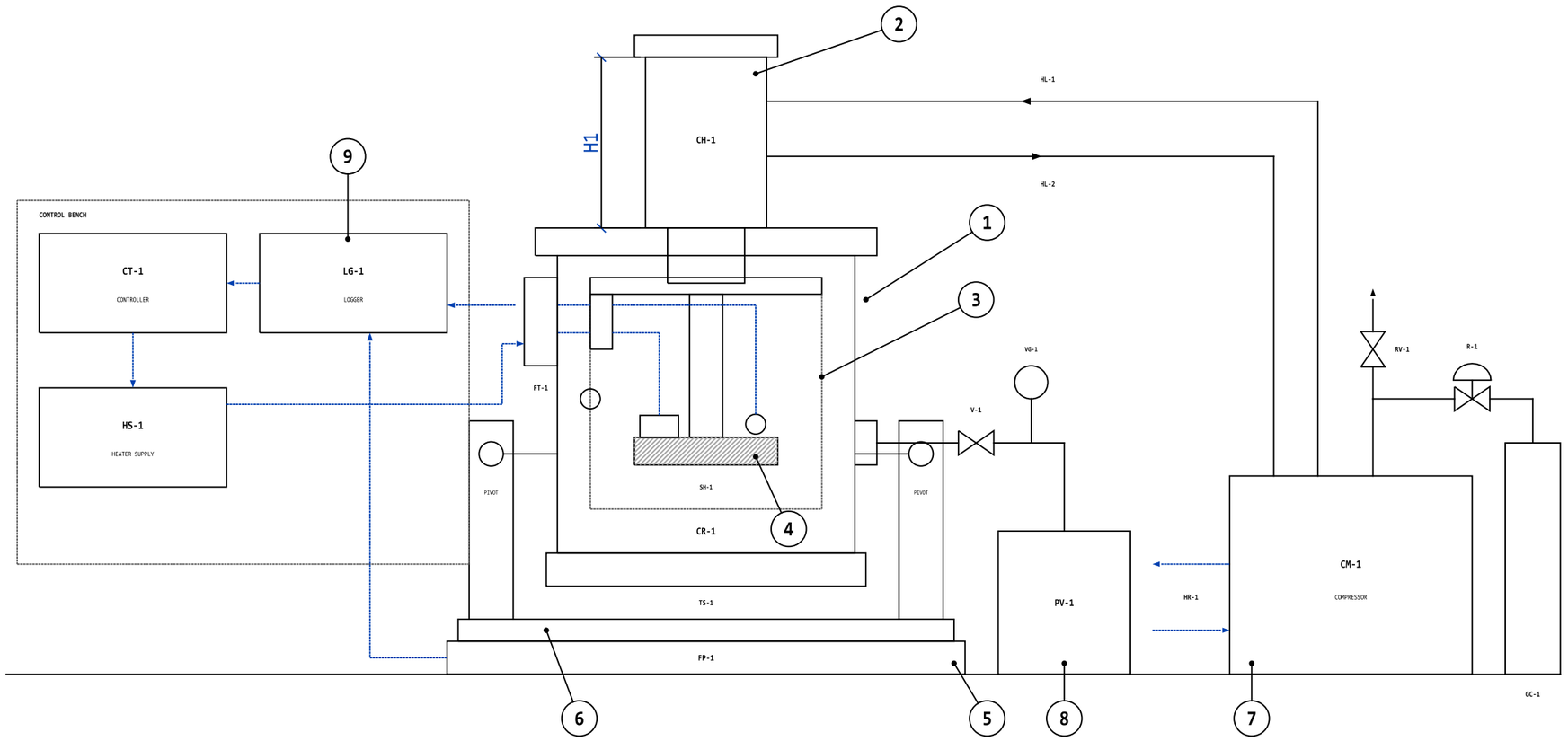
ELEVATION - PERFORMANCE AND ORIENTATION BENCH

