

# **Hellan Strainer**

## **Installation & Operations Manual** **Hellan Strainer Manual Self-Cleaning Strainers**

**Models:        DH, TSH, AH, QH, HH**

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## SECTION 1.0 - WARRANTY

**Product Warranty Limitation.** Seller warrants (a) that the Products will conform (subject to industry variations) to the descriptions provided by Seller, on the face hereof and to the written specifications, if any, furnished by Buyer and accepted by Seller, (b) that Seller will convey good title to the Products free from any lawful security interest or other lien or encumbrance unknown to Buyer and arising through Seller and (c) that the Products will remain free of defects in material and workmanship for one year from the date of tender of delivery, provided that the Products are properly stored, handled and cared for, installed in accordance with sound engineering practice, properly operated under normal conditions, with competent supervision, maintained in compliance with Seller's maintenance recommendations (if applicable) and not subjected to alteration, accident, damage, wear and tear beyond tolerances, abuse, misuse or misapplication. Seller's obligations under this Warranty shall be conditioned upon Buyer's notifying Seller of any alleged defect(s) promptly after discovery and upon Seller satisfying itself upon inspection that its Warranty has been breached. At Seller's request, Buyer shall make each allegedly defective Product available for Seller's inspection or shall, if so directed by Seller, return each such Product to the plant. In the event of any breach of warranty hereunder, Seller shall repair or replace the defective Product at Seller's expense other than freight both ways which must be prepaid by Buyer, except that in lieu of repairing or replacing as aforesaid, Seller may elect to discharge its obligation to Buyer by crediting Buyer's account in a reasonable amount on account of the defect but in no event in an amount greater than the paid purchase price of the defective Product. THE OBLIGATIONS SET FORTH IN THE PRECEDING SENTENCE ARE SELLER'S SOLE OBLIGATIONS AND BUYER'S EXCLUSIVE REMEDY. SELLER MAKES NO OTHER WARRANTY, IMPLIED OR

EXPRESS, AND NO WARRANTY OR MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. ANY BUYER OR USER'S SOLE REMEDY IN EVENT OF BREACH OF THE WARRANTIES WHICH ARE MADE BY SELLER IS REPLACEMENT OF THE GOODS F.O.B. SELLER'S PLACE OF BUSINESS OR CREDIT AS SET FORTH HEREIN; WITH THIS SOLE EXCEPTION, SELLER SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, AND ANY BUYER OR USER HEREBY WAIVES FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS (A) ANY AND ALL CLAIMS FOR PUNITIVE DAMAGES AND (B) ALL CLAIMS OF NEGLIGENCE OR STRICT LIABILITY OR BOTH. IN **NO** EVENT WILL SELLER'S LIABILITY EXCEED THE PURCHASE PRICE OF THE GOODS WHICH IS ACTUALLY PAID TO SELLER.

Buyer (a) recognizes that the provisions of this Warranty and Limitation are a material factor in Seller's sale of the Products at the price specified, and (b) agrees that any accommodation to Buyer by Seller, whether for sales policy reasons or otherwise, shall not be taken to establish any liability of Seller or any contract term inconsistent herewith. Seller's warranties are given only to purchasers who buy for resale or for industrial or commercial use. **Product Defect Notification.** Buyer shall notify Seller within a reasonable period of time, not to exceed 30 days, of any claim (made known to Seller) of any person that any Product was defective or caused injury to person or property. In the event that recovery is sought from Seller, Buyer shall indemnify and hold Seller harmless from any claim, judgment or settlement for any injuries resulting from the Product(s) being improperly stored, handled and cared for, installed not in accordance with sound engineering practices and safety practices, improperly operated, operated without competent supervision, maintained not in compliance with Seller's recommendations (if applicable), altered, damaged, abused, misused, misapplied, or used when tolerances are no longer maintained.

**Returns.** No products shall be returned to Seller, whether for inspection, repair, replacement or any other reason, without prior written consent from an authorized individual at Seller's Plant, district office or representative.

**Modification; Waiver.** This order may not be modified except by an instrument in writing signed by authorized employees of Buyer and Seller expressly referring hereto. No waiver by Seller of any breach of any provision hereof will constitute a waiver of any other breach of such or any other provision.

**Applicable Law.** The local laws of the State of Ohio shall apply to define and interpret the rights and obligations of Buyer and Seller. Buyer and Seller consent to the jurisdiction of the courts of the State of Ohio and to venue in Cuyahoga County.

## SECTION 2.0 – INSTALLATION

### 2.1 Pre-Installation Checks

- 2.1.1 Upon receipt of equipment, inspect all components for obvious signs of physical damage. Report any/all damage to the carrier that delivered the equipment and notify Hellan Strainer by calling Customer Service at 1-888-4HELLAN (1-888-443-5526)
- 2.1.2 Remove shipping covers and any foreign material in the inlet, outlet, and drain openings of the strainer before installation.
- 2.1.3 Check nameplate attached to strainer body to determine the size, type, and screen perforations. All data on this nameplate should be included in any future inquiry concerning this strainer.
- 2.1.4 Reference the Caution Tag attached to the strainer unit for safety instructions and warnings.

