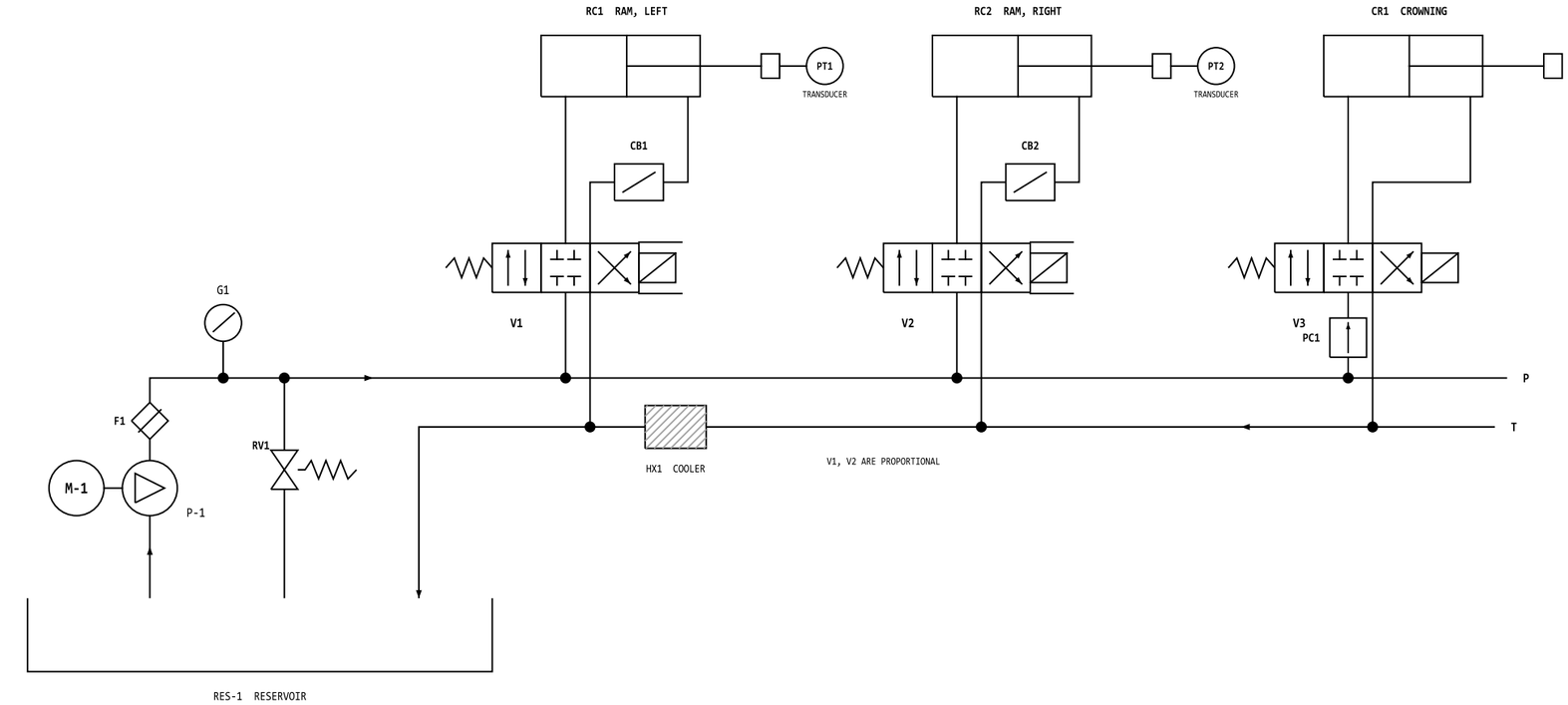
HYDRAULIC PRESS BRAKE - REFERENCE HYDRAULIC CIRCUIT

NOT TO SCALE - TAGS ONLY, NO PROCESS VALUES

HYDRAULIC CIRCUIT - ONE POWER UNIT, THREE FUNCTIONS



THE TWO RAM CYLINDERS ARE CONTROLLED ON THEIR OWN
PT1 AND PT2 TELL THE CONTROLLER WHERE EACH END OF THE RAM IS
CR1 LIFTS THE MIDDLE OF THE LOWER BEAM IN STEP WITH THE LOAD