NOT TO SCALE



THE CRYOSTAT CR-1 HOLDS THE COLD STAGE IN VACUUM BEHIND THE SHIELD SH-1; THE HEATER H-1 AND THE SENSORS T1 AND T2 ARE WIRED THROUGH THE ANCHOR AN-1 AND THE FEEDTHROUGH FT-1; H1 IS THE LENGTH OF THE COLD HEAD

THE COOLER'S OWN HELIUM CIRCUIT RUNS THROUGH HL-1 AND HL-2 TO THE COMPRESSOR CM-1 AND IS CHARGED FROM THE CYLINDER GC-1; THE PUMP PV-1 EVACUATES THE CRYOSTAT; THE FORCE PLATFORM FP-1 AND THE TILT STAGE TS-1 CARRY IT

NOTES

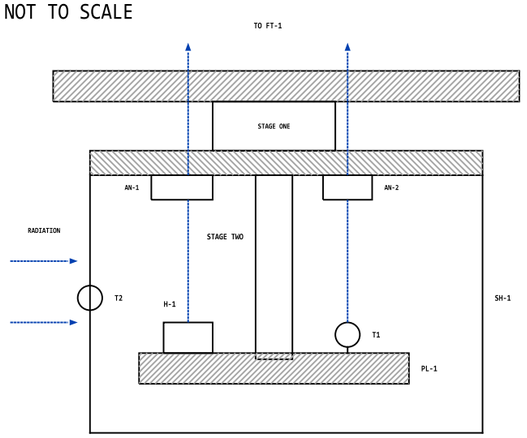
1. REFERENCE ARRANGEMENT OF A PERFORMANCE AND ORIENTATION BENCH. LETTERS ARE DIMENSIONS SET BY DESIGN: NO TEMPERATURE, POWER, FORCE, TIME OR SIZE VALUE IS GIVEN.
2. THE ELEVATION SHOWS THE CRYOSTAT CR-1 ON THE TILT STAGE TS-1 AND THE FORCE PLATFORM FP-1, WITH THE COLD HEAD CH-1, THE SHIELD SH-1, THE COLD PLATE PL-1, THE HEATER H-1 AND THE SENSORS T1 AND T2. H1 IS THE LENGTH OF THE COLD HEAD.
3. DETAIL A: THE COLD STAGE IN SECTION. DETAIL B: THE HEATER WIRING, CURRENT LEADS AND VOLTAGE LEADS, ANCHORED AT THE SHIELD. DETAIL C: THE TILT STAGE, WITH THE COLD END DOWN, LEVEL AND UP.
4. THE CIRCUITS AND THE CURVES ARE ON SHEET 002. THE SENSORS, THE HEATER SUPPLY, THE COOLER'S OWN COMPRESSOR, THE PUMPS AND THE LOGGER ARE CATALOGUE ITEMS, BOUGHT IN. NOBODY OPENS A CHARGED LINE.

ITEMS

ITEM	DESCRIPTION
1	VACUUM CRYOSTAT CR-1
2	COLD HEAD CH-1
3	RADIATION SHIELD SH-1
4	COLD PLATE PL-1, HEATER H-1
5	FORCE PLATFORM FP-1
6	TILT STAGE TS-1
7	COMPRESSOR CM-1
8	VACUUM PUMP PV-1
9	LOGGER LG-1

DETAIL A - THE COLD STAGE

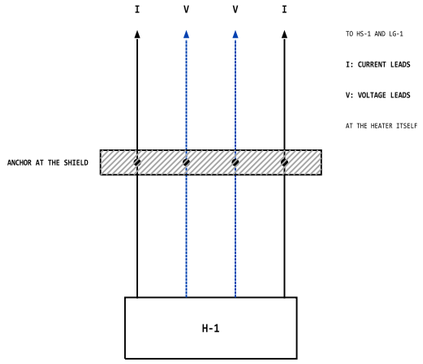
NOT TO SCALE



THE SHIELD HANGS FROM STAGE ONE AND SCREENS THE COLD PLATE FROM THE WARM WALL; THE WIRES ARE ANCHORED AT THE SHIELD BEFORE THEY REACH THE PLATE, SO THAT THEY ADD ALMOST NO HEAT TO THE COLD STAGE

