

SUPERPRESSURE

PRELIMINARY - TEST

REACTION VESSELS

CATALOG NO. 41-19230, 41-19250, 41-19270

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TABLE OF CONTENTS

INSTALLATION	3
OPERATION	3
ASSEMBLY PROCEDURE	3
DISASSEMBLY PROCEDURE	4
MAINTENANCE	5
PART LIST	6

FIGURES

1	PRELIMINARY-TEST REACTION VESSEL	2
2	REACTION VESSEL CROSS-SECTIONAL VIEW	6

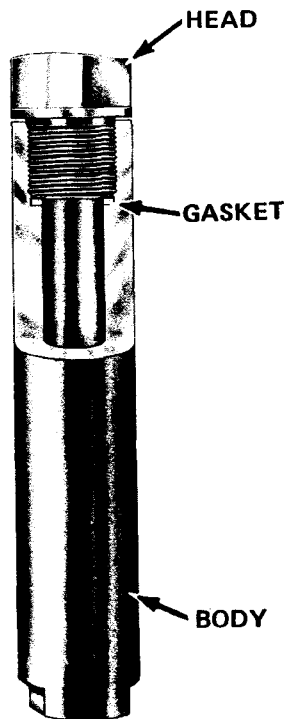


FIGURE 1. PRELIMINARY-TEST
REACTION VESSEL

These vessels are used for making simple and convenient preliminary tests of chemical reactions. The body of a reaction vessel is bored from solid bar stock. Two flats at the bottom of the reaction vessel permit it to be held with a wrench or in a vise to facilitate removal of the head. The closure is a screw-plug which is seated on a flat metallic gasket made of copper or stainless steel. A threaded opening in the head and another in the bottom of the reaction vessel are provided for connecting to 1/4-inch o.d. NSI tubing. The openings are supplied with nuts and sleeves for connecting to tubing. A 3/8-inch or 9/16-inch tubing connection can be furnished on special order.

The following apply to all models:

- Approximate weight: 8 lbs
- Outside diameter: 2 inches
- Inside diameter: 1 inch
- Inside depth: 8 inches
- Approx. Volume of reaction vessel:
103ml

The characteristics of each reaction vessel are as follows:

Cat No.	Mode of Construction	Maximum Working Pressure (lb/sq in.)			
		100°F	500°F	650°F	800°F
41-19230	A.I.S.I. 316	11,250	10,300	10,250	10,080
41-19250	A.I.S.I. 410	12,750	11,200	10,750	9,800
41-19270	Chrome-Vanadium Steel	20,250	16,880	12,800	6,780

INSTALLATION

Unpack reaction vessel and inspect for damage. Follow the guide line given in the "operation" paragraph to install and use the reaction vessel for your application.

OPERATION

The reaction vessel can handle solid, liquid, or gas samples in any combination. The operating procedure will vary according to the specific application. In general:

- If using a sealed system, follow the guideline in the "Assembly Procedure" and introduce samples into the reaction vessel according to your application.
- If you must open the reaction vessel to introduce the sample, follow the "Disassembly Procedure", introduce the sample, and then follow "Assembly Procedure" to seal the reaction vessel.

ASSEMBLY PROCEDURE

1. Tighten head on reaction vessel to a torque of approximately 225 foot-pounds.
2. Connect ¼-inch O.D. tubing to the threaded opening in the head and the bottom of the body secure with gland nuts.

3. Tighten these gland nuts to a torque of approximately 15 foot-pounds.
4. Check to ensure that all connections are secure.

The reaction vessel is now assembled.

DISASSEMBLY PROCEDURE

1. RELEASE PRESSURE FROM THE REACTION VESSEL.

WARNING

BEFORE DISCONNECTING TUBING FROM THE REACTION VESSEL, ENSURE THAT THE GAS PRESSURE IS RELEASED. IF CONTENTS OF REACTION VESSEL ARE HAZARDOUS OR IRRITATING, WEAR PROTECTIVE GLASSES AND GLOVES.

2. Loosen gland nuts and remove tubing connections.
3. Using a syringe with a large bore needle, inject solvent into the reagent vessel.
4. Plug openings and vigorously shake reaction vessel.
5. Remove plugs, rinse and drain. Repeat from step 3 as necessary.
6. Remove any residue from exterior surface.
7. Secure bottom of reaction vessel in a vise and unscrew head.
8. If required, reclean vessel and head.