### 2.2 Strainer Orientation

- 2.2.1 Proper pipe support must be provided on both sides of the strainer in accordance with all local plumbing codes.
- 2.2.2 The strainer casting or weldment includes a flow arrow showing the direction of flow through the strainer.
- 2.2.3 The Hellan Strainer must be installed as follows:
  - 2.2.3.1 Type TSH **must** be installed in the horizontal flow position.
  - 2.2.3.2 Type AH **must** be installed in the vertical down-flow position.
  - 2.2.3.3 Type DH can be installed in either the vertical up-flow or horizontal flow positions.
  - 2.2.3.4 Types QH and HH **must** be installed in the vertical up-flow position.

### 2.3 Drain/Flush Line

- 2.3.1 For horizontal flow, the drain line **must** be installed in a downward position to allow gravity to aid the removal of solids, or the drain line will become clogged.
- 2.3.2 For vertical flow, the drain line may be installed in either direction parallel to the floor.
- 2.3.3 The flush valve may be installed up to five feet away from the strainer body.

## **SECTION 3.0 – START-UP & OPERATING INSTRUCTIONS**

- 3.1** Perform a static inspection of equipment checking all fasteners, tubing, wiring, etc.
- 3.2** Perform a non-pressurized operational inspection.
  - 3.2.1** Check that the hand wheels rotate freely.
  - 3.2.2** Check that the drain valve (if applicable) operates freely.
- 3.3** Pressurize the system and check for water leaks.
  - 3.3.1** Open the drain valve
  - 3.3.2** Rotate the hand wheels for two full rotations in a clockwise direction
  - 3.3.3** Close the drain valve

## **SECTION 4.0 – PREVENTATIVE MAINTENANCE INSTRUCTIONS**

### **4.1 Maintenance Instructions**

#### **SAFETY NOTE:**

**Prior to any maintenance being carried out, the strainer must be isolated from all flow and residual pressure must be vented**

**4.1.1** Once a year inspect the screens & scraper brushes/bars via the inspection ports.

**4.1.2** Rotate the screens to ensure there is no binding between the screen & scraper.

### **4.2 Idle Periods Exercising Instructions**

Perform a cleaning cycle at least once every month during idle periods.

It is not necessary for the strainer to be filled with water before initiating a test cleaning cycle.

### **4.3 O-Ring Seal Replacement**

Whenever O-ring seals are disassembled, a hydrocarbon lubricant should be used before reassembly of the seal. Contact factory for O-ring kits.

### **4.4 Periodic Inspections**

Periodically, the screen and scraper brush/bar assemblies should be inspected for damage. Any damaged item should be replaced. Inspection of the screen and scraper brush/bar assemblies is accomplished by removing the inspection cover plate located on the body directly above each screen assembly. The O-ring seals should be inspected and replaced if necessary. Replacement of both the scraper brush/bar and screen assembly is performed by removing the screen assembly cover plates. If a new screen assembly and/or scraper brush/bar is installed, the scraper brush/bar adjustment procedure is as follows.

**4.4.1** Vent and drain the strainer cavity

**4.4.2** Remove the inspection cover plates

**4.4.3** Loosen the scraper brush/bar mounting bolts

**4.4.4** With the screen in position: For wedge wire screens, lower the scraper brush until it is in contact with the screen. For perforated screens, lower the scraper bar until there is a distance of .005” between the screen and scraper.

**4.4.5** Clamp the scraper brush/bar in place by tightening bolts

**4.4.6** Rotate the screen and check that it does not bind

**4.4.7** Re-install the inspection cover plate

**4.4.8** Open the isolation valves and restart the fluid flow for the strainer

## SECTION 5.0- TROUBLESHOOTING & DISASSEMBLY INSTRUCTIONS

### 5.1 Strainer

If the strainer fails to clean and the pressure drop across the strainer exceeds the normal operating parameters, check the following:

- 5.1.1 For foreign obstruction inside the strainer
- 5.1.2 Drain valve operation
- 5.1.3 Verify flush line is not obstructed
- 5.1.4 Scraper brush/bar assembly adjustment
- 5.1.5 Condition of screen assemblies

Correct the problem(s) and perform the startup procedures described in Section 3.0

### 5.2 Screen Replacement

To replace the screen assembly:

- 5.2.1 Remove the cover plate bolts and remove the cover plate, shaft, and screen assembly by sliding them as a unit from the strainer body.
- 5.2.2 Remove the nut holding the screen assembly on the shaft and remove the screen. Remove the handwheel and screen cover
- 5.2.3 Slide the new screen assembly over the shaft, making certain the key on the shaft engages the keyway in the hub of the screen assembly, and tighten the nut.
- 5.2.4 Install a new O-Ring on the cover plate.

**NOTE:** Whenever O-ring seals are disassembled, a hydrocarbon lubricant should be used before reassembly of the seal. Contact factory for O-ring kits.

- 5.2.5 Install the cover plate, shaft and screen assembly as a unit into the strainer body and fasten with the bolts which were previously removed.
- 5.2.6 Coat the end of the shaft with anti-seize compound.
- 5.2.7 Slide hand wheel over the screen shaft, ensuring that the key engages.
- 5.2.8 Fasten the hand wheel to the shaft.
- 5.2.9 Rotate the screen and check for leaks after pressurizing.