DETAIL B - THE HEATER WIRING

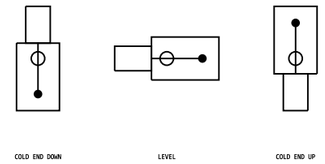
NOT TO SCALE



THE HEATING CURRENT RUNS IN ONE PAIR OF LEADS AND THE VOLTAGE IS READ BY ANOTHER PAIR AT THE HEATER ITSELF, SO THE POWER IS KNOWN AT THE PLATE; EACH LEAD IS ANCHORED AT THE SHIELD, SO THAT THE WIRING ADDS ALMOST NO HEAT TO THE COLD PLATE

DETAIL C - THE TILT STAGE

NOT TO SCALE



THE CRYOSTAT TURNS ABOUT ITS PIVOT, SO THE COOLER IS TESTED AT EACH ANGLE IT WILL MEET IN USE; THE DOT MARKS THE COLD END

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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CRYOCOOLER TEST FACILITY - REFERENCE CONFIGURATION

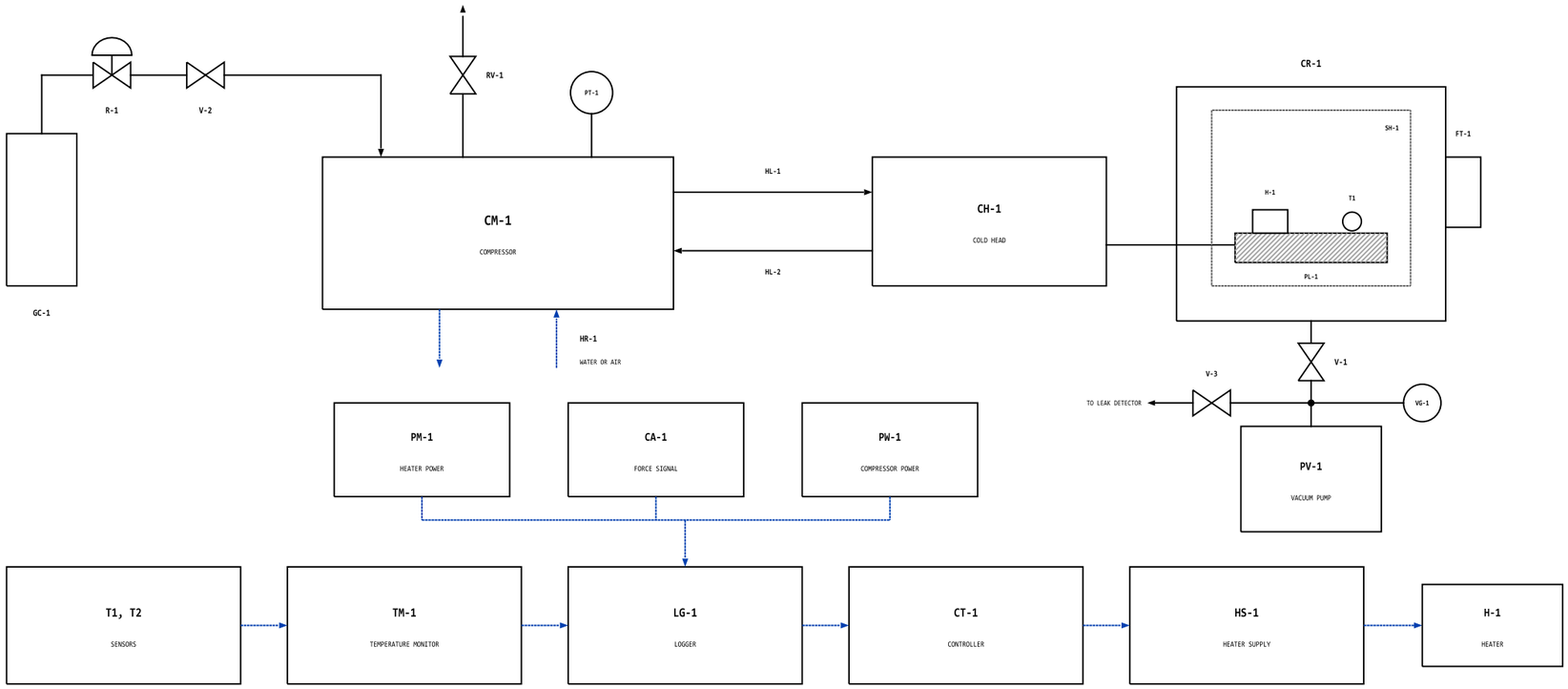
ARRANGEMENT AND DETAILS

THE CRYOSTAT, THE COLD STAGE, THE WIRING AND THE TILT

DWG NO	SCALE @ A3	SHEET	REV
NMX-CRY-111-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
18-11-2026	TAGS ONLY	NMX-DO	REFERENCE

HELIUM, VACUUM, HEAT AND MEASUREMENT - CRYOCOOLER TEST FACILITY

NOT TO SCALE



HELIUM: THE CYLINDER GC-1 CHARGES THE COMPRESSOR CM-1 THROUGH THE REGULATOR R-1 AND THE VALVE V-2, WITH THE RELIEF VALVE RV-1 AND THE TRANSDUCER PT-1; THE LINES HL-1 AND HL-2 CARRY THE GAS TO THE COLD HEAD CH-1; HR-1 CARRIES THE HEAT AWAY

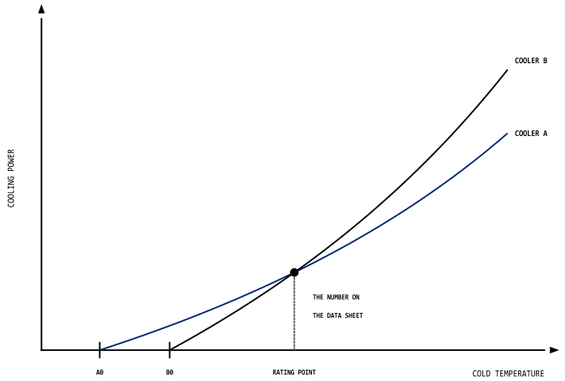
