

## Horizontal Cryostat System Equipment Naming Convention

10/10/2013

Equipment Type	Identification Code				Comment
	Element	Transmitter	Indicator	Switch	
<b>Passive Elements</b>					
Adsorber	A				
Cooler	E				
Filter	F				
Heat exchanger	HX				
Resistance	R				
Separator	S				
Water vessel	W				
Pressure or vacuum vessel	V				
Transfer Line	L				
<b>Power Devices</b>					
Compressor	C				
Helium pumping system	H				
Vacuum pumping system	J				
Motor	M				
Pump	P				
Supercritic Helium production	SH				
Turbine	T				
<b>Valves</b>					
Bursting disk	BD				
Electric	EV				
Control	CV				
Hand	HV				
Non-return	NRV				
Pressure reduction	PRV				
Pressure regulator	PV				
Safety	SV				
Electro-pneumatic	FV				
<b>Electric Devices</b>					
Current Source	IC				
Heater	EH				
Status indicator	EB				
Voltage source	EC				
<b>Measurement Devices</b>					
Current	IE	IT	II	IS	
Flow	FE	FT	FI	FS	
Force	WE	WT	WI	WS	
Level	LE	LT	LI	LS, LSL, LSH	
Magnetic flux	BE	BT	BI	BS	
Temperature	TE	TT	TI	TS, TSL, TSH	
Temperature differential	TDE	TDT	TDI	TDS	
Position	GE	GT	GI	GS, GSL, GSH	
Pressure	PE	PT	PI	PS, PSL, PSH	
Pressure differential	PDE	PDT	PDI	PDS	
Quality	QE	QT	QI	QS	
Speed	SE	ST	SI	SS	
Time	KE	KT	KI	KS	
Voltage	EE	ET	EI	ES	
<b>Control System Signals</b>					
Signal					

Indicate the process element number and must consists of 3 digits.

General equipment

- 000 – 099: vacuum system, vessels and transfer lines

Horizontal cryostat and its valve box

- 100 – 199: helium cryogenics
- 200 – 299: nitrogen cryogenics
- 300 – 399: supercritical helium

Interconnexion Box

- 500 – 549: helium cryogenics
- 400 – 449: nitrogen cryogenics

Reheater

- 550 – 599: helium cryogenics

Cryomodule and its valve box

- 600 – 699: helium cryogenics
- 700 – 799: nitrogen cryogenics
- 800 – 899: supercritical helium

In case several (not necessarily identical) elements exist in parallel at the same location for backup purposes, they can be identified by adding a letter (a, b, ...) in this position. For example, two similar temperature elements at the same location.

**Nomenclature**

08/11/2013

**Interconnection Box**

Sous-ensemble	name	equipment	specification
Vacuum equipment	V000	Vacuum vessel	
	FV000	Vacuum Gate valve	
	SV000	Vacuum vessel, Safety valve	
	J000	Vacuum pumping system	
	PT000	Secondary gauge	
	PT001	Primary gauge	
Transfer lines	L000	Transfer line from Cold Box to ICB	
	L001	Transfer line from ICB to Valve Box	
	L002	Transfer line from ICB to Cryomodule	
Nitrogen circuit	FV400	LN2 to Cryostat, Cryogenic stop valve	
	FV401	LN2 to Cryomodule, Cryogenic stop valve	
	EV400	Cool down thermal screen, Electric valve	
	PRV400	Adjustable pressure reduction	
	SV400	Thermal screen circuit, Safety valve	
	SV401	Cryomodule LN2 circuit, Safety valve	
	EH400	Warm up nitrogen, Electrical heater with fin tube	
	EH401A	Warm up thermal screen, Electrical heater	
	EH401B	Warm up thermal screen, Electrical heater	
	EH401C	Warm up thermal screen, Electrical heater	
	TT400	Warm up nitrogen, Pt thermometer	
	TT401A	Cylindrical thermal screen, Pt thermometer	
	TT401B	Cylindrical thermal screen, Pt thermometer	
	TT401C	Cylindrical thermal screen, Pt thermometer	
	TT402	Top thermal screen, Pt thermometer	
	TT403	Input LN2 circuit, Pt thermometer	
	TT404	Cryostat LN2 circuit, Pt thermometer	
	TT405	Cryomodule LN2 circuit, Pt thermometer	
	TS400	Warm up nitrogen, Thermoswitch	
	Helium circuit	FV500	Cryostat LHe circuit, Cryogenic stop valve
FV501		Cryomodule LHe circuit, Cryogenic stop valve	
FV502		Purging system, Stop valve	
SV500		Cryostat circuit, Safety valve	
SV501		Transfer line from Cold Box to ICB, Safety valve	
SV502		Cryomodule circuit, Safety valve	
TT500		Input LHe circuit, Cernox thermometer	
TT501		Cryostat LHe circuit, Cernox thermometer	
TT502		Cryomodule LHe circuit, Cernox thermometer	
PT500		Transfer line from Cold Box to ICB, Pressure sensor	
Purging system		H000	Purging system
	PS000	Input pressurized GHe, Pressure switch	
	FV010	To vacuum pump, Stop valve	
	FV011	To atmosphere, Stop valve	
	FV012	To pressurized GHe, Stop valve	
	P000	Vacuum pump	
	PV000	Helium Pressure regulator	