LEGEND

- FLUID LINE
- CYLINDER
- RESERVOIR
- RELIEF VALVE
- PUMP
- MOTOR
- FILTER
- COOLER
- PRESSURE GAUGE
- POSITION TRANSDUCER
- COUNTERBALANCE VALVE
- SOLENOID

WHAT EACH STEP DOES

STEP	WHAT HAPPENS
1 APPROACH	V1 AND V2 BRING THE RAM DOWN TO THE SHEET
2 BEND	V1, V2 SET THE DEPTH; PT1, PT2 KEEP IT LEVEL
3 CROWN	V3 AND PC1 LIFT THE BED TO FOLLOW THE LOAD
4 HOLD	CB1 AND CB2 HOLD THE RAM WHERE IT IS
5 RETURN	V1, V2 LIFT THE RAM; V3 RELAXES THE CROWN

NOTES

1. REFERENCE HYDRAULIC CIRCUIT OF A HYDRAULIC PRESS BRAKE, DRAWN IN THE STYLE OF THE GRAPHICAL SYMBOLS OF FLUID POWER. TAGS ONLY: NO FORCE, PRESSURE, FLOW, SIZE, TIME OR QUANTITY VALUE IS GIVEN. THE CYLINDERS ARE DRAWN HORIZONTALLY FOR CLARITY.
2. P-1, DRIVEN BY M-1, TAKES FLUID FROM RES-1 THROUGH F1 TO THE P RAIL. RV1 LIMITS THE PRESSURE AND G1 SHOWS IT. THE T RAIL RETURNS THROUGH HX1 TO RES-1.
3. THE RAM IS DRIVEN BY TWO CYLINDERS, RC1 AT ONE END AND RC2 AT THE OTHER, EACH THROUGH ITS OWN PROPORTIONAL VALVE (V1, V2). PT1 AND PT2 REPORT THE POSITION OF EACH END, SO THAT THE CONTROLLER KEEPS THE RAM PARALLEL TO THE BED.
4. CB1 AND CB2 ARE COUNTERBALANCE VALVES ON THE ROD SIDE. THEY HOLD THE RAM WHERE IT IS AND LET IT DOWN ONLY UNDER CONTROL.
5. CR1 IS THE CROWNING CYLINDER. V3 SENDS FLUID TO IT AND PC1 SETS ITS PRESSURE, SO THAT THE MIDDLE OF THE LOWER BEAM IS LIFTED IN STEP WITH THE LOAD.
6. LINES THAT CROSS ARE NOT CONNECTED. A DOT SHOWS A CONNECTION.
7. THE LIGHT CURTAIN, THE TWO-HAND CONTROL AND THE EMERGENCY STOP ACT THROUGH THE SAFETY CIRCUIT AND STOP THE RAM; TRAPPED PRESSURE CAN BE RELEASED. CATALOGUE ITEMS ARE BOUGHT IN.
8. THE ARRANGEMENT OF THE MACHINE AND THE DETAILS ARE ON SHEET 002.

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED
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HYDRAULIC PRESS BRAKE - REFERENCE CONFIGURATION