VACUUM: THE PUMP PV-1 EVACUATES THE CRYOSTAT THROUGH V-1 WITH THE GAUGE VG-1, AND V-3 CONNECTS A LEAK DETECTOR FOR THE CHECK BEFORE EVERY RUN; MEASUREMENT: THE SENSORS, THE HEATER POWER, THE FORCE AND THE COMPRESSOR POWER GO TO THE LOGGER

NOTES

1. REFERENCE CIRCUITS OF A PERFORMANCE AND ORIENTATION BENCH. TAGS AND LETTERS ONLY: NO TEMPERATURE, POWER, FORCE, TIME OR SIZE VALUE IS GIVEN.
2. HELIUM AND HEAT: THE CYLINDER GC-1 CHARGES THE COMPRESSOR CM-1 THROUGH THE REGULATOR R-1 AND THE VALVE V-2; THE RELIEF VALVE RV-1 AND THE TRANSDUCER PT-1 SIT ON THE CIRCUIT. THE LINES HL-1 AND HL-2 CARRY THE GAS TO THE COLD HEAD CH-1 AND HR-1 CARRIES THE HEAT AWAY.
3. VACUUM: THE PUMP PV-1 EVACUATES THE CRYOSTAT CR-1 THROUGH THE VALVE V-1, THE GAUGE VG-1 READS THE VACUUM, AND THE VALVE V-3 CONNECTS A LEAK DETECTOR FOR THE CHECK BEFORE EVERY RUN.
4. MEASUREMENT: THE SENSORS T1 AND T2 GO THROUGH THE FEEDTHROUGH FT-1 TO THE TEMPERATURE MONITOR TM-1 AND THE LOGGER LG-1; THE CONTROLLER CT-1 STEPS THE HEATER SUPPLY HS-1; PM-1, CA-1 AND PW-1 FEED THE LOGGER.
5. DETAILS A TO C ARE COMPUTED FROM THE IDEAL LIMIT TIMES A FRACTION, LESS A FIXED LOSS, IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT. THE ARRANGEMENT IS ON SHEET 001. NOBODY OPENS A CHARGED LINE.

