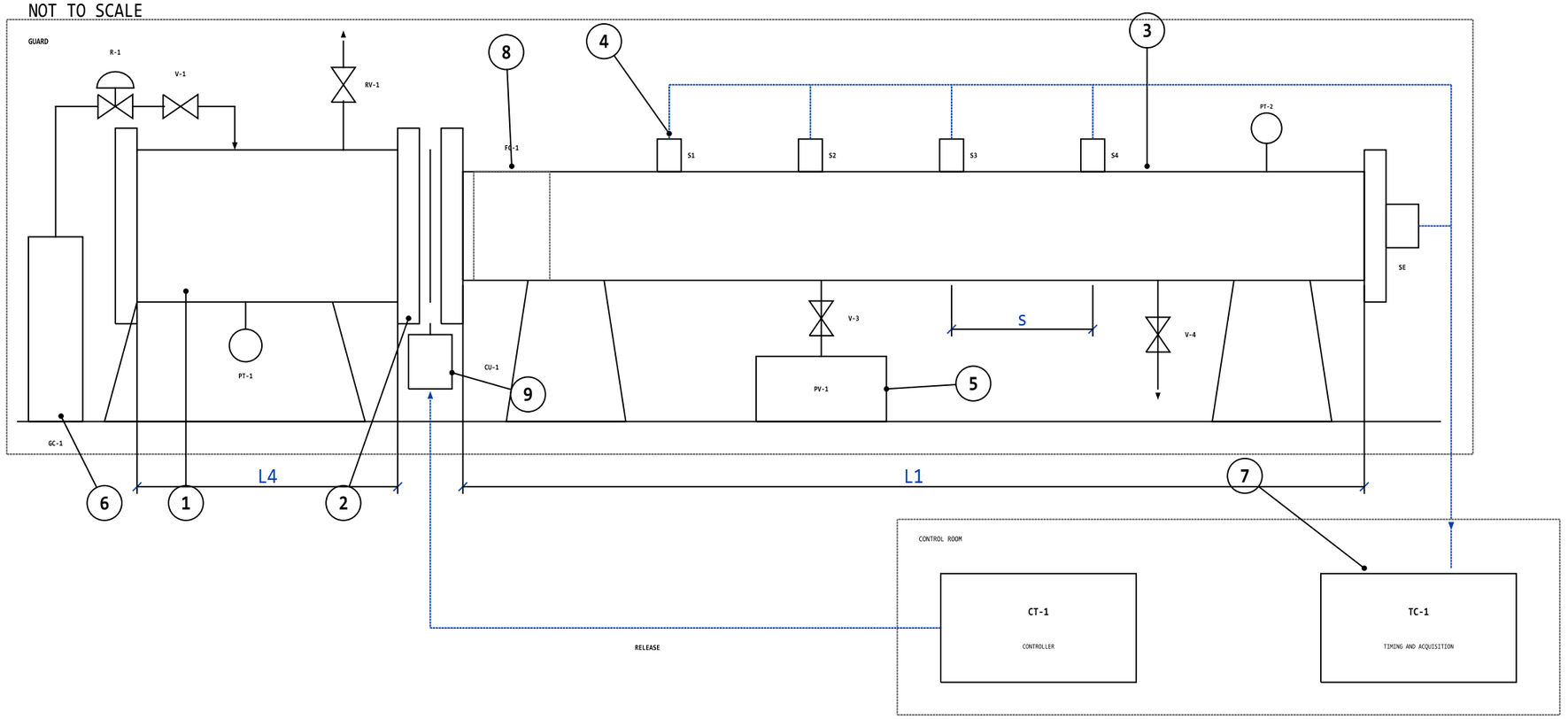
ELEVATION - CALIBRATION SHOCK TUBE

NOT TO SCALE



THE DRIVER IS FILLED FROM THE CYLINDER GC-1 THROUGH THE REGULATOR R-1 AND THE VALVE V-1; THE RELIEF VALVE RV-1 AND THE TRANSDUCER PT-1 SIT ON IT; L4 IS ITS LENGTH AND L1 THE LENGTH OF THE DRIVEN SECTION

