



USER'S MANUAL
T4200

T4200
VACUUM COMPARISON TEST PUMP
USER'S MANUAL

Manufactured by;

GE RUSKA

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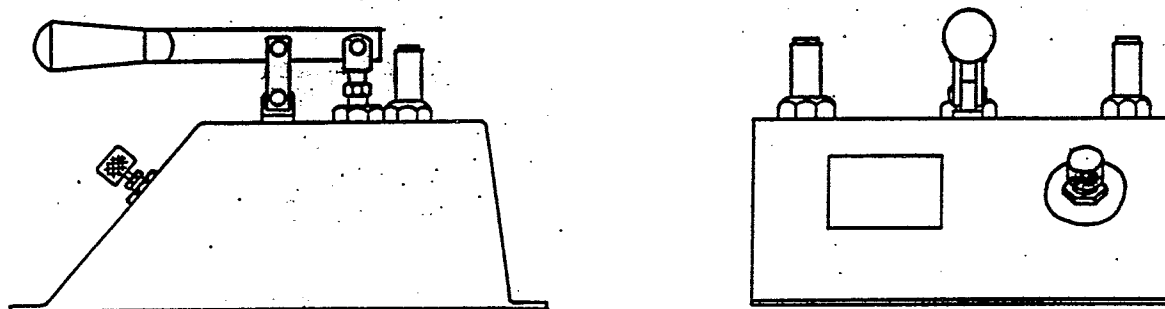
REVISION NOTICE

RELEASE NUMBER	REVISION	DATE OF REVISION	DESCRIPTION
PMAN-114-1D01	A	12/16/03	Original release.

WARNING

PRESSURIZED VESSELS AND ASSOCIATED EQUIPMENT ARE POTENTIALLY DANGEROUS. THE APPARATUS DESCRIBED IN THIS MANUAL SHOULD BE OPERATED ONLY BY PERSONNEL TRAINED IN PROCEDURES THAT WILL ASSURE SAFETY TO THEMSELVES, TO OTHERS, AND TO THE EQUIPMENT.

USERS HANDBOOK
COMPARISON TEST PUMP TYPE T4200
RANGE: 0 TO 90% Vacuum



1.0 GENERAL INFORMATION

The Comparison Test Pump is used for checking vacuum measuring instruments against Master Test Gauges.

Note: The term 'Master Test Gauge' or 'Gauge' in this document, means any vacuum measuring instrument such as: Transfer Standards, Digital Calibrators and Transducers.

This system is only as accurate as the Master Test Gauge used. The Master Test Gauge must be regularly calibrated on a Deadweight Tester (Primary Pressure Reference Standard) to ensure accuracy is maintained.

2.0 PREPARATION

2.1 Fit instrument to be tested to Test Station (3).

2.1.1 Screw the appropriate Adaptor (1) fully on to the instrument to be tested.

2.1.2 Screw assembly down ANTI-CLOCKWISE on to Test Station (3).

Note: The internal thread in the lower half of the Adaptor is LEFT-HANDED.

Hand-tight is sufficient; ensure the bottom face of the instrument to be tested contacts the Seal (2) on the Test Station.

2.1.3 To adjust position to face forward. Hold the Adaptor and unscrew the instrument to be tested ANTI-CLOCKWISE so that it faces forward. Hold the instrument to be tested steady whilst turning the Adaptor ANTI-CLOCKWISE until it pulls down on to the Test Seal (2).

2.1.4 To calibrate rear connection gauges use a T3700 Angle Adaptor - see Ancillary Equipment, Section 6.

IMPORTANT: ENSURE THAT ANY INSTRUMENT FITTED TO THE TEST STATION IS INTERNALLY CLEAN.

3.0 OPERATION

- 3.1 Ensure Decrease Valve (33) is closed.
DO NOT OVERTIGHTEN, AS DAMAGE TO VALVE SEAT CAN OCCUR.
- 3.2 Use the handpump to generate vacuum.
Note on handpump use:
Slow down-strokes will only partially contribute vacuum.
For higher values, a faster down-stroke is required.
- 3.3 Compare reading of the instrument under test with that of the Master Test Gauge.
- 3.4 For next, higher vacuum point, repeat from 3.2 above.
- 2.5 For lower points, open and close the Decrease Valve (33), slowly allowing air into the system.
- 3.6 Before removing instrument under test, equalise system by SLOWLY opening Decrease Valve (33).

4.0 FAULT FINDING

4.1 SYSTEM WILL NOT PRESSURISE

- 4.1.1 Check Decrease Valve (33) is closed.
- 4.1.2 Check for missing/damaged/dirty Seal (2) in Test Station (3).
- 4.1.3 Check that the face of the instrument under test is contacting the Test Seal (2), and the face is not dented or scored.
- 4.1.4 Check instrument under test is not leaking.

