



EXAMPLES FROM THE HART RANGE  
OF  
**HIGH PRESSURE**  
EQUIPMENT

## Pumps and Presses for oil pressures up to 10,000 kg/cm<sup>2</sup> (150,000 psi)

### Hand pump 1000 kg/cm<sup>2</sup> (15,000 psi)

with outlet and release valves.

### Two stage hand pump 1500 kg/cm<sup>2</sup> (22,500 psi)

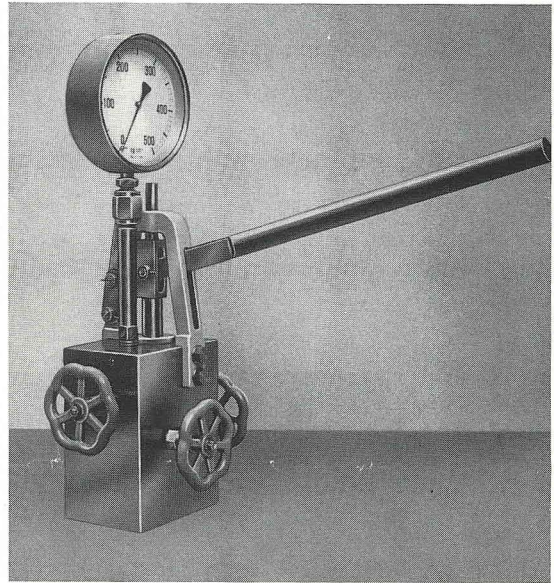
A packless pump with differential plunger. Special valve for changing the effective area of the plunger. Release valve and connection for pressure gauge.

### Presses for 3000 and 4000 kg/cm<sup>2</sup> (45,000 and 60,000 psi).

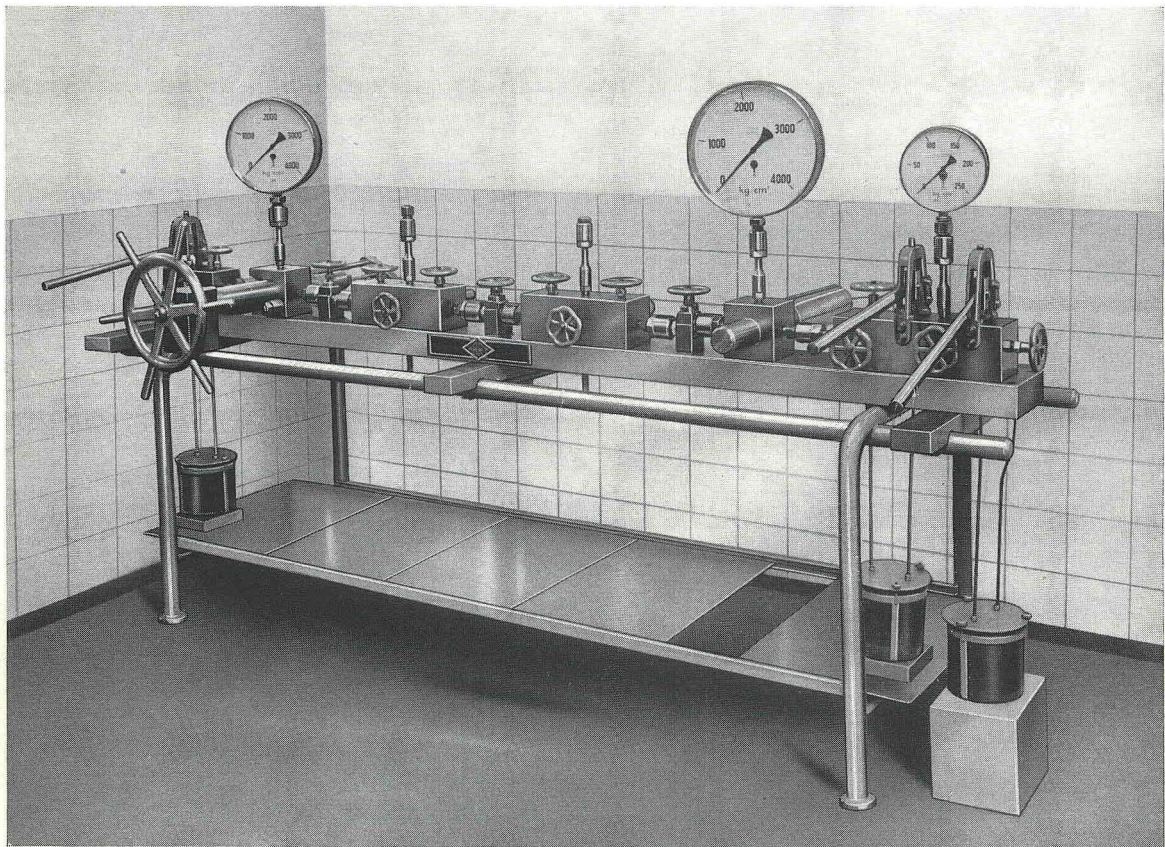
These presses are built up from separate units and can be supplied upon specification.

