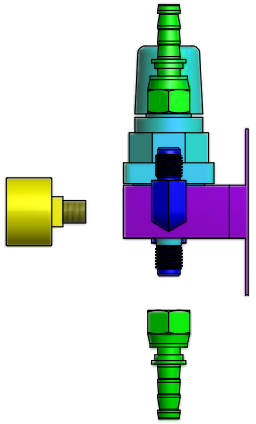
ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	302040	SWIVEL - FEMALE
2	2	302062	ELBOW - MALE
3	1	341004	PRESSURE GAUGE
4	1	341010	REGULATOR - PNEUMATIC
5	2	341011	WALL BRACKET MTG KIT FOR 341010 REGULATOR







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
STACKER PNEUMATIC REGULATOR ASSEMBLY - 730H	730H000924

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/12/2014

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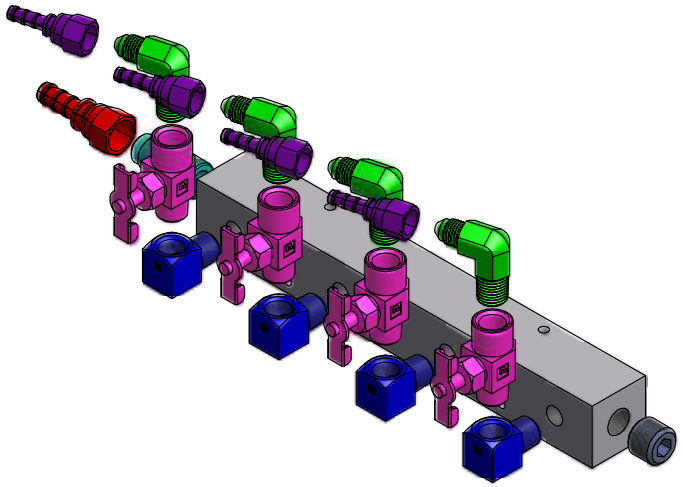
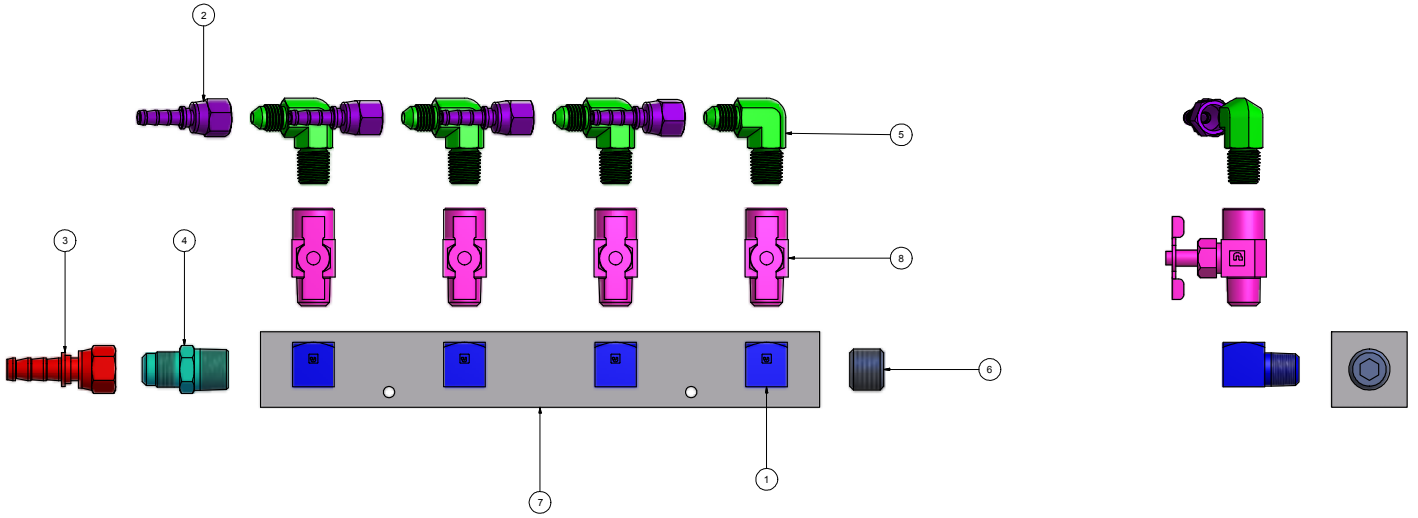
CAD LOCATION

