

INSTALLATION, OPERATION, AND MAINTENANCE

PREFACE

This manual contains information concerning the installation, operation, and maintenance of Keckley Temporary Strainers. To ensure efficient and safe operation of Keckley Temporary Strainers, the instructions in this manual should be thoroughly read and understood. This manual is general in nature and is not meant to take place of an on-site, process engineer or pipe fitter. As such, Keckley recommends that only experienced, skilled personnel be allowed to install and maintain Keckley Temporary Strainers. Please retain this manual in a location where it is readily available for reference.

GENERAL

A Temporary Strainer is installed into a pipeline system to remove unwanted debris from the pipeline flow. In contrast to other strainers, Temporary Strainers are not designed to be permanent and must be replaced after system startup is completed. Straining of the pipeline flow is accomplished via a perforated or mesh lined screen. In general, the size of the basket perforation should be slightly smaller than the smallest debris particle to be removed. If the basket perforation is undersized, the basket may require excessive cleaning. Consequently, if the basket perforation is oversized, unwanted debris may be permitted to flow through the pipeline, possibly damaging down stream equipment.

Figure 1



GENERAL (CONTINUED)

Prior to selection of a Keckley Temporary Strainer, the following factors must be determined:

- Material construction requirements of the Temporary Strainer.
- Design and working Pressure/Temperature requirements.
- Operating conditions (throttling, pressure drop, condensation, flow reversal, operation frequency, etc.).
- Pipeline service media type (liquid, gas, abrasive, corrosive, dirty, etc.).
- Pipeline media flow-rate and viscosity.
- Clean start-up pressure of the pipeline.
- Space availability for installation.

Please contact a Keckley Design Engineer to assist in the determination of these requirements prior to selection and purchase.

UNPACKING AND INSPECTION

Upon receipt of product, it is important to follow these unpacking and inspection procedures.

All Keckley Temporary Strainers are shipped in specialized shipping containers designed to prevent damage during transportation. If external damage to the shipping container is evident upon receipt of product, please request that a representative of the shipping carrier be present before unpacking the product.

- Carefully open the shipping container, following any instructions that may be marked on the container. Remove all packing material surrounding the Strainer and carefully lift it from the container. It is recommended to keep the shipping container and all packing material for reuse in storage or reshipment.

CAUTION:

For large or heavy Temporary Strainers, the appropriate material handling equipment must be used to prevent injury and possible damage to the Temporary Strainer.

- Visually inspect the Temporary Strainer for any signs of damage including scratches, loose parts, broken parts or any other physical damage that may have occurred during shipment. If damage is observed, immediately file a claim with the shipping carrier. Temporary Strainers that are damaged during transportation are the responsibility of the customer. For information regarding Keckley Warranty policy, please refer to the last page of this document.
- Before installation, the Temporary Strainer should be inspected internally for any loose or foreign materials that may have become trapped in the screen during transportation.
- If the Temporary Strainer is not required to be installed immediately, it should be stored indoors in a clean, dry, consistent temperature environment. It is also recommended to utilize the original shipping container and packing materials to properly store the Temporary Strainer. If long term storage is required, a desiccant may be necessary. This would be based upon the local, environmental storage conditions. Please consult a Keckley Design Engineer to assist in this determination.
- When ready to install, remove any preservatives with solvent dampened cloths. Remove any loose material and protective packing material.

INSTALLATION:
Pre-Installation Checklist

- Ensure Working conditions (pressure/temperature) are within the specified capacity of the product being installed. Please refer to the certified drawings to assist in determining these values.
- Make sure the construction material of the Strainer is chemically compatible with the media flowing in the pipeline.
- Inspect the Temporary Strainer's flange ends and the pipeline's mating flanges to ensure gasket surfaces are free of defects.

Installation Procedure
Step 1:

Keckley Temporary Strainers must be positioned in the pipeline ahead of the equipment requiring protection. If the equipment requiring protection is a pump, the Temporary Strainer must be placed on the suction side of the pump.

Step 2:

Before placing the Temporary Strainer into place, support the existing pipeline with pipe supports near the inlet and outlet connections.

Step 3:

Place the Temporary Strainer into the pipeline, ensuring the mesh lined side of the Temporary Strainer is facing in the direction of the pipeline flow. For large or heavy Temporary Strainers, the appropriate material handling equipment should be used to lift the Temporary Strainer.

Step 4:

If there is a downstream valve on the outlet side of the Temporary Strainer, make sure the tip of the Temporary Strainer does not interfere with the opening and closing of the disc, ball, or stem of the valve.

OPERATION:

Once proper installation has been successfully completed, start the system gradually, at start up as well as after shut down. This eliminates sudden shock to the strainer and other equipment in the line.

Start-up Procedure**Step 1:**

Remove air from the pipeline by opening the blow-down valve or other vent near the Temporary Strainer.

CAUTION:

With piping system that contain fluids other than water or when the working temperature is above 120°F, fluid must be drained to safe area, away from the operator. Operators should always be fitted with appropriate protective equipment when venting is performed.

Step 2:

Start the piping system by opening the outlet valve nearest the Temporary Strainer's outlet first. Then gradually open the inlet valve nearest the Temporary Strainer's inlet, approximately 25% of normal operational flow. It is important to start the system gradually to avoid displacing or damaging the Temporary Strainer.

Step 3:

Continue to open the inlet valve until the desired service flow has been reached.

Step 4:

Close the blow-down or other pipeline vent.

MAINTENANCE:

Keckley Temporary Strainers require monitoring once they are properly installed. The pressure differential across the Temporary Strainer should be checked periodically to determine if the basket needs to be cleaned or replaced. If the pressure differential goes unchecked and the screen becomes completely clogged, the screen will break and require replacing.

