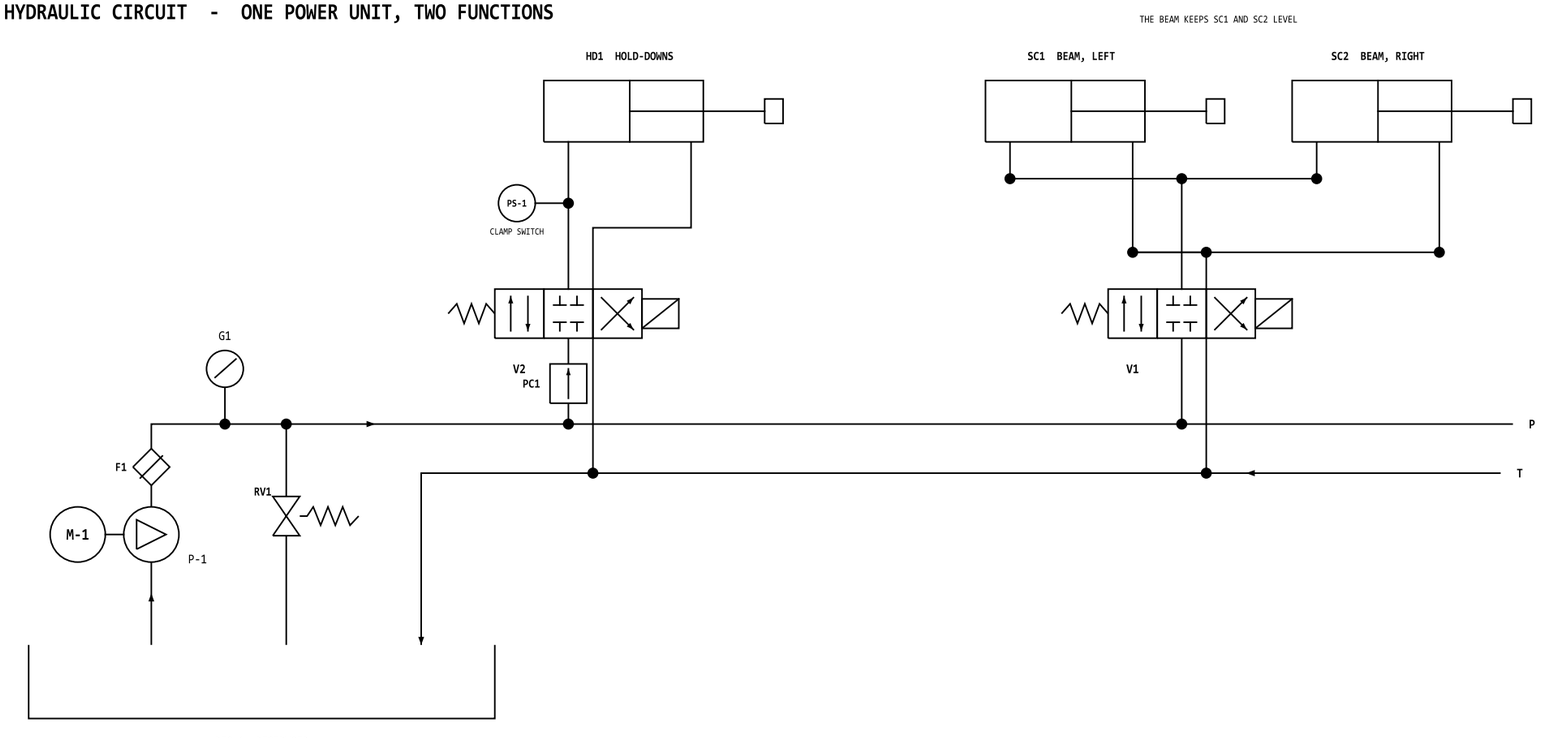
HYDRAULIC SHEARING MACHINE - REFERENCE HYDRAULIC CIRCUIT

NOT TO SCALE - TAGS ONLY, NO PROCESS VALUES

HYDRAULIC CIRCUIT - ONE POWER UNIT, TWO FUNCTIONS



V2 CLAMPS THE SHEET BEFORE V1 MOVES THE BEAM

PC1 SETS THE CLAMPING PRESSURE FOR THE SHEET

RV1 LIMITS THE FORCE SO THAT AN OVERLOAD CANNOT BREAK THE FRAME

LEGEND

- FLUID LINE
- CYLINDER
- RESERVOIR
- RELIEF VALVE
- PUMP
- MOTOR
- FILTER
- PRESSURE SWITCH
- PRESSURE GAUGE
- REDUCING VALVE
- SOLENOID
- CONNECTION