THE CUTTER CU-1 OPENS THE DIAPHRAGM ON THE RELEASE SIGNAL FROM THE CONTROLLER CT-1; THE FOUR SIDE-WALL SENSORS S1 TO S4 AND THE END-WALL SENSOR SE GO TO THE TIMING AND ACQUISITION UNIT TC-1

NOTES

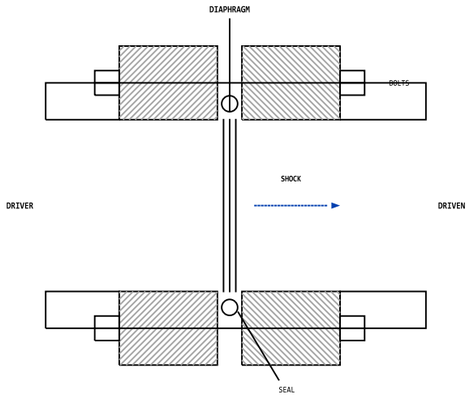
1. REFERENCE ARRANGEMENT OF A CALIBRATION SHOCK TUBE. LETTERS ARE DIMENSIONS SET BY DESIGN: NO PRESSURE, SPEED, TIME, LENGTH OR SIZE VALUE IS GIVEN.
2. THE ELEVATION SHOWS THE TUBE INSIDE ITS GUARD: THE DRIVER WITH ITS FILL LINE, THE DIAPHRAGM STATION WITH THE CUTTER CU-1, THE DRIVEN SECTION WITH THE FRAGMENT CATCH FC-1, FOUR SIDE-WALL SENSORS S1 TO S4 AND THE END-WALL SENSOR SE, THE VACUUM PUMP PV-1, AND THE CONTROL ROOM OUTSIDE THE GUARD. L4 IS THE LENGTH OF THE DRIVER, L1 THE LENGTH OF THE DRIVEN SECTION AND s THE SPACING OF THE SENSORS.
3. DETAIL A: THE DIAPHRAGM STATION IN SECTION. DETAIL B: THE SENSOR PORT, WITH THE SENSOR FLUSH WITH THE BORE. DETAIL C: THE SCORED DIAPHRAGM BEFORE AND AFTER IT OPENS.
4. THE GAS, VACUUM, RELEASE AND TIMING CIRCUITS, AND THE CURVES OF THE WAVE DIAGRAM, THE PRESSURE TRACES AND THE STEP AGAINST THE SHOCK SPEED, ARE ON SHEET 002. THE FAST SENSORS, THE TIMING UNITS AND THE ACQUISITION HARDWARE ARE CATALOGUE ITEMS, BOUGHT IN. NOBODY STANDS NEAR A CHARGED TUBE.

ITEMS

ITEM	DESCRIPTION
1	DRIVER SECTION
2	DIAPHRAGM STATION
3	DRIVEN SECTION
4	SIDE-WALL SENSORS S1 TO S4
5	VACUUM PUMP PV-1
6	DRIVER GAS CYLINDER GC-1
7	TIMING AND ACQUISITION TC-1
8	FRAGMENT CATCH FC-1
9	CUTTER CU-1

DETAIL A - THE DIAPHRAGM STATION

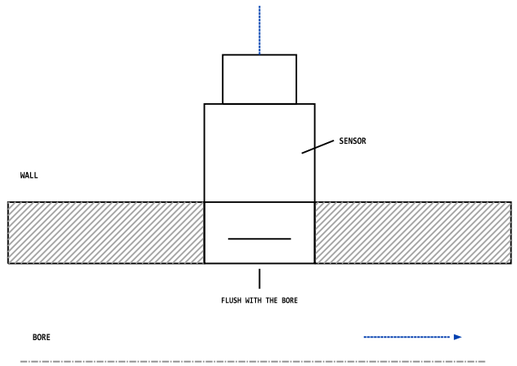
NOT TO SCALE



THE DIAPHRAGM IS CLAMPED FLAT BETWEEN TWO FLANGES AND SEALED; WHEN IT OPENS THE SHOCK RUNS INTO THE DRIVEN SECTION, AND AN EXPANSION WAVE RUNS BACK INTO THE DRIVER

