

SECTION 3 GENERAL TAPE INFORMATION

This section describes the evaluation of blank tapes, the duplication of master tapes, the labeling of tapes, and the care of tapes and the tape drive. The tapes you buy from Gould are master tapes; they contain the appropriate software but are not used directly for programming. A copy of a master tape called a working tape must be made for programming.

NOTE

There is no need to duplicate master tapes when using a Gould 884 or Micro 84 PC. All tapes supplied by Gould for use with these PC's are "working tapes."

3.1 TAPE EVALUATION

Before a blank tape (new or used) can be made into a working tape, it must go through the tape evaluation procedure on the Tape Loader Tape (T190-001). The evaluation procedure writes and verifies the quality of a blank tape, making two staggered passes so that the entire tape is evaluated and slack caused by temperature changes is eliminated. The evaluation procedure takes about twenty minutes (10 minutes per pass) to complete.

NOTE

Working tapes are not used with all controllers. The Tapes supplied with 884 and Micro 84 PC's are all "working tapes." There is no need to duplicate these tapes. Also, the 884 and Micro 84 PC's have their own Tape Loader Tapes which are only used with these controllers. Please refer to the appropriate programming manual for more detailed information.

To evaluate a tape:

1. If evaluating a used tape, first erase the tape with a bulk tape eraser. Slide the "record" tab to the left, so that the tape is in a "write enabled" state. See Figure 3-1.
2. Place the Tape Loader Tape in the tape drive. If this is the first tape inserted after power-up, it is loaded automatically. If switching from another tape, press the INIT and INIT LOCK keys to load the tape. (Loading takes approximately fifty seconds.)
3. When the tape is loaded, the following software labels appear across the bottom of the screen:

Remove the Tape Loader Tape and insert the tape that is to be evaluated. Press the software label key that corresponds to the "Evaluate Tape" software label. A new set of software labels appear:

Press the "Proceed" key to begin the tape evaluation process.

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4. If the tape is usable, a message will appear on the screen indicating that the tape evaluation has been successful. Erase the tape and use it for the creation of a working tape.

If the evaluation is not successful, a message will appear on the screen indicating that the tape is not usable. You may want to erase the tape and evaluate it once again before discarding it.

NOTE

Do not attempt to evaluate a working tape, as this function will erase it. If a working tape is suspect, first make another copy of it from the master tape, then erase the working tape and evaluate it.

3.2 TAPE DUPLICATION

Gould offers a line of master tapes and blank tapes to be used with each particular PC. Master tapes are used to create working tapes. Working tapes are used to load data into a P190 programmer, but they cannot be duplicated.

NOTE

Software tapes supplied with the 884 and Micro 84 PCs are all working tapes. The tape duplication procedure for creating "working" tapes does not apply to software tapes used with these controllers.

To create a working tape:

1. Select the desired master tape. Place the tape in the tape drive. If inserted immediately upon power-up, the tape loads automatically. If switching from another tape, press the INIT and INIT LOCK keys to begin loading the tape. Loading takes approximately fifty seconds.
2. A message appears on the P190's screen to prompt your next action. The first such prompt is "REMOVE TAPE."
3. Remove the master tape. The CRT screen displays the message "LOAD WRITE ENABLED SCRATCH TAPE." Select a blank tape that has already been evaluated. Make sure that the "record" tab in the upper left-hand corner of the tape is pushed all the way to the left, so that it is "write enabled." See figure 3-1.
4. Insert the tape into the tape drive. Once inserted, writing begins, and the CRT screen displays the "DUPLICATING" message.
5. When duplication is complete, the CRT screen displays the "REMOVE TAPE" message.
6. Remove the tape from the tape drive and slide the "record" tab all the way to the right. This puts the tape in a "write protected" state; nothing can be written over the existing data. You may also remove the tab and replace it at a later time. See Figure 3-2.
7. Label the tape with the appropriate tape number and information.