Z:\730H\730H DRAWINGS\730H000924A.idw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	302009	STREET ELBOW - 90°
2	4	302039	SWIVEL - FEMALE
3	1	302040	SWIVEL - FEMALE
4	1	302049	CONNECTOR - MALE
5	4	302061	ELBOW - MALE
6	1	313052	PIPE PLUG
7	1	314028	MANIFOLD - 4 PORT
8	4	322082	NEEDLE VALVE





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE	730H000915

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/19/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000915A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

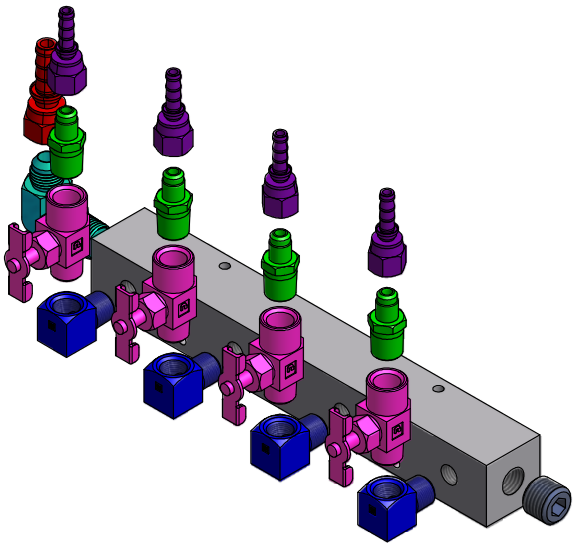
ALL BENDS 90 UNLESS SPECIFIED.

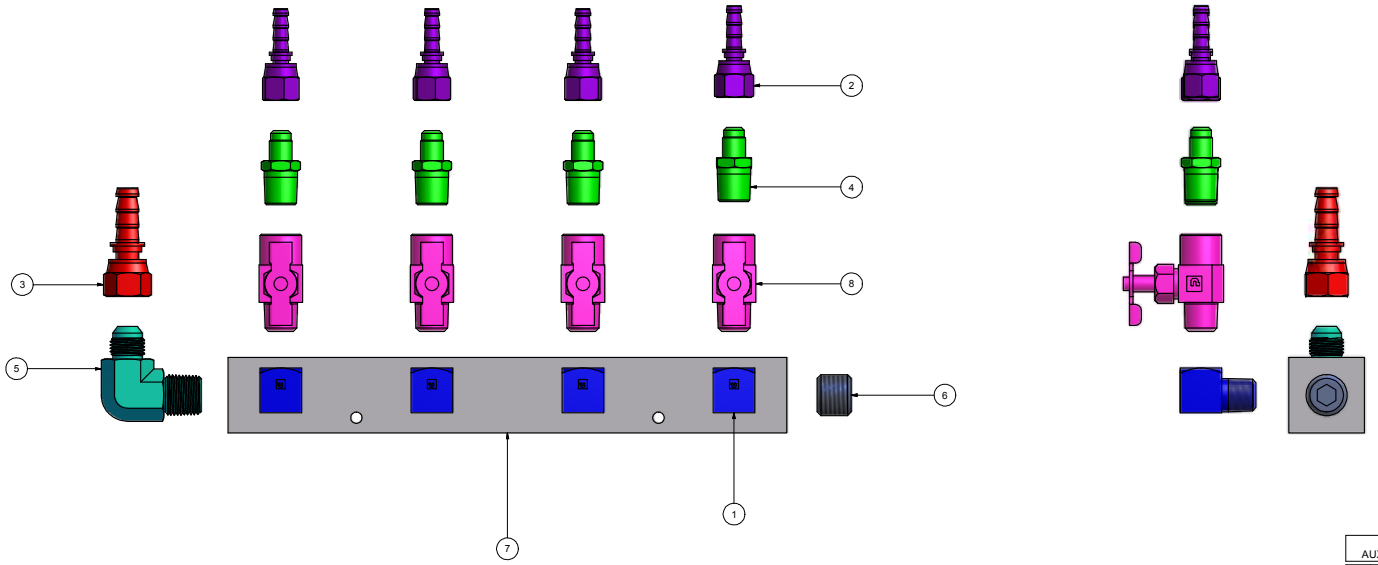
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	302009	STREET ELBOW - 90°
2	4	302039	SWIVEL - FEMALE
3	1	302040	SWIVEL - FEMALE
4	4	302045	CONNECTOR - MALE
5	1	302064	ELBOW - MALE
6	1	313052	PIPE PLUG
7	1	314028	MANIFOLD - 4 PORT
8	4	322082	NEEDLE VALVE





PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
AUXILIARY DIE PNEUMATIC MANIFOLD ASSEMBLY - 730H - 4 WIDE	730H000916

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED. ALL WELDS CONTINUOUS UNLESS SPECIFIED.

TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE 63 FINISH EXCEPT AS NOTED

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:1	SMC	2/19/2014

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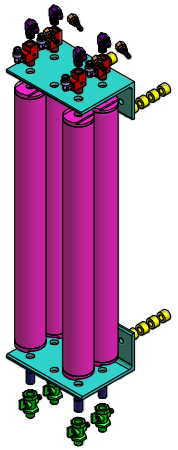
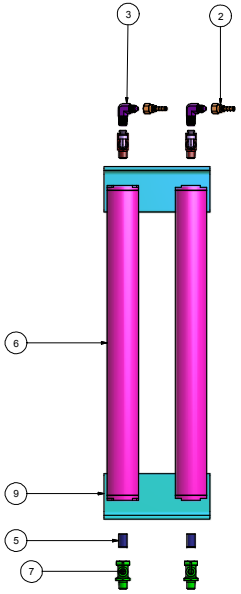
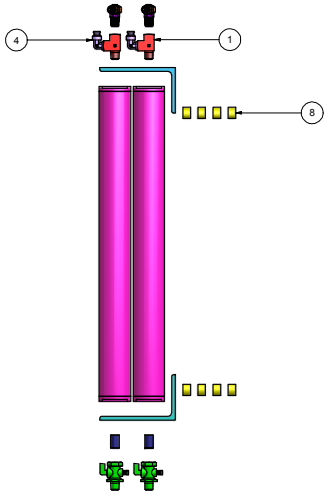
CAD LOCATION

Z:\730H\730H DRAWINGS\730H000916A.idw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	302029	STREET TEE
2	4	302039	SWIVEL - FEMALE
3	4	302061	ELBOW - MALE
4	4	302274	ELBOW - MALE SWIVEL
5	4	313011	PIPE NIPPLE
6	4	314009	PNEUMATIC RESERVOIR
7	4	322282	GROUND PLUG SHUTOFF
8	16	692821	SPACER
9	2	737T090101	FORMING DIE RING PNEUMATIC RESERVOIR MOUNTING BRACKET - 737T







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING DIE RING PNEUMATIC RESERVOIR ASSEMBLY- 730H - 4-WIDE	730H000918

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/18/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H000918A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