Typical combinations are:

- A. 3000 Ats Pressure Bench, consisting in order of:  
hand pump — screw press — valve — division block — valve.
- B. 3000 Ats Pressure Bench, consisting in order of:  
hand pump — screw press — valve — division block — valve — division block — valve.



- C. 3000 Ats Pressure Bench, consisting in order of:  
hand pump — screw press — valve — division block — valve — division block — intensifier — hand pump — low pressure hand pump for intensifier.



In principle the presses for 4000 kg/cm<sup>2</sup> (60,000 psi) are of the same construction as those for 3000 kg/cm<sup>2</sup> (45,000 psi).

Some dimensions and materials are different because of the higher pressure requirements. The press combinations can be constructed right or left hand as required.

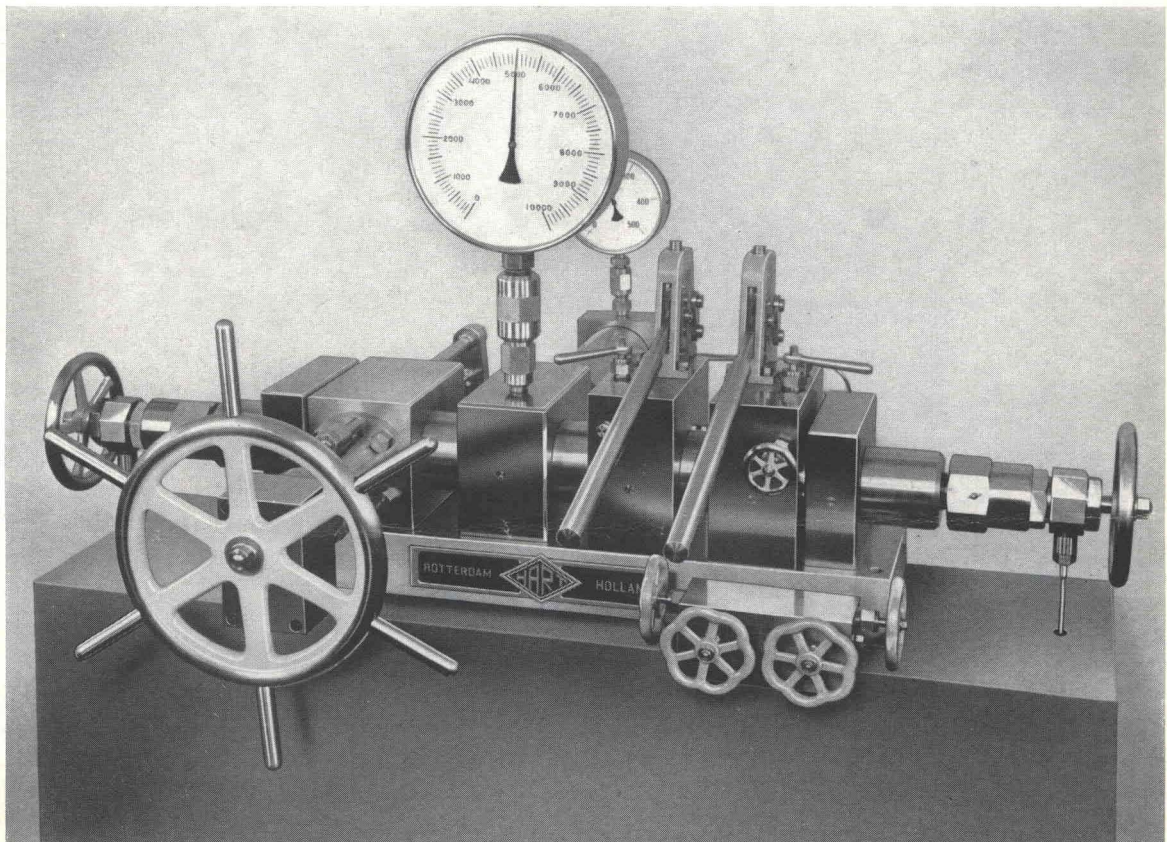
**Presses for 5000 and 10,000 kg/cm<sup>2</sup>  
(75,000 and 150,000 psi).**