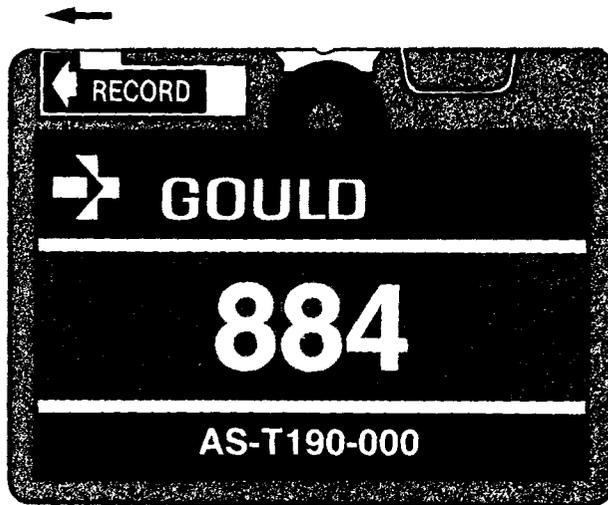


Figure 3-1. "Write Enabled" Blank Tape

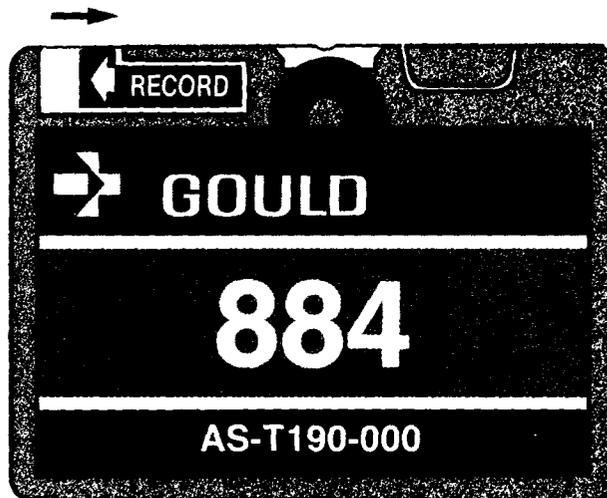


Figure 3-2. "Write Protected" Tape

8. When you have finished duplicating tape(s) press the INIT and INIT LOCK keys to reinitialize the P190. If you do not do this, the P190 attempts to create a working tape out of any tape that is inserted into the tape drive.

NOTE

If an error occurs during the duplication process a tone sounds, and an error message is displayed. To reset the P190 Programmer, remove the tape and press the INIT and INIT LOCK keys simultaneously. Erase the scratch tape and begin the procedure over again, starting with Step 1.

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3.3 TAPE LABELING

Clear, consistent tape labeling is essential to the identification and control of all program tapes. All master tapes are labeled with the tape name and number (for example, P190 Tape Loader, AS-T190-001), and also the revision level. All working tapes should be labeled with the following information:

Tape Name:
Tape Number:
Date of Master Tape:
Revision Level of Master Tape:

All of the information above is displayed on the CRT screen while the working tape is being created. The correct label date is the date the master tape was released, not the date that the working tape was made.

3.4 CARE OF TAPES AND TAPE DRIVE.

The estimated life of a tape is approximately 5000 complete passes. The estimated life of the tape drive is 40,000 tape cycles. Proper care and maintenance of the tapes and tape drive is essential to insure maximum useful life.

3.4.1 Care of Software Tapes

Extreme high or low temperatures may cause stretching or sagging of the program tapes. This damage may result in poor tape performance due to slack in the tape. The storage and shipping environment specifications are shown in Table 3-1.

If it is known that a tape has been exposed to minimum or maximum temperature extremes, you should evaluate the tape before attempting to use it. (See Section 3.1.) If tapes are not going to be used immediately, make sure that they are stored in the proper environment.

CAUTION

Always isolate tapes from any magnetic field. Do not store or carry tapes so that they come into contact with motors or magnetized screwdrivers. Never place a tape on top of the P190. There are magnetic fields within the P190 which may damage the tape.