DETAIL A - SAME RATING, TWO CURVES

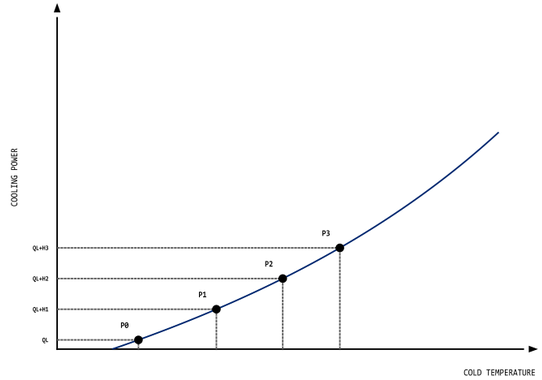
NOT TO SCALE - COMPUTED



TWO COOLERS WITH THE SAME NUMBER ON THE DATA SHEET LIFT THE SAME HEAT AT THE RATING POINT; BELOW IT COOLER B LIFTS LESS AND REACHES ITS NO-LOAD TEMPERATURE (B0) SOONER THAN COOLER A (A0), AND ABOVE IT COOLER B LIFTS MORE, SO THE NUMBER ALONE DOES NOT TELL THEM APART; COMPUTED FROM THE IDEAL LIMIT TIMES A FRACTION, LESS A FIXED LOSS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL B - THE HEATER STEPS

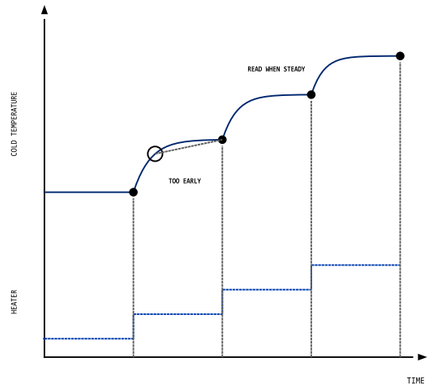
NOT TO SCALE - COMPUTED



THE COOLER SETTLES WHERE ITS COOLING POWER EQUALS THE HEATER POWER PLUS THE HEAT LEAK: THE FACILITY STEPS THE HEATER (H1 TO H3) AND WRITES DOWN EACH SETTLED TEMPERATURE, P0 TO P3, AND THAT IS HOW THE CURVE IS MADE; P0, WITH NO HEATER, IS THE LEAK ALONE; QL SHIFTS EVERY POINT, SO THE LEAK IS MEASURED ON ITS OWN; COMPUTED FROM THE SAME RELATION: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - STEADY MEANS STEADY

NOT TO SCALE - COMPUTED



AFTER EACH HEATER STEP THE COLD PLATE DRIFTS TO A NEW TEMPERATURE; A READING TAKEN TOO EARLY IS A POINT ON THE WAY, SO THE LOGGER WAITS UNTIL THE DRIFT HAS STOPPED; COMPUTED: A PICTURE OF THE IDEA

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

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CRYOCOOLER TEST FACILITY - REFERENCE CONFIGURATION

CIRCUITS AND CURVES

THE CIRCUITS AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-CRY-111-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
18-11-2026	TAGS ONLY	NMX-DO	REFERENCE