NOTES

1. REFERENCE HYDRAULIC CIRCUIT OF A HYDRAULIC SHEARING MACHINE, 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 OIL FROM RES-1 THROUGH F1 TO THE P RAIL. RV1 LIMITS THE PRESSURE, SO THAT AN OVERLOAD CANNOT BREAK THE FRAME OR THE BLADE, AND G1 SHOWS IT. THE T RAIL RETURNS TO RES-1.
3. HD1 REPRESENTS THE ROW OF HOLD-DOWNS. V2 SENDS OIL TO THEM THROUGH THE REDUCING VALVE PC1, SO THAT THE CLAMPING PRESSURE IS SET FOR THE SHEET. THE PRESSURE SWITCH PS-1 CONFIRMS THE CLAMP.
4. SC1 AND SC2 ARE THE TWO SHEAR CYLINDERS, ONE AT EACH END OF THE UPPER BEAM. V1 FEEDS THEM IN PARALLEL AND THE BEAM KEEPS THEM LEVEL. THE CONTROL OPERATES V2 BEFORE V1, AND V1 ONLY IF PS-1 CONFIRMS THE CLAMP.
5. THE GUARDS ARE INTERLOCKED WITH THE STROKE: V1 CANNOT BE OPERATED WITH A GUARD OPEN. THE EMERGENCY STOP DROPS OUT BOTH VALVES.
6. LINES THAT CROSS ARE NOT CONNECTED. A DOT SHOWS A CONNECTION.
7. THE ARRANGEMENT OF THE MACHINE AND THE DETAILS ARE ON SHEET 002. CATALOGUE ITEMS ARE BOUGHT IN.

WHAT EACH STEP DOES

STEP	WHAT HAPPENS
1 CLAMP	V2 SENDS OIL TO HD1; PC1 SETS THE PRESSURE
2 CHECK	PS-1 CONFIRMS THAT THE SHEET IS CLAMPED
3 CUT	V1 DRIVES SC1 AND SC2 AND THE BEAM DOWN
4 LIMIT	RV1 LIMITS THE FORCE OF THE CUT
5 RETURN	V1 LIFTS THE BEAM; V2 THEN RELEASES THE SHEET

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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HYDRAULIC SHEARING MACHINE - REFERENCE CONFIGURATION

