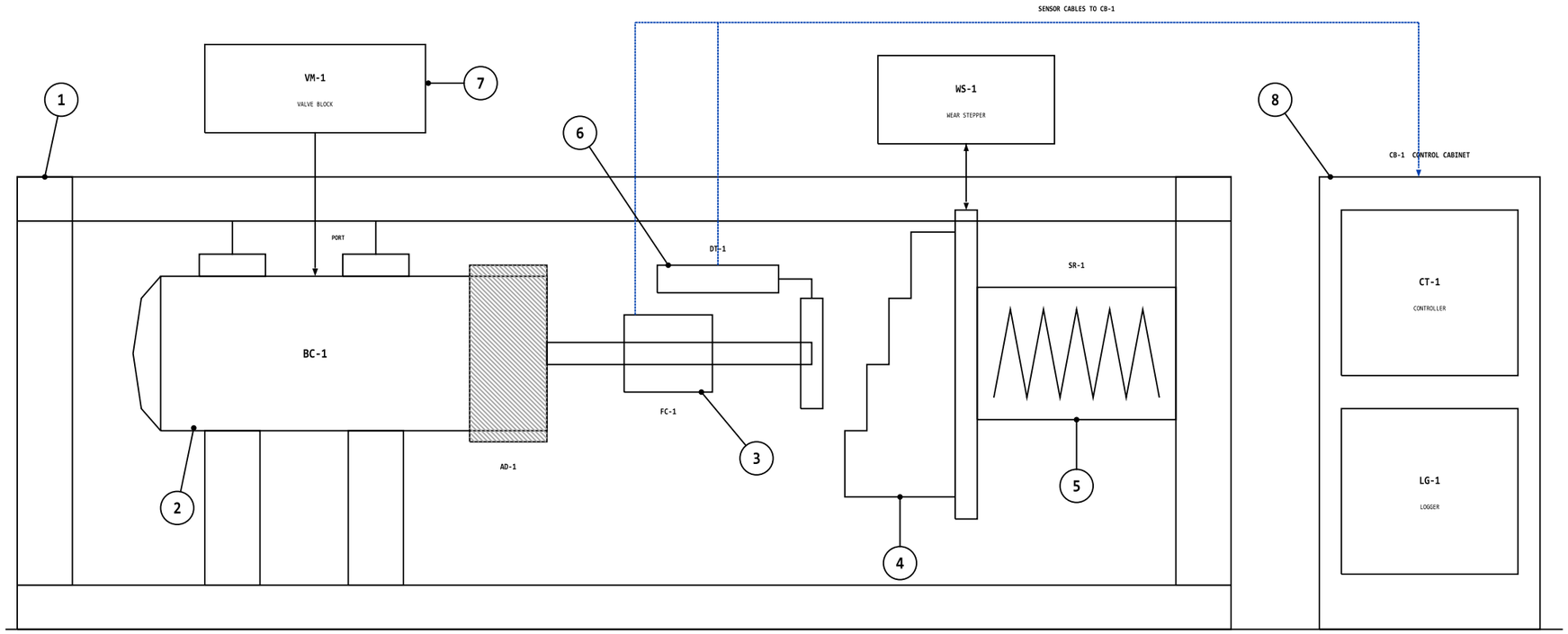
ELEVATION - BRAKE CYLINDER TEST BENCH

NOT TO SCALE



THE ROD PUSHES AGAINST THE STEPPED STOP AND THE SPRING SR-1 THROUGH THE FORCE CELL FC-1; THE STROKE SENSOR DT-1 FOLLOWS THE ROD END

