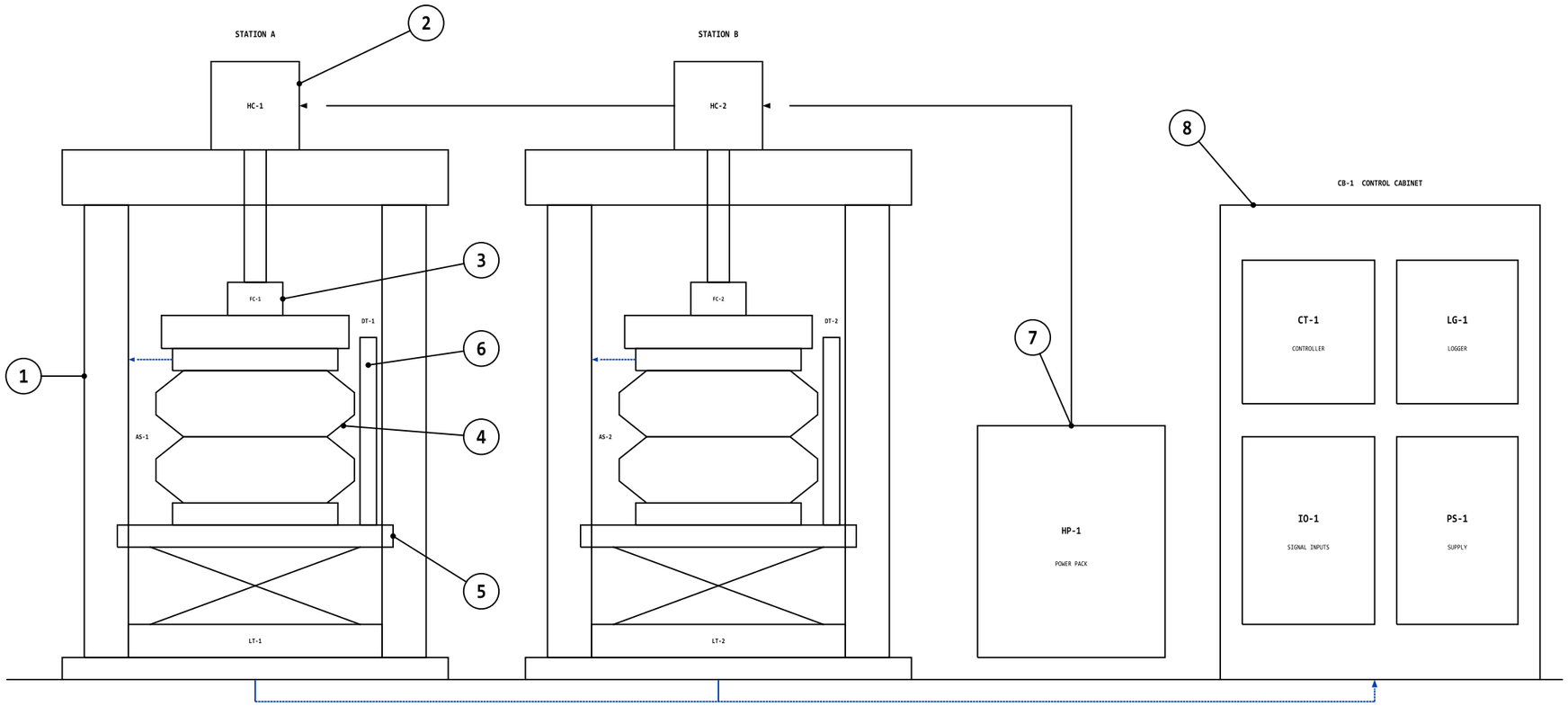
ELEVATION - TWO-STATION AIR SPRING TEST RIG

NOT TO SCALE



EACH STATION HOLDS ONE AIR SPRING AS-n ON A LIFTING TABLE LT-n UNDER A PLATEN; THE CYLINDER HC-n PRESSES IT TO ITS HEIGHT THROUGH THE FORCE CELL FC-n AND THE HEIGHT SENSOR DT-n WATCHES IT; THE POWER PACK HP-1 SERVES BOTH CYLINDERS

THE AIR STUB ON EACH TOP PLATE GOES TO THE AIR CIRCUIT (DETAIL B); THE SENSOR CABLES RUN IN THE TRENCH TO THE CONTROL CABINET CB-1 (CONTROLLER CT-1, LOGGER LG-1, SIGNAL INPUTS IO-1, SUPPLY PS-1)