The presses for 5000 and 10,000 kg/cm<sup>2</sup> are complete units in contrast with presses up to 3000 and 4000 ats, which are built up from a number of independent units.

The 5000 ats press consists of a main body with two hand pumps, an intensifier, a screw press, two connection blocks, two balanced end valves and a division block.

The 10,000 ats press consists of a main body with two hand pumps, an intensifier, two connection blocks, two balanced end valves and a division block.

All presses are mounted on a base plate, including oil reservoir, but without pressure gauges. Bourdon gauges are supplied on request.



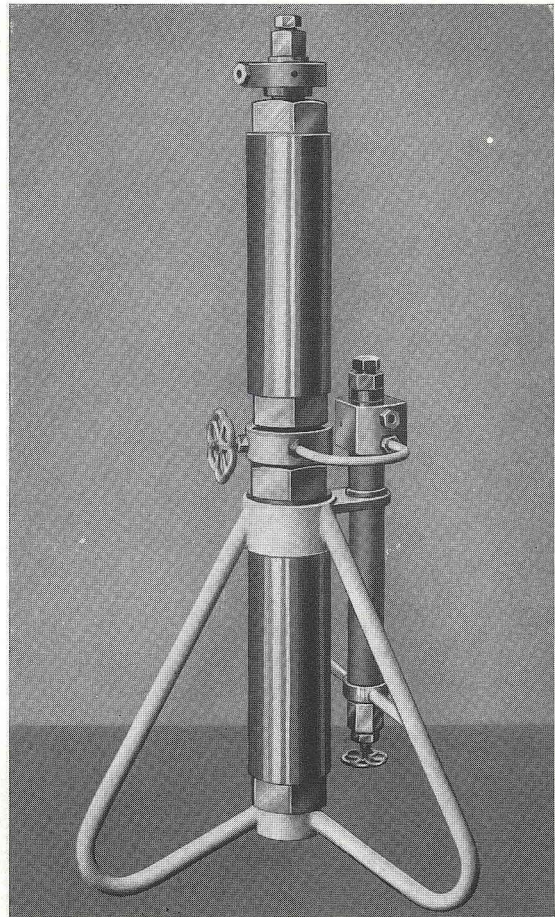
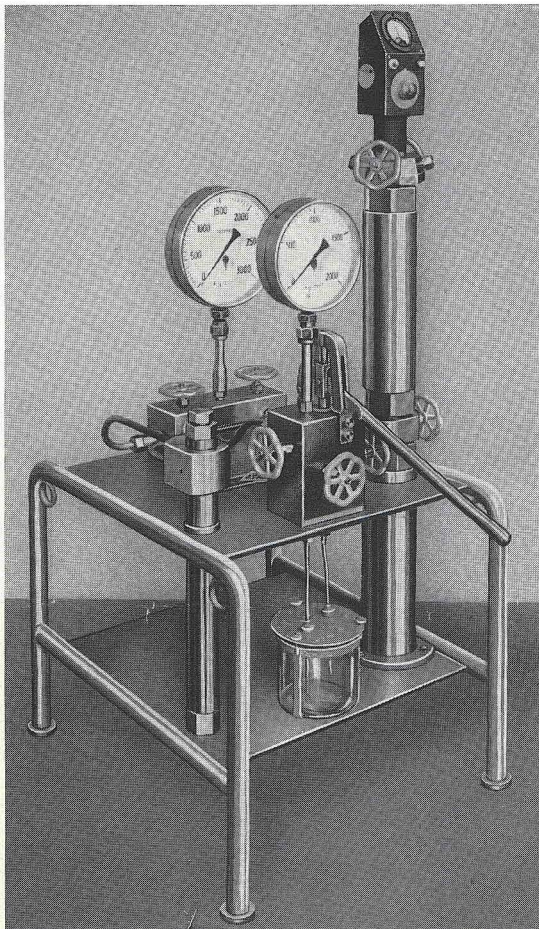
**Gas compressors with mercury piston up to 4000 kg/cm<sup>2</sup> (60,000 psi).**

