

ULTRA COMPACT THERMAL PRINTERS

FTP-628 SERIES

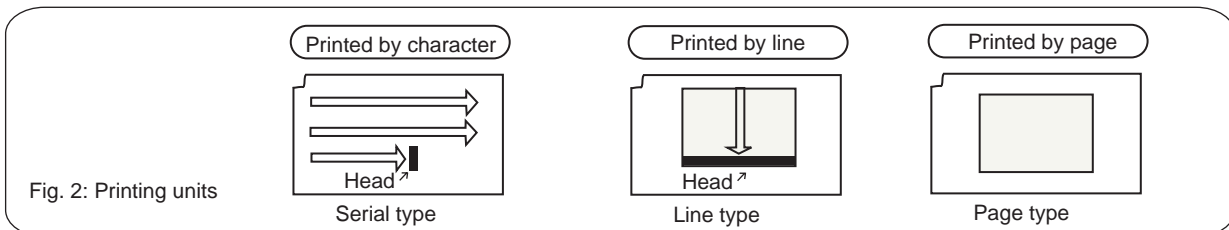
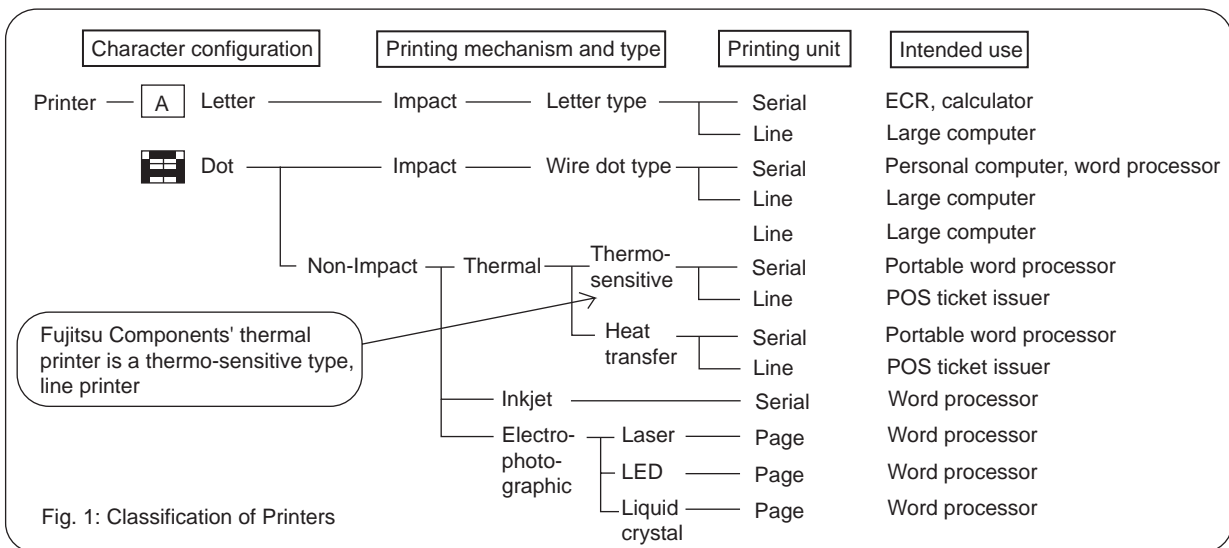
This document explains an ultra-compact thermal printer which uses our unique platen release mechanism.

■ TYPES OF PRINTERS

Printer types are largely classified into a letter and dot printer in terms of character configuration, and into a non-impact and impact printer in terms of the printing mechanism. Non-impact type printers include thermal type, inkjet type and electro-photographic type. Impact type printers include letter type and wire dot type. A printing unit is classified into serial, line and page. Thermal printers have thermo-sensitive types and heat transfer types.

Fujitsu Components' printer explained here is a thermo-sensitive line printer. The major features of this printer follow.

- (1) Compact, light weight
Configuration is simple, compact and light weight.
- (2) Low noise
Noise is low because it is a non-impact type which prints without mechanical impact.
- (3) High-speed and high quality printing
High quality images can be printed at high-speed because of a line dot system where printing is performed in one line units by a fixed print head.
- (4) Maintenance free
Such consumables as ribbon, tape, ink and toner are unnecessary. Thermo-sensitive paper alone is required.