NOTES

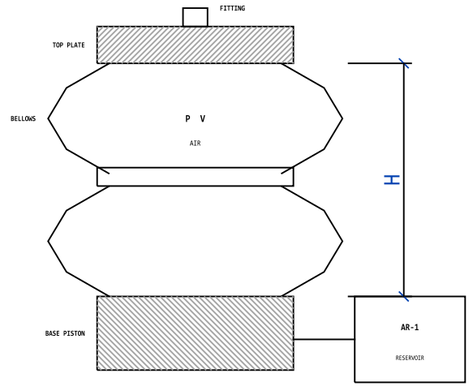
1. REFERENCE ARRANGEMENT OF A TWO-STATION AIR SPRING TEST RIG. LETTERS ARE DIMENSIONS SET BY DESIGN: NO PRESSURE, LOAD, HEIGHT, STIFFNESS, TIME OR SIZE VALUE IS GIVEN.
2. THE ELEVATION SHOWS STATIONS ST-A AND ST-B, EACH WITH A CYLINDER HC-n, A FORCE CELL FC-n, A PLATEN, AN AIR SPRING AS-n ON A LIFTING TABLE LT-n AND A HEIGHT SENSOR DT-n, THE POWER PACK HP-1 AND THE CONTROL CABINET CB-1.
3. DETAIL A: THE AIR SPRING IN SECTION, WITH THE HEIGHT H AND THE PORT TO THE RESERVOIR AR-1. DETAIL B: THE AIR CIRCUIT WITH THE SPRING AS-1 AND THE REFERENCE VESSEL RF-1. DETAIL C: THE TWO-STATION CYCLE.
4. THE HYDRAULIC AND MEASUREMENT CIRCUITS AND THE CURVES ARE ON SHEET 002. THE TRANSDUCERS, THE FORCE CELL, THE SENSORS, THE VALVES AND THE LOGGER ARE CATALOGUE ITEMS, BOUGHT IN. GUARDS ROUND EACH STATION ARE NOT SHOWN.

ITEMS

ITEM	DESCRIPTION
1	LOADING FRAME
2	HYDRAULIC CYLINDER HC-1
3	FORCE CELL FC-1
4	AIR SPRING AS-1
5	LIFTING TABLE LT-1
6	HEIGHT SENSOR DT-1
7	POWER PACK HP-1
8	CONTROL CABINET CB-1

DETAIL A - THE AIR SPRING IN SECTION

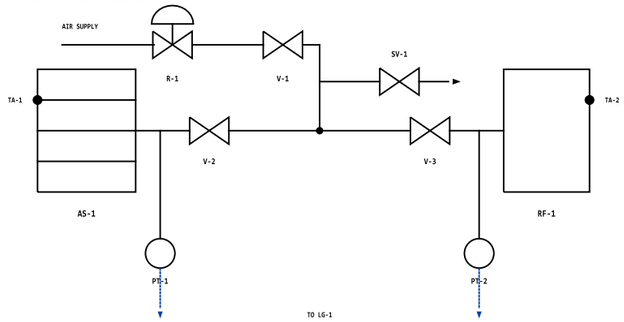
NOT TO SCALE



THE AIR IN THE BELLOWS HAS A PRESSURE P AND A VOLUME V; THE VOLUME FOLLOWS THE HEIGHT H, SO A SPRING THAT MOVES CHANGES ITS OWN PRESSURE; THE PORT IN THE BASE PISTON JOINS THE SPRING TO ITS RESERVOIR AR-1, WHICH ADDS VOLUME AND MAKES THE SAME BELLOWS SOFTER

DETAIL B - THE AIR CIRCUIT

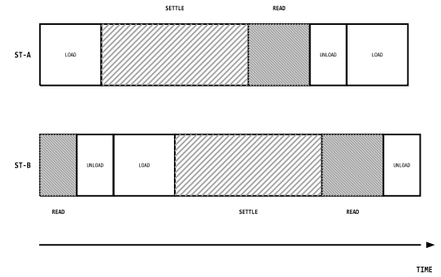
NOT TO SCALE



AIR IS FILLED SLOWLY THROUGH V-1 INTO THE SPRING AS-1 AND THE REFERENCE VESSEL RF-1 TOGETHER; V-2 AND V-3 ISOLATE THEM FOR THE HOLD; PT-1 AND PT-2 READ THE TWO PRESSURES AND TA-1 AND TA-2 THEIR TEMPERATURES, SO THE COOLING OF THE AIR SHOWS IN BOTH; THE RELIEF VALVE SV-1 RELIEVES THE CIRCUIT TO THE OPEN AIR

