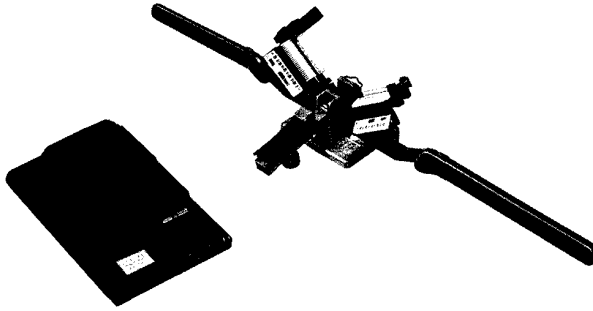


**Portable Hand Operated Tool (MI-1)**  
Refer to IS 408-7559



**Lacing Fixture**  
Refer to IS 408-7559

**Standard Tool Part Number 229378-1**

The standard portable hand-operated tool (MI-1) is designed for field applications and medium volume production and is capable of terminating all connectors up to 50 positions with 90° wire dress.

**Lacing Fixture Part Number 230328-3**

90° or 180° wire dress can be obtained with the MI-1 tool by using the removable lacing combs and placing them in the lacing fixture (shown above and ordered separately) all connectors up to 50 positions. Will not accommodate 64 positions.

**Comb Kit\* (6 per kit) Part Number 230327-1**

For greater productivity, additional operators can use additional comb sets and lacing fixtures with a single tool.

\*50-position Comb No. 231619-1 is for small conductor diameter insulation (less than .035 [0.89]) and two are required per MI-1 Tool.

**Note:** Best results obtained with conductor diameter to .045 [1.14] Max. with PVC insulation.

**Half-Tap Tool Part Number 229378-3**

For half-tap (daisy chain), 90° wire dress applications.

**Multiple Wire Tool (90° wire dress) Part Number 2-229378-0**

**Multiple Wire Conversion Kit Part Number 230596-1**

If required, the standard tool may be converted to multiple wire termination capability by use of separate multiple wire tools or a simple conversion kit.

**50-Position Tool Part Number 231925-1**

**64-Position Tool Part Number 231880-2**

**F-Slot conversion tool for existing MI-1 Part Number 231928-1**

For termination of F-Slot Cable Connectors.

**64-Position Tool Part Number 231880-1** Reference IS 408-9412

The 64-position Comb Kit No. 231619-3 for small conductor diameter insulation (less than .035 [0.89]).

For termination of 64-position, 90° wire dress connectors only.

**Back-to-Back Connector Tool Part Number 2-229378-3**

For termination of IEEE-488 back-to-back cable connectors, Part Numbers. 554815, 555182 and 555183.

**Conversion Kit, Color Code Bar Part Number 224105-1**

For termination of CHAMP System 5 Connectors.

**Palm Grip Hand Tool Kit**  
Part Number 229764-2, 14-64 Positions  
Part Number 229451-2, 50-Position Only  
Refer to IS 408-7642



The Palm Grip Hand Tool Kit is recommended for field application and low volume production. The kit includes the items listed in the chart below.

Item	Part Number
Palm Grip Tool	229451-1
Index Slides for:	
14 Positions	229706-1
24 Positions	229707-1
36 Positions	229708-1
50 Positions	229621-1
64 Positions	229709-1
Cable Clamp	229622-1
Ratchet Release	229765-1
Insertion/Extraction Tool	230238-1
Tool Carrying Case	229710-1

**T-Handle Wire Insertion Tool**  
Part Number 229384-1  
Refer to IS 408-7558



The T-Handle Wire Insertion Tool is designed for minor repair work on all CHAMP connectors. It does not have the capacity of shearing the wire in the termination process.

**Terminal Insertion/Extraction Tool**  
Part Number 230238-1  
Refer to IS 408-7787



The Insertion/Extract tool is designed to replace damaged contacts in the CHAMP plug and receptacle connectors.