

Macomber Loom Protocol

Serial Port Settings

1200 baud, no parity, 8 data bits, 1 stop bit

The message format consists of an ASCII string in the format of

ESC Opcode [Data] CR

Commands sent to the loom

Solenoids: opcode = # (0x23)

ESC # <data> <data> <data> <data> <data> <data> <data> <data> CR

Data are sent as ASCII-Hex characters corresponding to 4-bits of solenoid data. The LSB in the nibble is the lower number shaft. The first byte sent represents shafts 29-32 and the last byte sent represents shafts 1-4.

Examples: for 0x35 (ASCII 5) sent as the first byte shafts 31 and 29 are lifted
for 0x41 (ASCII A) sent as the last byte shafts 4 and 2 are lifted
for 0x30 (ASCII 0) sent no shafts are lifted for that group

ESC # 0x30 0x30 0x30 0x30 0x41 0x35 0x43 0x34 CR sent would lift shafts 16, 14, 11, 9, 8, 7 and 3.

Enable: opcode = E (0x45)

ESC E CR

Causes the harnesses to lift (air doobby) or solenoids to engage (single pedal).

Disable: opcode = D (0x44)

ESC D CR

Causes the harnesses to drop (air doobby) or solenoids to disengage (single pedal).

Echo On: opcode = BEL (0x07)

ESC BEL CR

Causes subsequent characters sent to the loom to be echoed back to the personal computer. The echo starts with the next character following the carriage return character of this message.

Echo off: opcode = NAK (0x15)
ESC NAK CR

Turns off echoing. This message is echoed in its entirety, up to and including the carriage return character. Nothing after this message is echoed.

Test: opcode = T (0x54)
ESC T CR

Solenoid test. The solenoids are engaged, one at a time, once per second, starting with #1, until another command is received.

Information Report: opcode = ? (0x3f)
ESC ? CR

Causes the loom to send an immediate Information Report message

Responses sent from the loom

Echo off: opcode = NAK (0x15)
ESC NAK CR

Sent in response to the Echo Off message. Can be used to confirm communications at startup if the sequence **Echo On Echo Off** is sent to the loom.

Information Report: opcode = ACK (0x06)
ESC ACK <5> CR

The data, 0x05, is sent as the ASCII character 5. The encoded bit pattern is as follows:

Timeout	Cycle Complete	Lower Switch	Upper Switch
0	1	0	1

This message indicates that a treadling cycle is complete, and is sent when either of these conditions are met:

- 1). On a single treadle loom, when the lower switch has closed and then opened, and the upper switch subsequently closes.
- 2). On an air dobbie, when the (so-called) upper switch opens and then closes.