Ultra Compact Thermal Printers

■ MARKET TREND OF THERMAL PRINTERS

The features of a thermal printer are high-speed printing, high quality image printing, low noise and maintenance free. Since paper price, storage, quality and the characteristics of thermo-sensitive paper have been improving, thermal line printers are being used for various equipment, including POS and ECR distribution terminals issuing receipts, and ATM and CD banking terminals, as well as for journal printers, ticket issuing machines, and measurement and medical equipment. As information equipment and distribution terminals become compact and mobile, more compact and more advanced functions are demanded of printers mounted on this equipment with batteries or with adapters. Also easy paper setting and better operability are demanded.

Fujitsu Components' has been including battery-driven type printers for compact information terminals, such as hand-held terminals, in a series. However to meet the above mentioned demands, we commercialized the new more compact FTP-628 product series. These are battery-driven ultra-compact thermal printers built into compact and high functioning equipment. In order to improve operability despite the ultra-compact size, we used our unique platen release mechanism where a wide route paper path can be secured.

We will introduce the new platen release mechanism used in the FTP-628 series.

■ BASIC CONFIGURATION AND OPERATION THEORY OF THERMAL PRINTERS

A thermal printer is basically comprised of a thermal head, which prints by generating heat, a platen (rubber roller), which feeds paper, and a head-pressure spring, which presses the thermal head to the thermo-sensitive paper. For printing, thermo-sensitive paper is inserted between the thermal head and platen, and the head pressure spring presses the thermal head to the thermo-sensitive paper. Current is supplied to the heating resistor of the thermal head to generate heat. This

heat colors the thermal coloring layer of the thermo-sensitive paper and prints data. This method of printing is called "thermo-sensitive (direct type)".

Using this thermo-sensitive type method, when one dot line (one row in the width direction of paper) of printing completes, the platen rotates to feed the paper, and printing continues to the next dot line. Therefore this system is called a "thermal line type".

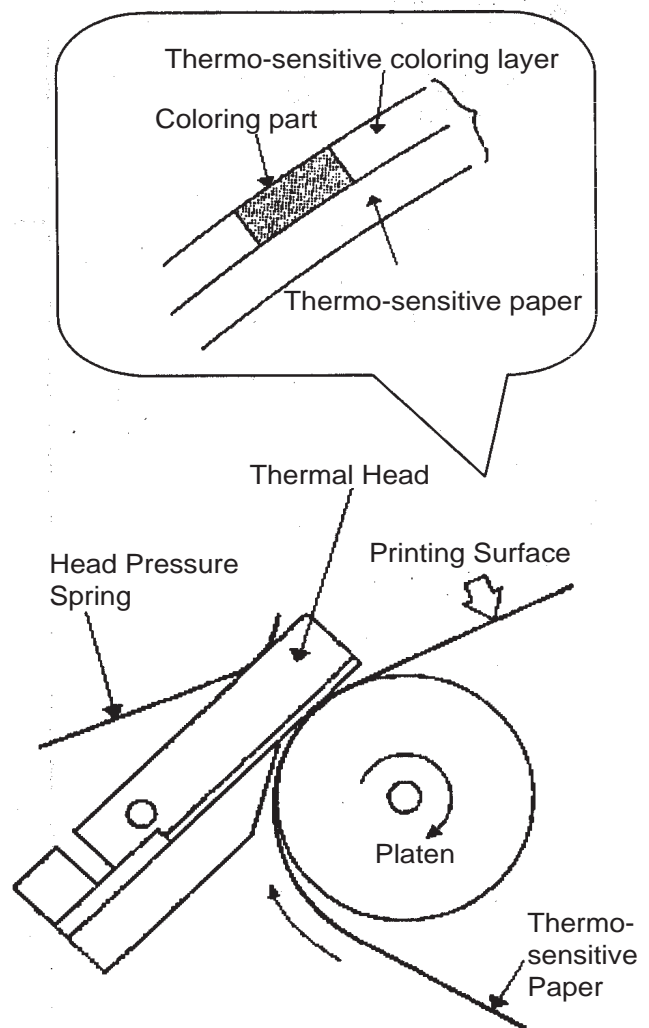
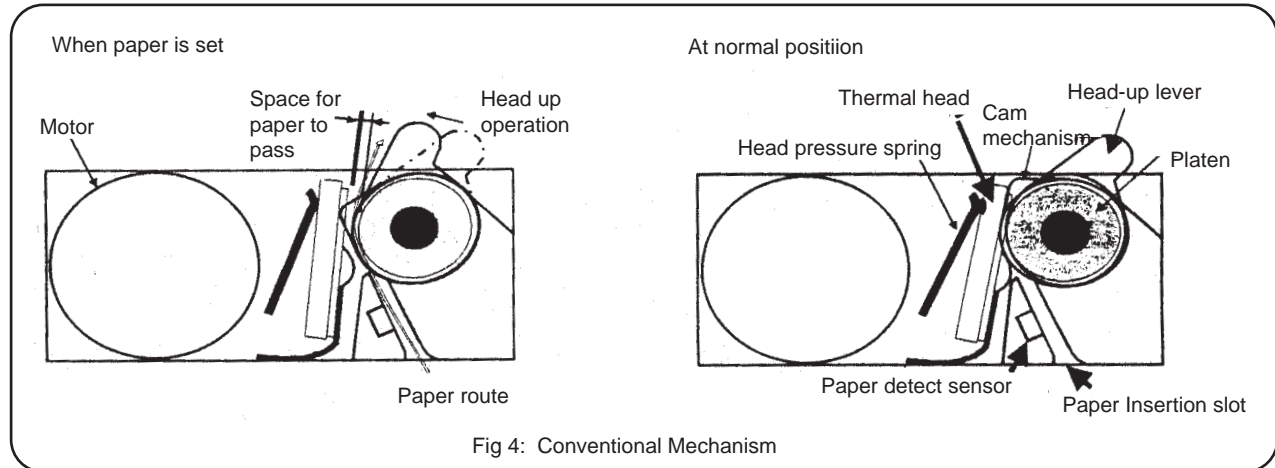