4.2 HANDPUMP HAS FAILED

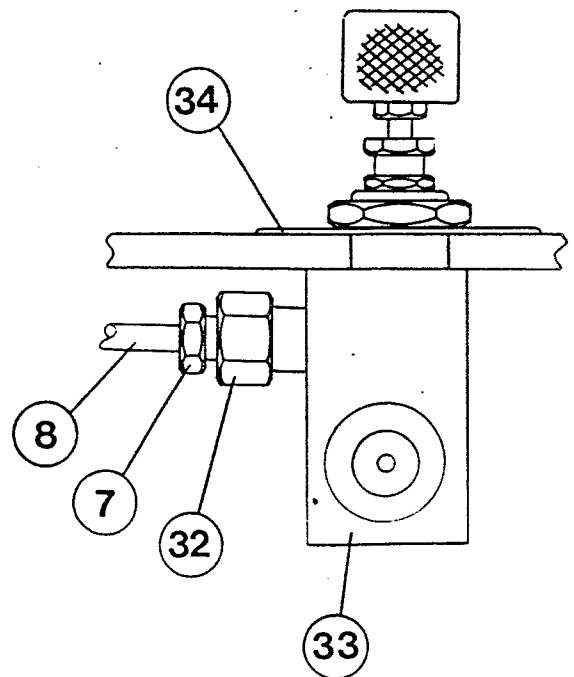
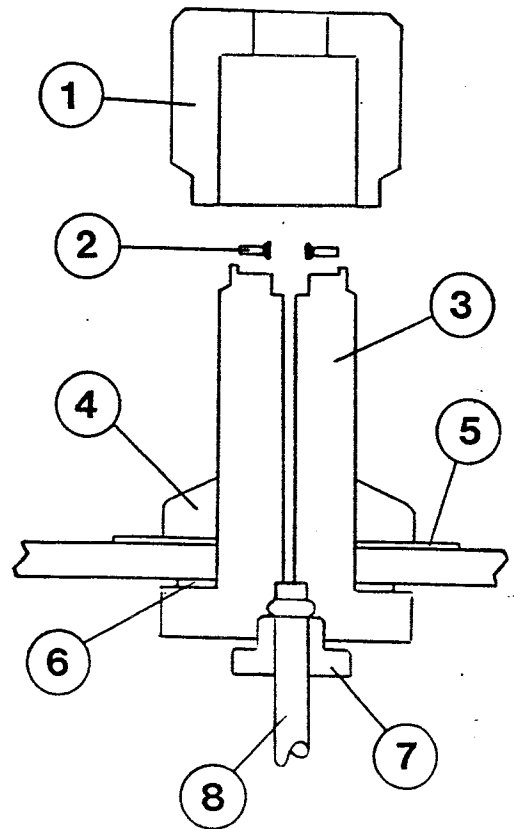
- 4.2.1 If continuous, quick pumping does not generate pressure, check 4.1.
- 4.2.2a If the system pressurises and depressurises in conjunction with the downward and upward strokes of the Pump (17), then the Outlet Non-Return Valve (30) has failed.
- 4.2.2b Disassemble valve and inspect all parts (27,28,29,30,31,35), for dirt or damage. After inspection, clean all parts thoroughly, replace as required and re-assemble correctly.
- 4.2.3 If continuous quick pumping does not generate any pressure, and all the above checks have been carried out, then the Inlet Non-Return Valve has probably failed.
The valve forms part of the piston-head (25), and is not user-servicable. Contact your local agent who will be able to supply replacement parts.