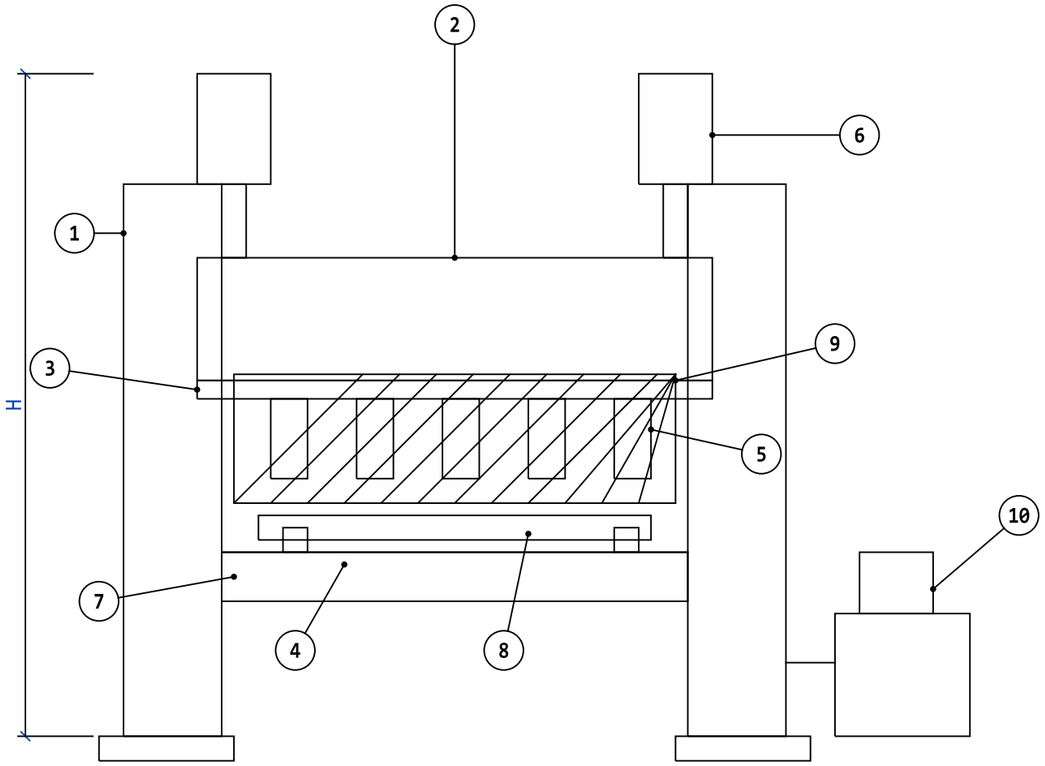
HYDRAULIC CIRCUIT

THE POWER UNIT, THE HOLD-DOWNS AND THE TWO SHEAR CYLINDERS

DWG NO	SCALE @ A3	SHEET	REV
NMX-HGS-98-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
12-11-2026	TAGS ONLY	NMX-DO	REFERENCE