THE STOP MOVES UP AND DOWN ON ITS SLIDE: EACH STEP STANDS IN FOR A STEP OF WEAR (DETAIL B); THE AIR CIRCUIT IS DETAIL C

NOTES

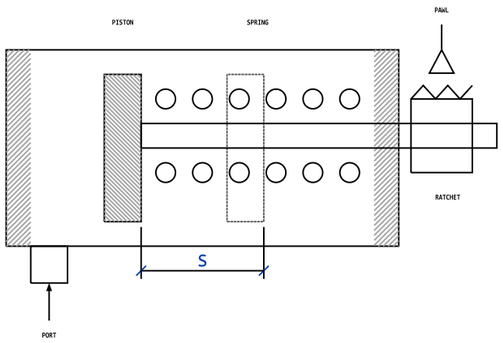
1. REFERENCE ARRANGEMENT OF A BRAKE CYLINDER TEST BENCH. LETTERS ARE DIMENSIONS SET BY DESIGN: NO PRESSURE, FORCE, STROKE, SIZE, COUNT OR TIME VALUE IS GIVEN.
2. THE ELEVATION SHOWS THE BRAKE CYLINDER BC-1 WITH ITS ADJUSTER AD-1 CLAMPED IN THE FRAME, THE ROD LOAD LINE THROUGH THE FORCE CELL FC-1 TO THE STEPPED STOP OF THE WEAR STEPPER WS-1 AND THE REACTION SPRING SR-1, THE STROKE SENSOR DT-1, THE VALVE BLOCK VM-1 AND THE CONTROL CABINET CB-1.
3. DETAIL A: THE CYLINDER IN SECTION, WITH THE STROKE s AND THE PAWL AND RATCHET OF THE ADJUSTER. DETAIL B: THE STEPPED STOP AND THE GAP g. DETAIL C: THE AIR CIRCUIT.
4. THE CHAIN 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 THE FIXTURE ARE NOT SHOWN.

ITEMS

ITEM	DESCRIPTION
1	FRAME AND FIXTURE
2	BRAKE CYLINDER BC-1, ADJUSTER AD-1
3	FORCE CELL FC-1
4	WEAR STEPPER WS-1
5	REACTION SPRING SR-1
6	STROKE SENSOR DT-1
7	VALVE BLOCK VM-1
8	CONTROL CABINET CB-1

DETAIL A - THE CYLINDER IN SECTION

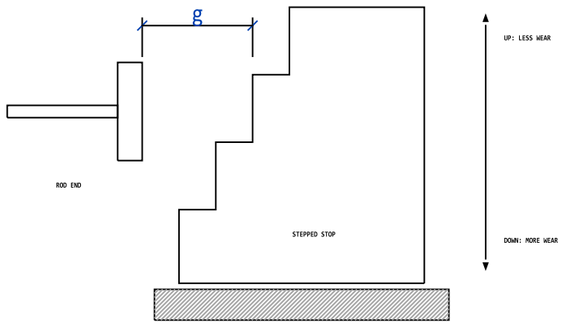
NOT TO SCALE



THE AIR PORT FEEDS THE BORE AND THE PISTON MOVES THE STROKE s AGAINST THE RETURN SPRING; WHEN s RUNS PAST ITS SET VALUE THE PAWL TURNS THE RATCHET ONE TOOTH AND THE PISTON BECOMES LONGER ON ITS RETURN, SO THE NEXT STROKE IS SHORTER

DETAIL B - THE STEPPED STOP

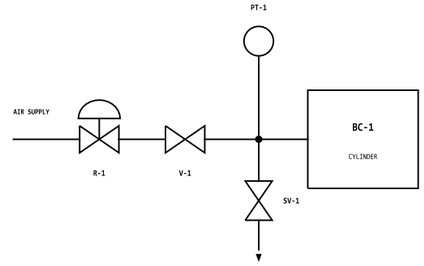
NOT TO SCALE



THE STOP IS A STAIR: MOVING IT UP OR DOWN PUTS A DIFFERENT FACE IN FRONT OF THE ROD END AND SO CHANGES THE GAP g; EACH STEP STANDS IN FOR A STEP OF WEAR, AND THE CONTROLLER APPLIES AND RELEASES THE CYLINDER AT EACH STEP, RECORDING THE LENGTH OF THE PISTON

DETAIL C - THE AIR CIRCUIT

NOT TO SCALE



AIR IS ONE REGULATED SUPPLY; THE RAMP VALVE V-1 RAISES AND LOWERS THE PRESSURE AT A SET RATE; PT-1 READS IT; THE RELIEF VALVE SV-1 PROTECTS THE CIRCUIT AND THE CYLINDER BC-1 IS FILLED THROUGH ITS PORT

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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BRAKE CYLINDER TEST BENCH - REFERENCE CONFIGURATION