These gas compressors offer the solution to the problem of compressing gases without any contamination or loss of gas.

It is an ideal combination to use in connection with experiments where relatively small quantities of very pure gases have to be handled.

Gas compressor system for 1500 ats (22,500 psi), gas volume 400, 500, 600 or 750 cc, mounted in a tripod, with electric mercury-level indicator and with mercury catch pot.

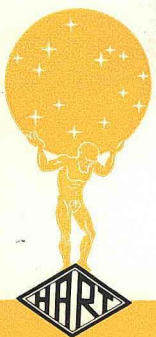
Gas compressor system for 1500 ats (22,500 psi), gas volume 400, 500, 600 or 750 cc, mounted on a steel bench, with electric mercury-level indicator, mercury catch pot and differential hand pump for 1500 ats

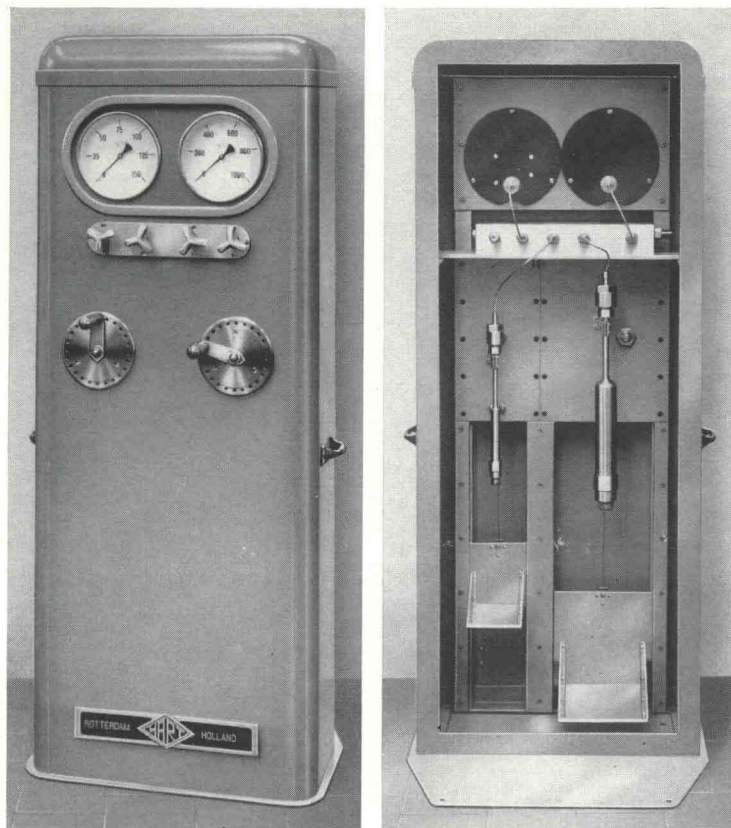


Gas compressor system for 3000 ats (45,000 psi) and 4000 ats (60,000 psi), mounted in a tripod, with electric mercury-level indicator and mercury-catch pot, gas volume 400, 500, 600 or 750 cc

Gas compressor system for 3000 ats (45,000 psi) and 4000 ats (60,000 psi), gas volume 400, 500, 600 or 750 cc mounted on a bench, with electric mercury-level indicator, mercury catch pot and differential hand pump for 1500 ats (22,500 psi) and with a 4000 ats (60,000 psi) division block.