Table 3-1. Tape Storage and Shipping Environment

Temperature:	5 to 50°C (41 to 113°F)
Relative Humidity:	20 to 80% noncondensing
Maximum wet bulb temperature:	28°C (79°F)

3.4.2 Care of Tape Drive

The tape head and drive puck should be cleaned once every 1,000 - 1,500 tape cycles, or once every 24 hours of continuous operation. In harsh environments, cleaning on a more frequent basis may be required. These components are located approximately 2.5 inches inside the tape drive. See Figure 3-3.

To clean these components, moisten a cotton swab with ethyl alcohol and gently rub the head and then the drive puck to loosen and remove dirt deposits.

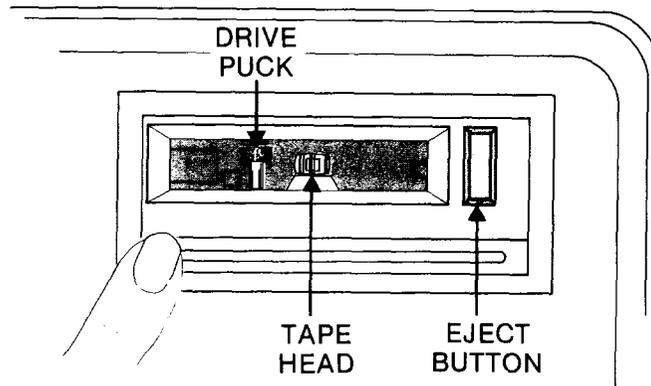


Figure 3-3. Tape Head and Drive Puck Location

3.5 P190 PROGRAMMING TAPES

Following is a list of all currently available software tapes used with the P190 Programmer. Please see your sales representative to obtain copies of the most recent product and price lists before ordering any program tapes from Gould Inc., Programmable Control Division.

184/384 Programmable Controller

P190 Tape Loader Tape	T190-001
384 Programmer Tape	T384-001
384 Utility Tape	T384-002

484 Programmable Controller

P190 Tape Loader Tape	T190-001
484 Programmer Tape	T484-001
484 Utility Tape	T484-002

584A Programmable Controller

P190 Tape Loader Tape	T190-201
584 Programmer Tape	T584-201
584 Utility and Configuration Tape Package	T584-202
584 ASCII Tape	T584-003
584 Configurator Tape	T584-204
584 PID Tape	T584-101
584 Modbus Master Pack	T584-102

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584M Programmable Controller

P190 Tape Loader Tape	T190-001
584 Programmer Tape	T584-001
584 Utility	T584-002
584 ASCII Tape	T584-003
584 Configuration Tape	T584-004
584 PID Tape	T584-101
584 Modbus Master Pack	T584-102

584L Programmable Controller

P190 Tape Loader Tape	T190-201
584 Programmer Tape	T584-201
584 Utility and Configuration Tape Package	T584-202
584 ASCII Tape	T584-003
584 Configuration Tape	T584-204
584 Utility Tape	T584-205
584 Redundancy Tape	T584-006
Redundancy Supervisor Tape	T211-001
584 PID Tape	T584-101
584 Modbus Master Pack	T584-102

Micro 84 Programmable Controller

M84 Programmer/Tape Loader/ Configurator Tape	TM84-001
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884 Programmable Controller

884 Programmer/Configurator Tape	T884-001
884 Tape Loader Tape	T884-002
884 Ladder Lister Tape	T884-004

984 Programmable Controller

984 Programmer Tape	T984-201
984 Configuration Tape	T984-204
984 Utility Package Tape (Ladder Lister)	T984-205
984 ASCII Programmer Tape	T984-003
984 PID Module Tape	T984-101

2184 Motion Controller

2184 Tape Assembly (Programmer, Tape Loader, and Executive)	TP84-000
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SECTION 4 P190 PHYSICAL CONNECTIONS

4.1 CABLES OPTIONS LISTING

Following is a listing of cable options to be used with all devices that hook up with the P190 Programmer. Consult the section covering your specific device (PC, printer, etc.) to see which cables are used with your particular system.

Consult the appropriate System Planning and Installation Guide before attempting to connect the P190 to any devices using the cables listed below.

The last three digits of the cable assembly number indicate the cable length. Refer to Cable Assembly Data Sheets for more information about specific assemblies.