FRONT ELEVATION - HYDRAULIC SHEARING MACHINE

NOT TO SCALE

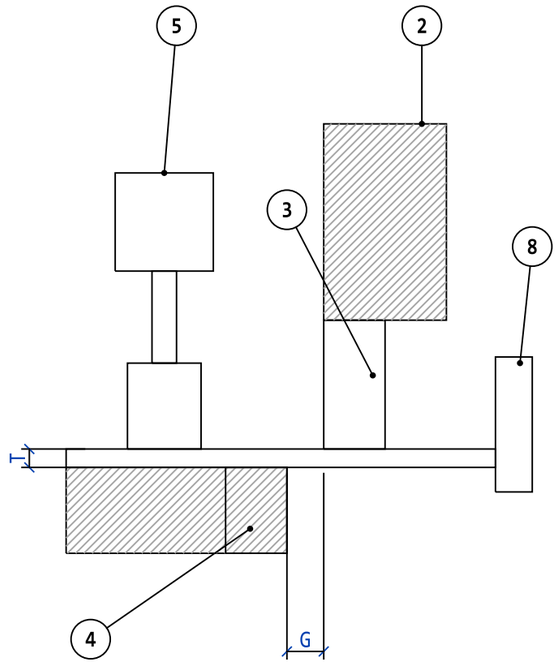


THE BEAM CARRIES THE UPPER BLADE AND IS DRIVEN BY TWO CYLINDERS

L IS THE LENGTH OF THE BLADE; H IS THE HEIGHT OF THE MACHINE

SECTION AT THE BLADES

NOT TO SCALE



THE SHEET IS CLAMPED, THE UPPER BLADE COMES DOWN PAST THE LOWER

G IS THE GAP BETWEEN THE BLADES; T IS THE THICKNESS OF THE SHEET

NOTES

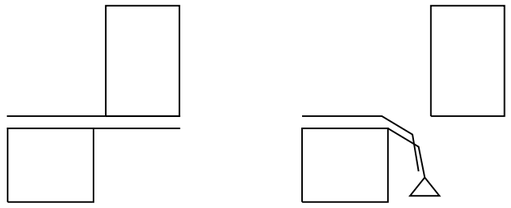
1. REFERENCE ARRANGEMENT OF A HYDRAULIC SHEARING MACHINE. LETTERS ARE DIMENSIONS SET BY DESIGN: NO FORCE, THICKNESS, LENGTH, GAP, ANGLE OR QUANTITY VALUE IS GIVEN.
2. THE FRONT ELEVATION SHOWS THE TWO SIDE HOUSINGS, THE UPPER BEAM DRIVEN BY TWO SHEAR CYLINDERS, THE ROW OF HOLD-DOWNS, THE TABLE, THE GUARD PANEL, THE BACK GAUGE AND THE POWER UNIT. L IS THE LENGTH OF THE BLADE; H IS THE HEIGHT.
3. THE SECTION SHOWS THE LOWER BLADE AT THE TABLE EDGE, THE UPPER BLADE ON THE BEAM, THE SHEET CLAMPED BY A HOLD-DOWN AND STOPPED BY THE BACK GAUGE. G IS THE GAP BETWEEN THE BLADES AND T IS THE THICKNESS OF THE SHEET.
4. DETAIL A: THE GAP IS SET FOR THE MATERIAL AND ITS THICKNESS. A RIGHT GAP GIVES A CLEAN EDGE. A GAP THAT IS TOO LARGE LEAVES A BURR AND A ROLLED EDGE, AND ONE THAT IS TOO SMALL WEARS THE BLADES.
5. DETAIL B: THE UPPER BLADE IS INCLINED TO THE LOWER BY THE RAKE ANGLE A, SO THAT THE CUT RUNS ALONG THE SHEET AND THE FORCE FALLS. THE RAKE ALSO CHANGES THE TWIST OF THE CUT STRIP.
6. DETAIL C: THE POINT OF OPERATION IS GUARDED IN FRONT AND BEHIND. THE GUARDS ARE INTERLOCKED WITH THE STROKE, AND AN EMERGENCY STOP IS WITHIN REACH.
7. THE HYDRAULIC CIRCUIT IS ON SHEET 001. CATALOGUE ITEMS ARE BOUGHT IN.

ITEMS

ITEM	DESCRIPTION
1	SIDE HOUSING
2	UPPER BEAM
3	UPPER BLADE
4	LOWER BLADE AND TABLE
5	HOLD-DOWN
6	SHEAR CYLINDER
7	SHEET SUPPORT
8	BACK GAUGE
9	GUARD PANEL
10	POWER UNIT

DETAIL A - THE GAP DECIDES THE CUT

NOT TO SCALE



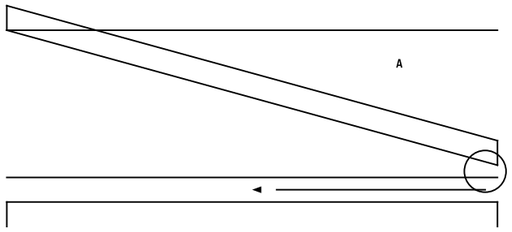
RIGHT GAP: A CLEAN EDGE

GAP TOO LARGE: A BURR AND A ROLLED EDGE

THE GAP IS SET FOR THE MATERIAL AND ITS THICKNESS

DETAIL B - THE RAKE

NOT TO SCALE



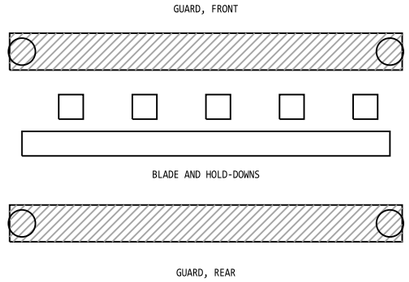
A IS THE RAKE ANGLE

THE UPPER BLADE IS INCLINED TO THE LOWER:

THE CUT RUNS ALONG THE SHEET, AND THE FORCE FALLS

DETAIL C - THE GUARDS

NOT TO SCALE



CIRCLES ARE INTERLOCK SWITCHES

NO STROKE WITH A GUARD OPEN

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

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HYDRAULIC SHEARING MACHINE - REFERENCE CONFIGURATION

GENERAL ARRANGEMENT AND DETAILS

FRONT ELEVATION, SECTION AT THE BLADES AND THE THREE DETAILS

DWG NO	SCALE @ A3	SHEET	REV
NMX-HGS-98-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
12-11-2026	TAGS ONLY	NMX-DO	REFERENCE