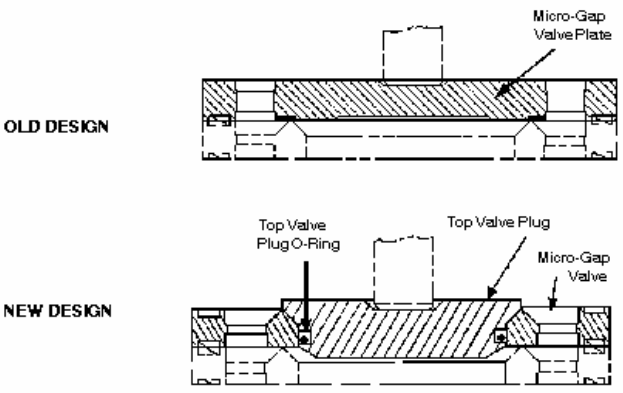
SERVICE BULLETIN #1

Micro-Gap

VALVE WEAR

These guidelines will help the customer operate and maintain their Micro-Gap® valve properly. An improved design of the Micro-Gap valve top plate has resulted in extended operating life and has simplified valve regrinding and routine maintenance. The “solid” top valve plate may now be replaced with a standard Micro-Gap valve/ plug and O-ring combination. Contact the Parts Department for the correct part numbers for your Micro-Gap valve.



Recognizing Micro-Gap Valve Wear

There are two types of Micro-Gap valve actuators in use, each of which require different amounts of HVA (hydraulic) pressure to obtain the desired homogenizing pressure. To determine the type of actuator on a machine, simply remove the actuator assembly and measure the diameter of the valve rod. The diameter will be either 3/4” or 1-1/8”.

As a rule of thumb, the hydraulic pressure required to actuate to homogenizing pressure is:

ACTUATOR ROD DIAMETER	HYDRAULIC PRESSURE REQUIRED FOR 1200 PSIG HOMOGENIZING PRESSURE
.75"	950 psig
1.125"	700 psig

These figures should be used only as an estimate, using either new or Factory-reground valves.

When initially installing the Micro-Gap valves or when installing new (reground) valves, the hydraulic pressure should be recorded and monitored. As Micro-Gap valves wear, the hydraulic pressure required to actuate the homogenizing pressure will increase. This pressure rise can be used as a valve-wear indicator. Failure to recognize excessive hydraulic pressure rise may result in cracked Micro-Gap valves! A guide for when to replace worn Micro-Gap valves is shown below.

NUMBER OF VALUES IN ASSEMBLY	HYDRAULIC PRESSURE REQUIRED FOR 1200 PSIG HOMOGENIZING PRESSURE	
	.75" ACUATOR	1.125” ACUATOR
4 VALVES OR LESS	1100 psig	900 psig
5 OR MORE VALVES	1200 psig	1000 psig

Replacing and Regrinding Micro-Gap Valves

When it has been determined that the Micro-Gap valves need to be reground:

1. Remove all valves, including the base valve with the O-ring on the outside diameter. (Valve body must be removed to remove base valve.) Visually inspect for wear and damage (see attached drawing).
2. Remove top valve plug and O-ring. The plug and O-ring must be installed in the new set of valves.
3. Wrap all parts carefully to prevent shipping damage and return to APV Gaulin authorized representative.