Fig.3: Thermal System

Ultra Compact Thermal Printers

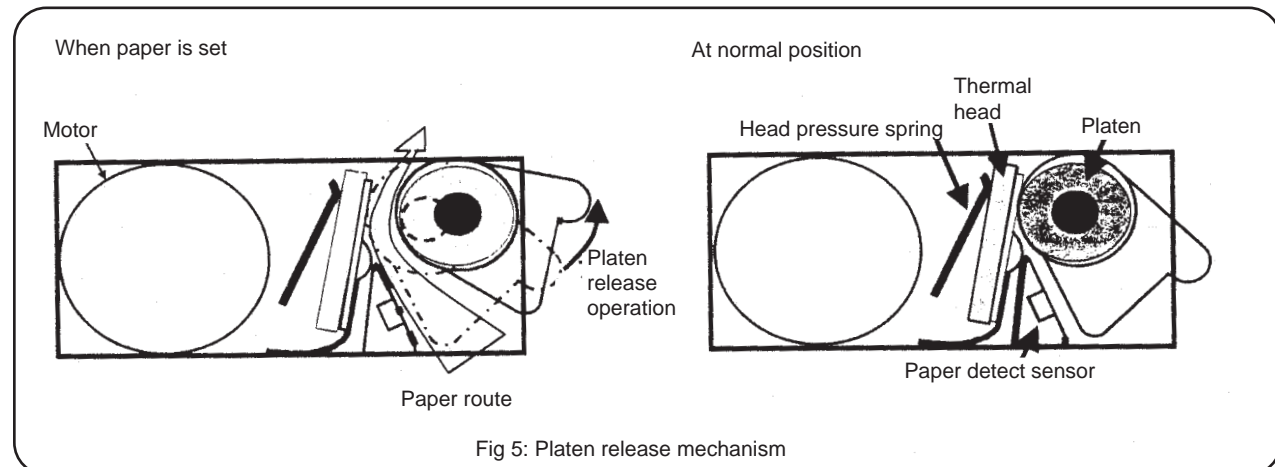
■ CONVENTIONAL MECHANISM

Paper is set between the thermal head and the platen. The thermal head is moved by a lever with a cam mechanism which maintains space from the platen. Since the lever is attached to the side face of the printer, space for the lever to operate is required on the side face of the printer.



■ PLATEN RELEASE MECHANISM

This mechanism allows the platen to be moved away from the thermal head. The platen is attached to the paper guide. By moving this paper guide away from the thermal head, the platen can be moved away from the thermal head. Because of this design, the space for a paper route is increased and operation to pass paper to the paper route became easier. Because of this front face operation, a lever at the side face of the printer is unnecessary, which makes the printer compact.



