Filter Media Selection

Company		Contact	
Address 1		Postion	
Address 2		Phone	
Address 3		Fax	

Table A
Pressure & Duty Cycles
(To take account of the Normal operating pressure & it's severity of change, both in magnitude & frequency)

Pressure; Select operating pressure
Duty;

LIGHT	Continuous operation at rated pressure or lower
MEDIUM	Medium pressure changes up to rated pressure
HEAVY	Zero to full pressure
SEVERE	Zero to full pressure - with transients at high frequency (0.6Hz) (e.g. power unit supplying a punching machine)

Select weighting from table below;

Pressure		Duty			
PSI	**Bar**	**Lt**	**Med**	**Hvy**	**Sev**
0 - 1015	0 - 70	1	2	3	4
1015 - 2175	70 - 150	1	3	4	5
2175 - 3625	150 - 250	2	3	4	6
3625 - 5075	250 - 350	3	5	6	7
5075 +	350 +	4	6	7	8

Weighting No .

Table B
Environment

	Examples	**Weighting**
Good	Clean area's, Lab's	0
Average	General machine shops assembly plants	1
Poor	Mobile mills (metal & paper)	2
Hostile	Foundries, also where ingression of contaminant is expected to be very high	3

Weighting No .

Table C
Component Sensitivity

	Examples	**Weighting**
Very High	High performance servo valves	8
High	Industrial servo valves	6
Above average	Piston pumps, proportional valves, compensated flow controls	4
Average	Vane pumps, spool valves	3
Below average	Gear pumps, manual & poppet valves	2
Minimal	Ram pumps & cylinders	1

Weighting No .

Table D
Life Expectancy

Hours	**Weighting**
0 - 1,000	0
1,000 - 5,000	1
5,000 - 10,000	2
10,000 - 20,000	3
20,000 +	5

Weighting No .

Table E
Component Economic Liability
To account for the cost of component replacement

	Examples	**Weighting**
Very High	Large Piston pumps, large high torque low speed motors	4
High	Cylinders, servo valves, piston motors	3
Average	Line mounted valves	2
Low	Subplate mounted valves, inexpensive gear pumps	1

Weighting No .

Table F
Operational Economic Liability
To account for the cost of downtime

	Examples	**Weighting**
Very High	Very expensive downtime of certain paper, steel mill equipment & automotive equipment	5
High	High volume production equipment	3
Average	Critical, but non-production equipment	2
Low	Equipment not critical to production	1

Weighting No .

Table G
Safety
To take into account potential safety hazards

	Examples	**Weighting**
High	Mine winding gear braking systems	3
Average	Where failure is likely to cause a hazard	1
Low	Some hydraulic component test stands; negligable hazard	0

Weighting No .

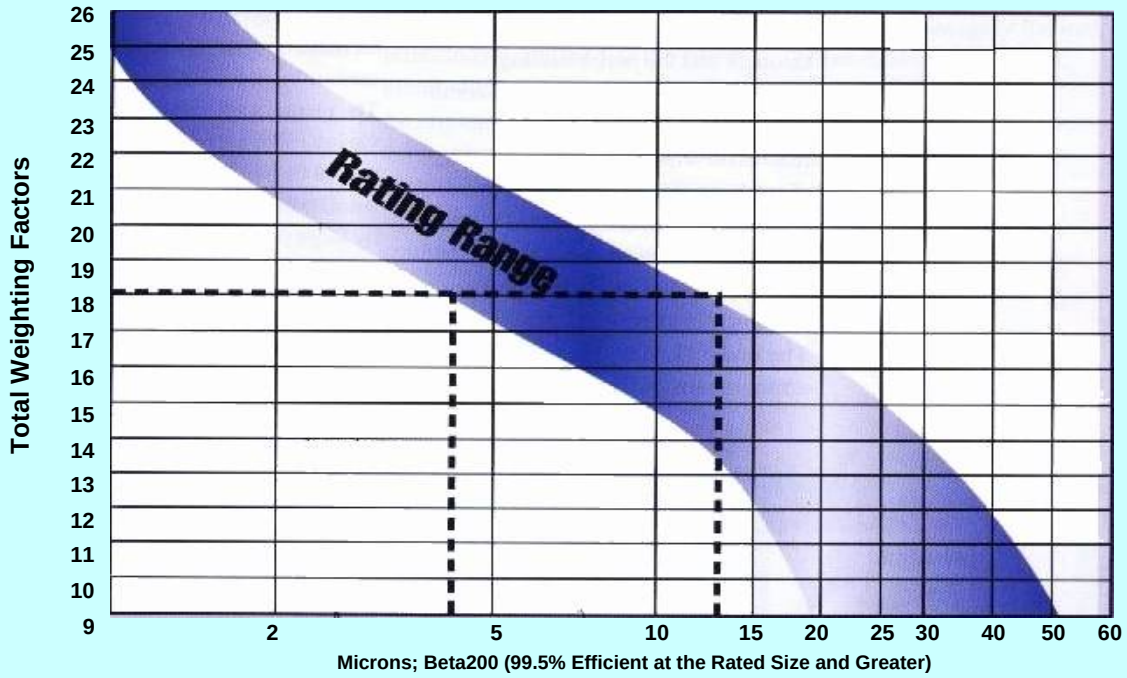
Total Weighting of all Tables

After you obtain the total weighting, by adding the seven individual weightings from tables A to G, find that number on the vertical axis located on the 'Total Weighting Graph'.

