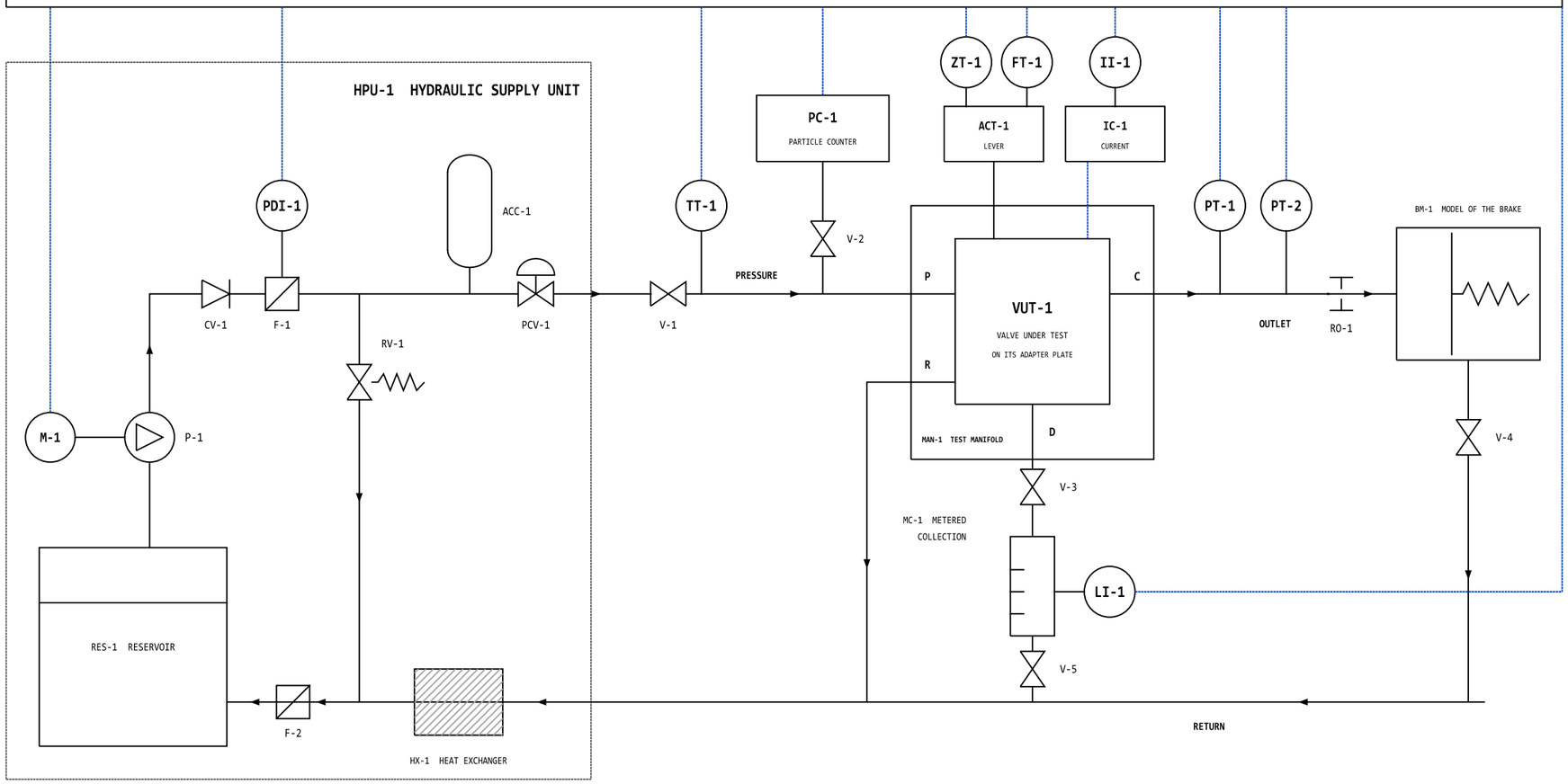
CTRL-1 CONTROLLER AND DATA RECORD

RUNS THE STEPS IN THE MAKER'S ORDER - LIMITS PRESSURE AND CURRENT - READS PRESSURE, FORCE, TRAVEL, CURRENT, TEMPERATURE, CLEANLINESS AND LEAKAGE - KEEPS THE RECORD