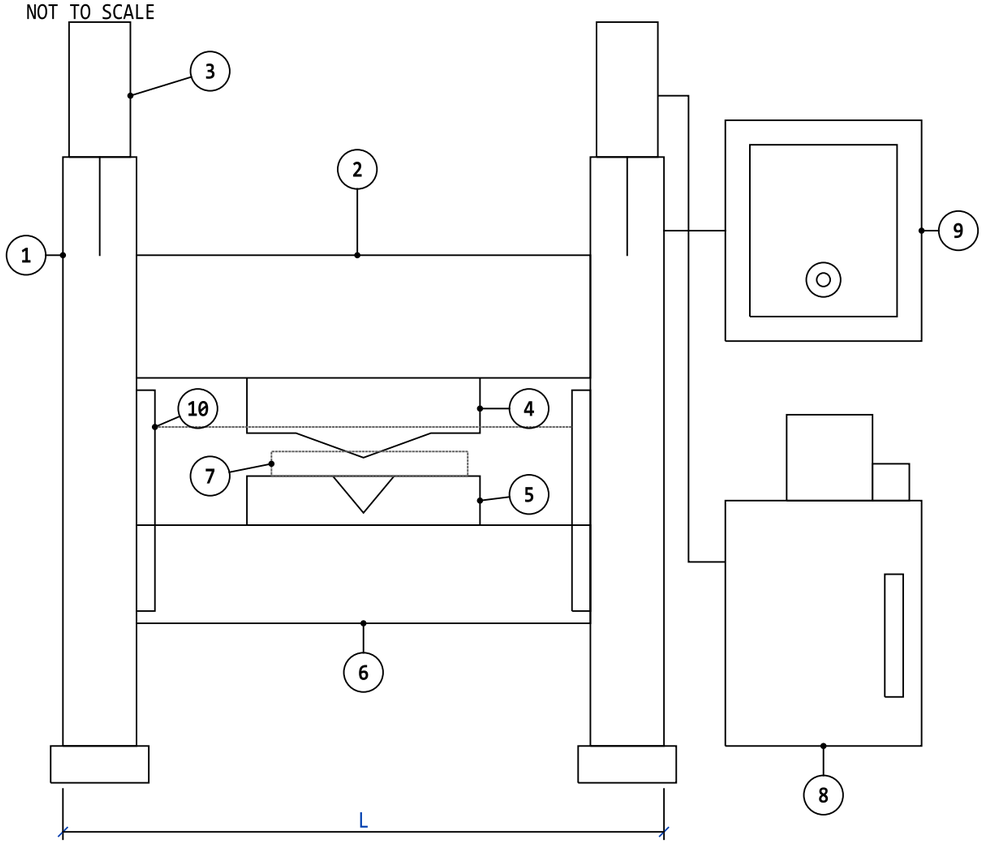
HYDRAULIC CIRCUIT

THE POWER UNIT, THE TWO RAM CYLINDERS AND THE CROWNING CYLINDER

DWG NO	SCALE @ A3	SHEET	REV
NMX-PHB-94-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
05-11-2026	TAGS ONLY	NMX-DO	REFERENCE