MAINTENANCE

Maintenance consists of keeping the reaction vessel free from contaminants, lubricating the threads between the body and head, and replacing the head gasket, whenever necessary. The procedure follows:

1. Disassemble reaction vessel as described.
2. Clean using hot tap water and applicable solvents and /or detergent. A bristle brush may be used to remove stubborn residues.
3. Rinse with a volatile low-residue solvent or with distilled or deionized water, if water cleaned.
4. Dry with a lint free wipe and/or rinse with acetone or similar solvent. Air dry to insure removal of all liquids.
5. If stubborn residues remain, use a wood or plastic scraper to remove them and then reclean surfaces and dry.
6. Make certain that the head gasket is free of nicks or scratches - particularly radial ones. This gasket fits into recess machined into the underside of the head. Stainless-steel vessels have stainless steel gaskets which may not be distinguishable from the head. copper gaskets are easily distinguished. If necessary, replace gasket as follows:
 - A. Spring the gasket from the groove by striking it sharply with a cape chisel around the inner and outer circumferences. Do not chisel down on the face of the gasket or damage to the head will result.
 - B. Drop a new, clean gasket into the groove in the head. A slight clearance should exist between the gasket and groove. After several installations and removals of the head, the gasket will expand into the recess and a ridge will appear on the gasket.

7. Lubricate the threads on the body and head with lubriplate 130A (62147002300). Every precaution should be taken to prevent this lubrication from entering the internal body of the reaction vessel.
8. Assemble the reaction vessel as described in the "Assembly Procedure".

PARTS LIST (See Figure 2)

REF NO.	DESCRIPTION	Part No.		
		41-19230	41-19250	41-19270
1	GLAND NUT (2REQ.)	45-11313	45-11313	45-11313
2	INNER SLEEVE (2REQ.)	45-11316	45-11316	45-11316
3	BODY	53063000200	53063000203	53063000201
4	GASKET*	P1604014900 (S.S)	P1604014900 (S.S)	P1604014800 (COPPER)
5	HEAD	5306300300	5306300303	5306300301

* The stainless steel and copper gaskets can be used interchangeably.

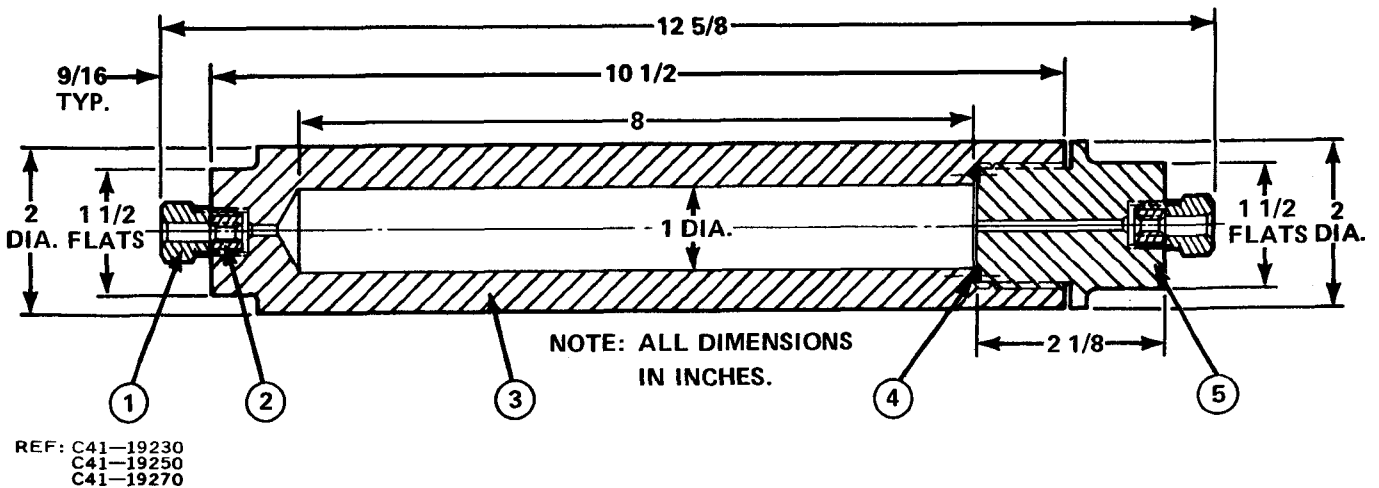


FIGURE 2. REACTION VESSEL CROSS-SECTIONAL VIEW