NOTES

1. REFERENCE SCHEMATIC OF AN AIRCRAFT BRAKE VALVE TEST BENCH. TAGS ONLY: NO PRESSURE, CURRENT, FLOW, TIME OR SIZE VALUE IS GIVEN.
2. P-1, DRIVEN BY M-1, TAKES FLUID FROM RES-1. THE PRESSURE LINE CARRIES CV-1, THE FINE FILTER F-1, ACC-1 TO STEADY THE FLOW, RV-1 TO PROTECT THE SUPPLY AND PCV-1 TO SET THE WORKING PRESSURE. PDI-1 SHOWS WHEN F-1 IS BLOCKING.
3. THE FLUID IS HELD IN TEMPERATURE BY HX-1 ON THE RETURN AND READ BY TT-1, AND IS CHECKED FOR CLEANLINESS BY PC-1 ON A SAMPLE LINE. THE RETURN PASSES THE FILTER F-2 BEFORE IT REACHES RES-1.
4. MAN-1 CARRIES VUT-1 ON AN ADAPTER PLATE, WITH PORTS P (SUPPLY), R (RETURN), C (OUTLET) AND D (DRAIN). THE SAME MANIFOLD TAKES EACH VALVE TYPE ON ITS OWN PLATE.
5. ACT-1 MOVES A BRAKE METERING VALVE AS THE PEDAL DOES: ZT-1 READS ITS TRAVEL AND FT-1 ITS FORCE. IC-1 DRIVES AN ANTI-SKID VALVE WITH A CURRENT, WITH DITHER WHERE THE VALVE NEEDS IT, AND II-1 READS THE CURRENT.
6. PT-1 IS THE REFERENCE TRANSDUCER FOR THE CURVE AND PT-2 IS THE FAST TRANSDUCER FOR THE STEP. BOTH READ AT THE OUTLET C, WHERE THE BRAKE WOULD BE.
7. RO-1 SETS HOW FAST BM-1, THE MODEL OF THE BRAKE, FILLS, SO THAT THE VALVE WORKS INTO A LOAD AND NOT A DEAD END. V-4 EMPTIES BM-1.
8. LEAKAGE LEAVES BY D AND BY R. THE DRAIN IS COLLECTED IN MC-1 FOR A SET TIME AND READ BY LI-1. V-3 ISOLATES MC-1 AND V-5 EMPTIES IT TO THE RETURN.
9. CTRL-1 RUNS THE STEPS IN THE MAKER'S ORDER, LIMITS THE PRESSURE AND THE CURRENT TO THE VALVE'S OWN LIMITS, AND KEEPS THE RECORD AGAINST THE VALVE'S SERIAL NUMBER.
10. PUMP, FILTERS, TRANSDUCERS, ACTUATOR, CURRENT SOURCE AND CONTROLLER PARTS ARE CATALOGUE ITEMS, BOUGHT IN. FOR REFERENCE SEE SAE ARP1070 AND ISO 4406. LIMITS AND SEQUENCES COME FROM THE VALVE MAKER'S MANUAL.

AIRCRAFT BRAKE VALVE TEST BENCH - PROCESS AND INSTRUMENT SCHEMATIC

NOT TO SCALE - TAGS ONLY, NO PROCESS VALUES

LEGEND

- PIPE OR HOSE
- XX-1 INSTRUMENT (TAG)
- SIGNAL
- VALVE
- FILTER
- MECHANICAL LINK
- CHECK VALVE
- PUMP
- RELIEF VALVE
- ACCUMULATOR

HOLDS AND RELEASES

CAUSE	EFFECT
TT-1 FLUID OUTSIDE ITS BAND	HOLD THE TEST
PC-1 FLUID TOO DIRTY	HOLD THE TEST, ALARM
PDI-1 F-1 BLOCKED	ALARM, STOP P-1
PT-1 OUTLET OVER ITS LIMIT	RV-1 OPENS, STOP
GUARD OPEN OR E-STOP	STOP P-1, DEPRESSURISE