ELEVATION - HYDRAULIC PRESS BRAKE

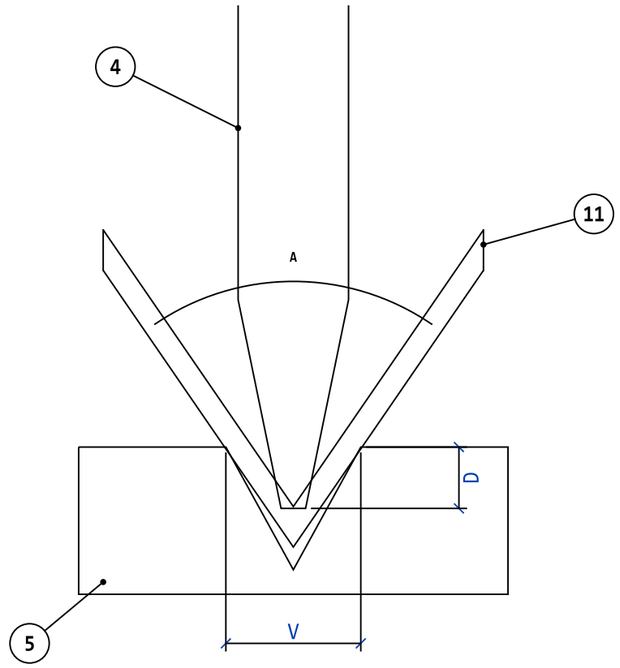
NOT TO SCALE



THE RAM IS DRIVEN BY A CYLINDER AT EACH END; THE BED CARRIES THE DIE

SECTION AT THE TOOLS - AIR BENDING

NOT TO SCALE



THE SHEET TOUCHES ONLY THE PUNCH TIP AND THE TWO SHOULDERS OF THE DIE

A DEEPER STROKE GIVES A SHARPER BEND

NOTES

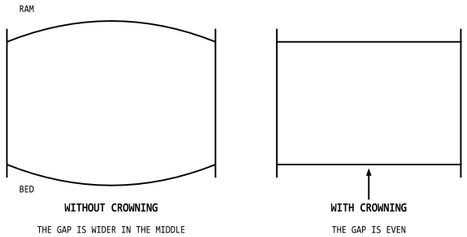
1. REFERENCE ARRANGEMENT OF A HYDRAULIC PRESS BRAKE. LETTERS ARE DIMENSIONS SET BY DESIGN: NO FORCE, PRESSURE, SIZE, THICKNESS, ANGLE LIMIT, TIME OR QUANTITY VALUE IS GIVEN.
2. THE ELEVATION SHOWS THE TWO SIDE FRAMES, THE RAM DRIVEN BY A CYLINDER AT EACH END, THE BED WITH THE DIE, THE PUNCH, THE BACK GAUGE BEHIND THEM, THE POWER UNIT, THE CONTROL CONSOLE WITH ITS EMERGENCY STOP AND THE LIGHT CURTAIN. L IS THE LENGTH BETWEEN THE FRAMES.
3. THE SECTION SHOWS AIR BENDING: THE SHEET TOUCHES ONLY THE PUNCH TIP AND THE TWO SHOULDERS OF THE DIE. V IS THE OPENING OF THE DIE, D THE DEPTH OF THE STROKE AND A THE ANGLE OF THE BEND.
4. DETAIL A: A LONG RAM AND A LONG BED DEFLECT UNDER LOAD, SO THAT THE GAP BETWEEN THE TOOLS IS WIDER IN THE MIDDLE. CROWNING LIFTS THE MIDDLE OF THE BED AND THE GAP IS EVEN.
5. DETAIL B: WITHOUT LEVEL CYLINDERS AND CROWNING THE ANGLE OPENS IN THE MIDDLE OF THE BEND. WITH THEM THE ANGLE A IS THE SAME FROM ONE END TO THE OTHER. THE MACHINE BENDS PAST THE ANGLE IT WANTS BECAUSE THE SHEET SPRINGS BACK.
6. DETAIL C: X IS THE DISTANCE FROM THE FINGER TO THE BEND LINE AND R THE HEIGHT OF THE FINGER, WHERE THE AXIS IS FITTED.
7. THE HYDRAULIC CIRCUIT IS ON SHEET 001. CATALOGUE ITEMS ARE BOUGHT IN.

ITEMS

ITEM	DESCRIPTION
1	SIDE FRAME
2	RAM
3	RAM CYLINDER
4	PUNCH
5	DIE
6	BED WITH CROWNING
7	BACK GAUGE
8	HYDRAULIC POWER UNIT
9	CONTROL CONSOLE AND STOP
10	LIGHT CURTAIN
11	SHEET

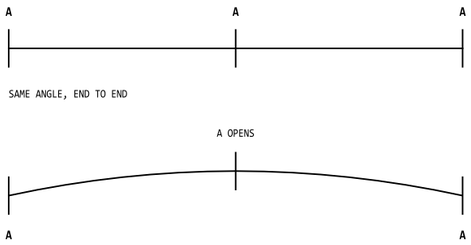
DETAIL A - DEFLECTION AND CROWNING

NOT TO SCALE



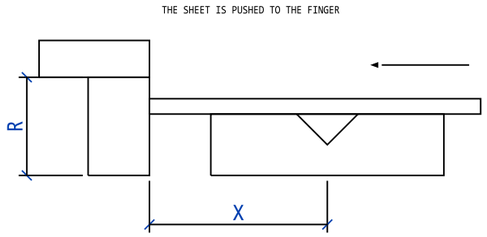
DETAIL B - THE ANGLE ALONG THE BEND

NOT TO SCALE



DETAIL C - THE BACK GAUGE

NOT TO SCALE



X DISTANCE OF THE BEND LINE

R HEIGHT OF THE FINGER

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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HYDRAULIC PRESS BRAKE - REFERENCE CONFIGURATION

GENERAL ARRANGEMENT AND DETAILS

MACHINE, TOOLS, DEFLECTION, ANGLE AND BACK GAUGE

DWG NO	SCALE @ A3	SHEET	REV
NMX-PHB-94-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
05-11-2026	TAGS ONLY	NMX-DO	REFERENCE