## Valve Box and Horizontal cryostat

Sous-ensemble	name	equipment	specification
Vacuum equipment	V001	Valve Box, Vacuum vessel	
	V002	Horizontal Cryostat, Vacuum vessel	
	FV001	Horizontal Cryostat, Vacuum Gate valve	
	J001	Vacuum pumping system	
	SV001	Horizontal Cryostat, Vacuum vessel Safety valve	
	PT002	Valve Box, Secondary gauge	
	PT003	Horizontal cryostat, Secondary gauge	
	PT004	Horizontal cryostat, Primary gauge	
Transfer lines	L003	Transfer line from Valve Box to Helium heater transfer line	
	L004	Transfer line from Valve Box to Helium heater transfer line	
	L005	Helium heater transfer line to helium heater	
	L006	Helium heater transfer line to helium heater	
Helium circuit	S100	4K vessel separator	
	S101	2K vessel separator	
	HX100	Heat exchanger	
	FV100	Purging system, Stop valve	
	FV101	Cool down transfer line, Cryogenic Stop valve	
	CV100	Cryogenic control valve to fill 4K vessel	
	CV101	Table and magnetic shield cooling, Cryogenic control valve	
	CV102	Cavity cooldown circuit, Cryogenic control valve	
	CV103	Cavity cooldown circuit, Cryogenic control valve	
	CV104	By pass HX100, Cryogenic control valve	
	CV105	Cryogenic JT valve to produce 2K	
	SV100	4K circuit, Safety valve	
	SV101	2K circuit, Safety valve	
	SV102	Cavities or magnet, Safety valve	
	SV103	Cavities or magnet, Safety valve	
	EH100A	Warm up 4K vessel, Electrical heater	
	EH100B	Warm up 4K vessel, Electrical heater	
	EH100C	Warm up 4K vessel, Electrical heater	
	EH100D	Warm up 4K vessel, Electrical heater	
	EH101	Warm up HX100, Electrical heater	
	EH102A	Warm up 2K vessel, Electrical heater	
	EH102B	Warm up 2K vessel, Electrical heater	
	EH103A	Warm up cavity 1, Electrical heater	
	EH103B	Warm up cavity 1, Electrical heater	
	EH103C	Warm up cavity 1, Electrical heater	
	EH104A	Warm up cavity 2, Electrical heater	
	EH104B	Warm up cavity 2, Electrical heater	
	EH104C	Warm up cavity 2, Electrical heater	
	EH105A	Warm up Table, Electrical heater	
	EH105B	Warm up Table, Electrical heater	
	EH106A	Warm up Magnetic shield, Electrical heater	
	EH106B	Warm up Magnetic shield, Electrical heater	
	LT100	4K vessel, Helium liquid level	
	LT101	2K vessel, Helium liquid level	
	PT100	4K vessel separator, Pressure sensor - atmospheric	
	PT101	2K vessel separator, Pressure sensor - atmospheric	
PT102	2K vessel separator, Pressure sensor - sub atmospheric		