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

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AIRCRAFT BRAKE VALVE TEST BENCH - REFERENCE CONFIGURATION

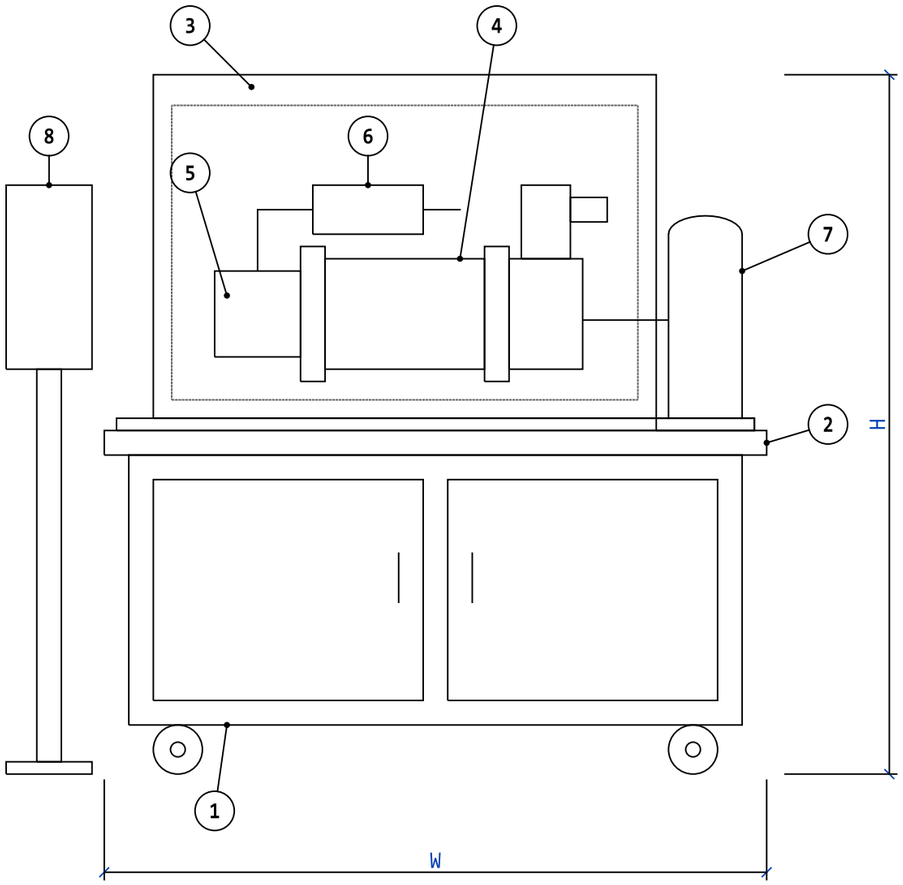
PROCESS AND INSTRUMENT SCHEMATIC

SUPPLY, MANIFOLD, DRIVES, OUTLET, LEAKAGE AND CONTROLLER

DWG NO	SCALE @ A3	SHEET	REV
NMX-ASV-91-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
04-11-2026	TAGS ONLY	NMX-DO	REFERENCE