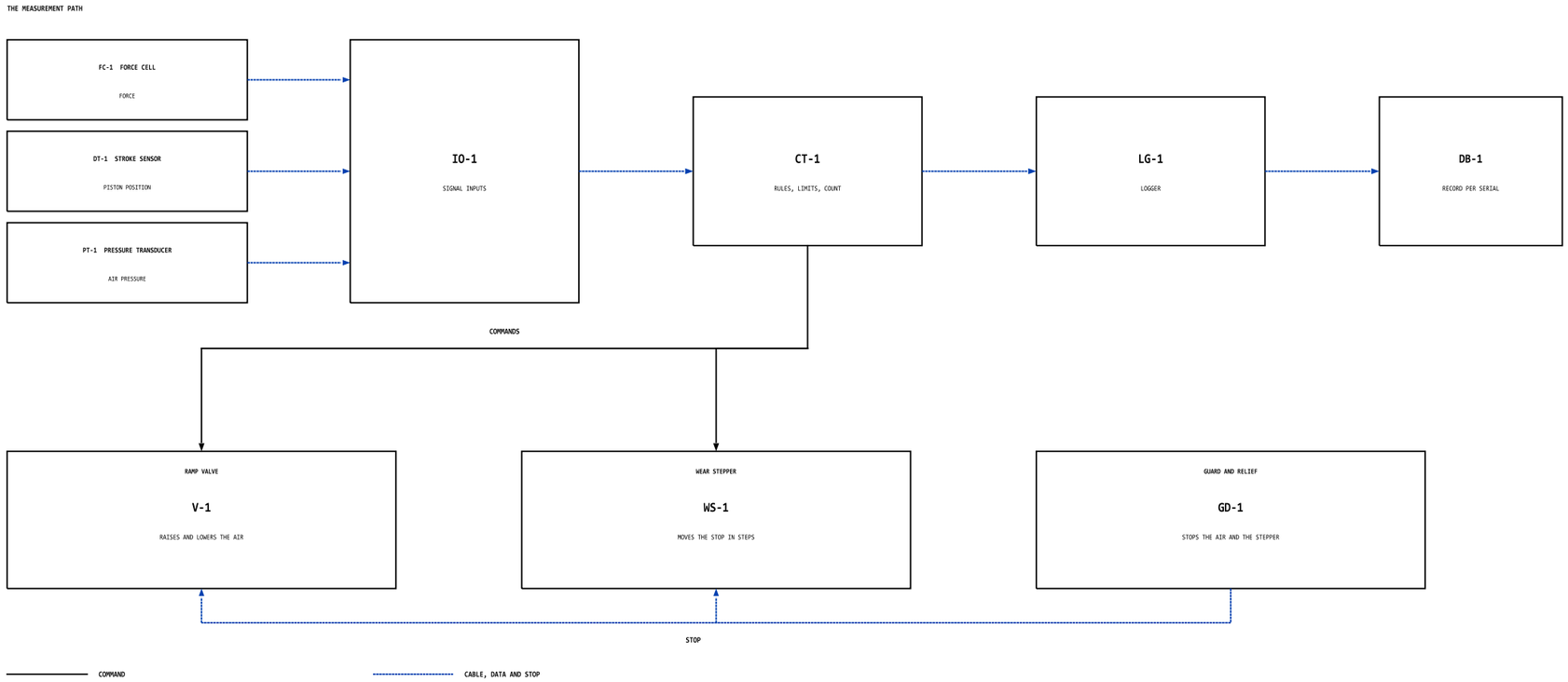
ARRANGEMENT AND DETAILS

THE BENCH, THE CYLINDER, THE STEPPED STOP AND THE AIR CIRCUIT

DWG NO	SCALE @ A3	SHEET	REV
NMX-BCS-115-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
20-11-2026	TAGS ONLY	NMX-DO	REFERENCE