DETAIL B - THE SENSOR PORT

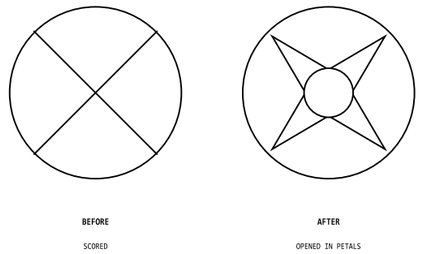
NOT TO SCALE



A SENSOR MOUNTED FLUSH WITH THE SMOOTH BORE SEES THE SHOCK GO BY WITHOUT A CAVITY IN FRONT OF IT TO RING; THE SIDE-WALL PORTS ARE AT KNOWN DISTANCES SO THAT THE SPEED OF THE SHOCK CAN BE TIMED

DETAIL C - THE SCORED DIAPHRAGM

NOT TO SCALE



SCORED TO OPEN EVENLY, THE SAME WAY EVERY SHOT, AND IN PIECES THAT FOLD BACK AGAINST THE WALL

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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SHOCK TUBE TEST FACILITY - REFERENCE CONFIGURATION

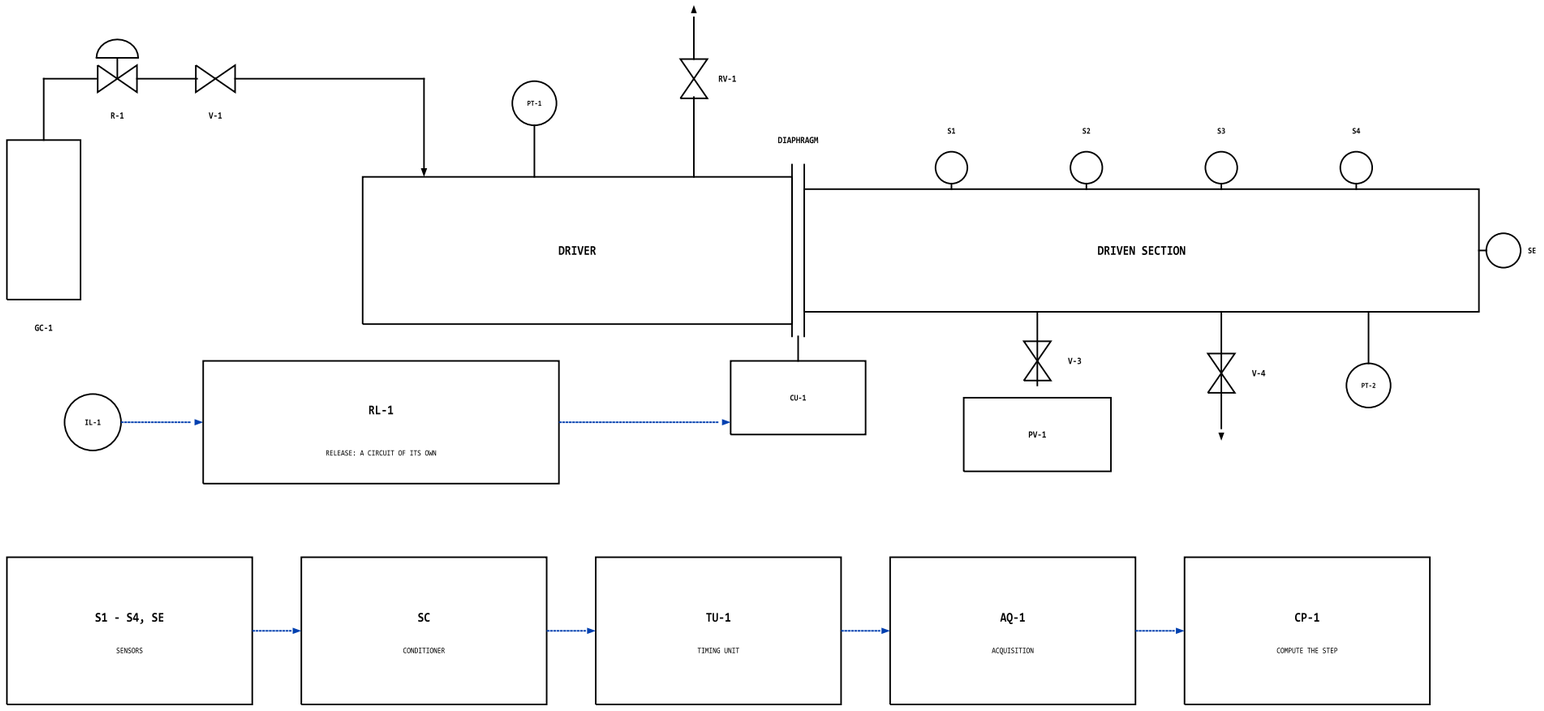
ARRANGEMENT AND DETAILS

THE TUBE, THE DIAPHRAGM, THE SENSORS AND THE GAS

