

To	ISAAC NEWTON GROUP	Fax/Email			
	Mr Van der Hoeven Michiel	Pages	1	Ref.	VBC 1623

From	Bart Limpens	Date	07-04-2008		
Subject	Offer Cryostat fill system				

Quotation VBC 1623

- Option 1: Uses the existing manifold and its original position.

Price: € 6.150,-

- Option 2: Uses the existing manifold moved into the “Grace building “

Price: € 5.345,-

- Option 3: A phase separator (with heated vent and automatic level controller) will be installed above the “Grace building.” The small tank should be connected at all times, to maintain a stable level of LN2 in the phase sep.
The triax will be equipped with an end trap, ensuring that the valve will not freeze up when there is no flow to the Cryostats. (also option 4)
This solution will provide instant liquid nitrogen at extremely low pressure (hydrostatic head, water-like), resulting in very low turbulence during refills.

Price: € 17.732,-

- Option 4: A vapour vent (with heated vent) will be installed in or above the “ Grace building.” All the gas being formed in the line will escape through the vent (positioned at the highest point), thus keeping the line cold at all times.
Although the supply of liquid nitrogen to the cryostats will not be as fast as in option 3, it will be a matter of seconds to get pure liquid nitrogen at the use points.
The pressure shall however be equal to the tank pressure, resulting in more turbulence during refills.

Price: € 10.937,-

REMARK: Special care should be taken to avoid humidity travelling into the system during tank changes. An optional purge assembly, that will blow gas backwards into the line when it is disconnected from the tank, is strongly recommended

Price: € 1.311,-

Since the lines will be disconnected from the cryostats after refill, it is also advised to keep the pipes connected to the valves and remove the valves (after closing) themselves from the cryostats. This will eliminate humidity from travelling into the system through the end points of the lines.

If requested we can also supply manual and/or electrical shut off valves.

- Manual ½” valve with safety relief valve assembly : 305 €/each
- Electrical shut-off valve (½”) with safety relief valve assembly: 655 €/each

Note: Delivery of the latter: 8-10 weeks

NOTE: A support should be foreseen for the line+ valves when they are disconnected

All above Prices are in EURO, CIF airport of your choice, not including installation.
Price are based on provisional lengths and require confirmation.

Delivery: 6-8 weeks after order confirmation

Validity of quote : 45 days

Payment terms : cash against documents

Should you have any more questions, please let me know.

Best regards,

Bart Limpens