All our gas compressors are supplied without pressure gauges and without mercury, unless specified otherwise.





**Thermal Compressor up to 1000 kg/cm<sup>2</sup> (15,000 psi).**

For compression of gases by consecutive liquefaction and evaporation. For a maximum pressure of 1000 ats, with two different sized vessels and two Bourdon gauges.

**Dead Weight Testers and Pressure Balances.**

For pressure gauge control and accurate pressure measurement.

These instruments are based on the principle of measuring pressure as the load per unit area.

**Multiple Dead Weight Tester.**

Measuring range from 3—500 kg/cm<sup>2</sup> in three steps, viz:

1st. 3—20 kg/cm<sup>2</sup> (45—300 psi)

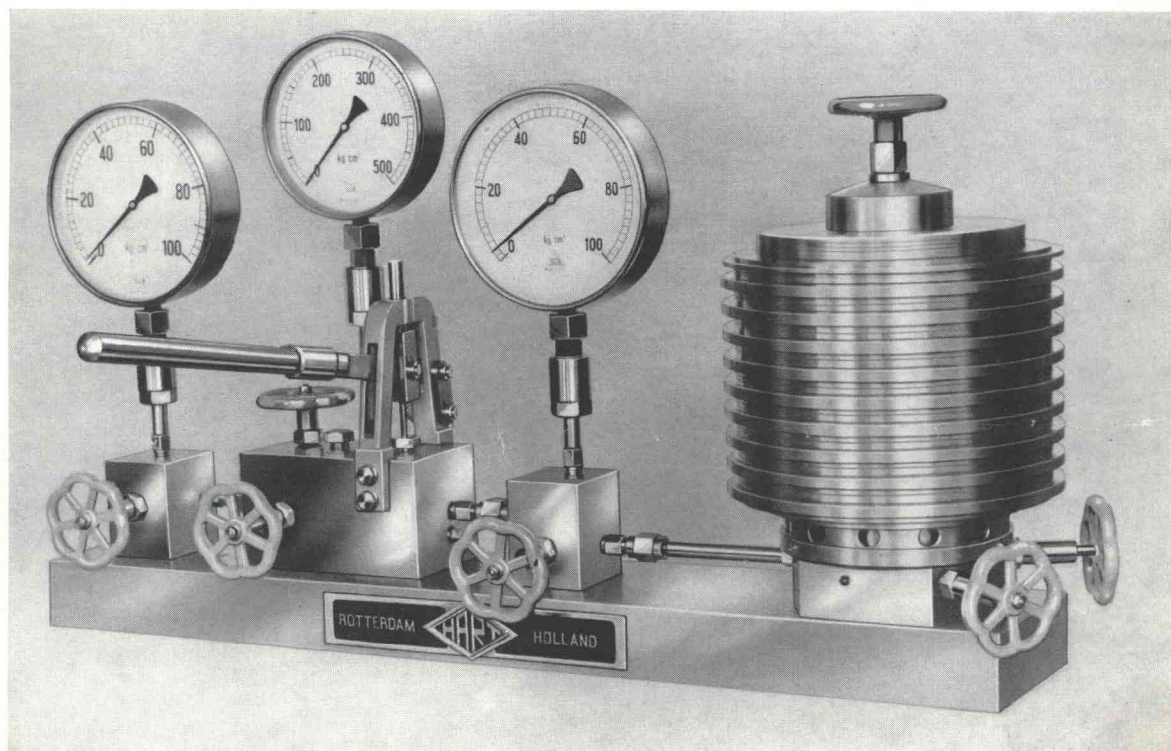
2nd. 20—100 kg/cm<sup>2</sup> (300—1500 psi)