	TT100	Cool down transfer line, Cernox thermometer	
	TT101	4K vessel, Cernox thermometer	
	TT102	Cool down circuit cavity 1, Cernox thermometer	
	TT103	Cool down circuit cavity 2, Cernox thermometer	
	TT104	Cavity 1 cool down, Cernox thermometer	
	TT105	Cavity 2 cool down, Cernox thermometer	
	TT106	Input Table, Cernox thermometer	
	TT107	Output Table, Cernox thermometer	
	TT108	Table, Cernox thermometer	
	TT109	Table, Cernox thermometer	
	TT110	HX100, Input atmospheric circuit, Cernox thermometer	
	TT111	HX100, Output atmospheric circuit, Cernox thermometer	
	TT112	Top 2K vessel, Cernox thermometer	
	TT113	2K vessel, Cernox thermometer	
	TT114	Output 2K vessel, Cernox thermometer	
	TT115	Cavity tank 1, Cernox thermometer	
	TT116	Cavity tank 2, Cernox thermometer	
	TT117	Top Cavity tank 1, Cernox thermometer	
	TT118	Top Cavity tank 2, Cernox thermometer	
	TT119	HX100, Input sub-atmospheric circuit, Cernox thermometer	
	TT120	HX100, Output sub-atmospheric circuit, Cernox thermometer	
	TT121	HX300, Output sub-atmospheric circuit, Cernox thermometer	
	TT122	Sub-atmospheric circuit, Output valve box, Cernox thermometer	
	TT123	Table circuit, Output valve box, Cernox thermometer	
	TT124	Outgassing 4K vessel, Cernox thermometer	
	TT125	Outgassing Cavity 1, Cernox thermometer	
	TT126	Outgassing Cavity 2, Cernox thermometer	
	TT127	Input Magnetic Shield, Cernox thermometer	
	TT128	Output Magnetic Shield, Cernox thermometer	
	TT129	Magnetic Shield, Cernox thermometer	
	TT130	Magnetic Shield, Cernox thermometer	
	TT140A	Warm up 4K vessel, Pt thermometer	
	TT140B	Warm up 4K vessel, Pt thermometer	
	TT140C	Warm up 4K vessel, Pt thermometer	
	TT140D	Warm up 4K vessel, Pt thermometer	
	TT141A	Warm up HX100, Pt thermometer	
	TT142A	Warm up 2K vessel, Pt thermometer	
	TT142B	Warm up 2K vessel, Pt thermometer	
	TT143A	Warm up cavity 1, Pt thermometer	
	TT143B	Warm up cavity 1, Pt thermometer	
	TT143C	Warm up cavity 1, Pt thermometer	
	TT144A	Warm up cavity 2, Pt thermometer	
	TT144B	Warm up cavity 2, Pt thermometer	
	TT144C	Warm up cavity 2, Pt thermometer	
	TT145A	Warm up Table, Pt thermometer	
	TT145B	Warm up Table, Pt thermometer	
	TT146A	Warm up Magnetic shield, Pt thermometer	
	TT146B	Warm up Magnetic shield, Pt thermometer	
	TT147	Warm up coupler 1, Pt thermometer	
	TT148	Warm up coupler 2, Pt thermometer	
Nitrogen circuit	FV200	Nitrogen couplers supply, Cryogenic stop valve	
	EV200	Valve box, thermal screen, Electro valve	
	EV201	Cryostat, thermal screen, Electro valve	
	CV200	Tesla Coupler 1 circuit, Control valve	
	CV201	Tesla Coupler 2 circuit, Control valve	

PRV200	Valve box, thermal screen, Adjustable pressure reduction
PRV201	Cryostat, thermal screen, Adjustable pressure reduction
SV200	Valve box, thermal screen, Safety valve
SV201	Cryostat, thermal screen, Safety valve
SV202	Tesla Coupler 1 circuit, Safety valve
SV203	Tesla Coupler 2 circuit, Safety valve
FT200	Tesla Coupler 1 circuit, Flow meter
FT201	Tesla Coupler 2 circuit, Flow meter
FT202	Thermal screen, Flow meter
EH200	Valve box thermal screen, Warm up nitrogen, Heater with fin tube
EH201	Cryostat thermal screen, Warm up nitrogen, Heater with fin tube
EH202	Tesla Coupler 1 circuit, Warm up nitrogen, Heater with fin tube
EH203	Tesla Coupler 1 circuit, Warm up nitrogen, Heater with fin tube
EH204A	Valve box, Warm up thermal screen, Electrical heater
EH204B	Valve box, Warm up thermal screen, Electrical heater
EH204C	Valve box, Warm up thermal screen, Electrical heater
EH205	Valve box, Warm up thermal screen, Electrical heater
EH206A	Cryostat, Warm up thermal screen, Electrical heater
EH206B	Cryostat, Warm up thermal screen, Electrical heater
EH206C	Cryostat, Warm up thermal screen, Electrical heater
EH206D	Cryostat, Warm up thermal screen, Electrical heater
EH206E	Cryostat, Warm up thermal screen, Electrical heater
EH206F	Cryostat, Warm up thermal screen, Electrical heater
EH207	Cryostat, Warm up thermal screen, Electrical heater
EH208	Cryostat, Warm up thermal screen, Electrical heater
PT200	Cryostat, Input LN2 circuit, Pressure sensor
TT200	Input LN2 circuit, Pt thermometer
TT201	Valve Box, Thermal screen, Input circuit, Pt thermometer
TT202	Cryostat, Thermal screen, Input circuit, Pt thermometer
TT203	Cryostat, Thermal screen, Output circuit, Pt thermometer
TT204	Valve Box, Thermal screen, Output circuit, Pt thermometer
TT205	Valve box, Warm up nitrogen, Pt thermometer
TT206	Cryostat, Warm up nitrogen, Pt thermometer
TT207	Input Tesla coupler 1, Pt thermometer
TT208	Output Tesla coupler 1, Pt thermometer
TT209	Input Tesla coupler 2, Pt thermometer
TT210	Output Tesla coupler 2, Pt thermometer
TT211	Tesla coupler 1 circuit, Warm up nitrogen, Pt thermometer
TT212	Tesla coupler 2 circuit, Warm up nitrogen, Pt thermometer
TT213	Valve Box, Top Thermal screen, Pt thermometer
TT214A	Valve Box, Thermal screen, Pt thermometer
TT214B	Valve Box, Thermal screen, Pt thermometer
TT214C	Valve Box, Thermal screen, Pt thermometer
TT215	Cryostat, Thermal screen end cap, Pt thermometer
TT216A	Cryostat, Thermal screen, Pt thermometer
TT216B	Cryostat, Thermal screen, Pt thermometer
TT216C	Cryostat, Thermal screen, Pt thermometer
TT216D	Cryostat, Thermal screen, Pt thermometer
TT216E	Cryostat, Thermal screen, Pt thermometer
TT216F	Cryostat, Thermal screen, Pt thermometer
TT217	Cryostat, Thermal screen end cap, Pt thermometer
TS200	Valve box, Warm up nitrogen, Thermoswitch
TS201	Cryostat, Warm up nitrogen, Thermoswitch
TS202	Tesla coupler 1 circuit, Warm up nitrogen, Thermoswitch
TS203	Tesla coupler 2 circuit, Warm up nitrogen, Thermoswitch