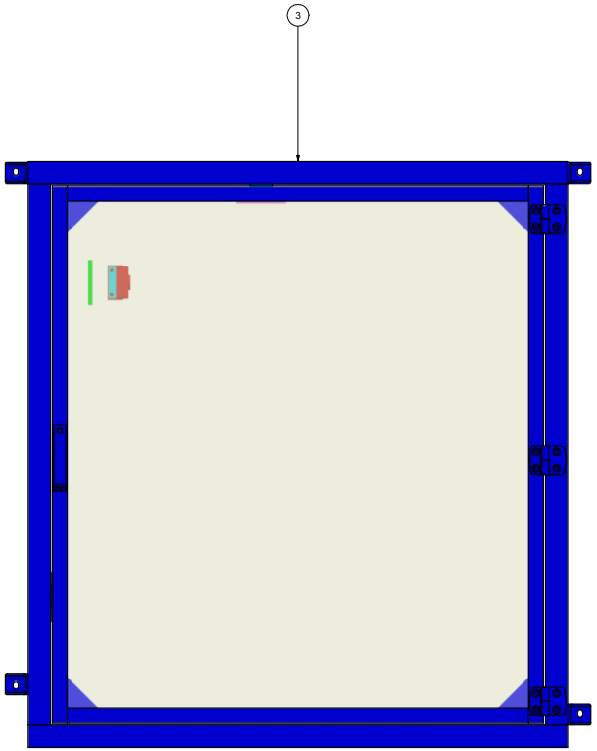
ALL BENDS 90 UNLESS SPECIFIED.

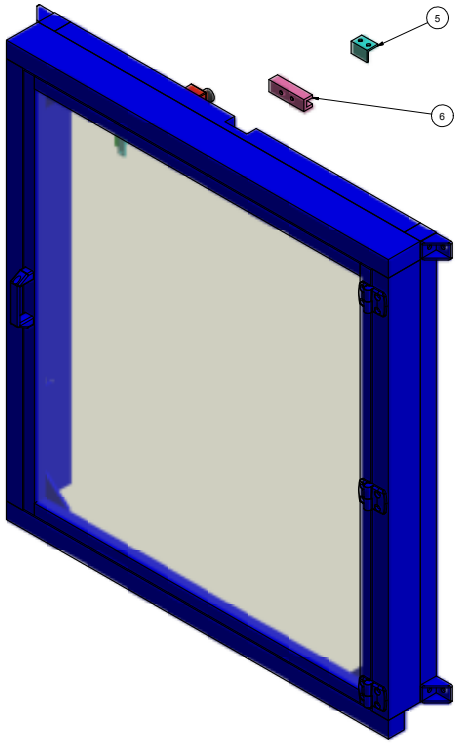
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

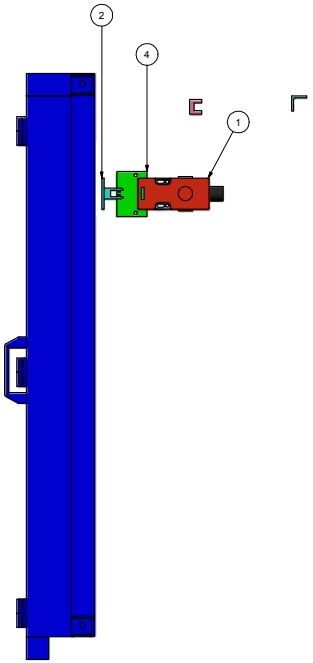
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	183001	SAFETY SWITCH - LOCKING
2	1	183002	SAFETY SWITCH KEY
3	1	730H100103	FORMING SECTION LEFT GUARD - 730H
4	1	730H100104	FORMING SECTION GUARD SAFETY SWITCH MOUNT - 730H
5	2	730H100107	FORMING GUARD DOOR AUXILIARY MAGNET CATCH - 730H
6	2	692700	MAGNET







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING SECTION LEFT GUARD ASSEMBLY - 730H	730H001001

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/10/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H001001A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

