Ticket Printer

TG558 series

35-58 mm

User Manual

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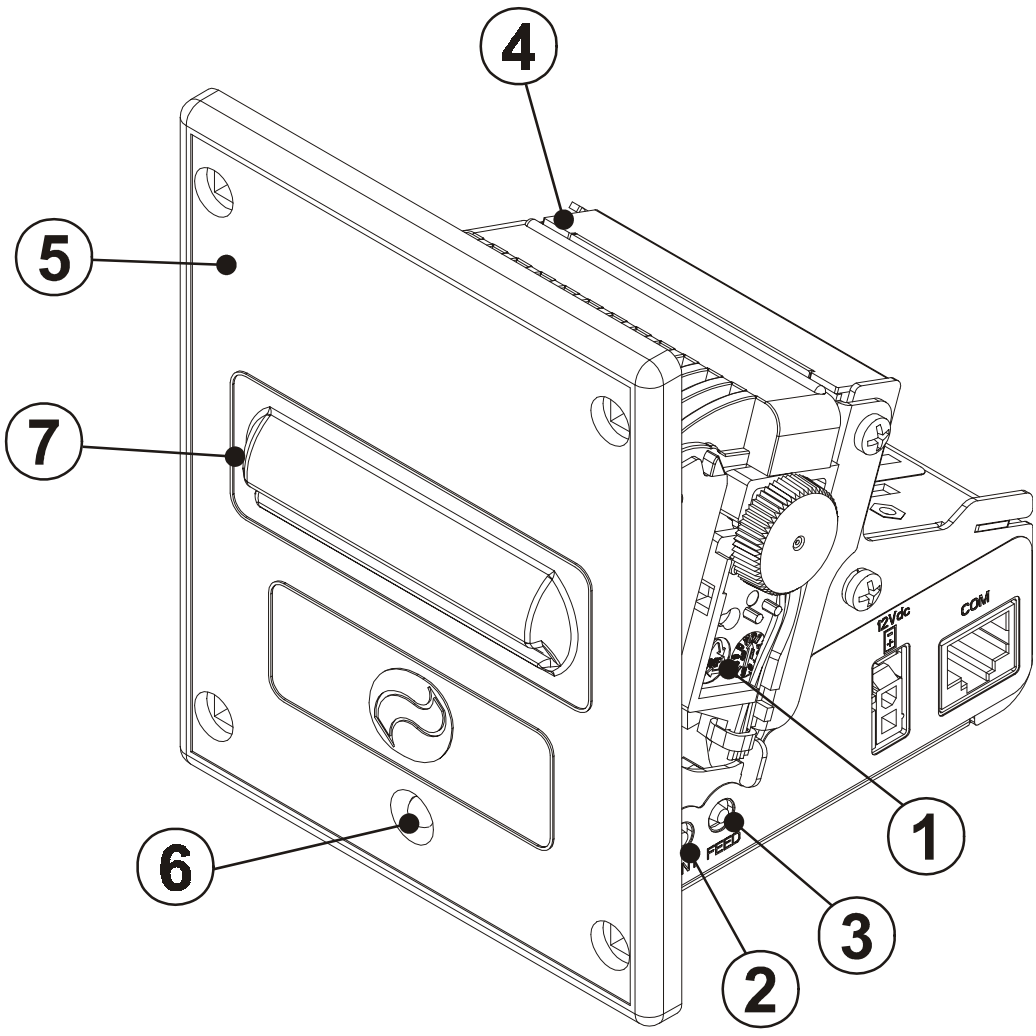
PRINTER COMPONENTS

A. TG558 Exterior view with plastic front panel
TG558-x35P [1],TG558-x58P [1], TG558-x35P-0001 [2], TG558-x58P-0001 [2]

1- Printing mechanism
2- “PRINT” key
3- “FEED” key
4- Case
5- Front panel
6- Led
7- Paper output

[1] *The **x** suffix indicates the following models :*
- TG558-S35P (35mm version with RS232 serial interface)
- TG558-S58P (58mm version with RS232 serial interface)
- TG558-T35P (35mm version with TTL serial interface)
- TG558-T58P (58mm version with TTL serial interface)

[2] *The **0001** suffix indicate the real time clock option.*

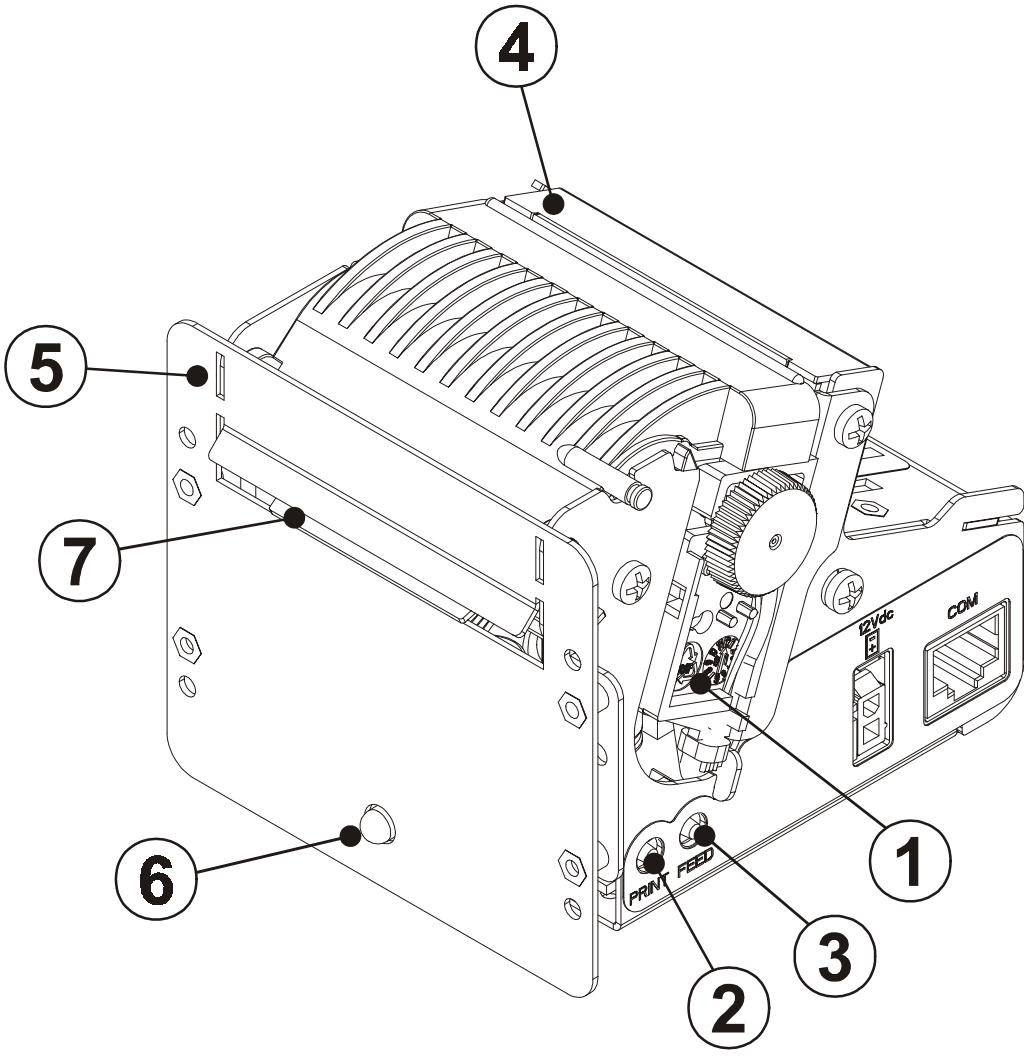


B. TG558 Exterior view with metallic front panel
TG558-x35M [1],TG558-x58M [1], TG558-x35M-0001 [2], TG558-x58M-0001 [2]

1- Printing mechanism
2- “PRINT” key
3- “FEED” key
4- Case
5- Front panel
6- Led
7- Paper output

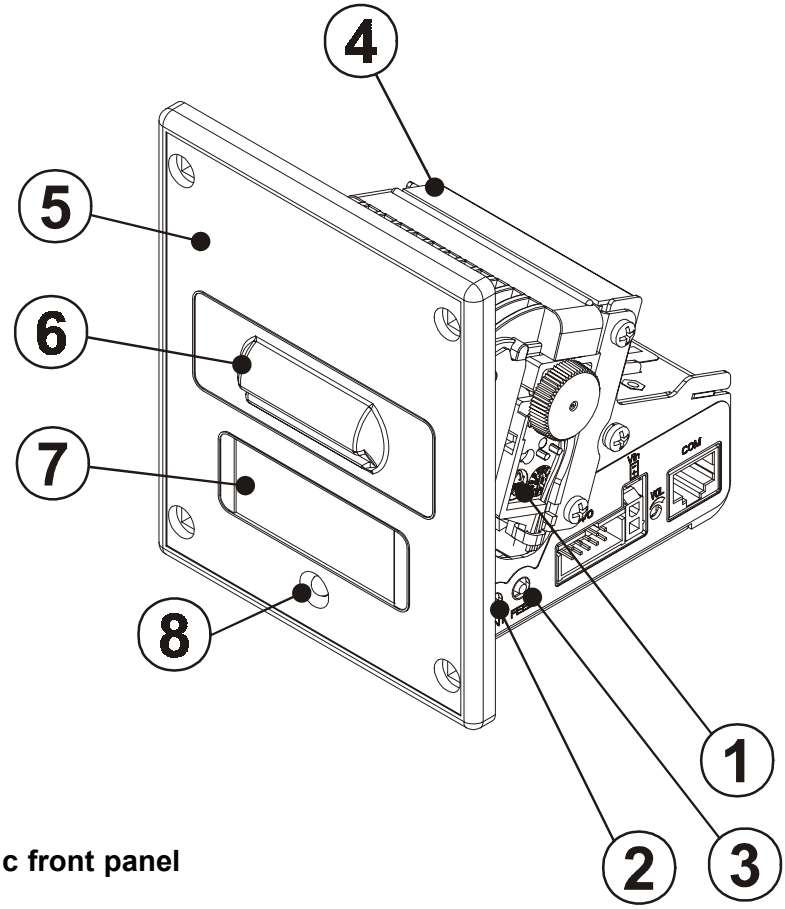
[1] *The **x** suffix indicates the following models :*
- TG558-S35M (35mm version with RS232 serial interface)
- TG558-S58M (58mm version with RS232 serial interface)
- TG558-T35M (35mm version with TTL serial interface)
- TG558-T58M (58mm version with TTL serial interface)

[2] *The **0001** suffix indicate the real time clock option.*



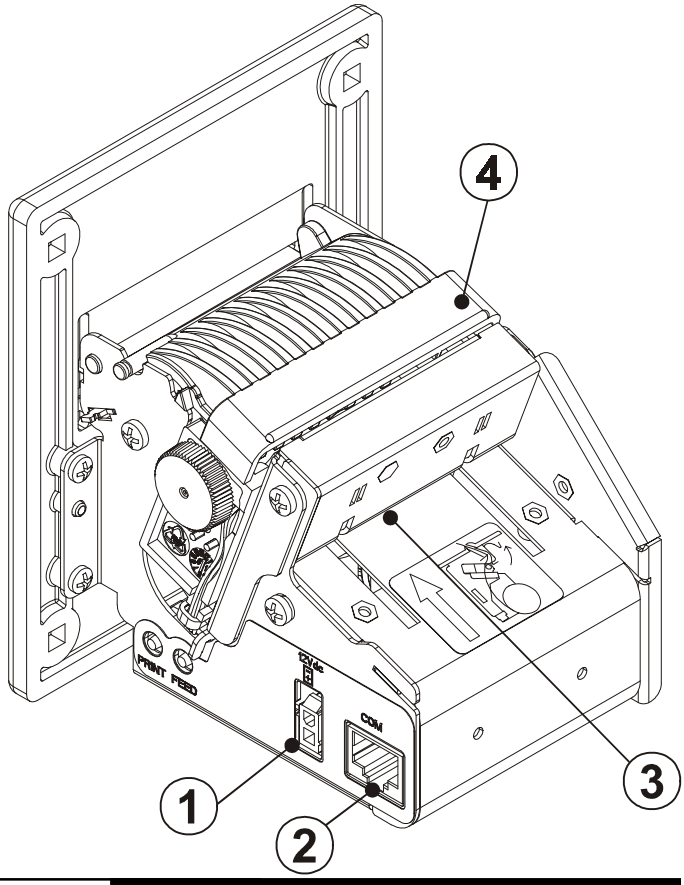
C. TG558 Exterior view with display TG558-35D