Draw a horizontal line from the Total Weighting Number on the right of the graph, through the 'Weighting Band', so that it intersects the 'Rating Band' at 2 points Read these points down, onto the horizontal axis, for the media ratings

Filter Media Selection

Total Weighting Graph



Example
Consider a large hydraulic excavator operating in a quarry. The hydraulic system includes pressure compensated piston pumps and very large lift cylinders

Operating Pressure & Duty Cycle (Table A)
The system operates at 245 bar with extremes of both flow & pressure fluctuations in a cycle that that is repeated approximately four times every minute. For this reason it is considered to be
Heavy **Weighting = 4**

Environment (Table B)
The environment in which this machine is working can, in dry weather, be very dirty. As a result, ingression is likely to be high.
Poor **Weighting = 2**

Component Sensitivity (Table C)
Although the majority of the components are considered to be of average sensitivity, the pumps are;
Above Average **Weighting = 4**

Life Expectancy (Table D)
The annual usage is about 2000 hours & component life is expected to be about 4 years hence 8000 hours and a weighting of;
5,000 - 10,000 Hours **Weighting = 2**

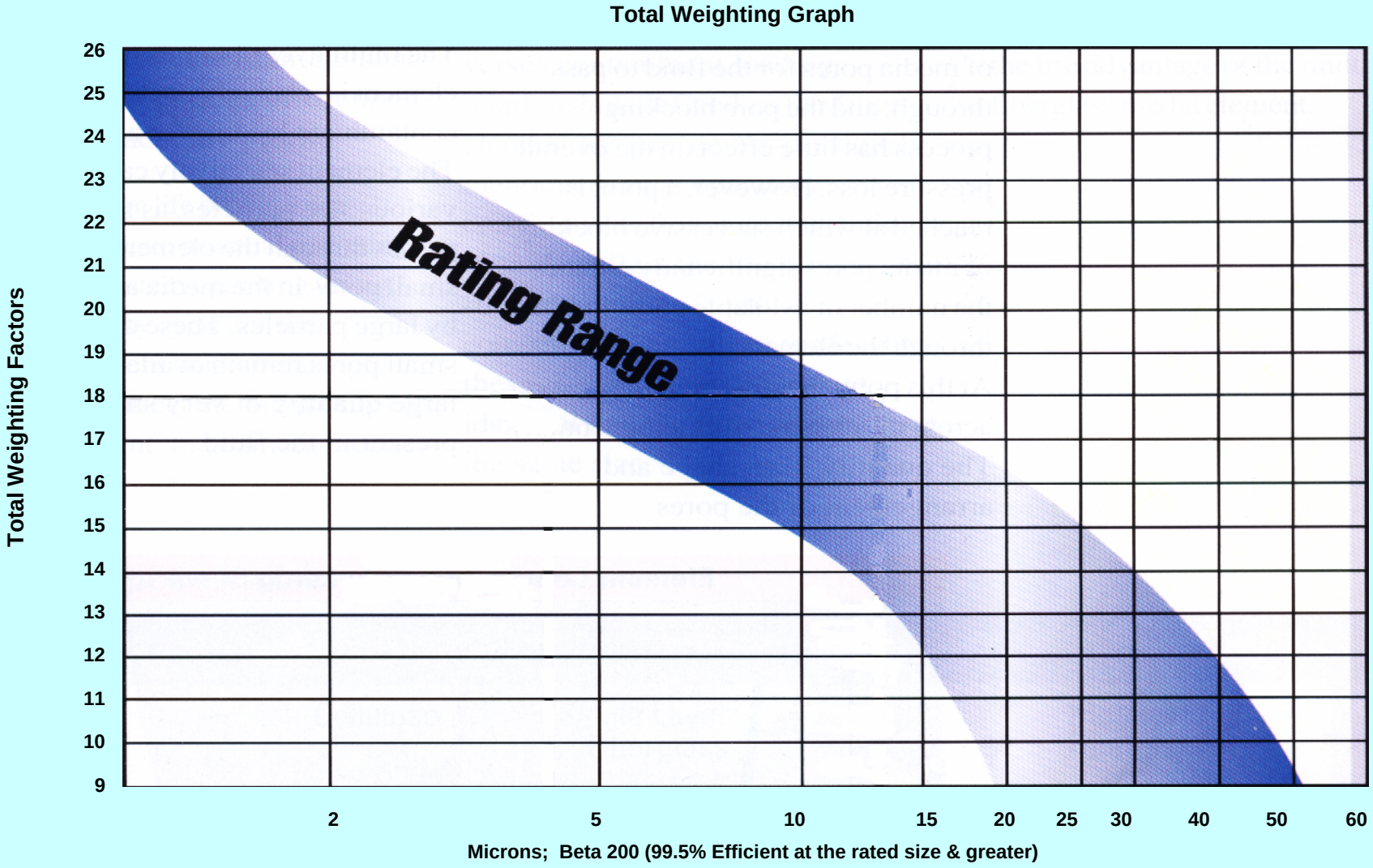
Economic Liabilities (Components) (Table E)
Components such as lift cylinders & variable piston pumps are quite expensive for the end user to purchase. Component costs are high, hence;
High **Weighting = 3**

Economic Liabilities (Operational) (Table F)
Economic liabilities caused by downtime vary depending upon the specific quarry situation, but the high capital cost of the sysytem puts it in the HIGH category.
High **Weighting = 3**

Safety Liabilities (Table G)
No additional weighting to take account of safety is required
Low **Weighting = 0**

Total Weighting (Sum of Individual Weightings) = 18
The weighting selected is in the range of 4 to 13 microns
The media selected should have a mimimum Beta Ratio $Beta_{13} = 200$ (99.5% efficient)

Filter Media Selection



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