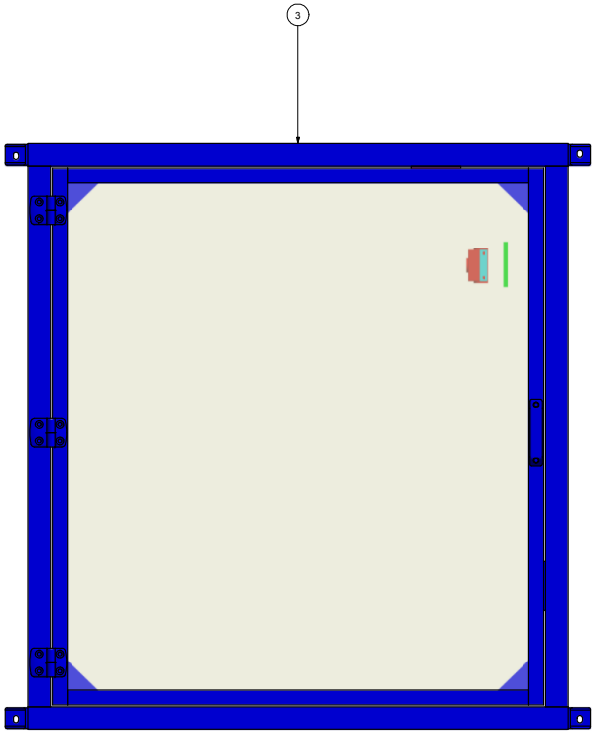
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

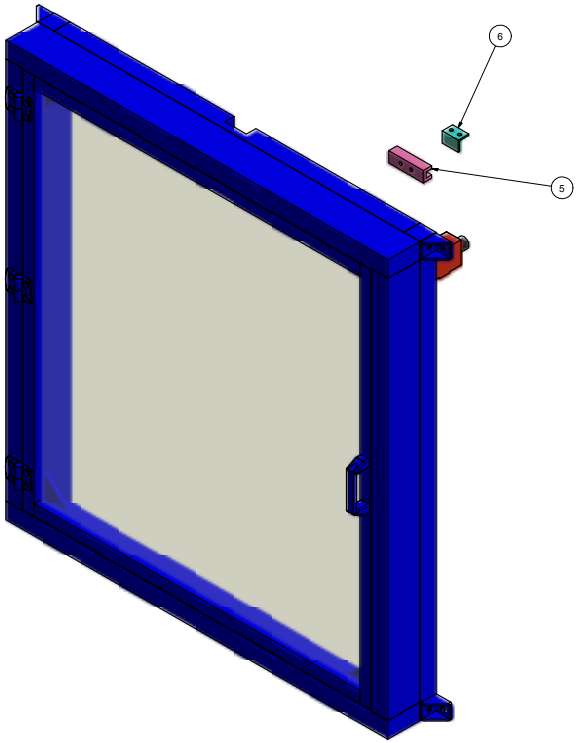
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

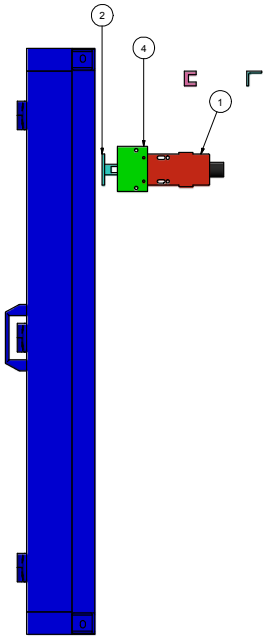
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	183001	SAFETY SWITCH - LOCKING
2	1	183002	SAFETY SWITCH KEY
3	1	730H100102	FORMING SECTION RIGHT GUARD - 730H
4	1	730H100104	FORMING SECTION GUARD SAFETY SWITCH MOUNT - 730H
5	2	692700	MAGNET
6	2	730H100107	FORMING GUARD DOOR AUXILIARY MAGNET CATCH - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
FORMING SECTION RIGHT GUARD ASSEMBLY - 730H	730H001002

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	2/10/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H001002A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