1- Printing mechanism
2- “PRINT” key
3- “FEED” key
4- Case
5- Front panel
6- Paper output
7- Display
8- Led



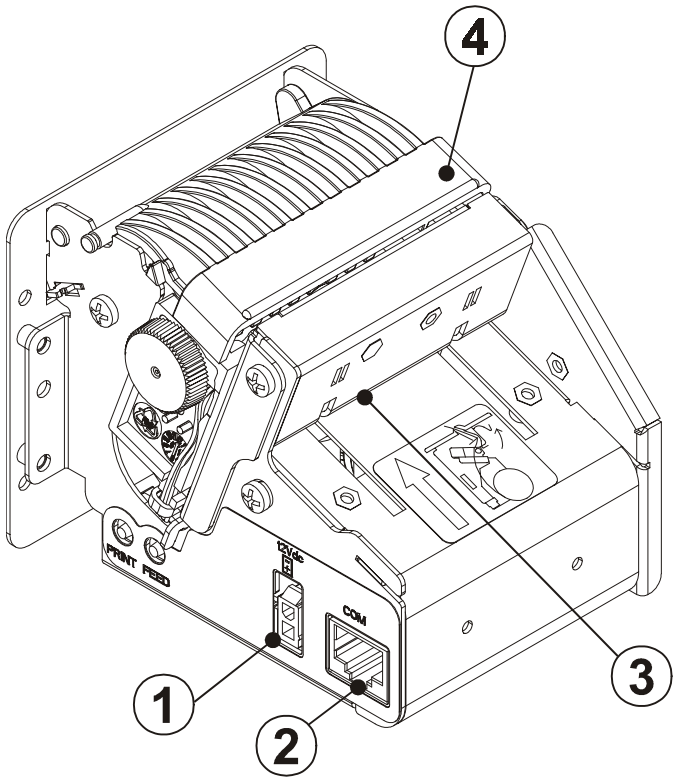
D. TG558 Rear view with plastic front panel

1- Power supply connector
2- RS232 /TTL serial interface connector
3- Paper input
4- Inspection cover for paper outlet



E. TG558 Rear view with metallic front panel

1- Power supply connector
2- RS232 /TTL serial interface connector
3- Paper input
4- Inspection cover for paper outlet



F. TG558 Rear view with Display

1- Power supply connector
2- TTL serial interface connector
3- Power supply connector and additional signals
4- Paper input
5- Inspection cover for paper outlet

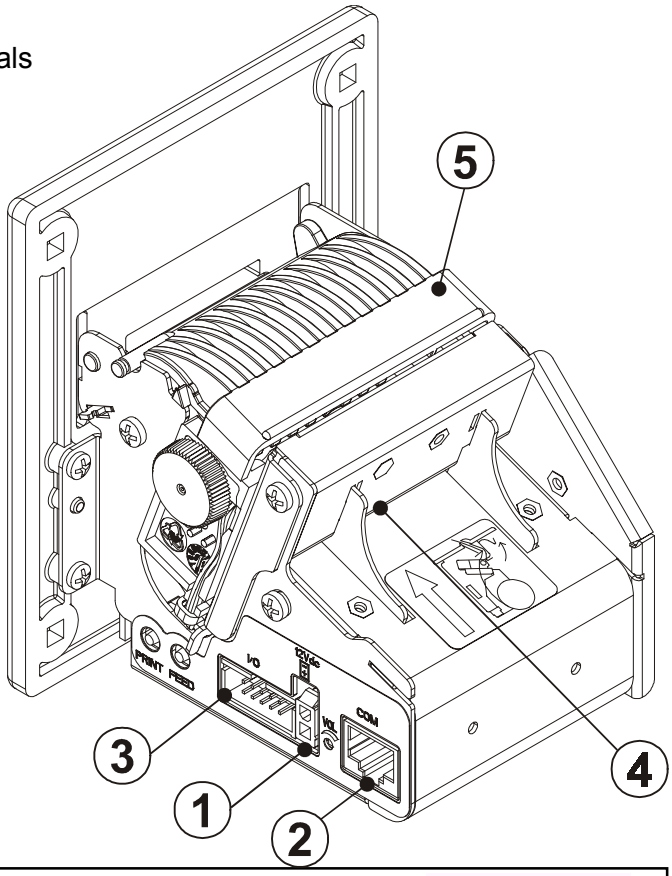


TABLE OF CONTENTS

MANUAL ORGANIZATION

In addition to the Introduction which contains information regarding the symbols used in the manual, general safety information, instructions for unpacking the printer and a brief description and main characteristics of the machine, this manual is divided into the following chapters:

Chapter 1: Contains the information required for correct printer installation and use

Chapter 2: Contains interface data

Chapter 3: Contains a description of printer controls

Chapter 4: Contains printer technical data

Chapter 5: Contains the character sets (fonts) used by the printer

Appendix : Contains a description of printer accessories and spare parts.

SYMBOLS USED IN THE MANUAL

NOTE
Gives important information or suggestions for printer use.

WARNING
Information indicated by this symbol must be followed carefully to avoid damaging the printer.

DANGER
Information indicated by this symbol must be followed carefully to avoid damage or operator injury.

GENERAL SAFETY INFORMATION

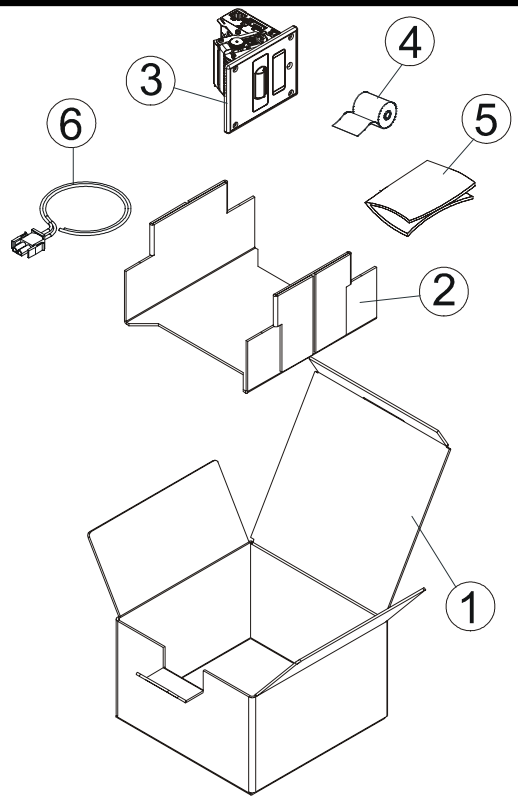
- Read and retain the instructions which follow.
- Before cleaning the printer, be sure to pull out the electrical cable.
- Use a damp cloth to clean the printer. Do not use liquid or spray products.
- Do not operate the printer near water.
- When positioning the printer, make sure its cables will not be damaged.
- Use the type of electrical power supply indicated on the printer label. If uncertain, contact your dealer.
- Do not block the ventilation openings.
- Do not insert objects inside the printer as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not spill liquids onto the machine.
- Do not carry out repairs on the machine yourself, except for the normal maintenance operations given in the user manual.
- Unplug the printer from the electrical mains and call a specialized repairman if any of the following conditions should arise:
    A. the power supply connector is damaged
    B. liquid has spilled into the printer
    C. the printer has been exposed to rain or water
    D. the printer is not functioning normally despite the fact that all instructions given in the user manual have been followed
    E. the printer has been dropped and the cover is damaged
    F. printer performance is noticeably reduced
    G. the printer is not working

UNPACKING THE PRINTER

Remove the printer from the carton, taking care not to damage the packing materials which should be retained for future shipping/moving.
Make sure all components listed below are present and not damaged. If any part is missing and/or damaged, contact customer service.

1. Box
2. Foam packing shell
3. Printer
4. Paper roll
5. Manual (or CD-Rom)
6. Electrical supply cable

(Fig. 1)



PRINTER DESCRIPTION

Ultra compact thermal printer (only 9cm deep) for dispensing 35 or 58mm tickets width, easy to install (4 fastening holes and ticket presentation to user incorporated). Thanks to the exclusive **anti-paper-jam system**, the ticket will always be promptly dispensed to the user.
Thanks to an innovative type of **paper roll holding bracket**, it is possible to accommodate up to 73 metres of paper (max external Ø 80mm), adapt the printer to the mechanical space requirements necessitated by the application (3 positions: upper, lower and rear) and manage the near paper end signal.
It is equipped with a 203 dpi thermal print mechanism; it has TTL and RS232 serial and it's also available with a calendar clock (Real Time Clock).
The TG558 is available with Fireproof plastic or metal front panel. The TG558 display version is equipped with :

- alphanumeric display for viewing scrolling messages is available integrated speaker output;
- software tools that allows transfer MIDI format sound into the printer, through serial port;
- When the "REPORT" key is pressed, it prints the printer operational report.
- When the "FEED" key is pressed, the paper can be fed forward manually.
- The green Status LED displays a printer hardware error status and the winnings. The check is carried out"on line", i.e. in the event of a malfunctioning, the LED will starts flashing as follows:

STATUS LED	DESCRIPTION
Always OFF	Printer OFF
Always ON	Printer ON – no faults
Slow flashing (on for a long period)	Tilting cover raised
Slow flashing (on for a short period)	Paper Out Message

(Tab.1)

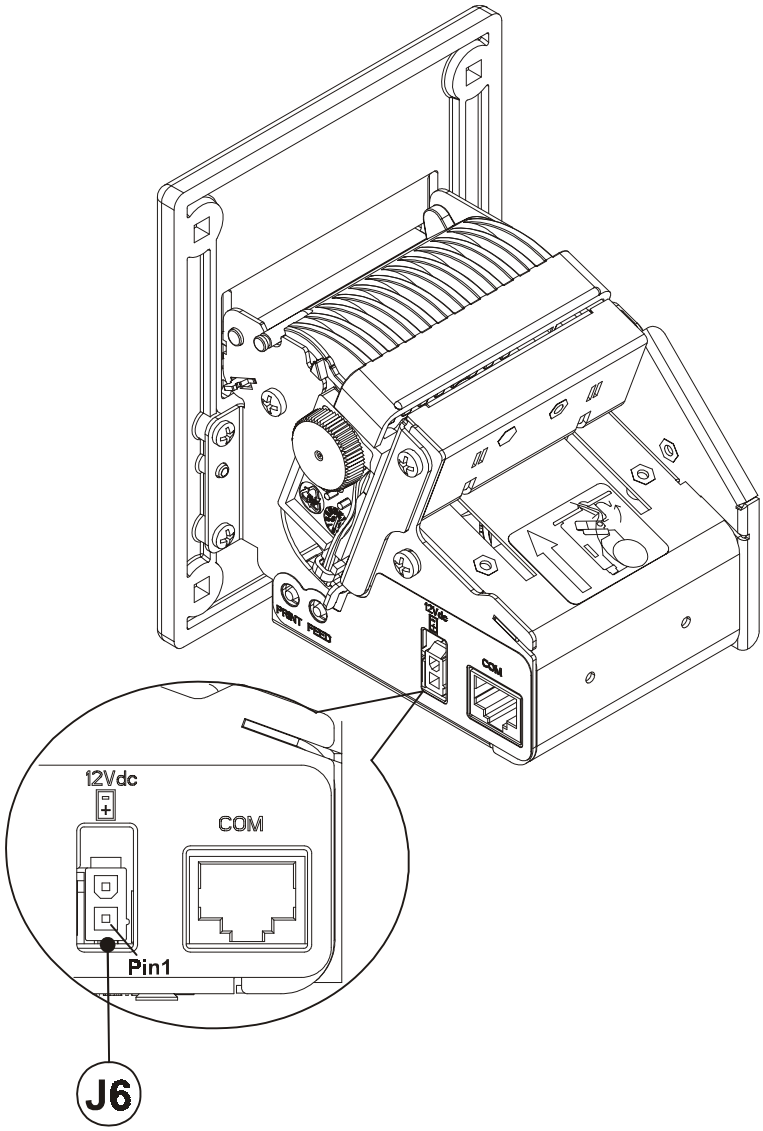
MAIN APPLICATIONS

The TG558 printer is the ideal solution for :

- kiosks (internet, public offices, bookings, bank transactions);
- self-service;
- ticket dispensing (public/private transport, automatic payments);
- parking lots;
- queue management systems;
- instruments;
- Gaming machines;
- Vending machines;
- instant lotteries.

1.1 CONNECTIONS

(Fig.1.1)



1.1.1 Power supply

The printer TG558 is equipped with a 2 pin male molex connector series 5569 (Vertical), for the power supply (J6). The signals on the pins of the feed connector are as follows:

Model no. type : Header : 90° Molex series 5569 (no. 39-30-1020)
Housing: Molex series 5557 (no. 39-01-3022)

(Tab.1.1)

PIN	SIGNAL	DESCRIPTION
1	+ 12 V	POWER
2	GND	SIGNAL GROUND

WARNING:
Be sure to observe the correct polarity for the power supply.

