

RECOMMENDED CLEANING PROCEDURES FOR HOFFER TRI-CLOVER SANITARY METERS

GENERAL

Hoffer's line of Sanitary flowmeters has been designed to allow for cleaning by commercially accepted practices. These include removing the flowmeter from the line for cleaning in an approved fluid, flushing the line with an approved solution, and finally steam cleaning. A recommended overview of the later two cases now follows which should assure suitable cleaning and a long operating life.

CHEMICAL CLEANING

The Hoffer Tri-Clover Sanitary flowmeter may be chemically cleaned provided the following conditions are met:

1. The use of an approved cleaning solution is required. Compatibility with the following CIP fluids manufactured by Klenszade has been tested and found to be acceptable for hard carbon composite bearing designs; Mandate, AC-300, AC-101, Principal, and XY-12.
2. It is recommended following the cleaning operation, the clean solution be flushed with potable water to remove the chemically active solution from the line.

In addition, the following precautions should be observed:

1. The carbide bearing experiences negligible chemical attack during the cleaning operation. It is recommended however that the cleaning solution not be left in the flowmeter during extended periods of disuse. Where this condition cannot be met it may be advisable to use a hard carbon composite bearing as it is more chemically resistant to cleaning solutions and stagnant lines.
2. The flowrates occurring during chemical cleaning should not exceed the flow capacity of the flowmeter.

STEAM CLEANING

The Hoffer Tri-Clover Sanitary flowmeter may be steam cleaned provided the following conditions are met:

1. Steam cleaning is only recommended with hard carbon composite “C” bearings.
2. The flow velocity during the steam cleaning should not exceed 1/3 of the maximum liquid flowmeter.
3. These conditions are satisfied with the limits shown in Table 1 that follows.

Table 1							
Maximum Recommended Steam Flow Rates for Cleaning Hoffer Tri-Clover Sanitary Flowmeters							
Meter Size	Steam Cleaning Rates at Various Steam Pressures:					Velocity FPS	Rate GPM
	50 PSIG PPH*	75 PSIG PPH*	100 PSIG PPH*	125 PSIG PPH*			
1/4	1.25	1.70	2.25	2.5	1.72	1.05	
3/8	2.70	3.67	4.75	5.39	3.68	2.25	
1/2	3.50	4.73	6.14	7.00	4.74	2.90	
5/8	5.78	7.82	10.2	11.5	5.02	4.80	
3/4	10.5	14.2	18.4	20.9	6.32	8.70	
1	21.7	29.4	38.1	43.1	7.35	18.0	
1-1/4	33.7	45.7	59.3	67.1	7.32	28.0	
1-1/2	47.0	63.6	82.5	93.5	7.08	39.0	
2	81.3	110.1	142.8	162.	6.89	67.5	
2-1/2	144.6	196.	254.	288.	7.84	120.	
3	235.	318.	412.6	467.	8.85	195.	

- Notes:
1. The velocity is expressed for a line size equal to the inlet bore of the flowmeter.
 2. The apparent GPM is provided since many applications have a flow rate indicator that can be used to set a safe flow rate during the steam cleaning cycle.

*PPH = Pounds Per Hour