<u>Specifications for Turbo pumps, dry roughing pumps and dry Scroll chemical</u> pump:

Turbo pump Unit (2-3 units may be purchased bases on cost)

Option 1

- 1) Two Turbo pump with pumping speed \sim 400 l/s to \sim 700 l/s or greater. Pumping speed will be given 50% weight-age with 50% for cost in selection. Companies may quote different models.
- 2) Pumps must be mountable in any orientation i.e vertical facing up or horizontal.
- 3) Pumps must have side venting valves for breaking vacuum. A KF-16 adapter for BSP or NPT fitting with 1/4" swagelok needle valve.
- 4) Air cooling unit and water cooling unit must be provided.
- 5) Option for additional water cooling must also be included.
- 6) Appropriate controller and appropriate control and power cables (at least 1.5 m long) to run the turbo must be provided. Mounting brackets or small bench top controllers must be provided. **Controller must allow independent control of turbo manually without dependence on status of roughing pump.**
- 7) ISO -100 or ISO-160 port conflate seals with splinter shield.

Dry Scroll Roughing pump

- 1) 20 m³/h Scroll or 28m³/h dry roots roughing pump
- 2)Scroll with 3 years warranty. Must supply additional tips for 5 years if tip performance cannot be guaranteed for 3 years minimum.
- 3) Additional tips as required for 3 years + 1 tip for use beyond 3 years must be provided.

Dry Scroll chemical pump 2 units may be purchased based on cost

- 1) Scroll pump 10-12 m³/h with inlet and outlet chemical filters (for chemicals like solvents *e.g*, Iso-propanol, Acetone, Dichloromethane and others). The pump should have an ultimate pressure of 0.007 mbar or better.
- 2) Tip seal must have 3 years warranty or supply (6 tips) + one tip for use beyond three years

Pressure gauges and readers 1 unit:

1) Pirani and cold cathode gauge with reader from 1000 mbar to 10^{-8} torr or lower with reader included in controller or separate reader must be quoted.

2) Two dial gauges from 0-1000 mBar with 10 or 20 mbar steps. (2 units)
Spares:
1) KF-25 spring clamps 25 pcs
2) KF-40 Spring clamps 10 pcs
3) KF-25 centering rings (metal with Viton O-ring) 25 pieces
4) KF-40 centering rings (metal with Viton O-ring 1o Pieces
5) KF-25 bellow 1m long 6 bellows
6) KF-25 crosses 10 pcs
7) KF-25 blanks 10 pcs
8) KF-25-16 adapter 4 pieces
Payment terms
1) Net 30 or line of sight draft. Cost of L/C will also be included in price comparison.
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