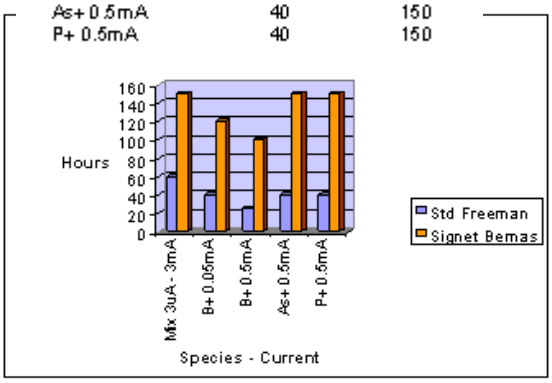
SIGNET

Quality and Value Through Engineering

Customer Test Number # 1
Source Life Increased 3 Times

350D CONVERSION
New Power supply and magnetics
PRIMARY SPECIES =
Mixed As+, P+ and B+ & B+ & As+ & P+
BEAM CURRENT = 3uA - 0.5mA

	MAX HOURS	
	Std Freeman	Signet Bernas
Mix 3uA - 3mA	60	150
B+ 0.05mA	40	120
B+ 0.5mA	25	100
As+ 0.5mA	40	150
P+ 0.5mA	40	150



Customer Test # 2 showed:

- Bernas ion source life 250% longer than the standard Freeman ion source.
- Down time due to ion source changes reduced 300% which yielded 475 more wafers per month.
- Ion source parts cots reduced 26%
- Maintenance labor reduced due to fewer ion source changes.

VSEA – IMPLANTER PARTS
Models A2F, CF/DF3000 & 350D

Signet Bernas Conversion

31-5391-3 Bernas Conversion Kit Cost Impact

The cost of ownership is greatly influenced by implanter downtime. Source life is an important component of downtime. The average Varian 3000 series/350D medium current Freeman source has a life of approximately 40 hours using 60% Boron at 150 micro amps. The typical lost production time due to a source change is one half hour. In a normal 24-hour per day, 6 days per week of operation, 3.5 hours of operation are lost due to source changes per week. Over a one year period this means a total of 182 hours are loss due to source changes. Using the SEMI standard of $400.00 per hour the cost of down time equals $72,400.00 per year.

Depending on the processes used the Bernas source is expected to last 100 to 120 hours before a source change is required. Using the same 60% Boron at 150 micro amps and a source life of only 80 hours a saving of $36,400.00 per year would be obtained. The $36,400.00 saving is just due to savings in down time alone.

There are additional savings when using a Bernas source vs. the Freeman. They include:

- Less maintenance time as there are fewer source rebuilds.
- A 25% reduction in replacement parts cost as there are fewer source rebuilds.
- A reduction in gas cost as the gas consummation is lower as the Bernas source runs at a lower pressure.

A Signet Bernas conversion would have a pay back period of less than 6 months in most operations.

Ref. = Design Alteration of OEM Part

Signet Products Inc.
2 Davis Drive
Belmont, CA 94002
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Phone 650 592-3575
Fax 650 592-7223
e-mail sales@signetproducts.com
Web www.signetproducts.com