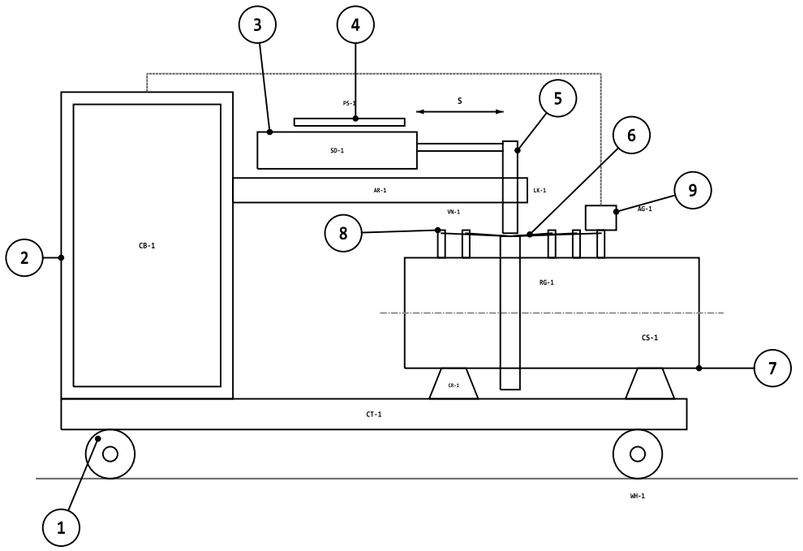
SIDE ELEVATION - VANE REGULATION RIG

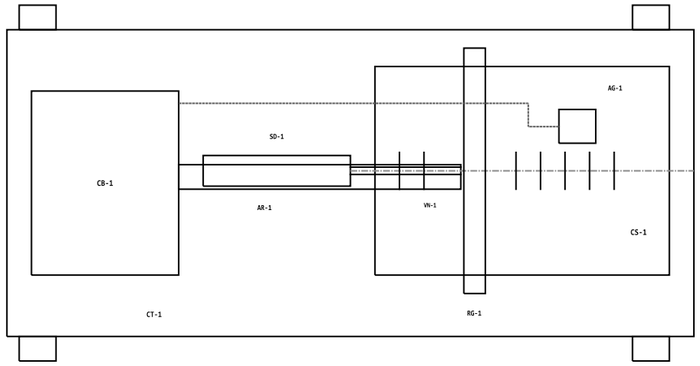
NOT TO SCALE



THE SERVO DRIVE SD-1 MOVES THE RING RG-1 THROUGH THE LINK LK-1, THE LEVERS TURN THE VANES VN-1, AND THE GAUGE AG-1 READS THE ANGLE AT THE VANE;
THE POSITION SENSOR PS-1 READS THE STROKE S, SO THE TWO READINGS ARE TAKEN TOGETHER AT EVERY REST POINT AND LAID ON THE SCHEDULE

PLAN - THE RIG FROM ABOVE

NOT TO SCALE



THE PLAN FROM ABOVE: THE ARM AR-1 CARRIES THE SERVO DRIVE SD-1 TO THE RING RG-1 ON THE CASING SECTION CS-1, AND THE GAUGE BOX AG-1
SITS BESIDE THE VANES WITH ITS CABLE LED BACK TO THE CABINET CB-1; THE CART CT-1 CARRIES THE WHOLE RIG TO THE ENGINE

NOTES

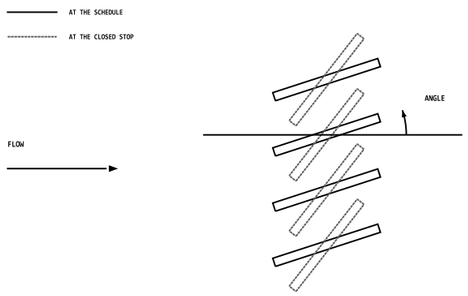
1. REFERENCE ARRANGEMENT OF A COMPRESSOR VANE REGULATION TEST RIG. LETTERS ARE QUANTITIES SET BY DESIGN: NO ANGLE, STROKE, FORCE, SIZE, COUNT OR TIME VALUE IS GIVEN.
2. THE SIDE ELEVATION SHOWS THE CART CT-1, THE CABINET CB-1, THE ARM AR-1 WITH THE SERVO DRIVE SD-1 AND THE POSITION SENSOR PS-1, THE LINK LK-1, THE RING RG-1 WITH ITS LEVERS LV-1, THE CASING SECTION CS-1 ON ITS CRADLES, THE VANES VN-1 AND THE ANGLE GAUGE AG-1; THE STROKE S IS A LETTER. THE PLAN SHOWS THE SAME RIG FROM ABOVE.
3. DETAIL A: THE VANE ANGLE. DETAIL B: THE LINKAGE. DETAIL C: THE GAUGE AND THE PROOF. NO PERSON IS DRAWN, AND NO ENGINE IS NAMED.
4. THE SEQUENCE OF A REGULATION AND THE CURVES ARE ON SHEET 002. THE DRIVE, THE SUPPLY, THE POSITION SENSOR, THE ANGLE GAUGES AND THE DATA ACQUISITION ARE CATALOGUE ITEMS, BOUGHT IN. THE RIG DOES NOT SET THE SCHEDULE AND DOES NOT REPLACE THE ENGINE'S OWN MANUAL OR THE MAINTENANCE PROCEDURE.