1.1.2 Input/Output connector for TG558 display

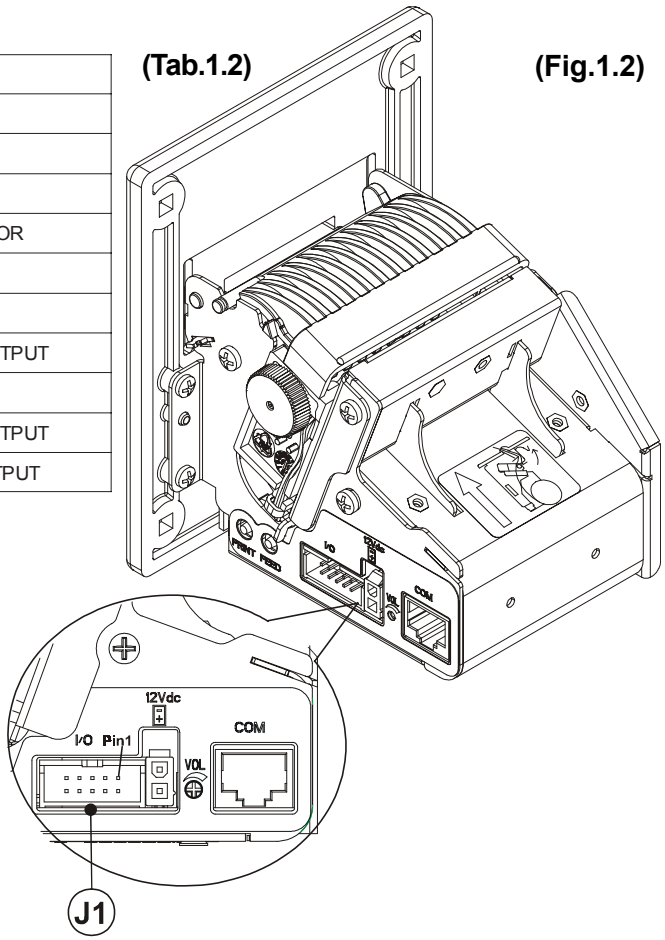
The TG558 printer is equipped, for power supply of Coin and loudspeaker and additional signals, with a 10-pin screw terminal connector (J1). The signals on the connector pins are as follows:

Model no. type : Header : 90° connector for FFC/FPC (pitch 2.54mm)
Housing: 10 pin flat cable (pitch 2.54 mm)

(Tab.1.2)

PIN	SIGNAL	DESCRIPTION
1	GND	POWER
2	GND	POWER
3	+12 V	POWER
4	AUXILIARY OUTPUT	OPEN COLLECTOR
5	+12 V	POWER
6	COIN-IN 1	COIN INPUT
7	ALT1	LOUDSPEAKER OUTPUT
8	COIN-IN 2	COIN INPUT
9	ALT2	LOUDSPEAKER OUTPUT
10	INIBIT	ENABLE COIN OUTPUT

(Fig.1.2)



1.2 SETUP

The printer enables the configuration of the printer default parameters (see fig. 1.3). The parameters affected during configuration are:

* PRINT MODE *

- **Columns:** 24 columns^{D} , 40 colums e 42 colums.
- **Print Direction:** Normal^{D} or Reverse.
- **Print mode:** Little^{D} , Double width (2 x Width), Double height (2 x Height), Expanded.
- **Automatic Feed:** CR disabled or CR enabled^{D}.
- **Auto Feed** (1)**:** Enable^{D}, Disable.
- **Red intensity** (2)**:** 0,1,2,3,4,5^{D},6,7.

* SERIAL MODE *

- **Baud Rate:** 38400, 19200, 9600^{D}, 4800, 2400, 1200, 600.
- **Protocol:** 8, N,1^{D} (8 bit, parity none, 1 Stop bit)
  8, E,1 (8 bit, parity even, 1 Stop bit)
  8, O,1 (8 bit, parity odd, 1 Stop bit)
  7, N, 2 (7 bit, parity none, 2 Stop bit)
  7, E, 1 (7 bit, parity even, 1 Stop bit)
  7, O, 1 (7 bit, parity odd, 1 Stop bit)
- **Flow control:** CTS-RTS, XON-XOFF^{D}.

* REAL TIME CLOCK * (3)

- **Printing seconds setting:** Enables seconds, disables seconds^{D}.
- **DST setting** (4)**:** Enable DST^{D}, Disable DST.

Notes : The parameters indicates with a ^{D} symbol are the default values.

(1) **NOTE:** If the function is enabled when the printer receives a characters number equal to the line buffer the next character will place on the left margin in a new line.

(2) **NOTE:** Using two-colour thermal paper is possible to set different red tonality.

(3) **NOTE:** This setting is available only with RTCK printer version (Real Time Clock) and display version.

(4) **NOTE:** This parameter enable the automatic change of the solar time and summer time.

SET UP DEFAULT :

24 COLUMNS (font 16 x 24)
PRINT DIR. = NORMAL
PRINT MODE. = LITTLE
CR-LF HONOR CR
AUTO FEED = ENABLE
RED INTENSITY = 5
SERIAL PORT SELECTED
BAUD RATE = 9600
PROTOCOL = 8, N, 1
FLOW CONTROL = XON - XOFF
DISABLE SECONDS
ENABLE DST

(Fig.1.3)

1.2.1 Configuration of REPORT and FEED keys

If, when the printer is switched on, both of the **PRINT** and **FEED** keys are held down, the printer enters configuration mode and prints the first modifiable parameter. At this point, each time the **PRINT** key is pressed, the parameter changes and its current value is printed. Once the desired value has been obtained, press the **FEED** key to proceed to the next parameter, and so on. Once all the parameters have been run through, the printing of a message signals the end of setting procedure.

1.3 AUTOTEST

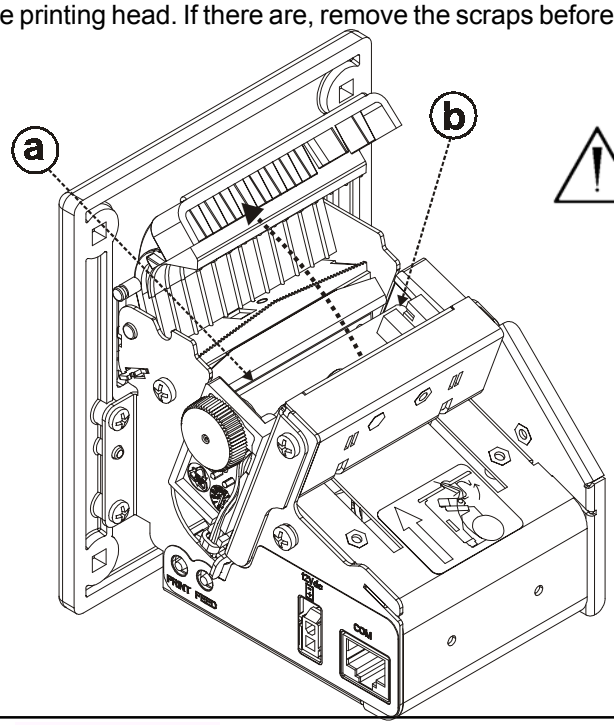
To run the autotest, press the **FEED** key while switching on the printer. During the running of the autotest, the character fonts and logos stored inside the printer are printed.

1.4 MAINTENANCE

1.41 Changing the paper roll

Every time you change the paper, referred to fig.1.4, need to check as follows :

• Lift the paper outlet cover and check that there are no scraps of paper at the area indicated with a) letter near the printing head. If there are, remove the scraps before proceeding with any other operation.

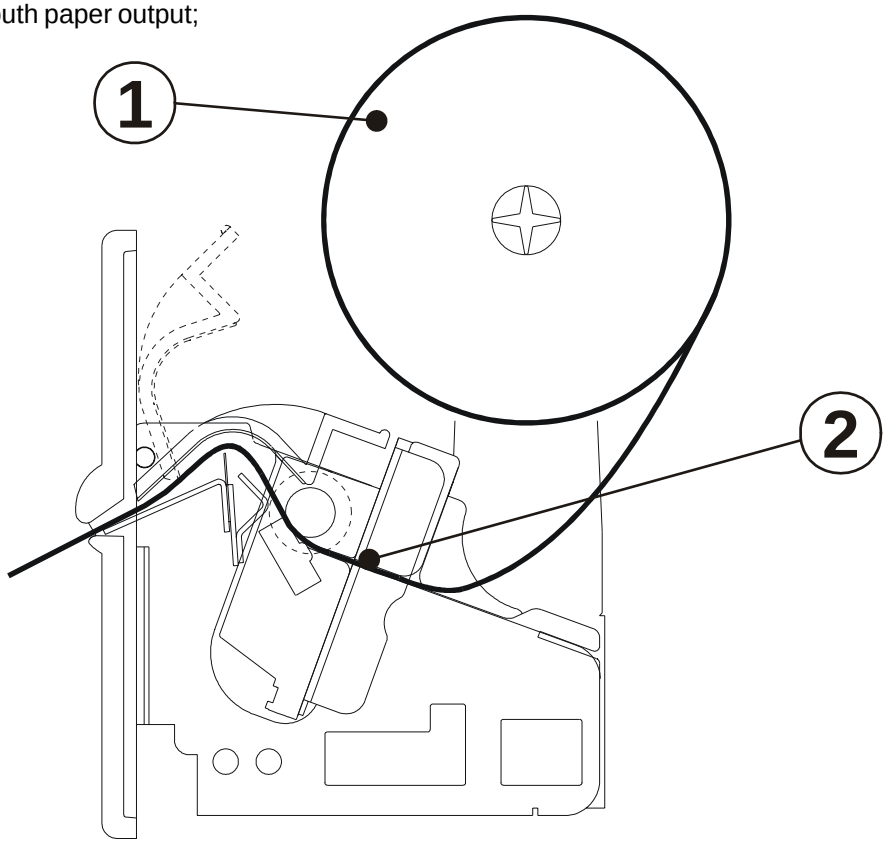


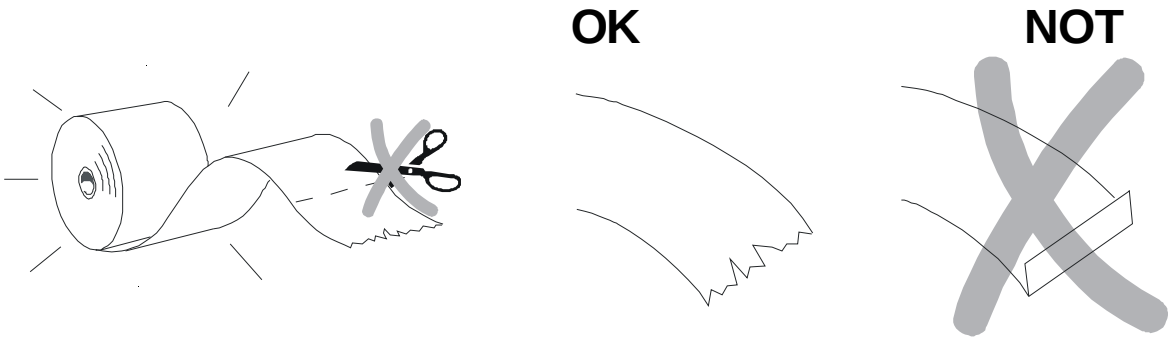
(Fig.1.4)

WARNING
Periodically remove accumulated paper dust from the drag paper roll and the area around the paper outfeed sensor (see fig. 1.4 with b letter). To clean, do not use harsh chemical solvents; the use of a soft, alcohol-oistened cloth is recommended.