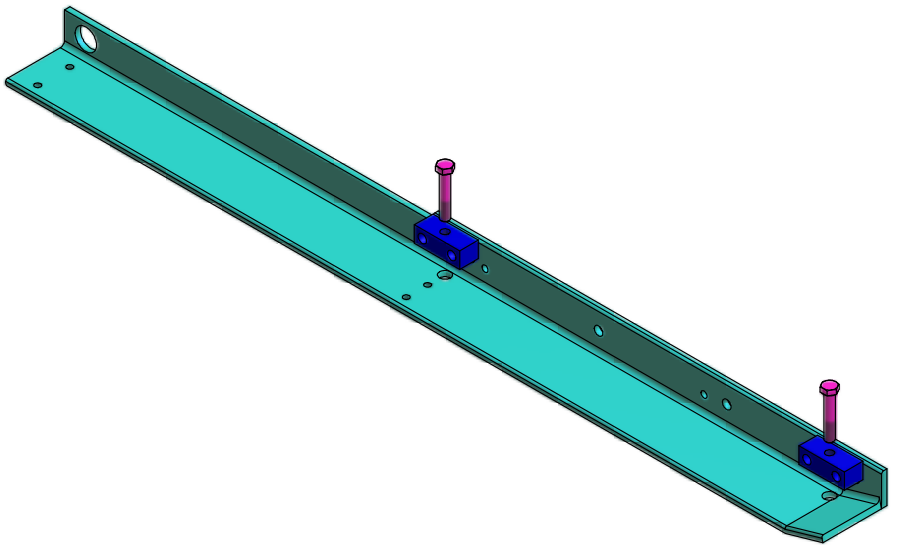
ALL BENDS 90 UNLESS SPECIFIED.

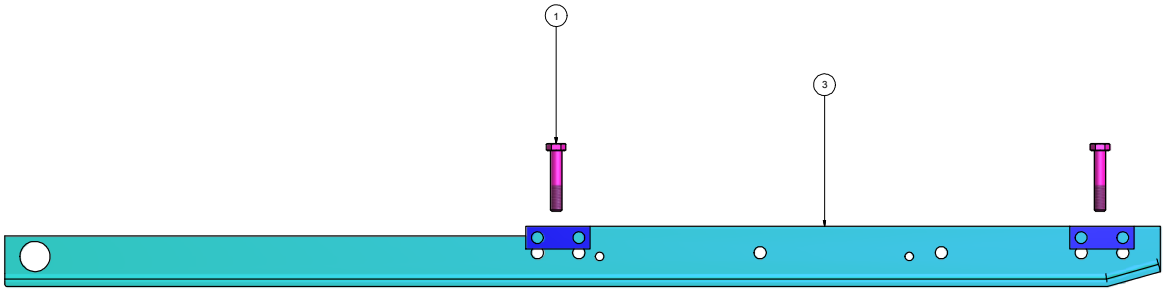
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

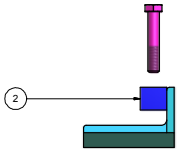
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	410898	HEX HEAD CAP SCREW
2	2	730H110628	SKID LEVELING BOLT BLOCK - 730H
3	1	730H110631	SKID, LEFT - 730H - MACHINE #19 TO PRESENT







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
LEFT SKID ASSEMBLY - 730H	730H001101

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	3/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H001101A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