DETAIL C - THE TWO-STATION CYCLE

NOT TO SCALE



ONE SPRING SETTLES WHILE THE OTHER IS LOADED OR READ, SO THE OPERATOR NEVER WAITS AND NOTHING IS READ EARLY; HATCHED: SETTLING, DENSE: THE READING

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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AIR SPRING TEST RIG - REFERENCE CONFIGURATION

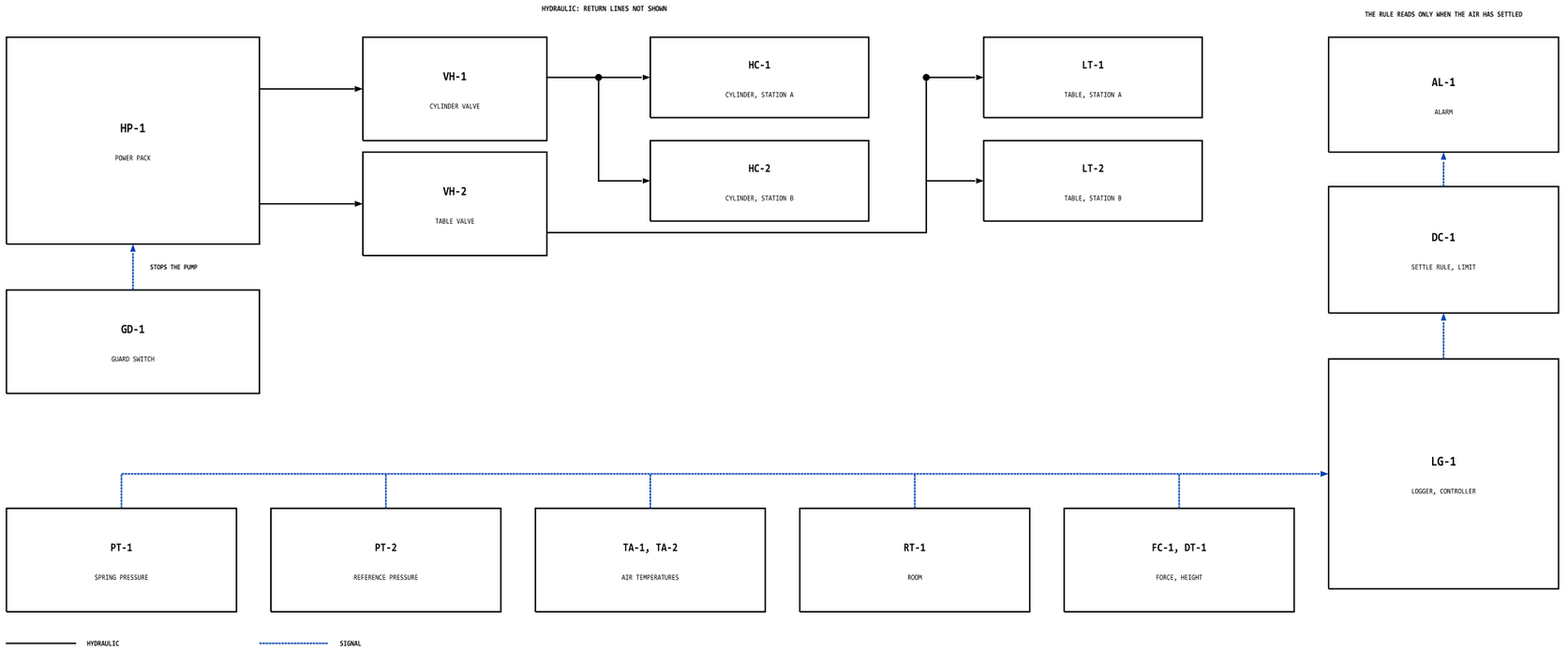
ARRANGEMENT AND DETAILS

THE STATIONS, THE AIR SPRING, THE AIR CIRCUIT AND THE CYCLE

DWG NO	SCALE @ A3	SHEET	REV
NMX-ASP-113-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
19-11-2026	TAGS ONLY	NMX-DO	REFERENCE

