

TECHNICAL MANUAL

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT MAINTENANCE MANUAL:
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
BWO POWER SUPPLY,**

PRD TYPE

816-S10

**This copy is a reprint which includes current pages from
Changes 1 and 2.**

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 INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST:
 BWO POWER SUPPLY, PRD TYPE 816-S10

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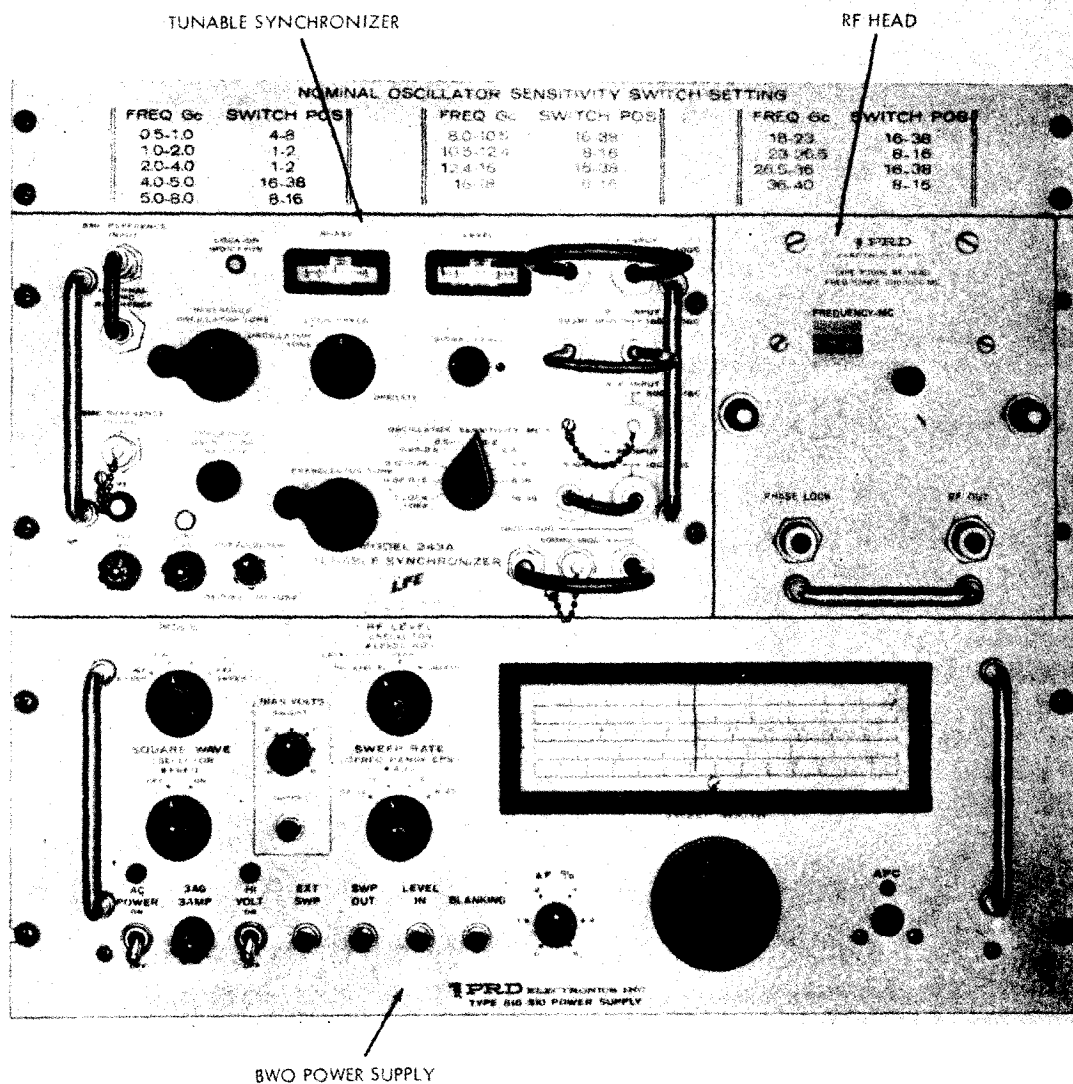


Figure 1. PRD 816-S10 BWO Power Supply Installed in Signal Source

SECTION O

GENERAL

Scope

This manual includes installation and operation instructions and covers organizational, direct support (DS), and general support (GS) maintenance. It describes the BWO Power Supply, PRD Type 816-S10.

Indexes of Publications

DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine if there are any new editions, changes, or additional publications pertaining to the equipment.

DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Forms and Records

Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions given in TM 38-750.

Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in DOD 4140-34-M.

Discrepancy in Shipment Report. Fill out and forward Discrepancy in Shipment Report (DIS-REP) (SF 361) as prescribed in AR 55-38 (Army), NAVSUP Pub 459 (Navy), AFM 75-34 (Air Force), and MCO P4610.19 (Marine Corps).

Reporting of Equipment Publication Improvements. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Missile Command, AMSMI-MFM, Redstone Arsenal, AL 35809.

SECTION I

INTRODUCTION

The PRD 816-S10 BWO Power Supply (figure 1) provides operating voltages for a Signal Source that consists of the Power Supply, an RF Head, and a Tunable Synchronizer. The Signal Source covers the frequency range of 500 mc to 40 gc in eight separate bands, the selection of which is obtained by interchanging the RF Head.

The RF Head provides a continuously variable frequency output within the selected band. This output is sampled by the Tunable Synchronizer which provides a drift-correction voltage for the rf output. The Tunable Synchronizer is manufactured by LFE Instruments, and is described in a separate manual. Coverage in this manual is limited to the Power Supply.

The operating voltages provided by the Power Supply comprise a helix source, variable from +100 to +2,500 volts; a collector source, fixed at +130 volts with respect to the helix; an anode supply, variable from 0 to +200 volts; and a regulated filament supply, fixed at 6.3 volts. In addition, the Power Supply contains a varactor bias source which is variable between 0 and -6 volts.

Various sweep and modulating modes may be selected through separate control circuits. These circuits consist of:

1. A square wave generator, which optionally modulates the rf power level by modulating the anode supply, adjustable from 800 to 1200 cps.
2. A leveler amplifier, which allows alternate leveled operation from either a crystal detector or a thermistor input. Alternatively, unleveled operation is also possible.
3. A ΔF source, which sweeps the helix over a range that corresponds to five percent of the frequency band.