During normal use, the screen will become clogged with foreign matter, causing the differential pressure to increase. Once the differential pressure has increased to an unacceptable value, typically by 5 psi to 10 psi, it is time to clean or replace the Temporary Strainer. It is not advisable to let the differential pressure increase beyond 10 psi. This may cause the strainer to fail and possibly damage downstream equipment.

A convenient and safe way to determine when the basket needs to be replaced is to install pressure gauges on the inlet and outlet side of the Temporary Strainer. The maximum acceptable pressure drop across the Temporary Strainer will indicate when the screen needs to be replaced. Strainer size and construction determine the maximum pressure drop a Temporary Strainer can withstand. Please consult factory for exact pressure ratings.

CAUTION:

Before removing the Temporary Strainer, the pressure inside the pipeline must be reduced to atmospheric via suction or venting. Failure to do so may result in serious bodily injury.

CAUTION:

Before removing the Temporary Strainer's cover, ensure that the media that is flowing in the pipeline is known and any special handling precautions are understood. Please review the Material Safety Data Sheet (MSDS) for that specific fluid.

Strainer Removal/Cleaning/Replacement:**Step 1:**

Isolate the Temporary Strainer by closing the inlet and outlet valve connections on either side of the Temporary Strainer. Make sure valves are bubble tight.

Step 2:

Open vent or drain plug near the Temporary Strainer to drain fluid and relieve pipeline pressure.

Step 3:

Once pressure is relieved and fluid is drained, loosen the flange bolts.

Step 4:

Remove the flange gaskets.

Step 5:

Remove the Temporary Strainer from the pipeline and replace with a permanent type strainer.

SPARE PARTS LIST:

Temporary Strainers are designed for temporary service. As such, there are no spare parts. Once the piping system has completed startup operations, the Temporary Strainer must be replaced with a permanent type strainer.

TERMS AND CONDITIONS OF SALE

PRICE QUOTATION

Written quotations are firm for a period of 30 days unless Seller indicates on the quotation a longer period. All orders placed by the Buyer from a published price list, written quotation or verbal quotation are subject to acceptance by the Keckley Company.

Contracts or orders having penalty clauses for failure to meet shipment are not acceptable unless specifically approved in writing by an authorized individual in our office. All delivery dates are subject to prior sale.

DELIVERY

Delivery promises are based on conditions at the time of quoting and are subject to change for causes beyond the seller's control. Under no circumstance will the seller be liable for consequential damages due to failure to fulfill a delivery promise.

CANCELLATION

Any order or part thereof may be canceled by the purchaser upon written notice to the Seller prior to 45 days before completion. Upon receipt of a cancellation notice, all work on the order or part thereof being canceled will be stopped as promptly and as reasonably as possible, and the purchaser will be liable for a cancellation charge. This charge is calculated on the basis of established or quoted prices for all completed items and for the full cost incurred by the Seller up to the time of work stoppage plus 15% on incomplete items. In addition, there will be supplementary costs for packing and storing those items.

Nonstandard, special, and fabricated orders cannot be canceled after acceptance by Seller, unless agreed upon in writing by the Seller. The Buyer shall be liable for up to the full purchase price in any stage of completion.

WARRANTY

Seller warrants all parts and assemblies are warranted to be free from defects in materials and workmanship for a period of one year from date of shipment from the Seller's plant. The Seller reserves the right to examine all parts or assemblies claimed to be defective to determine whether they are defective in material or workmanship. All parts or assemblies which are determined to be defective in either material or workmanship may, upon express authority of the Seller, be returned to the Seller's plant prepaid and will be repaired or replaced or credit allowed at the Seller's option. In no event shall the Seller be liable for consequential costs or damages. This warranty is expressly in lieu of all other warranties, expressed or implied and whether of merchantability or fitness. This warranty does not apply to parts or assemblies which have been subject to misuse, negligence or accident. Also, it does not apply if repairs, modifications or reconditioning work is undertaken without prior written approval of the Seller. The customer is required to examine all parts and assemblies immediately upon receipt of shipment and promptly notify the Seller of any defects or alleged defects of the parts and assemblies.

PACKAGING

Unless Buyer specifies in writing, material will be packed as Seller deems necessary for proper protection. Export shipments will be subject to an additional charge for special overseas shipping. Additional charges may also be imposed if packaging instructions/specifications are other than standard.

SHIPMENT

Routing and manner of shipment will be at Seller's discretion and may be insured at Buyer's expense, value to be stated at order price. The Seller does not accept standing general or blanket shipping instructions. Full shipping instructions must accompany each individual order. No claim for shortages will be allowed unless made in writing within (10) days of receipt of shipment. Claims for material damaged or lost in transit should be made to the carrier, as Seller's responsibility ceases on delivery to the carrier.

RETURNS

Returns must not be made without our written consent. Goods must in all cases be carefully handled, properly packed and shipped prepaid. A copy of the Seller's authorization for return must be attached to the returned material. Goods authorized for return are subject to a restocking charge. Restocking charges will be based upon our inspection which may include any charges for retesting, reconditioning or repainting as required. Seller reserves the right to refuse credit for unwanted fabricated items. Goods returned for repair will be subject to our evaluation and charges will be based upon replacement of parts and labor.

NOTE

We reserve the right to correct obvious clerical errors in quotations, invoice and other contracts.

TERMS

Net 30 days from date of invoice, unless otherwise agreed upon by both the Seller and Buyer. Past due accounts are subject to a 1.5% service charge per month (18% per annum).

MINIMUM CHARGE

\$50.00 (Net)

FREIGHT

All shipments are F.O.B. Skokie, IL.