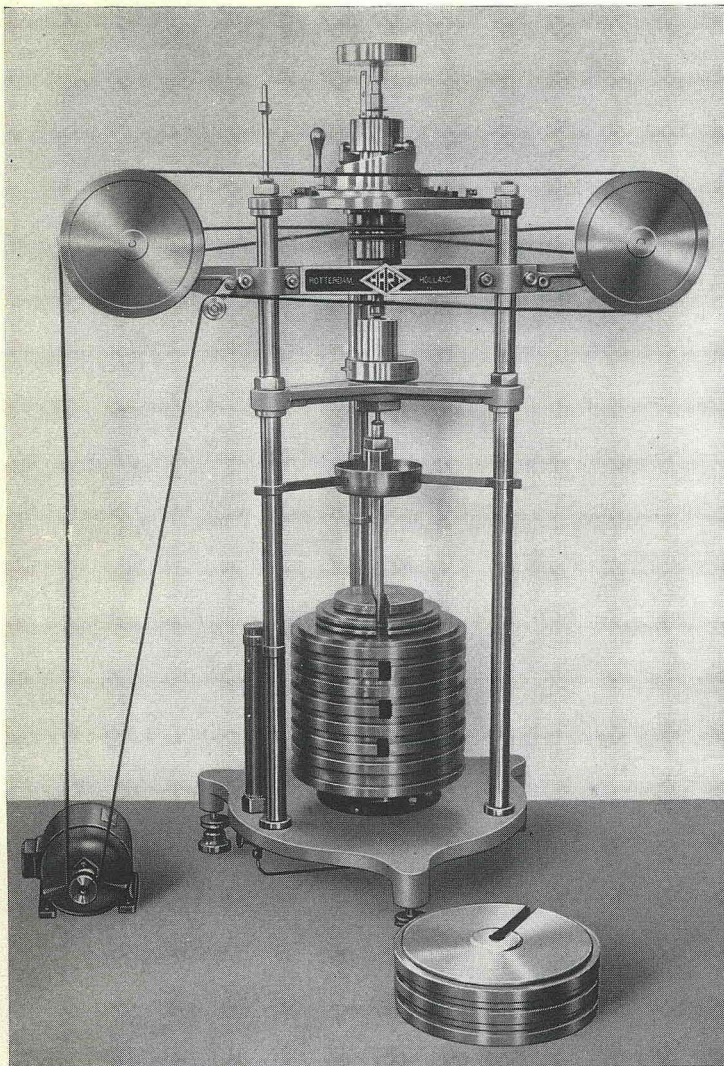
3rd. 100—500 kg/cm<sup>2</sup> (1500—7500 psi)

Accuracy: 1 : 1500.

Certificates issued by the Measuring Institute Bemetel-T.N.O. at Amsterdam.

Tester complete with hand pump and two connection blocks.





**Pressure Balance for 3000 kg/cm<sup>2</sup>  
(45,000 psi).**

With this balance can be supplied a set of 8 measuring cylinders having a total range from 3 to 3000 kg/cm<sup>2</sup> (45 to 45,000 psi).

Accuracy 1 : 10,000

Sensitivity 1 : 100,000

Reproducibility 1 : 20,000

Certificates and tables for each pressure balance and measuring cylinder are issued by the Measuring Institute Bemtel-T.N.O. at Amsterdam.

The instrument is of the differential piston type and ensures the most accurate pressure determination.

**Other products of the Hart high pressure equipment include:**

- oil pressure intensifiers up to 4000 kg/cm<sup>2</sup> (60,000 psi) with or without hand pump for the low pressure part,
- valves and fittings,
- piezometer pots for pvt measurements,
- oil driven gas compressors with floating piston,
- thermostats,
- pressure vessels,
- differential pressure gauges, etc.



**W.C. THART & ZN. - INSTRUMENTEN- EN APPARATENFABRIEK N.V.**  
ROTTERDAM (HOLLAND)