SIGNAL AND CONTROL - BRAKE CYLINDER TEST BENCH

NOT TO SCALE

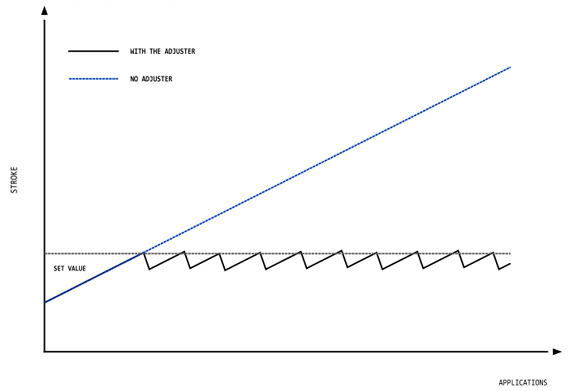


NOTES

1. REFERENCE CHAIN OF A BRAKE CYLINDER TEST BENCH. TAGS AND LETTERS ONLY: NO PRESSURE, FORCE, STROKE, SIZE, COUNT OR TIME VALUE IS GIVEN.
2. THE MEASUREMENT PATH: THE FORCE CELL FC-1, THE STROKE SENSOR DT-1 AND THE PRESSURE TRANSDUCER PT-1 FEED THE SIGNAL INPUTS IO-1, THE CONTROLLER CT-1 APPLIES ITS RULES AND LIMITS, AND THE LOGGER LG-1 KEEPS THE RECORD DB-1 OF EVERY SERIAL.
3. COMMANDS: CT-1 DRIVES THE RAMP VALVE V-1 AND THE WEAR STEPPER WS-1. THE GUARD AND RELIEF GD-1 STOPS THE AIR AND THE STEPPER.
4. DETAILS A TO C ARE COMPUTED FROM SIMPLE RELATIONS IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT. THE ARRANGEMENT IS ON SHEET 001.

DETAIL A - THE ADJUSTER AT WORK

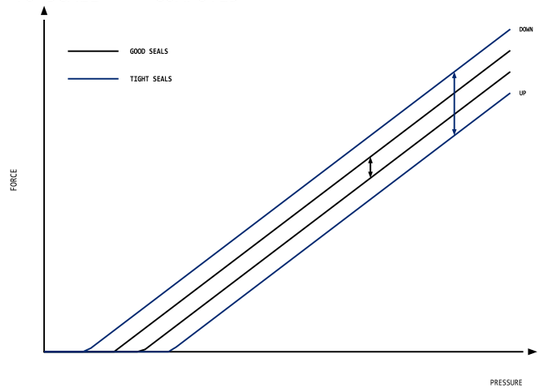
NOT TO SCALE - COMPUTED



THE STROKE RISES WITH THE WEAR UNTIL IT PASSES THE SET VALUE; THE PAWL THEN TAKES ONE STEP AND THE STROKE FALLS BACK, SO IT STAYS IN A NARROW BAND AT THE SET VALUE; WITHOUT THE ADJUSTER IT RISES FOR EVER; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL B - THE FORCE, UP AND DOWN

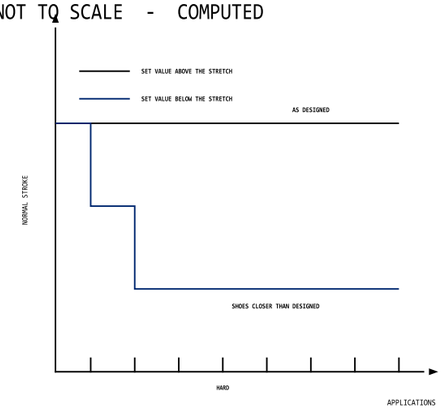
NOT TO SCALE - COMPUTED



THE FORCE IS THE PRESSURE TIMES THE AREA, LESS THE RETURN SPRING AND THE FRICTION OF THE SEALS: FRICTION HOLDS THE FORCE BACK ON THE WAY UP AND UP ON THE WAY DOWN, SO IT SHOWS AS THE GAP BETWEEN THE LINES, WIDER FOR TIGHT SEALS; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - A HARD APPLICATION

NOT TO SCALE - COMPUTED



EVERY FIFTH APPLICATION IS HARD AND STRETCHES THE BRAKE UNIT; WITH THE SET VALUE ABOVE THE STRETCH THE NORMAL STROKE IS LEFT ALONE; WITH IT BELOW, EACH HARD APPLICATION TAKES A STEP AND THE SHOES SIT CLOSER THAN DESIGNED; COMPUTED, RELATIVE UNITS: A PICTURE OF THE IDEA

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

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BRAKE CYLINDER TEST BENCH - REFERENCE CONFIGURATION

CHAIN AND CURVES

THE CHAIN OF THE BENCH AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-BCS-115-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
20-11-2026	TAGS ONLY	NMX-DO	REFERENCE