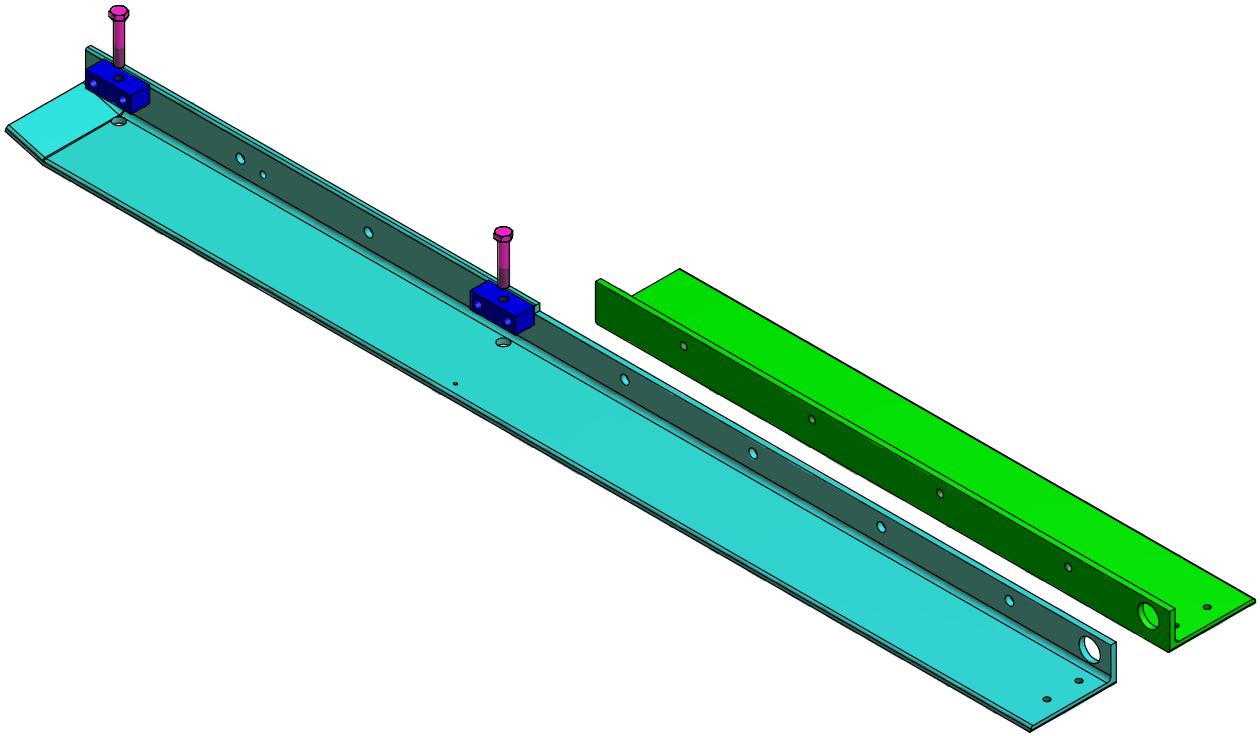
ALL BENDS 90 UNLESS SPECIFIED.

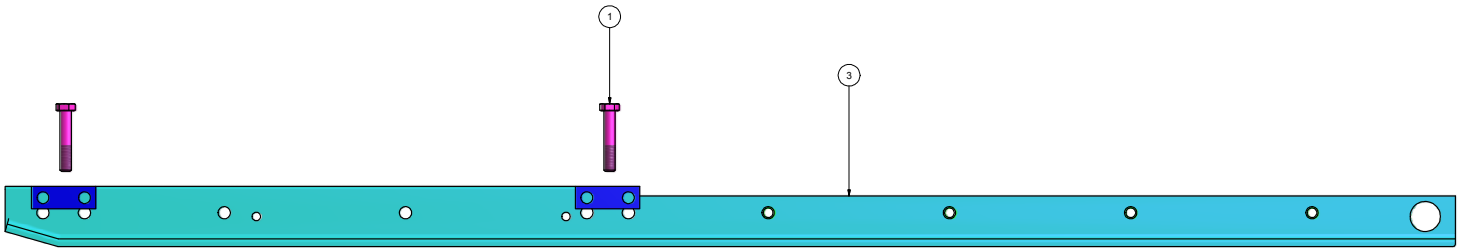
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

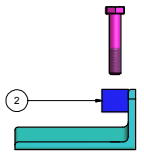
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

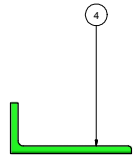
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	410898	HEX HEAD CAP SCREW
2	2	730H110628	SKID LEVELING BOLT BLOCK - 730H
3	1	730H110629	SKID, RIGHT - 730H - MACHINE #19 TO PRESENT
4	1	730H110630	SKID, MIDDLE - 730H - MACHINE #19 TO PRESENT









PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
RIGHT SKID ASSEMBLY - 730H	730H001102

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:4	SMC	3/6/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H001102A.idw

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.