DWG NO	SCALE @ A3	SHEET	REV
NMX-SHT-110-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
18-11-2026	TAGS ONLY	NMX-DO	REFERENCE

GAS, VACUUM, RELEASE AND TIMING - SHOCK TUBE TEST FACILITY

NOT TO SCALE



GAS: THE CYLINDER GC-1 FILLS THE DRIVER THROUGH THE REGULATOR R-1 AND THE VALVE V-1; THE VACUUM PUMP PV-1 EVACUATES THE DRIVEN SECTION THROUGH V-3 AND THE DRIVEN GAS COMES IN THROUGH V-4; THE FILLING GOES IN A SET ORDER

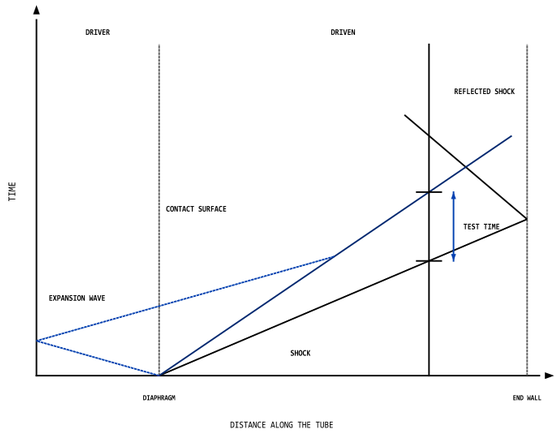
RELEASE: THE DOOR INTERLOCK IL-1 FEEDS THE RELEASE RL-1, A CIRCUIT OF ITS OWN, WHICH OPERATES THE CUTTER CU-1 AND CANNOT BE COMMANDED WITH THE DOOR OPEN; TIMING: THE SENSORS FEED THE CONDITIONER, THE TIMING UNIT AND THE ACQUISITION