ITEMS

ITEM	DESCRIPTION
1	CART CT-1 ON CASTORS WH-1
2	CABINET CB-1
3	ARM AR-1 AND SERVO DRIVE SD-1
4	POSITION SENSOR PS-1
5	LINK LK-1
6	RING RG-1 AND LEVERS LV-1
7	CASING SECTION CS-1 ON CRADLES CR-1
8	VANES VN-1
9	ANGLE GAUGE AG-1
10	REFERENCE VANE RV-1

DETAIL A - THE VANE ANGLE

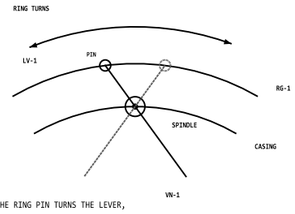
NOT TO SCALE



THE VANE ANGLE IS THE ANGLE OF THE BLADE TO THE FLOW
AND IT SETS HOW THE AIR MEETS THE ROTOR BLADES BEHIND IT;
THE DASHED BLADES ARE THE SAME VANES AT THE CLOSED STOP,
SO THE ANGLE IS READ AT THE VANE ITSELF

DETAIL B - THE LINKAGE

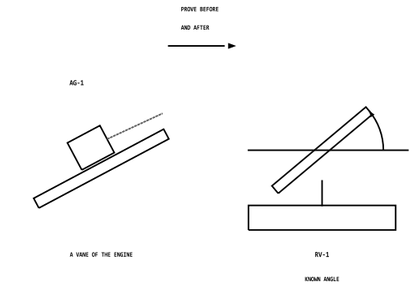
NOT TO SCALE



THE ACTUATOR MOVES THE RING, THE RING PIN TURNS THE LEVER,
THE LEVER TURNS THE SPINDLE AND THE VANE. THE SAME STROKE
GIVES A DIFFERENT ANGLE WHEN THE LEVER, THE PIN OR THE
BUSHES ARE WORN, SO THE ANGLE IS READ AT THE VANE

DETAIL C - GAUGE AND PROOF

NOT TO SCALE



THE GAUGE AG-1 IS CLAMPED TO A REFERENCE
VANE OF EVERY STAGE. THE REFERENCE VANE
RV-1 HAS A KNOWN ANGLE AND PROVES EACH
GAUGE BEFORE AND AFTER A RUN

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED
ENGINEERED IN NOIDA - INDIA

COMPRESSOR VANE REGULATION TEST RIG - REFERENCE CONFIGURATION

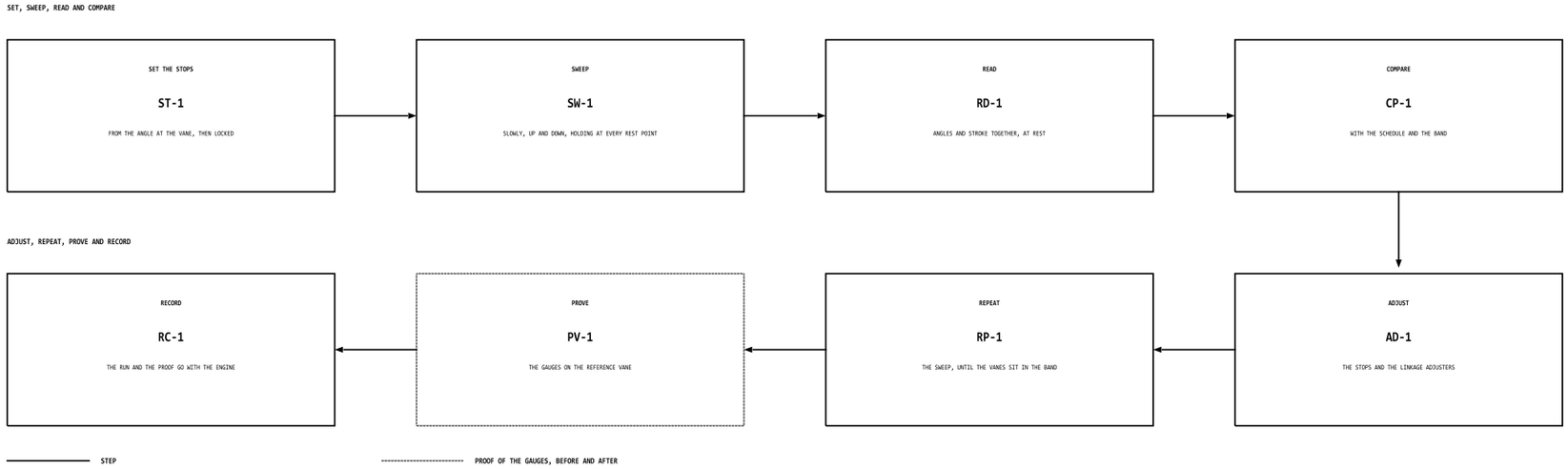
ARRANGEMENT AND DETAILS

THE RIG, THE RING AND THE VANES, AND THREE DETAILS

DWG NO	SCALE @ A3	SHEET	REV
NMX-VSV-121-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
24-11-2026	TAGS ONLY	NMX-DO	REFERENCE