<p>Supercritical helium circuit</p>	<p>F300 SH300 HX300 FV300 FV301 FV302 CV301 CV302 SV300 SV301 FT301 FT302 EH300 EH301 EH302 EH303 PT300 PT301 PT302 TT300 TT301 TT302 TT303 TT304 TT305 TT306 TT307 TT308 TT309 TT310 TT311 TT312 TS301 TS302</p>	<p>Charcoal filter Supercritical Helium production SHe Heat exchanger Purging system, Stop valve, Coupler 1 circuit, Stop valve Coupler 2 circuit, Stop valve Coupler 1 circuit, Control valve Coupler 2 circuit, Control valve SHe circuit, Safety valve SHe circuit, Safety valve Coupler 1 circuit, Flow meter Coupler 2 circuit, Flow meter Warm up HX300, Electrical heater Warm up SHe coupler 1, Heater with fin tube Warm up SHe coupler 2, Heater with fin tube Warm up charcoal filter, Electrical heater Input SHe circuits, Pressure sensor Output coupler 1 circuit, Pressure sensor Output coupler 2 circuit, Pressure sensor Output Charcoal filter, Pt thermometer Input HX300, Cernox thermometer Output HX300, Cernox thermometer Input coupler 1, Cernox thermometer Input coupler 2, Cernox thermometer Output coupler 1, Cernox thermometer Output coupler 2, Cernox thermometer Warm up SHe coupler 1, Pt thermometer Warm up SHe coupler 2, Pt thermometer Input Valve Box, Pt thermometer Output Valve Box coupler 1 circuit, Pt thermometer Output Valve Box coupler 2 circuit, Pt thermometer Warm up HX300, Pt thermometer Warm up SHe coupler 1, Thermostat Warm up SHe coupler 2, Thermostat</p>	
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## He heater and He gas recovery

Sous-ensemble	name	Equipment	specification
Re-Heater	W550	Water vessel and water needle	
	HV550	Tank drain valve	
	SV550	Water vessel, Security valve	
	EH550A	Warm up Water, Electrical heater	
	EH550B	Warm up Water, Electrical heater	
	EH550C	Warm up Water, Electrical heater	
	LS550	Water level, Switch	
	TT550	Water temperature, Pt thermometer	
	TS550	Water temperature, Thermo-switch	
	PT550	He atmospheric circuit, Pressure sensor - atmospheric	
	PT551	He sub atmospheric circuit, Pressure sensor - atmospheric	
	PT552	He sub atmospheric circuit, Pressure sensor - sub atmospheric	
Helium pumping and recovery system	H550	Helium pumping system	
	CV550	He atmospheric circuit, Control valve	
	CV551	He Sub atmospheric circuit, Control valve	
	CV552	By pass Helium pumping system, Control valve	
	FV550	He atmospheric circuit, Stop valve	
	FV551	He sub atmospheric circuit, Stop valve	
	FT550	He atmospheric circuit, Flow meter	
	FT551	He sub atmospheric circuit, Flow meter	
FT552	By pass Helium pumping system, Flow meter		