Ultra Compact Thermal Printers

In the FTP-628 series, auto loading, the same as in conventional products, is also possible, and two types of paper routes are in this series for mounting in various equipment. In addition to a 2-inch mechanism, a 24V drive product with the same shape, and a miniature cutter were also developed and will be included in the series.

FTP-628 series

The FTP-628 series, which uses a unique platen release mechanism, has the following features.

- Ultra-compact shape

Designed to be minimum size, with a 15.5mm height, 70.0mm width and 35.6mm depth. The volume is the smallest in the industry in this class of printers.

- High-speed printing

With our original head control, high-speed printing is possible. Speed is a maximum 60mm/sec. (480 dot lines/sec.), which is the fastest among battery-driven printers in this class.

- Easy paper setting

With our original platen release mechanism, there is a wide space for the paper route despite the ultra-compact shape, making paper insertion much easier. Conventional auto loading can also be supported.

- Two types of paper routes

Two types of paper routes are available in order to be easily mounted in various equipment.

- Easy mounting

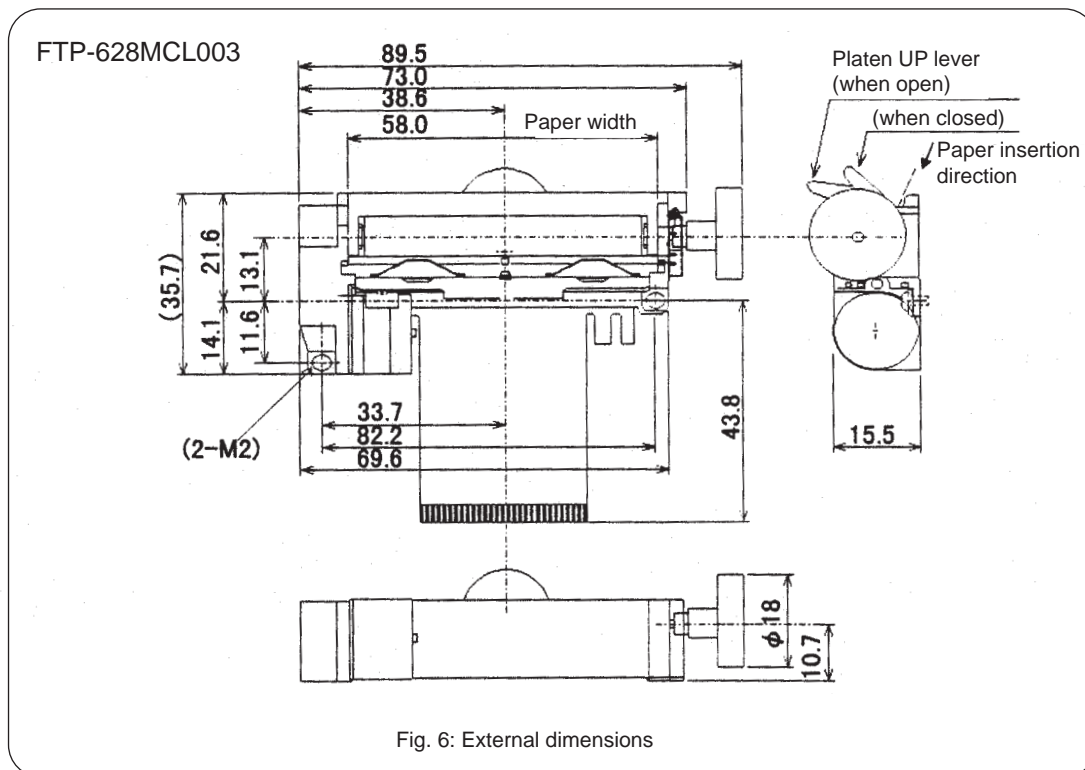
Since the wires of the head, motor and sensor are collectively housed in one flexible cable, and the mechanism can be secured by a hook and screws at two locations, mounting is easy.

- High resolution printing

High resolution printing at 8 dots/mm is possible.

- Industry standard paper width

In the 2 inch type, the 58mm industry standard paper width is supported.



The above mentioned features allow this printer to be used in various fields. It can be not only built in to hand-held-terminals, portable settlement terminals, such distribution terminals as ECR, and various information terminals, but also it can be used for portable communication terminals, ticket issuing machines and measurement equipment.

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