HYDRAULIC, MEASUREMENT AND DECISION - AIR SPRING TEST RIG

NOT TO SCALE

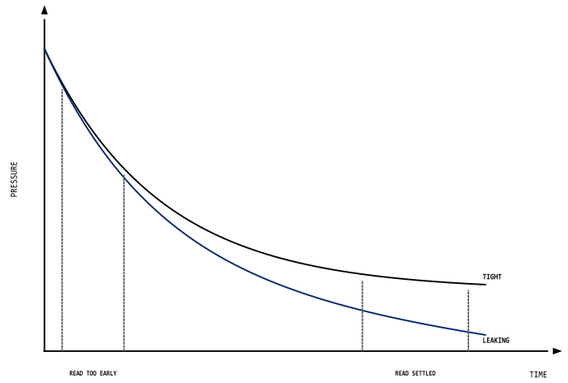


NOTES

1. REFERENCE CIRCUITS OF A TWO-STATION AIR SPRING TEST RIG. TAGS AND LETTERS ONLY: NO PRESSURE, LOAD, HEIGHT, STIFFNESS, TIME OR SIZE VALUE IS GIVEN.
2. HYDRAULIC: THE POWER PACK HP-1 FEEDS THE CYLINDER VALVE VH-1, WHICH SERVES THE CYLINDERS HC-1 AND HC-2, AND THE TABLE VALVE VH-2, WHICH SERVES THE LIFTING TABLES LT-1 AND LT-2. THE GUARD SWITCH GD-1 STOPS THE PUMP.
3. MEASUREMENT AND DECISION: THE TRANSDUCERS PT-1 AND PT-2, THE TEMPERATURE SENSORS TA-1 AND TA-2, THE ROOM RT-1, THE FORCE CELL FC-1 AND THE HEIGHT SENSOR DT-1 FEED THE LOGGER AND CONTROLLER LG-1; THE RULE DC-1 READS ONLY WHEN THE AIR HAS SETTLED, AND THE ALARM AL-1 CALLS THE PERSON ON DUTY.
4. DETAILS A TO C ARE COMPUTED FROM SIMPLE GAS RELATIONS IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT. THE ARRANGEMENT AND THE AIR CIRCUIT ARE ON SHEET 001.

DETAIL A - TIGHT OR LEAKING?

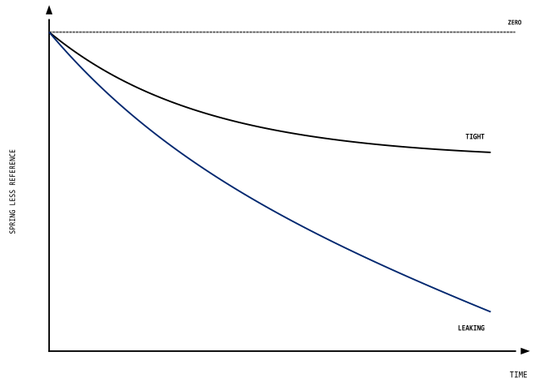
NOT TO SCALE - COMPUTED



AFTER FILLING BOTH SPRINGS LOSE PRESSURE AS THE WARM AIR COOLS: READ TOO EARLY THEY CANNOT BE TOLD APART, AND THE TIGHT ONE LOOKS LIKE A LEAK; READ SETTLED THE TIGHT SPRING IS FLAT AND THE LEAKING ONE KEEPS FALLING; COMPUTED FROM A COOLING TERM, A SETTLING TERM AND A LEAK TERM, IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL B - READ AGAINST THE REFERENCE

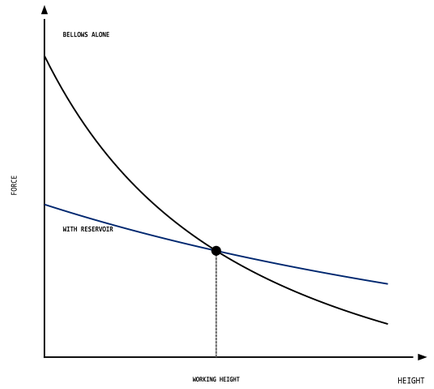
NOT TO SCALE - COMPUTED



THE REFERENCE VESSEL WENT THROUGH THE SAME FILLING, SO THE COOLING OF THE AIR CANCELS AT ONCE; WHAT IS LEFT IS THE SETTLING OF THE RUBBER, WHICH STOPS, AND THE LEAK, WHICH DOES NOT; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - THE SAME BELLOWS, SOFTER

NOT TO SCALE - COMPUTED



THE STIFFNESS IS THE SLOPE: THE AIR ALONE MAKES IT, AND IT DEPENDS ON THE PRESSURE, THE AREA AND THE VOLUME, SO A RESERVOIR MAKES THE SAME BELLOWS SOFTER; COMPUTED, AREA TAKEN CONSTANT: A PICTURE OF THE IDEA, NOT A MEASUREMENT

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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AIR SPRING TEST RIG - REFERENCE CONFIGURATION

CIRCUITS AND CURVES

THE CIRCUITS AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-ASP-113-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
19-11-2026	TAGS ONLY	NMX-DO	REFERENCE