To change the paper roll in the printer, proceed as follows (see the fig. 1.5) :
1) Position the paper roll (1), so that it rotates in the direction shown (fig.1.5);
2) Insert the end of the paper roll in the print mechanism (2) and wait until the roll loads automatically;
3) Remove the ticket from the mouth paper output;

(Fig.1.5)





(Fig.1.6)

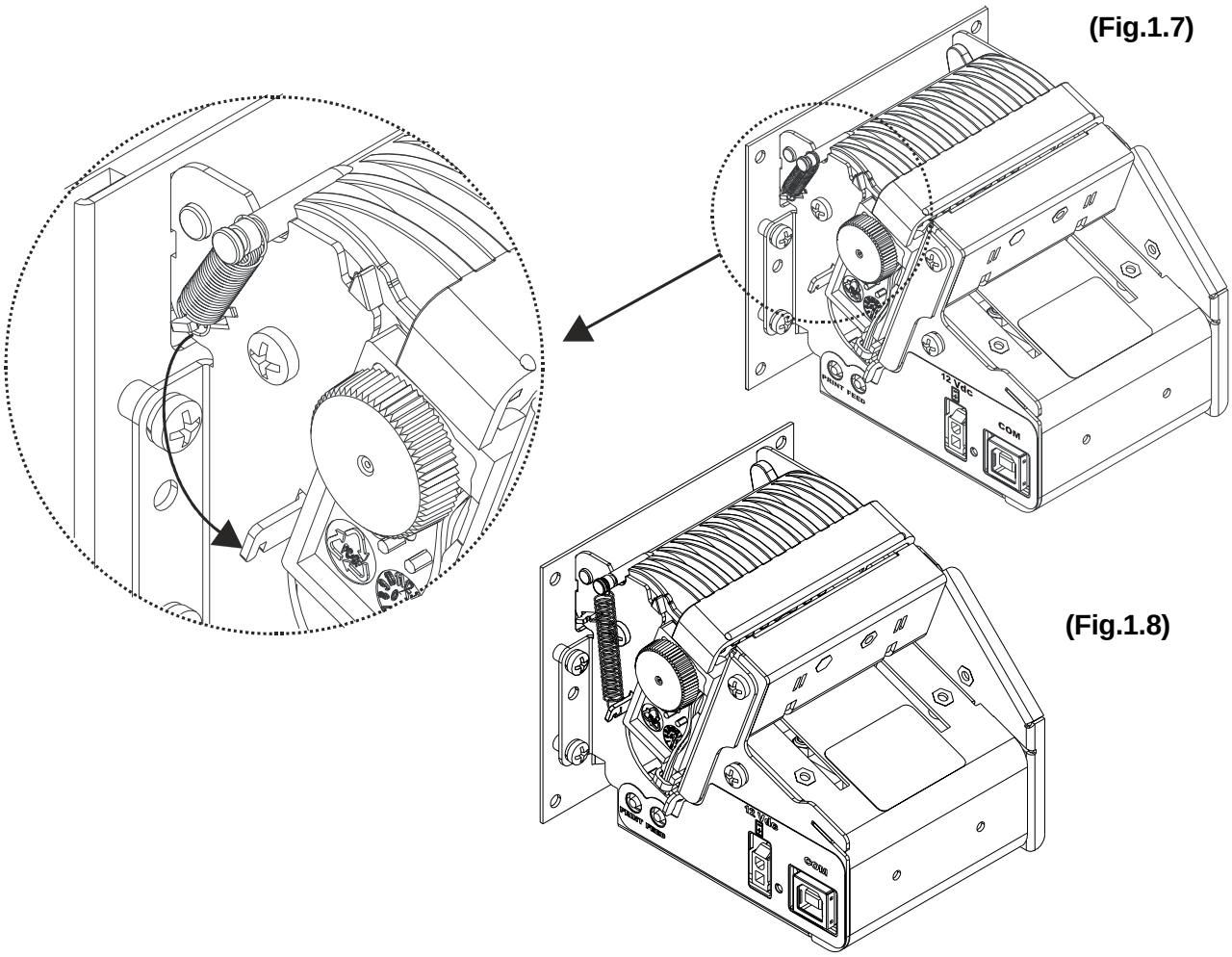
WARNING
Before inserting the paper, ensure that it isn't cut evenly.

1.4.2 Notes for installation and using the printer in the upside down position

To install the printer in the upside down position proceed as follows :

1) Release the spring as indicated in fig. 1.7 and placed it in the new position as indicated in fig. 1.8;

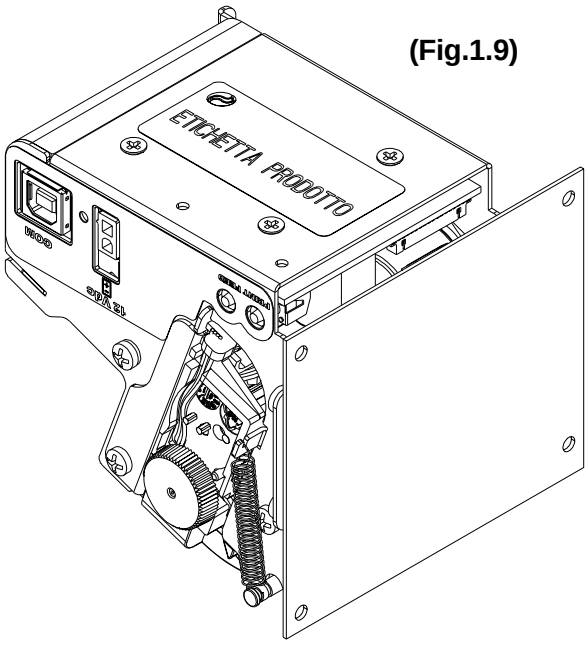
(Fig.1.7)



(Fig.1.8)

2) The printer is ready to be installed in the upside down position.

(Fig.1.9)



(3) **NOTE:** The operations described are valid for all models.

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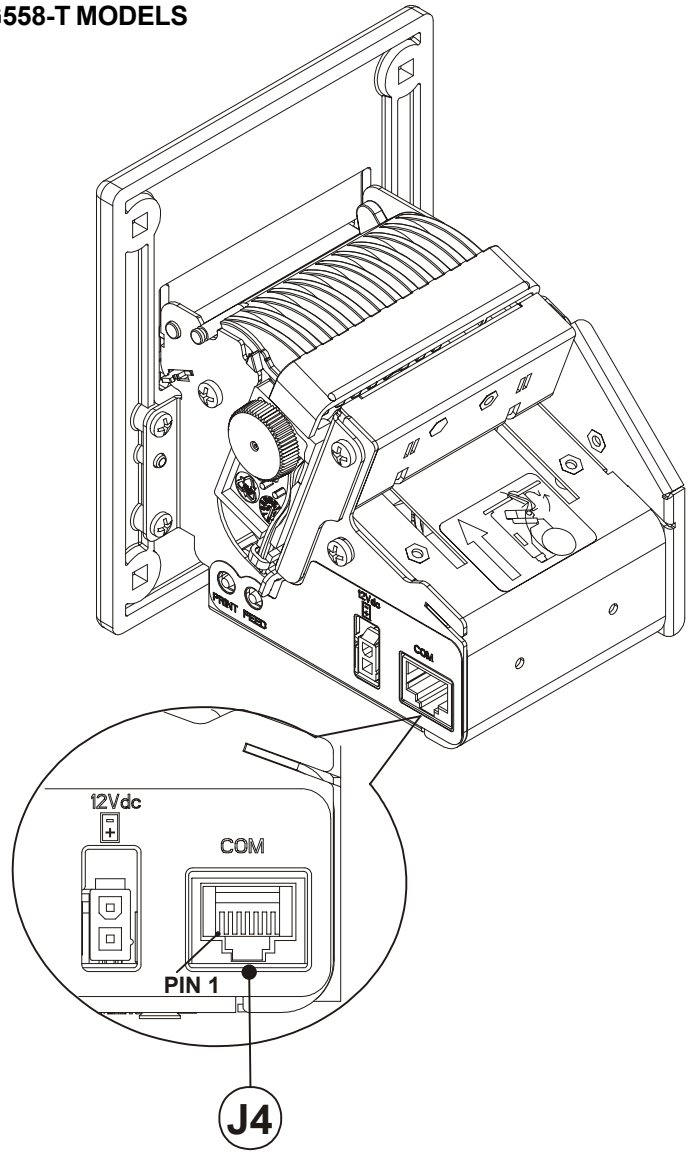
2.1 INTERFACES OF TG558-S AND TG558-T MODELS

(Fig.2.1)



2.1.1 RS232/TTL Serial

The printer with RS232/TTL serial interface is connected by means of a RJ45 connector J4 (see fig. 2.1). In the following table, the signals present on the connector are listed:

(Tab.2.1)

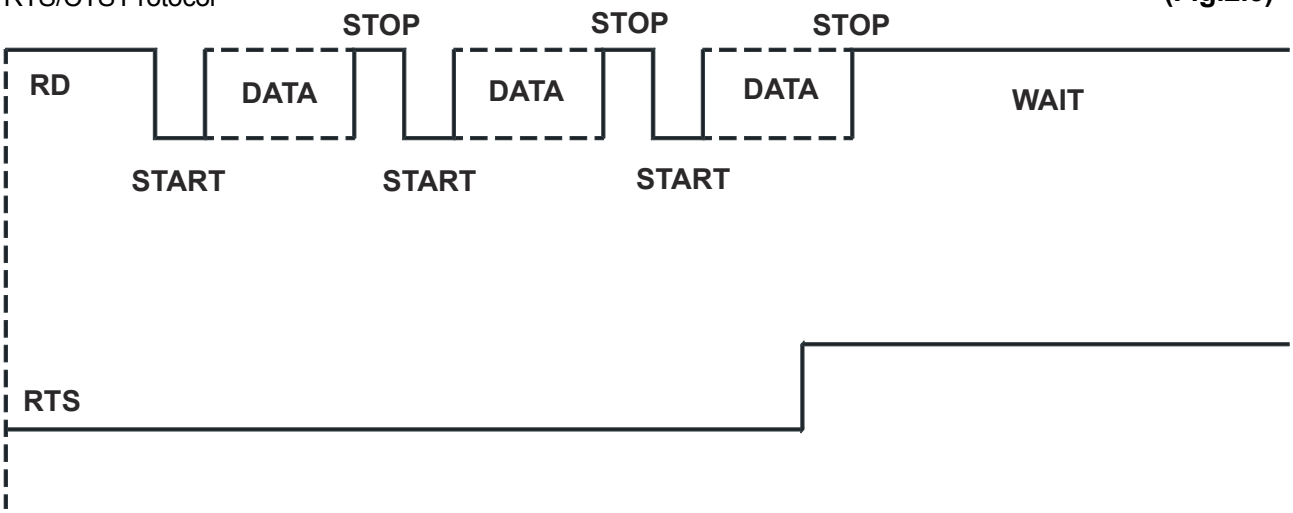
PIN	SIGNAL	DESCRIPTION
1	VCC	+ 5V
2	GND	GROUND
3	TXD	DATA TRANSMISSION
4	RXD	DATA RECEPTION
5	RTS	READY TO SEND
6	+VIN	+ 12V
7	NC	NOT CONNECTED
8	NC	NOT CONNECTED

In the serial protocol, the signals which characterize communication are TD, RD and RTS if the RTS/CTS protocol has been selected; alternatively, if the XON/OFF protocol has been selected, the signals are TD and RD.

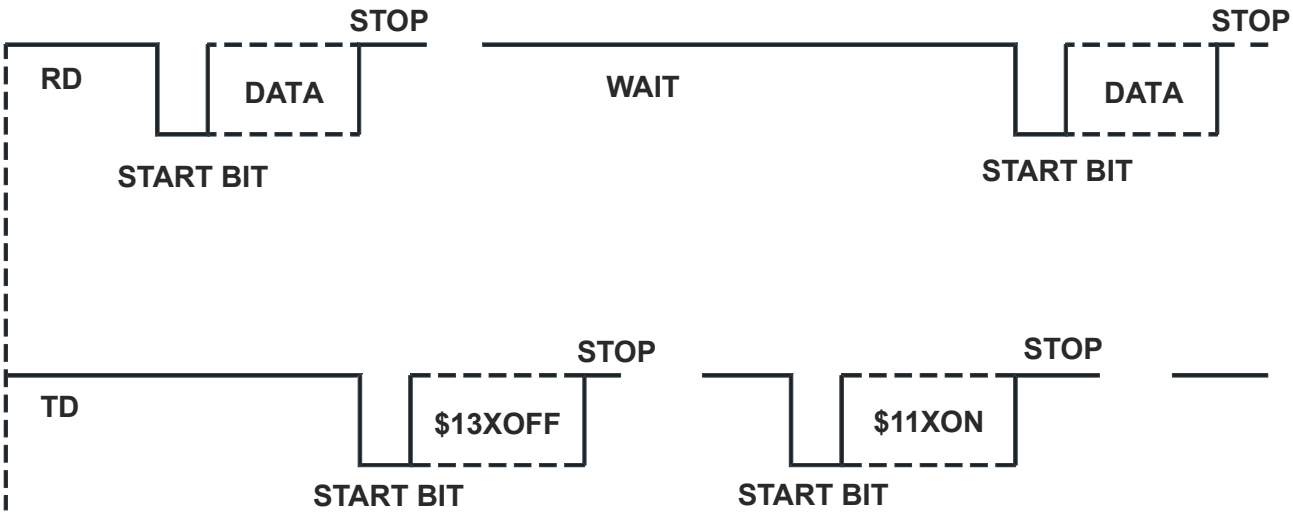
Transmission format **(Fig.2.2)**

NOTES :
(1) **Bit 7** is present only if in the set-up was enabled 8 bit character ("Data length").
(2) **Parity Bit** is present only if in the set-up the parity was enabled.

