

## Section 3.1

# Headbox

14.0100B

## Type: Valley™ 2208 Headbox

Closed distributing roll headbox with lateral inflow through tapered header, tube bundle, air pad chamber, two distributing rolls, vertically and horizontally adjustable slice assembly and adjustable apron blade. The headbox is of stainless steel.

### Design data

Headbox size	2208
Pond width	140.0 inches
Design speed (structural)	1500 fpm
Operating speed (initial max.)	805 fpm
Operating speed (future maximum)	1200 fpm
Operating speed (min.)	350 fpm
Rod spacing (lip) approx.	4.0 inches
Number of rods (lip)	35
Operating flow to slice	
initial maximum	2764 gpm
future maximum	3902 gpm
absolute maximum capacity	5500 gpm <small>see note a</small>
minimum	2148 gpm
Hand of machine	left hand

### Note a:

Absolute maximum capacity is based upon initial slice roll size. The inlet will be designed for the flow rates indicated. The headbox will be designed to accept a larger slice roll (10") should slice flow conditions require added capacity. Inlet design would have to be reviewed for any flows higher than those specifically indicated above.

**Material:**

316L stainless steel

Welding filler material will be 317 L.

Welding technique will be either inert gas tungsten arc (TIG) or FCAW welds, depending upon specific welding requirements (i.e. size of weld)

Selected components of Bronze.

Motor and gear reducer housings of steel, cast iron or aluminum.

Required fasteners of 316 stainless steel.

**Surface Finishes (Roughness Height Rms) :**

Apron board, back panel and side plates

- in the flow area:	8 $\mu$ -inch	electropolished
- in the air pad area:	35 $\mu$ -inch	not electro-polished
Apron Blade and Slice Beam:	8 $\mu$ -inch	electropolished
Manifold:	35 $\mu$ -inch	electropolished
Rectifier Rolls:	8 $\mu$ -inch	electropolished
Tubes - as cold drawn:	22 $\mu$ -inch	electropolished

Note: All values before electropolishing

### Section 3.1.1

## Valley™ 2208 Headbox

1 **Apron board with adjustable blade and one water chamber**  
of stainless steel, adjustable (on the run) apron blade assembly, one water chamber for thermal expansion control located along the base of the structure.

14.0204C

2 **Apron board pedestals**  
of stainless steel.

14.0400B

1 **Distributing roll drive assembly**  
slice distributing roll driven by a reversible variable speed AC motor with speed reducer, turning roll driven by constant speed AC gearmotor.

14.0401B

1 **Drive pedestal for slice distributing roll**  
of stainless steel, supports slice distributing roll drive.

14.0402B

1 **Drive pedestal for turning distributing roll**  
of stainless steel, supports distributing roll drives.

14.0410A

1 **Distributing roll assembly**  
slice distributing roll and distributing roll

14.0420A

1 **Slice roll bearing assembly**  
front side water purged double eccentric cartridge bearing assembly, drive side water purged double eccentric cartridge bearing assembly.

14.0430A

1 **Turning roll bearing assembly**  
front side water purged single eccentric cartridge bearing assembly, drive side water purged single eccentric cartridge bearing assembly.

14.0500-

**1 General panel assembly**

front side side plate, drive side side plate, front plate cover, back panel, front side deckle pan and drive side deckle pan.

14.0501A

**1 Side plate - front side**

of stainless steel, hinged access port (suitable for entry) with a fixed window, inspection port with removable flush plug in the mixing chamber, housing for 12 volt incandescent light, equipped with all required holes for mounting external equipment. With approx 6" dia window at pond level

14.0502A

**1 Side plate - drive side**

of stainless steel, inspection port with removable flush plug in the mixing chamber, housing for 12 volt incandescent light, equipped with all required holes for mounting external equipment.

14.0503B

**1 Front plate cover, fixed**

of stainless steel.

14.0504B

**1 Back panel, fixed**

of stainless steel.

14.0531B

**1 Deckle pan with edge bleed - front side**

of stainless steel, adjustable edge seal, rectangular edge bleed with pipe stub-end for connection with customer's bleed piping.

14.0532B

1 **Deckle pan with edge bleed - drive side**  
of stainless steel, adjustable edge seal, rectangular edge bleed with pipe stub-end for connection with customer's bleed piping.

14.0600C

35 **Profile adjuster assemblies**  
of stainless steel, stainless steel slice lip, spring clamp assembly presses the slice lip firmly against the entire length of the slice beam, connect to optional actuator assemblies or Purchaser supplied actuators.

14.0635A

1 **Profile adjuster spacing**  
Number of slice lip adjuster locations 35 locations  
Slice lip adjuster spacing (approximate) 4.0 inches

14.0640C

1 **Vertical adjusting assembly, electric operation**  
of stainless steel, anti-backlash worm gear jacks, structural bracket mounted, cross shaft synchronizes jack movement during adjustment, equipped with protective guard, limit switch, will stop the electric motor when the slice reaches safe travel limits.

14.0642B

1 **Slice beam**  
of stainless steel, constructed with water chambers for thermal expansion control, ends of beam have replaceable seals.