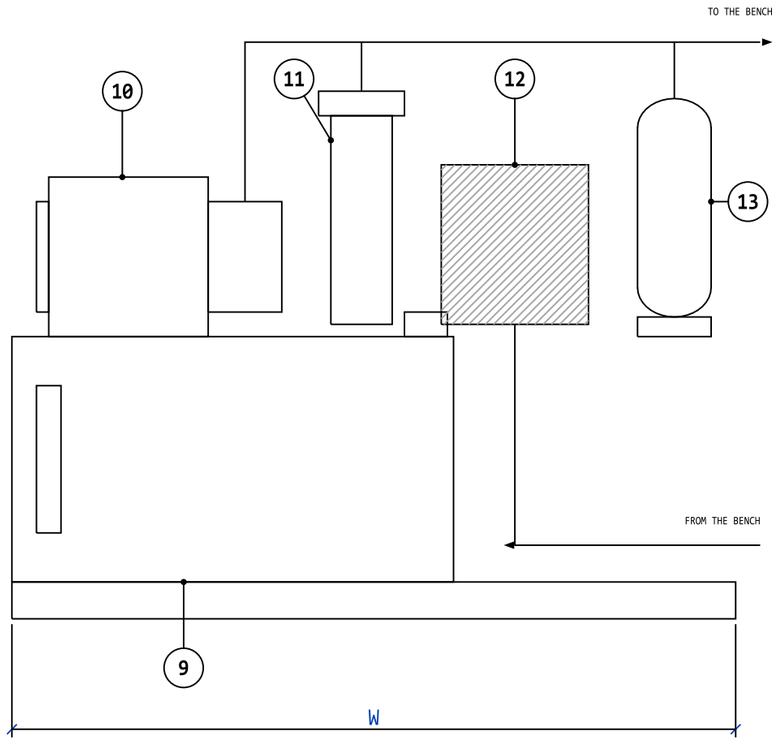
ELEVATION - TEST BENCH

NOT TO SCALE



ELEVATION - HYDRAULIC SUPPLY UNIT

NOT TO SCALE



NOTES

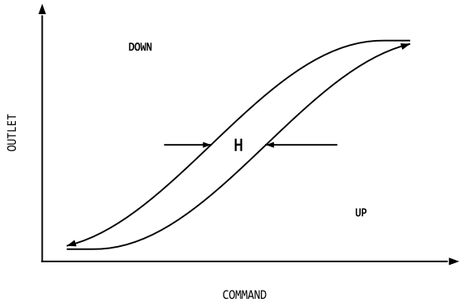
1. REFERENCE ARRANGEMENT OF AN AIRCRAFT BRAKE VALVE TEST BENCH AND ITS HYDRAULIC SUPPLY UNIT. LETTERS ARE DIMENSIONS OR TIMES SET BY DESIGN: NO PRESSURE, CURRENT, FLOW, TIME OR SIZE VALUE IS GIVEN.
2. H AND W ARE THE HEIGHT AND WIDTH OF THE BENCH, AND W OF THE SUPPLY UNIT. IN DETAIL A, H IS THE WIDTH OF THE CURVE GOING UP AND COMING DOWN. IN DETAIL B, T1 AND T2 ARE THE DEAD TIME AND THE RISE TIME.
3. DETAIL A: THE OUTLET OF A GOOD VALVE FOLLOWS ITS COMMAND. THE CURVE IS TAKEN GOING UP AND COMING DOWN, AND THE WIDTH H IS WHAT THE VALVE LOSES.
4. DETAIL B: ANTI-SKID CONTROL NEEDS A QUICK ANSWER, SO THE COMMAND IS STEPPED AND THE OUTLET IS RECORDED AGAINST A TIME BASE. SEE SAE ARP1070.
5. DETAIL C: THE MODEL OF THE BRAKE IS A VOLUME THAT FILLS AS THE PRESSURE RISES. A VALVE WORKING INTO A DEAD END LOOKS BETTER THAN IT IS.
6. THE BENCH HAS A GUARD, A DRIP TRAY AND ROOM FOR THE HANDS. THE SUPPLY UNIT STANDS BESIDE IT, JOINED BY A PRESSURE HOSE AND A RETURN HOSE.
7. THE SCHEMATIC, THE INSTRUMENTS AND THE HOLDS AND RELEASES ARE ON SHEET 001. CATALOGUE ITEMS ARE BOUGHT IN.

ITEMS

ITEM	DESCRIPTION
1	FRAME, CABINET AND CASTORS
2	WORK TOP AND DRIP TRAY
3	TEST PANEL AND GUARD
4	TEST MANIFOLD
5	ADAPTER PLATE AND VALVE
6	LEVER ACTUATOR
7	MODEL OF THE BRAKE
8	CONTROLLER ON ITS POST
9	RESERVOIR
10	MOTOR AND PUMP
11	FINE FILTER
12	HEAT EXCHANGER
13	ACCUMULATOR

DETAIL A - THE CURVE

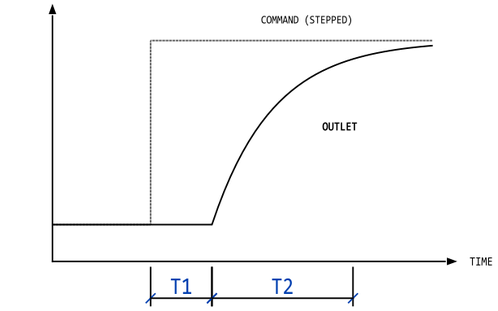
NOT TO SCALE



THE WIDTH H IS WHAT THE VALVE LOSES GOING UP AND COMING DOWN.

DETAIL B - THE STEP

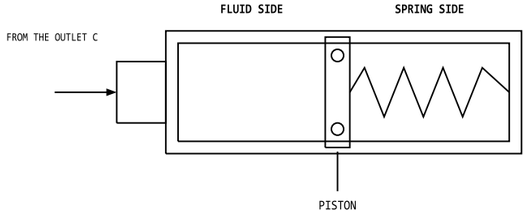
NOT TO SCALE



T1 IS THE DEAD TIME AND T2 THE RISE TIME OF THE OUTLET AFTER THE STEP.

DETAIL C - THE MODEL OF THE BRAKE

NOT TO SCALE



THE PISTON TRAVELS AS THE PRESSURE RISES, SO THE VALVE FILLS A VOLUME, AS AT A BRAKE.

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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AIRCRAFT BRAKE VALVE TEST BENCH - REFERENCE CONFIGURATION

GENERAL ARRANGEMENT AND DETAILS

BENCH, SUPPLY UNIT, THE CURVE, THE STEP AND THE BRAKE MODEL

DWG NO	SCALE @ A3	SHEET	REV
NMX-ASV-91-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
04-11-2026	TAGS ONLY	NMX-DO	REFERENCE