ALL BENDS 90 UNLESS SPECIFIED.

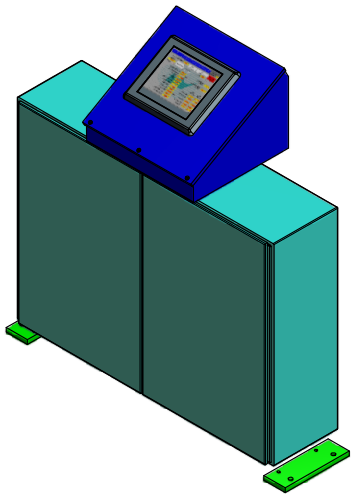
ALL WELDS CONTINUOUS UNLESS SPECIFIED.

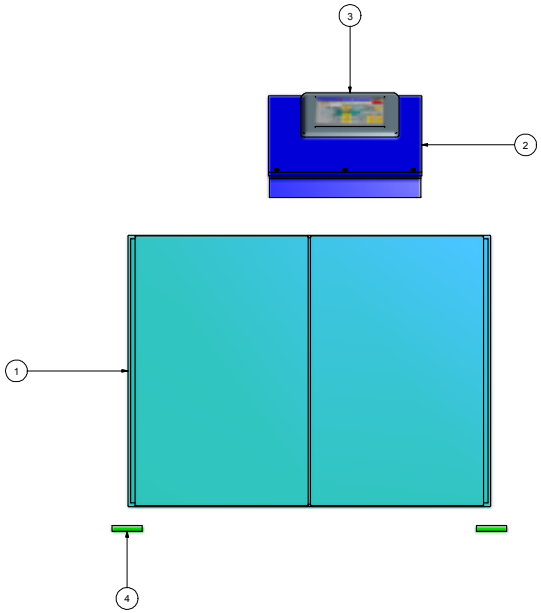
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005

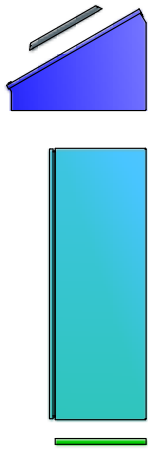
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	105004	ELECTRICAL BOX
2	1	105058	ELECTRICAL BOX
3	1	160038	PC / HMI - TOUCH SCREEN
4	2	730H110626	ELECTRICAL BOX FLOOR MOUNT - 730H







PEERLESS MACHINE & TOOL CORP.

PART DESCRIPTION	PART NUMBER
MAIN ELECTRICAL BOX ASSEMBLY - 730H	730H001401

REV.	ECO.	CHANGE MADE	DRN	CHK	DATE

DET.	REQ'D.	MAT.	ROUGH SIZE/PUR. PART NUMBER OR DESCRIPTION

SCALE	DRAWN BY	DATE
1:8	SMC	2/12/2014

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CAD LOCATION
Z:\730H\730H DRAWINGS\730H001401A.idw

REMOVE ALL BURRS AND RADIUS ALL SHARP CORNERS UNLESS SPECIFIED.
ALL BENDS 90 UNLESS SPECIFIED.
ALL WELDS CONTINUOUS UNLESS SPECIFIED.
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS +/- 1/64 ANGLES +/- 1/2 DEGREE .00 +/- .01 .000 +/- .005 .0000 +/- .0005
ALL MACHINED SURFACES TO BE FINISH EXCEPT AS NOTED 63