RTS/CTS Protocol **(Fig.2.3)**



XON-XOFF Protocol **(Fig.2.4)**



3.1 CONTROL CHARACTERS

LEGEND :

Symbol	Function
$	indicates the representation of the command hexadecimal value (for example $40 means HEX 40).
{ }	indicates an ASCII character not performable.
n, m, t, x, y	are additionals/optional parameters that can have different values.

The command table lists all the commands for the management of the printer functions.
The commands can be transmitted to the printer at any moment, but they will only be carried out when the characters previously transmitted have been printed or the commands previously transmitted have been carried out. There are no commands with priority status; all the commands are carried out when the circular buffer is free to do so.

COMMAND TABLE **(Table 3.1)**

HEX	ASCII	Description	Notes
$00	NUL	Prints in small characters	
$01	SOH	Prints in double width	
$02	STX	Prints in double height	
$03	ETX	Expanded printing	
$04	EOT	Restores small character printing	
$08	BS	Moving back of one character	
$0A	LF	Forward feeds one line	
(n) $0B	VT	Forward feeds (n) line	
$0D	CR	Prints line buffer	
$0F	SI	Sets CRLF mode	
$10 $04 (n)	DLE EOT n	Real-time status transmission	
$11	DC1	Graphic mode	
$12	DC2	Prints time and date	TG558-D,RTCK opt.
$13	DC3	Sets time and date	TG558-D,RTCK opt.
$14	DC4	Transmits time and date in serial	TG558-D,RTCK opt.
$18	CAN	Cancel print data	
$1B $23 n	ESC # n	Transmit printer ID	
$1B $28 nL nH	ESC (v nL nH	Set relative vertical print position	
$1B $2D (n)	ESC - n	Turn underline mode on/off	
$1B $30	ESC 0	Select 1/8-inch line spacing	
$1B $32	ESC 2	Select 1/6-inch line spacing	
$1B $33 (n)	ESC 3 n	Set line spacing using minimum units	
$1B $40	ESC @	Resets the printer	
$1B $41	ESC A	Executes [n] dots line feed	
$1B $44	ESC D	Enters date in print buffer	TG558-D,RTCK opt
$1B $49	ESC I	Selects Font A	
$1B $4A (n)	ESC J n	Print and feed paper	
(dd) $1B $4D	(dd) ESC M	Writes value (dd) in print mode	
$1B $4E	ESC N	Sets normal mode printing	
$1B $51	ESC Q	Enables underlining	
$1B $52	ESC R	Sets reverse mode printing	
$1B $54	ESC T	Enters time in print buffer	TG558-D,RTCK opt
$1B $55	ESC U	Enters date (mm:dd:yy) in print buffer	TG558-D,RTCK opt
$1B $57	ESC W	Prints graphic line of 200 dpi	
$1B $58	ESC X	Prints in red	

HEX	ASCII	Description	Notes
$1B $61	(dd) ESC a	Selects justification	
$1B $62	(dd) ESC b	Selects number of dot spaces	
$1B $63	ESC c	Management of bar code printing	
$1B $64 (n)	ESC d n	Print and feed paper n lines	
$1B $68	ESC h	Selects Font B	
$1B $69	ESC i	Selects Font B	
$1B $6D	ESC m	Transmits print mode in serial	
$1B $71	ESC q	Disables underlining	
$1B $72 (n)	ESC r n	Set/reset red printing mode	
$1B $73	ESC s	Transmits next character in serial	
$1B $76	ESC v	Transmit printer status	
$1B $78 n	ESC x n	Select speed/current mode	
$1B $7B (n)	ESC { n	Set/cancel upside-down character printing	
$1B $F0	ESC { }	Transmission of printer real time clock	TG558-D,RTCK opt
$1B $F1	ESC { }	Setting of printer real time clock	TG558-D,RTCK opt
$1B $FA n xL xH yH yL	ESC { } n xL xH yH yL	Print logo	
$1D $24 n	GS $ n	Set absolute shift into a graphic line	
$1D $44 s1 s2 s3 s4	GS D s1 s2 s3 s4	Visualization on display of a string characters	Only for TG558-D
$1D $45 d1..d8	GS E d1..d8	Display management in graphic mode	Only for TG558-D
$1D $46 n	GS F n	Setting graphic display effects	Only for TG558-D
$1D $49 (n)	GS I n	Transmit printer ID	
$1D $4C n m t d1..dk	GS L n m t d1..dk	Receive graphic display effect from serial port	Only for TG558-D
$1D $57 nL nH	GS W nL nH	Set printing area width	
$1D $59 n	GS Y n	Sets height in printing	
$1D $5A n	GS Z n	Receive n bytes from serial port	
$1D $62 n	GS b n	Prints formatted barcode	
$1D $64 n	GS d n	Enable/Disable scrolling text	Only for TG558-D
$1D $6F n	GS o n	Management of output lines	Only for TG558-D
$1D $72 n	GS r n	Transmit status	
$1D $EB	GS { }	Receive, Save and Play melody	Only for TG558-D

NOTE: commands without specifications in the “Note” column are valid for all the models; otherwise the “Note” column indicate a command that is valid for a specific model as follows :
• TG558-D printer version with display;
• RTCK opt. printer version with real time clock option.

The following pages provide a more detailed description of each command.

$00

[Name] **Small character printing**

[Format] ASCII NUL
Hex 00
Decimal 0

[Description] The printer prints in small characters (normal)

[Notes] • The commands $00 - $04 do not cancel the print buffer
• The commands which modify the direction of the characters are only active at the beginning of the line
[Default] Setting the “Print mode” parameter in the printer set-up
[Reference] **$01, $02, $03, $04, $1D $21, $1B $4D**
[Example]

$01

[Name] **Double width printing**
[Format] ASCII SOH
Hex 01
Decimal 1
[Description] The printer prints in double width format
[Notes] • The commands $00 - $04 do not cancel the print buffer
• The commands which modify the direction of the characters are only active at the beginning of the line
[Default] Setting the “Print mode” parameter in the printer set-up
[Reference] **$00, $02, $03, $04, $1D $21, $1B $4D**
[Example]

$02

[Name] **Double height printing**
[Format] ASCII STX
Hex 02
Decimal 2
[Description] The printer prints in double height format.
[Notes] • The commands $00 - $04 do not cancel the print buffer
• The commands which modify the direction of the characters are only active at the beginning of the line
[Default] Setting the “Print mode” parameter in the printer set-up
[Reference] **$00, $01, $03, $04, $1D $21, $1B $4D**
[Example]

$03

[Name] **Expanded printing**
[Format] ASCII ETX
Hex 03
Decimal 3
[Description] The printer prints in expanded character mode
[Notes] • commands $00 - $09 do not cancel the print buffer
• the commands which modify the dimensions of the characters are only active at the beginning of the line
[Default] Setting the “Print mode” parameter in the printer set-up
[Reference] **$00, $01, $02, $04, $1D $21, $1B $4D**
[Example]

$04

[Name] **Restore small character printing**

[Format] ASCII EOT
Hex 04
Decimal 4

[Description] The printer resumes printing with small characters

[Notes] • The commands $00 - $09 do not cancel the print buffer
• the commands which modify the dimensions of the characters are only active at the beginning of the line

[Default] Setting the “Print mode” parameter in the printer set-up

[Reference] **$00, $01, $02, $03, $1D $21, $1B $4D**

[Example]

$07

[Name] **Cancel print data buffer**

[Format] ASCII BEL
Hex 07
Decimal 7

[Description] Deletes all the print data in the current print buffer.

[Notes] • If data that existed in the previously specified printing area also exists in the currently specified printing area, it is deleted.

[Default]

[Reference]

[Example]

BS

[Name] **Moving back of one character**

[Format] ASCII BS
Hex 08
Decimal 8

[Description] Moves print position to previous character.

[Notes] This command can put two characters at the same position.

[Default]

[Reference]

[Example]

$0A

[Name] **Forward feeds one line**

[Format] ASCII LF
Hex 0A
Decimal 10

[Description] Forward feeds one line equivalent to a line of print

[Notes] • This command brings about the printing of the contents of the line buffer

[Default]

[Reference] **$1B $32, $1B $33**

[Example]

(n) $0B

[Name]	**Forward feeds (n) lines**			
[Format]	ASCII	VT		
	Hex	0B		
	Decimal	11		
[Description]	Carries out the number of line feeds specified in (n)			
[Notes]	•The number must be ASCII and between 0 and 9 (when n=0 the command is ignored)			
	• This command clears the line buffer			
[Default]				
[Reference]	**$0A**			
[Example]	To forward feed fast, 5 lines at a time:			
	$35 $0B (or 5 and the command $0B)			

CR

[Name]	**Print and carriage return**			
[Format]	ASCII	CR		
	Hex	0D		
	Decimal	13		
[Description]	When autofeed is “CR enabled”, this command functions in the same way as **$0A**, otherwise it is disregarded.			
[Notes]	• Sets the print position to the beginning of the line.			
[Default]	See “Autofeed in setup” parameter.			
[Reference]	**$0A**			
[Example]				

$0F

[Name]	**Set CRLF mode**			
[Format]	ASCII	SI		
	Hex	0F		
	Decimal	15		
[Description]	Inhibits the command $0D maintaining enabled only the command $0A for printing			
[Notes]	• To disable this option, reset the printer			
	• This command clears the line buffer			
	• On switching on the default value is in the Option Register			
[Default]	Setting in the option register by means of the front keys			
[Reference]	**$0D**			
[Example]				

DLE EOT n

[Name]	**Real-time status transmission**			
[Format]	ASCII	DLE	EOT	n
	Hex	10	04	n
	Decimal	16	4	n
[Range]	$1 \leq n \leq 6$			
[Description]	Transmits the selected printer status specified by *n* in real time according to the following parameters:			

n = 1 transmit printer status
n = 2 transmit off-line status
n = 3 transmit error status
n = 4 transmit paper roll sensor status
n = 5 transmit paper sensors status
n = 6 transmit input/output status

[Notes]
• This command is executed when the data buffer is full.
• This status is transmitted whenever data sequence $10 $04 n is received ($1 \le n \le 6$).

[Default]

[Reference] See tables below.

[Example] n=1: Printer status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED
1	-	-	-	RESERVED
2	-	-	-	RESERVED
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	Off	00	0	Drag paper motor off
	On	40	64	Drag paper motor on
7	-	-	-	RESERVED

n=2: Off-line status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2	Off	00	0	REPORT button not pressed
	On	04	4	REPORT button pressed
3	Off	00	0	FEED button not pressed
	On	08	8	FEED button pressed
4	-	-	-	RESERVED.
5	Off	00	0	Paper present.
	On	20	32	Paper end.
6	Off	00	0	No error.
	On	40	64	Error.
7	-	-	-	RESERVED.

n=3: Error status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2	-	-	-	RESERVED.
3	-	-	-	RESERVED.
4	-	-	-	RESERVED.
5	-	-	-	RESERVED.
6	Off	00	0	No auto-recoverable error.
	On	40	64	Auto-recoverable error.
7	-	-	-	RESERVED.

n=4: Paper roll sensor status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2	-	-	-	RESERVED.
3	-	-	-	RESERVED.
4	-	-	-	RESERVED.
5,6	-	-	-	RESERVED
7	-	-	-	RESERVED.

n=5: Paper sensor status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2,3	Off	00	0	Paper end sensor Paper present
	On	0C	12	The paper end is detected by the sensor
4	-	-	-	RESERVED.
5, 6	Off	00	0	Near Paper end sensor Paper present
	On	40	64	The near paper end is detected by the sensor
7	-	-	-	RESERVED.

n=6: Input/Output status

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	RESERVED.
1	-	-	-	RESERVED.
2	Off	00	0	COIN 1 status at low level
	On	04	4	COIN 1 status at high level
3	Off	00	0	COIN 2 status at low level
	On	08	8	COIN 2 status at high level
4	-	-	-	RESERVED.
5	Off	00	0	INHGET status at low level
	On	20	32	INHGET status at high level
6	Off	00	0	AUXOUT status at low level
	On	40	64	AUXOUT status at high level
7	-	-	-	RESERVED.