	CABLE NO.	FUNCTION
W190-XXX	W190-015 -025 -050 -100 -200	The W190 Cable Assembly connects the P190 Programmer directly to a 584 PC.
W191-XXX	W191-015 -025 -050	The W191 Cable Assembly connects the P190 Programmer to a modem and also connects the P190 and the J478 Interface.
W192-XXX	W192-006 -015 -025 -050	The W192 Cable Assembly connects the 584 PC to a modem or a J162-010 Telephone Interface.
W193-XXX	W193-015 -025 -050	The W193 Cable Assembly connects the P190 Programmer to a RS-232-C compatible Printer. This cable has a female connector on the printer side.
W194-XXX	W194-015 -025 -050	The W194 Cable Assembly connects the P190 Programmer to a RS-232-C compatible Printer. This cable has a male connector on the printer side.
W195-XXX	W195-015 -025 -050	The W195 Cable Assembly connects the P190 Programmer to a J470 Interface.

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W196-XXX	W196-015 -025 -050	The W196 Cable Assembly connects the P190 Programmer to the J146 Interface.
W807-XXX	-012 -025 -050	The W807 Cable Assembly directly connects the P190 Programmer and the 884 PC. It also connects the P190 to A J375 Modbus Adapter.
W907-XXX	W907-006 -015 -025 -050 -200	The W907 Cable Assembly directly connects the P190 Programmer and the 984 PC.
ASW02M-XXX	ASW02M-015 -025 -050	The ASW02 Cable Assembly connects the P190 to a 2184 Motion Controller.

4.2 P190 — 184/384 CONNECTIONS

The P190 can be connected to 184 and 384 PC's using either an I646 Interface or a J146 Interface. These interface units are connected to the P190 Programmer using a W196-XXX cable assembly.

4.3 P190 — 484 CONNECTIONS

The P190 must be connected to a 484 PC using an interface device.

CAUTION

Direct connection between a P190 and a 484 will cause damage to one or both of the components.

The J470 Interface connects the P190 Programmer to the 484 PC using a W195 Cable Assembly.

The P190 may also be connected to the 484 using a J478 Modem. A W191 Cable Assembly connects the P190 and the J478. A J474 completes the connection to the 484 PC.

The P190 may also be connected to the 484 via a telephone interface. The P190 is connected to an AJ342 acoustic coupler (or equivalent). This coupler is then connected to a T158-611 Telephone Interface, which in turn is connected to the 484 via a J470 Interface.

4.4 P190 — 584 CONNECTIONS

The P190 may be directly connected to a 584 PC using a W190-XXX cable assembly.

Modems can also be used to complete a P190 — 584 connection. A W191 cable assembly is used to connect the P190 to a modem and a W192 cable assembly is used to connect the 584 to a modem.

A telephone interface can also be used to connect a P190 Programmer and a 584 controller. The P190 is connected to a J162-010 Telephone Interface (or equivalent) while the 584 is connected to a J162-010 Telephone Interface via a W192-XXX cable assembly.

NOTE

J160-010 (300 baud) and/or J161-010 (300 baud) telephone interfaces may also be used.

4.5 P190 — 884 CONNECTIONS

The P190 Programmer connects directly to an 884 PC using a W807-XXX cable assembly.

4.6 P190 — 984 CONNECTIONS

The P190 Programmer connects directly to a 984 PC using a W907-XXX cable assembly.

4.7 P190 — MICRO 84 CONNECTIONS

The P190 Programmer connects to a Micro 84 PC using a J375 Modbus Adapter. The J375 fits into the M84's I/O rack, and is directly connected to the Micro 84. The P190 is then connected to the J375 using the W807-XXX cable assembly.

4.8 P190 — 2184 MOTION CONTROLLER CONNECTIONS

The P190 connects to a 2184 controller using an ASW02M-XXX cable assembly.

4.9 P190 — PRINTER CONNECTIONS

The P190 Programmer connects to a RS-232-C compatible printer using a W193-XXX (female connector on printer side), or W194-XXX (male connector on printer side) cable assembly.