NOTES

1. REFERENCE GAS, RELEASE AND TIMING CIRCUITS OF A CALIBRATION SHOCK TUBE. TAGS AND LETTERS ONLY: NO PRESSURE, SPEED, TIME, LENGTH OR SIZE VALUE IS GIVEN.
2. GAS AND VACUUM: THE CYLINDER GC-1 FILLS THE DRIVER THROUGH THE REGULATOR R-1 AND THE VALVE V-1; THE RELIEF VALVE RV-1 AND THE TRANSDUCER PT-1 SIT ON THE DRIVER. THE VACUUM PUMP PV-1 EVACUATES THE DRIVEN SECTION THROUGH V-3, THE DRIVEN GAS COMES IN THROUGH V-4 AND PT-2 READS ITS PRESSURE. THE FILLING GOES IN A SET ORDER.
3. RELEASE: THE DOOR INTERLOCK IL-1 FEEDS THE RELEASE RL-1, A CIRCUIT OF ITS OWN, WHICH OPERATES THE CUTTER CU-1 AND CANNOT BE COMMANDED WITH THE DOOR OPEN.
4. TIMING: THE SENSORS S1 TO S4 AND THE END-WALL SENSOR SE FEED THE CONDITIONER SC, THE TIMING UNIT TU-1 AND THE ACQUISITION AQ-1; CP-1 WORKS OUT THE STEP FROM THE SPEED OF THE SHOCK.
5. DETAIL A: THE WAVE DIAGRAM. DETAIL B: THE PRESSURE A SIDE-WALL SENSOR AND AN END-WALL SENSOR SEE. DETAIL C: THE STEP AGAINST THE SHOCK SPEED. THE CURVES ARE COMPUTED FROM IDEAL-GAS RELATIONS, IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT. THE ARRANGEMENT IS ON SHEET 001. NOBODY STANDS NEAR A CHARGED TUBE.

DETAIL A - THE WAVE DIAGRAM

NOT TO SCALE - COMPUTED

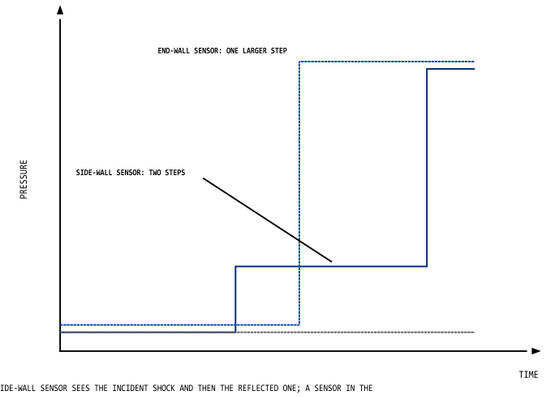


DISTANCE AGAINST TIME FOR AN EXAMPLE SHOCK: THE SHOCK RUNS DOWN THE DRIVEN SECTION AND REFLECTS FROM THE END WALL; THE EXPANSION WAVE RUNS BACK INTO THE DRIVER, REFLECTS AND RETURNS; A LONGER DRIVER DELAYS IT, SO THE TEST TIME AT A STATION IS LONGER

COMPUTED FROM IDEAL-GAS RELATIONS: A PICTURE OF THE IDEA

DETAIL B - THE PRESSURE SEEN

NOT TO SCALE - COMPUTED

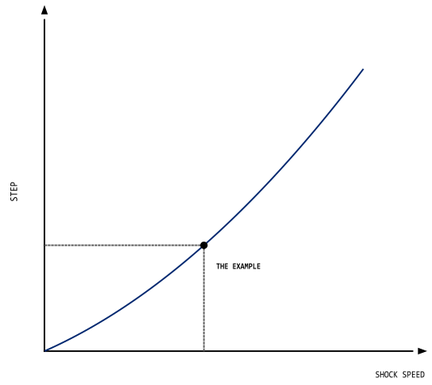


A SIDE-WALL SENSOR SEES THE INCIDENT SHOCK AND THEN THE REFLECTED ONE; A SENSOR IN THE END WALL SEES ONE STEP TO THE REFLECTED PRESSURE, AT THE MOMENT THE SHOCK ARRIVES

COMPUTED FROM IDEAL-GAS RELATIONS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - THE STEP

NOT TO SCALE - COMPUTED



THE STEP GROWS WITH THE SQUARE OF THE SHOCK SPEED, SO THE SPEED, TIMED BETWEEN SENSORS A KNOWN DISTANCE APART, GIVES THE STEP BY THE ORDINARY GAS LAWS

COMPUTED: A PICTURE OF THE IDEA

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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SHOCK TUBE TEST FACILITY - REFERENCE CONFIGURATION

GAS, RELEASE, TIMING, CURVES

THE GAS, RELEASE AND TIMING CIRCUITS AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-SHT-110-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
18-11-2026	TAGS ONLY	NMX-DO	REFERENCE