$11

[Name] **Graphic mode**

[Format] ASCII DC1

Hex 11

Decimal 17

[Description] Enables graphic mode:

a line in 24 column mode corresponds to 144 horizontal dots divided into 24 blocks of 6 dots each; a line in 40 column mode corresponds to 240 horizontal dots divided into 40 blocks of 6 dots each.

[Notes] To obtain graphic printing, enter the command $11 at the beginning of each line. The format of the byte in graphic configuration is:

X	R	P6	P5	P4	P3	P2	P1
D7	D6	D5	D4	D3	D2	D1	D0

where:

X is not used (0 is recommended);

R must be fixed at level 1;

P1,...,P6 are the graphic dot data (1 prints, 0 does not print).

The P6 bit of the string of dots transmitted is printed on the left and the others follow from left to right (P5, P4, P3, P2, P1) as shown:

1st byte ➔	**2nd byte ➔**	**3rd byte ➔**
P6 P5 P4 P3 P2 P1	P6 P5 P4 P3 P2 P1	P6 P5 P4 P3 P2 P1

[Default]

[Reference]

[Example] To print a line of dots, transmit:

$11, n x $7F (where n is the number of characters per line), $0D.

To print an empty line, transmit:

$11, $40, $0D.

$12

[Name] **Print time and date**

[Format]

ASCII	-
Hex	12
Decimal	18

[Description] Prints the time and date in the following format:

hh : mm dd - mm -yy

If seconds printing is enabled, the format will be:

hh : mm : ss dd - mm -yy

[Notes]

- The command resets the line
- This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference] **$13, $14**

[Example]

$13

[Name] **Set time and date**

[Format]

ASCII	-
Hex	13
Decimal	19

[Description] This command sets the time and date in two possible ways :

the first uses 24 hour clock and the second the 12-hour am/pm clock. In the first case, transmits the 10 ASCII characters representing the time and the date followed by $13 and in the second case transmits the 10 ASCII characters representing the time and the date preceded by “A” or “P” and followed by $13.

[Notes]

- It is advisable to transmit the command $0D first, in order to empty the print buffer.
- This command is present only in the printer version with display (TG558-D) and with RTCK option.

[Default]

[Reference] **$12, $14**

[Example] To set the time 12:45 on 19-01-93, transmit

1	2	4	5	1	9	0	1	9	3	$13
$31	$32	$34	$35	$31	$39	$30	$31	$39	$33	$13

To set the time A 12:45 on 19-01-93, transmit

A	1	2	4	5	1	9	0	1	9	3	$13
$41	$31	$32	$34	$35	$31	$39	$30	$31	$39	$33	$13

$14

[Name] **Transmit the time and date in serial**

[Format]

ASCII	-
Hex	14
Decimal	20

[Description] Transmit the time and date on serial port with ASCII format (11 ASCII characters) :
hours/minutes/day/mont h/year + (CR) $0D

[Notes] • This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference] **$13, $14**

[Example]

$1B $23 n

[Name] **Transmit printer ID**

[Format]

ASCII	ESC	#	n
Hex	1B	23	n
Decimal	27	73	n

[Range] $1 \le n \le 3$, $49 \le n \le 51$

[Description] Transmits the printer ID specified by *n* follows:

n	Printer ID	Specification
1, 49	Printer model ID	$68 (58mm model) $69 (35mm model)
2, 50	Not used	Fixed on $00
3, 51	ROM version ID	Depends on version ROM (4 char)

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]

[Reference]

[Example]

$1B $28 $76 nL nH

[Name] Set relative vertical print position

[Format]

ASCII	ESC	(	v	nL	nH
Hex	1B	28	76	nL	nH
Decimal	27	10	118	nL	nH

[Range] 0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

[Description] Sets the print vertical position based on the current position by using the horizontal or vertical motion unit.

• This command sets the distance from the current position to [(*nL* + *nH* x 256) x (horizontal or vertical motion unit)].

[Notes] • When the starting position is specified by N motion unit to the bottom:

nL + *nH* x 256=N

• When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536:

nL + *nH* x 256=65536 - N

• In standard mode, the vertical motion unit is used.

[Default]

[Reference]

[Example]

$1B $30

[Name] **Select 1/8-inch line spacing**.

[Format]

ASCII	ESC	0
Hex	1B	30
Decimal	27	48

[Description] Selects 1/8-inch line spacing.

[Notes]

[Default]

[Reference] **$1B $32, $1B $33**

[Example]

$1B $32

[Name] **Set line spacing at 1/6 inch**.

[Format]

ASCII	ESC	2
Hex	1B	32
Decimal	27	50

[Description] Selects 1/6 inch line spacing.

[Notes]

[Default]

[Reference] **$1B $30, $1B $33**

[Example]

$1B $33 n

[Name] **Set line spacing.**

[Format]

ASCII	ESC	3	n
Hex	1B	33	n
Decimal	27	51	n

[Range] 0 ≤ n ≤ 255

[Description] Sets the line spacing at [*n* × (vertical or horizontal motion unit)] inches.

[Notes] • Changing the horizontal or vertical motion unit does not affect the current line spacing.
• However, the value cannot be less than the minimum vertical movement amount.

• In standard mode, the vertical motion unit is used.
• The maximum line spacing is *n* = 255 (≅ 32mm).

[Default] n = 32 (1/6 inch)

[Reference] **$1B $30, $1B $32**

[Example]

ESC @

[Name] **Initialize printer**

[Format]

ASCII	ESC	@
Hex	1B	40
Decimal	27	64

[Description] Clears the data in the print buffer and resets the printer mode to that in effect when power was turned on.

[Notes] • The data in the receiver buffer is not cleared.
• The macro definitions are not cleared.

[Default]

[Reference]

[Example]

$1B $41 [nH] [nL]

[Name] **Executes [n] dots line feed**

[Format]

ASCII	ESC	A	nH	nL
Hex	1B	41	nH	nL
Decimal	27	65	nH	nL

[Description] Executes [N] dots line feed where N = 256 x *nL* + *nH*.

[Notes] • 1 mm is equivalent to 8 dot line.

[Default]

[Reference]

[Example] To executes a 40 mm of feed transmit :

$1B $41 $01 $40 (or the ESC A command and the value 40mm x8 dot).

$1B $44

[Name] **Enters the date in the print buffer**

[Format]

ASCII	ESC	D
Hex	1B	44
Decimal	27	68

[Description] Enters in the buffer the date of the calendar clock intsalled inside the printer, in the following format :dd - mm - yy .

[Notes] • The date is printed in 8 characters: if there is not enough space in the buffer, it will not be printed.
• It does not zero-set the line buffer
• This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference] **$1B $54, $1B $55**

[Example] If you wish to write :

DATE : 11-09-93 TEST OK

transmit DATE : $1B $44 TEST TEST OK $0D
to print just the date $1B $44 $0D

$1B $49

[Name] **Selects Font A**

[Format]

ASCII	ESC	I
Hex	1B	49
Decimal	27	73

[Description] After this command is received Font A is selected and the printer is ready to use this configuration. The number of columns by row is indicated as follows :

TG558	Font A
58mm model	24 columns
35mm model	17 columns

[Notes]

[Default]

[Reference] **$1B $69**

[Example]

$1B $4A n

[Name] **Print and feed paper.**

[Format]

ASCII	ESC	J	n
Hex	1B	4A	n
Decimal	27	74	n

[Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds the paper [$n \times$ (vertical or horizontal motion unit) inches.

[Notes]
- After printing is over, this command sets the print starting position at the beginning of the line.
- The paper feed amount set by this command does not affect the values set by **$1B $32** or **$1B $33**.
- In standard mode, the vertical motion unit is used.
- The maximum paper feed amount is 31.8 mm.

[Default]

[Reference]

[Example]

(dd) $1B $4D

[Name] **Writes the value (dd) in the print mode.**

[Format]

ASCII	dH	dL	ESC	M
Hex	dH	dL	1B	4D
Decimal	dH	dL	27	77

[Description] Sets the print mode default parameters

$00 small characters

$01 double width printing

$02 double height printing

$03 expanded printing

[Notes]
- The setting is stored in EEPROM

[Default] Setting by means of the front keys
[Reference] **$1B $6D**
[Example] For double height printing, transmit :
$30 $32 $1B $4D

$1B $4E

[Name] **Set printing in NORMAL**
[Format] ASCII ESC N
Hex 1B 4E
Decimal 27 78
[Description] Selects printing in NORMAL mode.
[Notes] • Setting remains until next set.
[Default] Setting the “Print mode” parameter in the printer set-up.
[Reference] **$1B $52**
[Example]

$1B $51

[Name] **Enable underlined printing**
[Format] ASCII ESC Q
Hex 1B 51
Decimal 27 81
[Description] After this command has been received, the characters are printed underlined.
[Notes]
[Default]
[Reference] **$1B $71**
[Example]

$1B $52

[Name] **Set printing in REVERSE**
[Format] ASCII ESC R
Hex 1B 52
Decimal 27 82
[Description] Set printing in REVERSE mode: the ticket comes out from the printer with the strings straight and orientated from left to right .
[Notes]
[Default] Setting the “Print mode” parameter in the printer set-up.
[Reference] **$1B $4E**
[Example]

$1B $54

[Name] **Enters the time in the print buffer**
[Format] ASCII ESC T
Hex 1B 54
Decimal 27 84
[Description] Enters in the buffer the time of the calendar clock intsalled inside the printer, in the following format : hh : mm.
[Notes] • The time is printed in 5 characters: if the seconds option is enabled, in 8 characters: if

there is not enough space in the buffer, it will not be printed.

• It does not zero-set the line buffer

• This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference] **$1B $44, $1B $55**

[Example] If you wish to write :

HOUR : 16 : 45 TEST OK

transmit HOUR : $1B $54 TEST TEST OK $0D

to print just the time $1B $54 $0D

$1B $55

[Name] **Enters the date (mm - dd- yy) in the print buffer**

[Format]

ASCII	ESC	U
Hex	1B	55
Decimal	27	85

[Description] Enters in the buffer the date of the calendar clock installed inside the printer, in the American style format : mm-dd-yy.

[Notes] • The date is printed in 8 characters: if there is not enough space in the buffer, it will not be printed.

• It does not zero-set the line buffer

• This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference] **$1B $44, $1B $54**

[Example] If you wish to write :

DATE : 09-11-93 TEST OK

transmit DATE : $1B $55 TEST OK $0D

to print just the date $1B $55 $0D

$1B $57

[Name] **Prints a graphic line at 203 dpi**

[Format]

ASCII	ESC	W
Hex	1B	57
Decimal	27	87

[Description] After receiving this command, the printer waits for *n* bytes which correspond to an entire graphic line where n assumes :

n = 34byte for 35mm model

n = 48 bytes for 58mm model

[Notes]

[Default]

[Reference]

[Example]

$1B $58

[Name] **Prints in red**

[Format]

ASCII	ESC	X

	Hex	1B	58	
	Decimal	27	88	

[Description] After receiving this command, the printer prepares itself to print in red.

[Notes]

[Default]

[Reference]

[Example]

ESC a n

[Name] **Select justification**

[Format]

ASCII	ESC	a	n	
Hex	1B	61	n	
Decimal	27	97	n	

[Range] $0 \le n \le 2$, $48 \le n \le 50$

[Description] Aligns all data in one line to the specified position, where *n* selects the type of justification as follows:

n	Justification
0, 48	Flush left
1, 49	Centered
2, 50	Flush right

[Notes]
- This command is only enabled when inserted at the beginning of a line.
- Lines are justified within the specified printing area.
- Spaces set by **HT**, **ESC $** and **ESC ** will be justified according to the previously entered mode.

[Default] n = 0

[Reference]

[Example]

Flush left

```
ABC
ABCD
ABCDE
```

Centered

```
 ABC
 ABCD
ABCDE
```

Flush right

```
  ABC
 ABCD
ABCDE
```

(dd) $1B $61

[Name] **Selects the number of dot spaces**

[Format]

ASCII	(dd)	ESC	b	
Hex	(dd)	1B	62	
Decimal	(dd)	27	98	

[Description] (dd) are two ASCII characters which identify a hexadecimal byte and correspond to the number of dot lines between one print line and another.

[Notes]

[Default] = 0

[Reference]

[Example]

$1B $63

[Name] **Management of bar code printing**

[Format]

ASCII	ESC	c	[code] [height] [position] [options] [length] [data]
Hex	1B	63	

Decimal 27 99

[Description] This command executes a barcode printing depending on the following parameters:

[code] = Type of bar code (ASCII character) The values are :

- I Interleved 2/5
- C Code 39
- B CodaBar
- e EAN8
- E EAN13

[height] = Number of dot lines in 1/8 mm units.

[position]= Left hand margin, expressed in 1/8 mm units.