*INCLUDED IN SLICE  
PARTS?*

14.0650B

1 **Slice opening indicator assembly**  
stainless steel scale and pointer, LVDT transducer and signal conditioner for remote indication, located on front side of headbox.

*HOW IS LVDT APPLIED?*

14.0660A

1 **Nozzle alarm assembly**  
audible alarm and warning light remotely located.

14.0700C

1 **Horizontal adjusting assembly, electric operation**  
of stainless steel, anti-backlash worm gear jack controls horizontal movement of the slice beam, allows the operator to control jet impingement via an electric motor.

14.0720B

1 **Horizontal position indicator assembly**  
stainless steel scale, and pointer mounted on the headbox indicates the horizontal position of the slice lip, LVDT transducer and signal conditioner for remote indication. *Where is LVDT mounted?  
What protects it and keeps it clean?*

14.1200D

1 **Liquid level control assembly, automatic**  
liquid level control assembly for pressure and vacuum operation with a liquid ring compressor, valves, and electronic dP cell.

14.1220A

1 **Total head gage glass assembly**  
glass tube used to indicate total head pressure in inches of water column and operating speed, located on front side of headbox.

14.1250A

1 **Purge water piping assembly**  
valves, rotometers and water piping for purging the dP cell block and/or distributing roll journals and headbox compressor, requires clarified whitewater or clean warm fresh water supply.

14.1300A

1 **Headbox shower assembly**  
of stainless steel, *fixed nozzles* located on approximately 30" centers, full coverage nozzles accessible from inside the headbox, and a single supply line joining each nozzle.

*(Assume this indicates it is a non-rotating shower)*

14.1400A

1 **Manifold assembly, fixed**  
of stainless steel, consists of the supply transition, tapered header, tube bundle, recirculation transition, and support.

14.1401A

1 **Tube bundle**  
of stainless steel, support structure rigidly houses rows of tubes.  
Number of tube rows **3 rows**

14.1402B

1 **Tapered header (fixed)**  
of stainless steel, matched metal-to-metal stub end flange sets at inlet and recirculation ends, **flush mounted** clean-out located near the **inlet end**, connection provided on each end for manifold pressure balance assembly.

14.1403A

1 **Supply transition**  
of stainless steel, connection provided for pressure balance assembly, attaches to supply pipe with metal to metal connector.

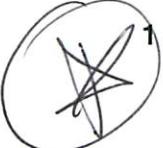
14.1404A

1 **Recirculation transition**  
of stainless steel, connection provided for pressure balance assembly, attaches to recirculation line with metal to metal connector.

14.1405A

1 **Clean-out / inspection port**  
of stainless steel, removable.

14.1410A

 **Manifold pressure balance assembly**  
sight glass, for connection to inlet transition and recirculation transition, **installed by Purchaser**, **recirculation control valve(s) provided by Purchaser**. **L?**

14.2400A

1 **Conduit assembly**

14.2500-

1 **Piping assembly**

14.2900B

1 **Shop erection**

1 **Apron board shroud**  
extends from soleplates to apron blade along the full width of the headbox.

## Section 3.1.2

# Controls and Instrumentation

## General

The C&I engineering includes order-related C&I circuit documentation the details of which are tailored to the customer's requirements. The documentation of the C&I engineering includes the following documents: I/O list, hardware diagrams, terminal diagrams (for boxes within Voith Paper's scope of supply), tag list, device specification (manufacturer).

## Headbox

### 1 Control panel

of stainless steel, NEMA 4X construction, headbox or pedestal mounted, controls mounted as follows:

1 Vertical slice position

panel mounted LED digital display, open push button, close push button, motor starter by Purchaser.

1 Horizontal slice position

panel mounted LED digital display, in push button, out push button, motor starter by Purchaser.

1 Headbox lighting circuits

on / off switch.

Deleted headbox shower drive

1 Slice distributing roll drive

panel mounted motor start push button and motor stop push button, panel mounted motor rotation forward / reverse selector (optional), panel mounted motor speed control dial (optional), reversible variable speed AC motor, variable speed drive controller.

1 Turning distributing roll drive

panel mounted motor start push button and motor stop push button, constant speed AC gearmotor, turning distributing roll motor starter by Purchaser.

*temperature controls moved to the thermal control option*

14.1200F

1 **Liquid level control assembly, automatic**  
liquid level control assembly for pressure and vacuum operation with a liquid ring compressor, control valves, and electronic dP cell.

14.0650C

1 **Headbox total head control**  
total head electronic dP cell, total head digital display, total head field device by Purchaser (variable speed fan pump or control valve).

14.0660A

1 **Nozzle alarm assembly**  
audible alarm and warning light remotely located, proximity switch, terminated at local junction box.

14.0720C

1 **Slice horizontal position indicator assembly**  
of stainless steel, scale shows slice position in reference to the breast roll centerline, horizontal slice position transducer mounted on front side of headbox for remote indication / control, minimum travel proximity switch terminated at local junction box, maximum travel proximity switch terminated at local junction box.

*15 Nozzles available*