SEQUENCE OF A REGULATION - VANE REGULATION RIG

NOT TO SCALE

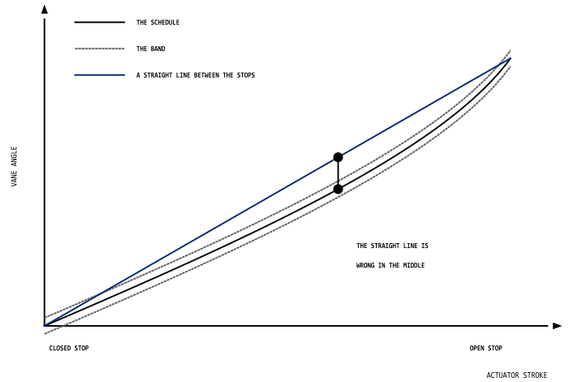


NOTES

1. REFERENCE SEQUENCE AND CURVES OF A COMPRESSOR VANE REGULATION TEST RIG. TAGS AND LETTERS ONLY: NO ANGLE, STROKE, FORCE, SIZE, COUNT OR TIME VALUE IS GIVEN.
2. THE SEQUENCE: SET THE STOPS ST-1 FROM THE ANGLE AT THE VANE, SWEEP SW-1 UP AND DOWN SLOWLY, READ RD-1 THE ANGLES AND THE STROKE TOGETHER AT REST, COMPARE CP-1 WITH THE SCHEDULE AND THE BAND, ADJUST AD-1, REPEAT RP-1 UNTIL THE VANES SIT IN THE BAND, PROVE PV-1 THE GAUGES ON THE REFERENCE VANE, AND RECORD RC-1.
3. 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.
4. THE SCHEDULE, THE BAND AND THE STOPS COME FROM THE ENGINE'S OWN MANUAL AND THE AUTHORITY THE CUSTOMER NAMES. THE RIG DOES NOT SET THE SCHEDULE AND DOES NOT REPLACE THE ENGINE'S OWN MANUAL OR THE MAINTENANCE PROCEDURE.

DETAIL A - THE SCHEDULE IS A CURVE

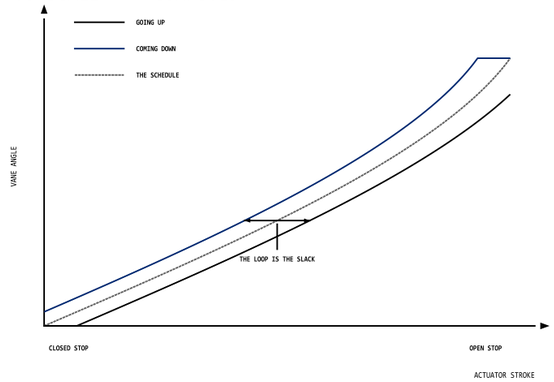
NOT TO SCALE - COMPUTED



THE SCHEDULE IS A CURVE WITH A BAND ROUND IT, SO A STRAIGHT LINE BETWEEN THE STOPS IS WRONG IN THE MIDDLE EVEN WHEN THE VANE IS RIGHT AT BOTH STOPS; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL B - UP AND DOWN DIFFER

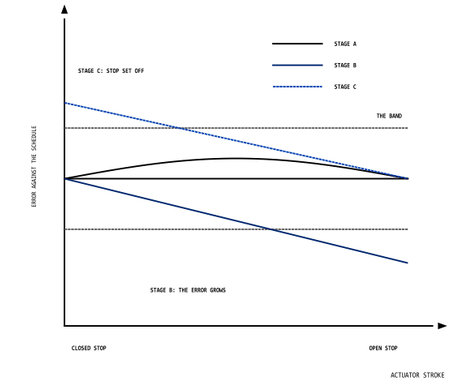
NOT TO SCALE - COMPUTED



SLACK AND FRICTION MAKE THE VANE LAG GOING UP AND LEAD COMING DOWN, SO THE TWO PATHS ENCLOSE A LOOP, AND ITS WIDTH IS THE SLACK; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - THE STAGES MUST TRACK

NOT TO SCALE - COMPUTED



EVERY STAGE HAS ITS OWN LEVER AND RING, SO A STAGE CAN LEAVE THE BAND ALONE: ONE WITH A LONG LEVER DRIFTS AS IT MOVES, ONE WITH ITS STOP SET OFF STARTS OUTSIDE; COMPUTED, RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

ENGINEERED IN NOIDA - INDIA

COMPRESSOR VANE REGULATION TEST RIG - REFERENCE CONFIGURATION

SEQUENCE AND CURVES

THE SEQUENCE OF A REGULATION AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-VSV-121-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
24-11-2026	TAGS ONLY	NMX-DO	REFERENCE