[options] = Specify the bar code options through a byte. Listed in the following table are all the possible value of a single bit inside of byte :

Bit 0	Function	Description
0	Check digit is not printed	Check digit
1	Check digit is printed	

Bit 1	Function	Description
-	Not used	-

Bit 3	Bit 2	Function	Description
0	0	no	HRI position
0	1	above	
1	0	below	
1	1	above and below	

Bit 5	Bit 4	Function	Description
0	0	normal	barcode length
0	1	double	
1	0	triple	
1	1	Not used	

Bit 1	Function	Description
6	Not used	-
7	Not used	-

[maximum length] Specify the characters number to print through a byte; following are the maximum lengths allowed :

- Interleaved 2/5 = 12 characters
- Code 39 = 10 characters
- CodaBar = 10 characters
- EAN8 = 8 characters
- EAN13 = 13 characters

[data] = Expressed in ASCII.

[Notes]

[Default]

[Reference]

[Example] In the following example the command sequence to print a barcode is indicated :

$1B, 'N', $1B, 'c', 'C', $50, $3C, $14, $06, 'TG558'

where :

$1B, 'N'	(sets the printing in normal mode)
$1B, 'c',	(barcode printing command)
'C',	(barcode type= Code 39)
$50,	(barcode height = 10 mm)
$3C,	(starting position = 7,5 mm)
$14,	(HRI printing below, barcode width double)
$06,	(characters number to print)
'TG558'	(characters to print)

ESC d n

[Name] **Print and feed paper *n* rows**

[Format]

ASCII	ESC	d	n
Hex	1B	64	n
Decimal	27	100	n

[Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds the paper *n* rows.

[Notes]
- Sets the print starting position at the beginning of the line.
- This command does not affect the line spacing set by **$1B $32** or **$1B $33**.
- The maximum paper feed amount is 200 rows. Even if a paper feed amount of more than 200 rows is set, the printer feeds the paper only 200 rows.

[Default]

[Reference] **$1B $32, $1B $33**

[Example]

$1B $68

[Name] **Selects Font B**

[Format]

ASCII	ESC	h	
Hex	1B	68	
Decimal	27	104	

[Description] After this command is received Font B is selected and the printer is ready to use this configuration. The number of columns by rows is indicated as follows :

TG558	Font B
58mm model	42 columns
35mm model	28 columns

[Notes]

[Default]

[Reference] **$1B $49, $1B $69**

[Example]

$1B $69

[Name] **Selects Font B**

[Format]

ASCII	ESC	i
Hex	1B	69
Decimal	27	105

[Description] After this command is received Font B is selected and the printer is ready to use this configuration. The number of columns by rows is indicated as follows :

TG558	Font B
58mm model	40 columns
35mm model	28 columns

[Notes]

[Default]

[Reference] **$1B $49, $1B $68**

[Example]

$1B $6B

[Name] **Transmits the second configuration register in serial**

[Format]

ASCII	ESC	k
Hex	1B	6B
Decimal	27	107

[Description] The value of the second configuration register is transmitted through the serial port, is in ASCII format and has two characters which represent the hexadecimal value.

[Notes]

[Default]

[Reference] **$1B $4B**

[Example] The response is on two bytes. E.g. if you receive :

$30 $39

it means that the default register is 00001001

$1B $6D

[Name] **Transmits the printing mode in serial**

[Format]

ASCII	ESC	m
Hex	1B	6D
Decimal	27	109

[Description] Transmits the printing mode configuration through serial port.

[Notes] • If the printer using a parallel protocol, it doesn't transmits anything.

[Default] Setting in the option register by means on the front keys

[Reference]

[Example] The response is in two bytes. E.g. if you receive :
$30 $32
it means that printing is in double height mode

$1B $70

[Name] **Transmits the configuration register in serial**

[Format]

ASCII	ESC	p	
Hex	1B	70	
Decimal	27	112	

[Description] Transmits the option register byte through serial port.

[Notes] • If the printer using a parallel protocol, it doesn't transmits anything

[Default]

[Reference] **$1B $47, $1B $4B, $1B $6B**

[Example] The response is in two bytes. E.g. if you receive :
$30 $39
it means that the default configuration is 00001001

$1B $72 n

[Name] **Set/reset red printing mode**

[Format]

ASCII	ESC	r	n
Hex	1B	72	n
Decimal	27	114	n

[Range] $0 \le n \le 1$, $48 \le n \le 49$

[Description] Sets and resets red printing mode.

n	Function
0, 48	Reset red printing mode
1, 49	Set red printing mode

[Notes] • The printer prints only entire lines in red, not individual characters.
• The printer prints red only if enabled (see Setup).

[Default] *n* = 0

[Reference]

[Example]

$1B $73

[Name] **Transmits the next character in serial**

[Format]

ASCII	ESC	s
Hex	1B	73
Decimal	27	115

[Description] Transmits the next character it receives from the serial port

[Notes]

[Default]

[Reference]

[Example] If you transmit : $1B $73 $41 the last character, A ($41), will not be printed but immediately transmitted on the serial line.

$1B $76

[Name] **Transmit paper sensor status**

[Format]

ASCII	ESC	v
Hex	1B	76
Decimal	27	118

[Description] Trasmit the current paper sensor status upon receiving this command

[Notes] This commandi is executes immediately, even when the reception buffer is full (BUSY).
The status to be trasmitted is shown in the table bellow.

Bit	Off/On	Hex	Decimal	Function
0-3	off	00	00	Paper present
0-3	on	0F	15	Paper end
5	off	00	00	Cover close/no paper jam
5	on	20	32	Cover oper/Paper jam
6-7	-	-	-	RESERVED

[Default]

[Reference] **$10 $04**

[Example]

$1B $78

[Name] **Prints in black**

[Format]

ASCII		ESC	x
Hex	1B	78	
Decimal		27	120

[Description] After receiving this command, the printer prepares itself to print in black.

[Notes]

[Default] n = 0

[Reference]

[Example]

$1B $7B n

[Name] **Turn upside-down printing mode on/off**

[Format]

ASCII	ESC	{	n
Hex	1B	7B	n
Decimal	27	123	n

[Range] $0 \le n \le 255$

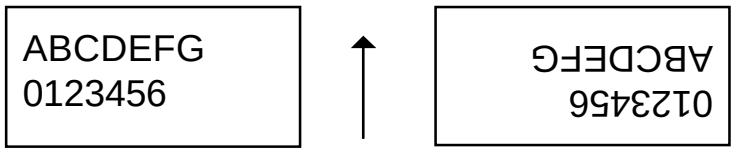
[Description] Turns upside-down printing mode on or off.
• When the LSB of *n* is 0, the upside-down printing mode is off.
• When the LSB of *n* is 1, the upside-down printing mode is on.

[Notes] • Only the LSB of *n* is effective.
• This command is valid only if entered at the beginning of a line.
• In upside-down printing mode, the printer rotates the line to be printed 180° and then prints it.

[Default] n = 0

[Reference]

[Example] Upside-down printing Off Upside-down printing On



Printing direction

$1B $F0

[Name] **Transmits the real time clock**

[Format]

ASCII		ESC	{}
Hex	1B	F0	
Decimal		27	240

[Description] Use this command, to read the printer's calendar clock (real time clock).

[Notes] • Transmit the time and date in 12 ASCII characters format :

HHmmSSDDMMYY

where :

HH -> hour
mm -> minutes
SS -> seconds
DD -> day
MM -> month
YY -> year

• This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference]

[Example]

$1B $F1 n0...n9

[Name] **Sets the real time clock**

[Format]

ASCII	ESC	{}	n0...	n9
Hex	1B	F1	n0...	n9
Decimal	27	241	n0...	n9

[Description] Use this command, to set the printer calendar clock (real time clock).

[Notes] • Transmit the time and date in 10 ASCII characters format :

HHmmDDMMYY

where :

HH -> hour
mm -> minutes
DD -> day
MM -> month
YY -> year

• This command is present only in the printer version with display (TG558-D) and RTCK option.

[Default]

[Reference]

[Example]

$1B $FA n xH xL yH yL

[Name] **Print logo.**

[Format]

ASCII	ESC	{}	n	xH	xL	yH	yL
Hex	1B	FA	n	xH	xL	yH	yL
Decimal	27	250	n	xH	xL	yH	yL

[Range] n = 1, 49

$0 \le xH, xL, yH, yL \le 255$

[Description] Prints graphic logo stored into flash bank; n selects the graphic source as follows :

xL + *xH* × 256 specifies the starting dotline (1 ÷ *Nrow*) where

Nrow = 341 for 58mm model

Nrow = 512 for 35mm model

yL + y*H* × 256 specifies the number of lines to print.

[Notes]

• If (*xL* + (*xH* × 256)) > *Nrow* the printer does not execute the command where

Nrow = 341 for 58mm model

Nrow = 512 for 35mm model

• If (*xL* + (*xH* × 256) + *yL* +(y*H* × 256))> *Nrow* the printer prints only *Nrow* - *xL* + (*xH* × 256) +1 dotline where

Nrow = 341 for 58mm model

Nrow = 512 for 35mm model

• The logo dimension is :

384 x 341 for 58mm model

256 x 512 for 35mm model

[Default]

[Reference]

[Example] To print from ram bank dotline 10 to dotline 64, send:

$1B $FA $00 $00 $0A $00 $40

$1D $21 n

[Name] **Select character size**

[Format]

ASCII	GS	!	n
Hex	1D	21	n
Decimal	29	33	n

[Range] $0 \le n \le 255$

[Description] Selects character height and width, as follows:

• Bits 0 to 3 low Nibble: to select character height (see table 2).

• Bits 4 to 7 High Nibble: to select character width (see table 1).

0bit	1bit	2bit	3bit	4bit	5bit	6bit	7bit
height				width			

Table 1 Select Character Width (high Nibble)

Hex	Width
0x	1 (normal width = 1x)
1x	2 (width = 2x)
2x	3 (width = 3x)
3x-Fx	1 (normal width = 1x)

Table 2 Select character height (Low Nibble)

Hex	Height
x0	1 (normal height = 1x))
x1	2 (height = 2x)
x2	3 (height = 3x)
x3-xF	1 (normal height = 1x)

[Notes] • This command is effective for all characters (except HRI characters).
• If *n* falls outside the defined range, this command is ignored.
• Characters enlarged to different heights on the same line are aligned at the baseline or topline.

[Default] n = 0

[Reference] **$00, $01, $02, $03, $04**

[Example]

$1D $24 n

[Name] **Set absolute shift into a graphic line.**

[Format]

ASCII	GS	$	n	
Hex	1D	24	n	
Decimal	29	36	n	

[Range] 0≤ n ≤ 47 for 58mm model
0≤ n ≤ 34 for 35mm model

[Description] Set the print beginning position into a graphic line based on the current value of n that indicate the byte number of shift from left margin.

[Notes] • Settings outside the specified printable area are ignored.

[Default]

[Reference]

[Example]

$1D $44 s1 s2 s3 s4

[Name] **Visualization on display a string of 4 characters.**

[Format]

ASCII	GS	D	s1	s2	s3	s4
Hex	1D	44	s1	s2	s3	s4
Decimal	29	68	s1	s2	s3	s4

[Range] 48 ≤ s1, s2, s3, s4 ≤ 57
65 ≤ s1, s2, s3, s4 ≤ 90

[Description] Visualizes a string of 4 characters on printer display.

[Notes] • This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example] To visualize the string “CIAO” on display send :

$1D	$44	$43	$49	$41	$4F

$1D $45 d1...d8

[Name] **Display management in graphic mode.**

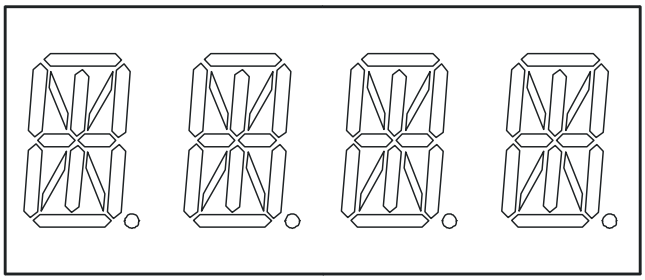
[Format]

ASCII	GS	E	d1...	d8
Hex	1D	45	d1...	d8
Decimal	29	69	d1...	d8

[Range] $0 \le d1 \le 255$

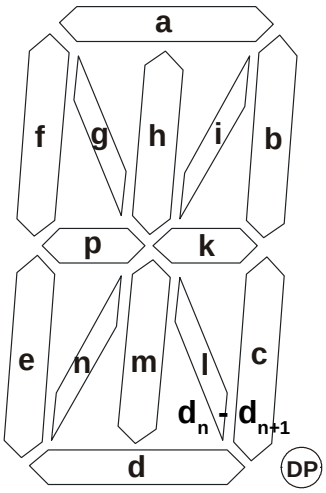
$0 \le d8 \le 255$

[Description] It's possible to customize the display visualization mode. Send 8 bytes (d1...d8) that identify the 4 digit present on display in the following mode :



1st digit		2nd digit		3rd digit		4th digit	
d1	d2	d3	d4	d5	d6	d7	d8

[Notes] • In the followimg figure are represented the display digits :



• Each pair of bytes identify a digit, and must be as follows :

7				dn			0	7				dn +1			0
N.U.	DP	k	p	n	m	l	i	h	g	f	e	d	c	b	a

• This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example] To visualize the character "+" on all 4 display digits send :

$1D $45 $34 $80 $34 $80 $34 $80 $34 $80

$1D $46 n

[Name] **Enabling graphic display effects.**

[Format]

ASCII	GS	F	n
Hex	1D	46	n
Decimal	29	70	n

[Range] $1 \le n \le 4$, $49 \le d8 \le 52$

[Description] Enables the graphic display effects. There are four effects already stored into the printer that can be reloaded in base of the n value.