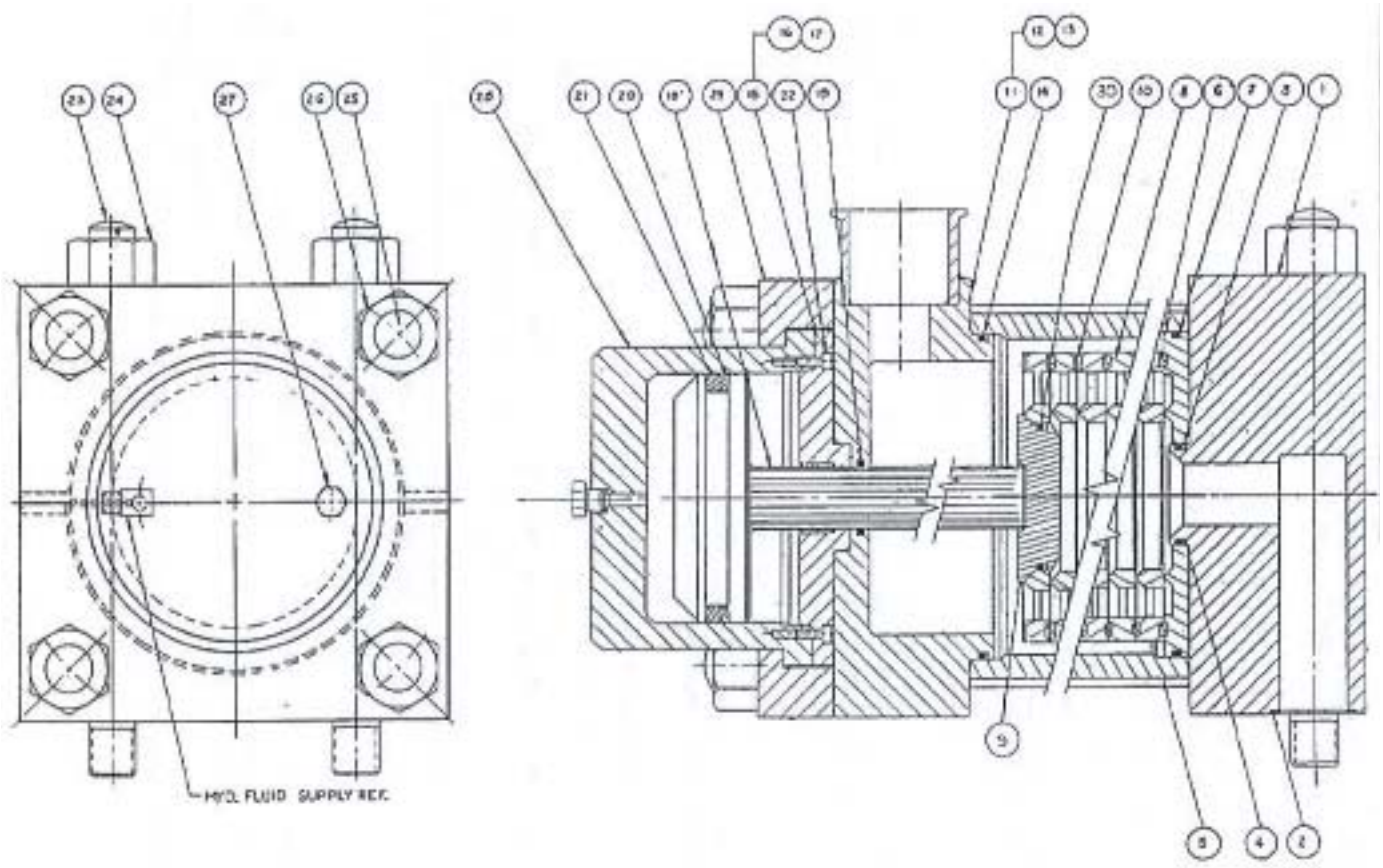
Note: Always replace a complete set of Micro-Gap Valves, including the base valve.

Due to the critical tolerances involved, do not attempt to regrind the Micro-Gap valves in the field. They must be reground by the Factory.

Each valve may be reground until its thickness is less than .450", at which point it will need to be replaced. The valves will be inspected by the Factory before being reground, and the customer will be notified.

Troubling Shooting Guide

Symptom	Cause
Little or no homogenizing pressure with HVA pressure	1) Debris caught between the valves. 2) Broken spring caught between valves, or spring slipped out of spring groove. 3) Soil build-up between th evalves. C.I.P. the valves with HVA pump shut off.
Excessive HVA pressure to actuate homogenizing pressure	Worn valves. Inspect an dreplace with new or reground set. Return the worn valves for replacing.
Valve springs slipping from spring groove	Too few micro-Gap valves. Check to see that the corrcet number of valves were reinstalled. Check with Factory fo rthe correct number of valves.
Improper cleaning of Micro-Gap valve assembly	1) C.I.P. with the HVA pump shut off. 2) Longer c.i.p. cycle 3) Run homogenizer throughout the c.i.p. cycle. Do not cycle the homogenzier



NO.	QUANTITY	DESCRIPTION
1	1	Inlet Flange
2	1	Inlet Flange Flat Gasket
3	1	Inlet Flange O-Ring Gasket
4	1	O-Ring Gasket Backup Ring
5	1	Micro-Gap Valve Body
6	1	Micro-Gap Base Valve
7	1	Micro-Gap Base Valve Gasket
8	*	Micro-Gap Valve
9	1	Top Valve Plug
10	*	Micro-Gap Valve Spring
11	1	Discharge Flange Assembly
12	1	Discharge Flange Ferrule
13	1	Ferrule
14	1	Discharge Flange Gasket
15	1	Actuator Guide Plate Assmbly

NO.	QUANTITY	DESCRIPTION
16	1	Actuator Plate Guide Bushing
17	1	Actuator Guide Plate
18	1	Actuator Rod
19	1	Actuator Rod Seal
20	1	Back-up Ring
21	1	Actuator Rod O-Ring
22	2	Actuator Body Screw
23	2	Inlet Flange Stud
24	2	Inlet Flange Stud Nut
25	4	Micro-Gap Assembly Stud
26	4	Micro-Gap Assembly Nut
27	1	Vent Plug
28	1	Actuator Body
29	1	Actuator Body Clamp
30	1	Top Valve Plug O-Ring

Note: *Quantity will vary according to capacity

APV®

611 Sugar Creek Road, Delavan, WI 53115

P: (262) 728-1900 or (800) 252-5200, F: (262) 728-4904 or (800) 252-5012, E: wcb@spx.com

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