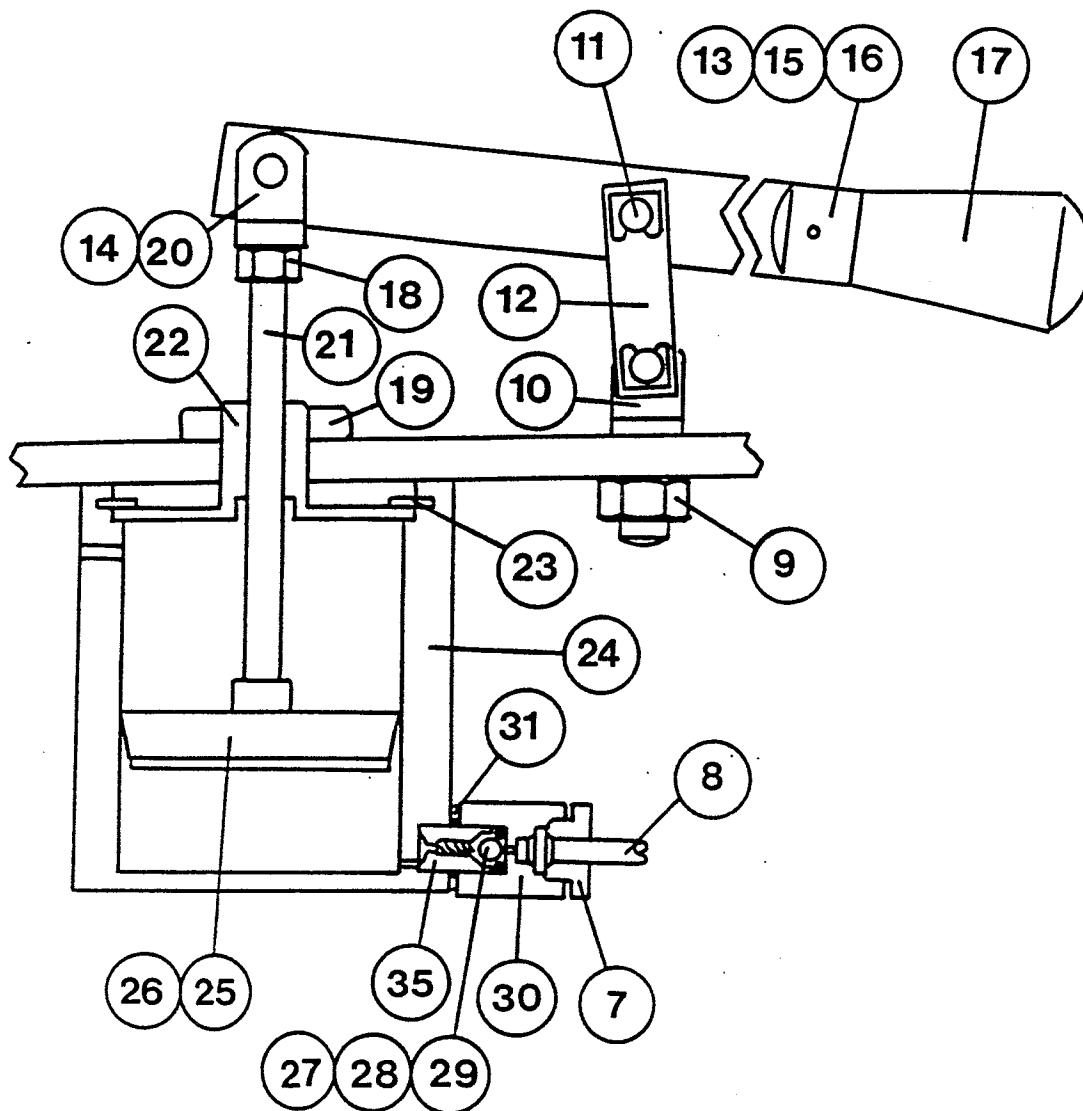
5.0 GENERAL ARRANGEMENT DRAWINGS & PARTS LISTING

ITEM	PART	DESCRIPTION
1	D1018	ADAPTORS
2	B1066	TEST SEAL
3	D1401	TEST STATION
4	D1039	DOME NUT
5	D1098	LABEL: HAND TIGHT ONLY
6	B1407	LOCK WASHER
7	B1805	MALE COUPLING
8	B1804	PIPE
9	B2421	LOCKNUT
10	D2418	EYE BOLT
11	B2411	CLEVIS PIN
12	D2408	LINK
13	D2406	ARM
14	D2407	FORK END
15	B2409	PIN
16	D2410	FORK HEAD
17	B2405	PUMP HANDLE
18	B2420	LOCKNUT
19	B1807	LOCKNUT
20	B2407A	PIN CLIP
21	D2445	SHAFT
22	D2625	TOP PLATE
23	B2627	CIRCLIP
24	D2624	BARREL
25	D2626	PISTON HEAD
26	B2628	CUP SEAL
27	B2454	SPRING
28	B4012	BALL
29	B2451	'O' RING
30	D2452	VACUUM VALVE BODY
31	B1033	BONDED SEAL
32	B1806	FEMALE COUPLING
33	T1700	VALVE ASSEMBLY
34	D1404	LABEL: DECREASE
35	D2453	VALVE INSERT

PARTS NOT ILLUSTRATED:

36	B2416	CROSS ADAPTOR
37	D4201	TEST PUMP CASE





6.0 ANCILLIARY EQUIPMENT

If you require any further information on the following equipment, please contact your local agent.

T3700 ANGLE ADAPTOR

To calibrate rear/back connection gauges in their correct position, an Angle Adaptor must be used.

The Angle Adaptor fits directly onto the Test Station, converting it through 90 degrees, allowing the same adaptors to be used.

T4600 POINTER REMOVER/PUNCH

To remove and refit the pointer of a pressure gauge. This two-in-one tool has a spring-loaded plunger to quickly and consistently refit the pointer.

T4400 DIRT/MOISTURE TRAP

Prevents instruments under test from contaminating the internal system of the Test Pump, therefore reducing the risk of non-return valve failure or contamination of subsequently tested gauges.

The unit is mounted directly onto the Test Station, any particles or moisture present can be seen through the transparent body.