[Notes] • This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example]

$1D $49 n

[Name] **Transmit printer ID**

[Format]

ASCII	GS	I	n
Hex	1D	49	n
Decimal	29	73	n

[Range] $1 \le n \le 3$, $49 \le n \le 51$

[Description] Transmits the printer ID specified by *n* follows:

n	Printer ID	Specification
1, 49	Printer model ID	$68 (58mm model) $69 (35mm model)
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 character)

n = 2, Type ID

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	2-byte character codes not supported
1	Off	00	0	Autocutter not supplied
	On	02	2	Autocutter supplied
2	Off	00	0	Thermal paper w/o label
	On	04	4	Thermal paper w/label
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]

[Reference]

[Example]

$1D $4C n m t d1...dk

[Name] **Receive display effect from serial port**

[Format]

ASCII	GS	L	n	m	t	d1...	dk
Hex	1D	4C	n	m	t	d1...	dk
Decimal	29	76	n	m	t	d1...	dk

[Range] $1 \le n \le 4$, $49 \le n \le 52$

$0 \le m \le 63$

$0 \le d1 \le 255$, $0 \le dk \le 255$

[Description] Receives display effect from serial port.

• The *n* parameter indicates the effect display number to apply (see $1D $46 command).

• The *m* parameter indicates the frame number. If the m value exceeds the maximum value allowed then was automatically limited to 63.

• The *t* parameter indicates the display interval between one frame and another (the value is calculated in milliseconds).

[Notes] • The frame structure is the same as specified in the command $1D $45.

• The d1...dk bytes, that was sent to define the display effect, are calculated as follows :

k = m x 8 (where m is the frame number)

• After receiving this command a printer reset is executed.

• This command is present only in the printer version with display (TG558-D).

[Default]

[Reference] **$1D $45**

[Example]

$1D $57 n d1...dn

[Name] **Prints n byte of a 203 dpi graphic line**

[Format]

ASCII	GS	W	n	d1...	dn
Hex	1D	57	n	d1...	dn
Decimal	29	87	n	d1...	dn

[Range] $1 \le n \le 48$ for 58mm model

$1 \le n \le 34$ for 35mm model

$0 \le d1 \ldots dn \le 255$

[Description] Print n byte of a 203 dpi graphic line where :

• n specifies the number of byte to print;

• d1...dn specify the bytes to print.

[Notes] • If the bit image data input exceeds the number of dots to be printed on a line, the excess data are processed as printable characters.

• *d* indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.

• This command is not affected by the emphasized, double-strike, underline (etc.) print modes and the upside-down mode.

[Default]

[Reference]

[Example] For printing 12 bytes the command sequence is :
$1D $57 $0C $FF $00 $FF $00 $FF $00 $FF $00 $FF $00 $FF $00

$1D $59 n

[Name] **Sets height in printing.**

[Format]

ASCII	GS	Y	n
Hex	1D	59	n
Decimal	29	89	n

[Description] Sets height during printing based on following values of n:
When you print a dot line if
n=0 height is set to one
n ≠ 0 (default value) height is set to two

[Notes] When n ≠ 0 (default value) each dotline is twice replicated

[Default] n ≠ 0

[Reference]

[Example]

$1D $5A n

[Name] **Receive n bytes from serial port**

[Format]

ASCII	GS	Z	n
Hex	1D	5A	n
Decimal	27	90	n

[Description] Receives n bytes from serial port and prints them in graphic mode

[Notes] Max value of n is n ≤ 48 for 58mm model
n ≤ 34 for 35mm model

[Default]

[Reference]

[Example]

$1D $62 m n

[Name] **Management of barcode printing.**

[Format]

① ② ③	ASCII	GS	b	m	n	
	Hex		1D	62	m	n
	Decimal		29	124	m	n

[Range]
① m = ‘p’, ‘P’ 1 ≤ n ≤ 3, 49 ≤ n ≤ 51
② m = ‘t’, ‘T’ 48 ≤ n ≤ 56
③ m = ‘c’, ‘C’ n = ‘z’, ‘Z’, ‘i’, ‘I’, ‘d’, ‘D’, ‘r’, ‘R’

[Description] ① This command prints a EAN13 barcode already formatted ; n specifies the formattation type as follows :

n	Barcode format
1, 49	DDMMYYHHmmSS
2, 50	DDMMY*n*HHmmSS
3, 51	DDMMYHHmm*nnn*

where :
DD -> day **MM** -> month **YY** -> year **HH** ->hour
mm -> minutes **SS** -> seconds ***n*** -> terminal number(0-9)
nnn -> progressive ticket number

② This command sets the terminal number that will be printed in the barcode if it was

selected the DDMMY*n*HHmmSS format.

• The terminal number value must be included between 0 and 9 (n).

After receiving this command the printer send a byte to host in the following format :

1° byte: ACK ($06) if the setting value is included in the interval

NAK ($15) if the setting value is not included in the interval

• The terminal number is stored into EEprom so this value still remains also after a reset command or printer shut-down.

③ This command is relative to the counter defined as progressive of ticket printed; n specifies the operation executed on counter as indicated in the following table :

n	Function
'z', 'Z'	Resets the progressive ticket counter
'i', 'I'	Increases the progressive ticket counter
'd', 'D'	Decreases the progressive ticket counter
'r', 'R'	Reads the progressive ticket counter

• The counter value is stored into RAM so when the printer resets or shut-down the counter is reset .

[Notes]

[Default]

[Reference]

[Example]

(1) $1D $64 $30, (2) $1D $64 $31 n d1...dk

[Name] **Enable / Disable scrolling text**

[Format]

①	ASCII	GS	d	0		
	Hex	1D	64	30		
	Decimal 29	100	0			
②	ASCII	GS	d	1	n	d1...dk
	Hex	1D	64	31	n	d1...dk
	Decimal 29	100	1	n	d1...dk	

[Range] ② 0 ≤ n ≤ 63, 0 ≤ d1 ≤ 255, 0 ≤ dk ≤ 255

[Description] ② This command disables scrolling text .

① This command visualizes on display a string , that was sent through serial port as scrolling text;

[Notes] ② • The *n* parameter indicates the length of a string. The maximum number length's 63 characters it will be.

• If the string containes a NULL character ($00) the next characters recpetion are aborted.

• This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example]

ù

$1D $6F n

[Name] **Management of output lines**

[Format]

ASCII	GS	o	n
Hex	1D	6F	n
Decimal	27	111	n

[Description] This command sets the output lines as follows :

bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
AUXOUT				INIBIT			

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Out Inibit
	On	01	1	
1	-	-	-	RESERVED
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	Off	00	0	Out Auxout
	On	08	8	
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Notes] • This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example]

$1D $72 n

[Name] **Transmit status**

[Format]

ASCII	GS	r	n
Hex	1D	72	n
Decimal	29	114	n

[Range] n = 1, 49

[Description] Transmits the status specified by *n* as follows:

n	**Function**
1, 49	Transmits paper sensor status (as for **$1D $76**).

Paper sensor status (n = 1, 49)

Bit	Off/On	Hex	Decimal	Function
0,1	-	-	-	RESERVED
2,3	Off	00	0	Paper-end sensor: Paper present
	On	(0C)	(12)	Paper-end sensor: Paper not present
4	Off	00	0	Not used. Fixed to Off.
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Notes] • This command is executed when the data is processed in the data buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on data buffer status.

[Default]

[Reference] **$10 $04, $1B $76**

[Example]

$1D $EB

[Name] **Receive, save, execute melody**

[Format]

①	ASCII	GS	{}	N	k			
	Hex	1D	EB	4E	k			
	Decimal	29	235	78	k			
②	ASCII	GS	{}	w	k	mh	ml	n1t1..nmtm
	Hex	1D	EB	77	k	mh	ml	n1t1..nmtm
	Decimal	29	235	119	k	mh	ml	n1t1..nmtm

[Range] ① $1 \le k \le 4$, $49 \le k \le 52$

② $1 \le k \le 4$, $49 \le k \le 52$

$0 \le mH \le 255$, $0 \le mL \le 255$

[Description] ① • This command is used for receiving and saving a melody.

• The k parameter selects the melody to execute.

② • This command save a melody into flash.

• k parameter selects the melody to receive.

• mh and mL are the number of notes to receive (mH x 256 + mL).

• n indicates the note to play (see Note Table).

• t indicates the duration of playing note ; (the exactly duration of any note will be expressed in multiples of 5 ms).

In the following table are listed the usable notes and theirs hexedecimal value to send for playing note.

NOTES TABLE

Note	Value (Hex)	Description
NO_SOUND	$21	-
SOUND_ON	$20	-
RE_D_5	$30	RE # 5 Ottava
MI_5	$31	MI
FA_5	$32	FA
FA_D_5	$33	FA #
SOL_5	$34	SOL
SOL_D_5	$35	SOL #
LA_5	$36	LA
LA_D_5	$37	LA #
SI_5	$38	SI
DO_6	$39	DO 6 Ottava
DO_D_6	$3A	DO #
RE_6	$29	RE
RE_D_6	$3B	RE #
MI_6	$3C	MI
FA_6	$3D	FA
FA_D_6	$0E	FA #
SOL_6	$3E	SOL
SOL_D_6	$2C	SOL #
LA_6	$3F	LA
LA_D_6	$04	LA #
SI_6	$05	SI
DO_7	$25	DO 7 Ottava
DO_D_7	$2F	DO #
RE_7	$06	RE
RE_D_7	$07	RE #

[Notes] ② • The NO_SOUND note disable the tones generator must be used to end a melody.

• The SOUND_ON note enable the tones generator but no produce any music. This note must be used also when executes a pause.

• Every melody must start with the SOUND_ON note.

• This command is present only in the printer version with display (TG558-D).

[Default]

[Reference]

[Example]

Blank page

4.1 TECHNICAL SPECIFICATIONS

Table 4.1 gives the main technical specifications for the 204 dpi printer model. **(Tab.4.1)**

Model	**58 mm**			**35 mm**	
Columns	24	40	42	17	28
Print method	Thermal				
Resolution	203 DPI (8 dot/mm)				
Paper specifications					
Type of paper	Thermal rolls Heat-sensitive side on outside of roll				
Recommended types of paper	from 55 g/m^2 to 65 g/m^2 (KANZAN)				
Width	57.5 mm ± 1 mm			35mm ± 0.5 mm	
Internal roll core diameter	13mm				
External roll diameter	max Ø80 mm (with external roll holder support)				
Core type	Cardboard or plastic				
Sensors	Head temperature, paper end, anti-paper-jam Optional : external near paper end, ticket presence on output				
Printing mode	Straight, Reverse				
Printing format	Height/Width from 1 to 2, bold, reverse, underlined.				
Character fonts	ASCII standard, International				
Available interfaces	RS232/TTL				
Baud rate	From 600 to 38400 bps				
Receive buffer	750 bytes				
Flash memory	60 Kbytes				
Graphics memory	1 logo of 384 x 341 dots			1 logo of 256 x 512 dots	
Printing Driver	Windows™ 95, 98, ME, NT4, 2K, XP				
Power supply	12 Vdc ± 10%				
Current Consumption					
Medium consumption	2 A				
Stand by consumption	0.1 A				
Printer Weight (1)	490 gr.				
Environmental conditions					
Operating temperature	0°C ÷ 45°C				
Relative humidity	10% ÷ 70% w/o condensation				
Storage temperature / Humidity	-20 °C ÷ +70 °C / 10% ÷ 90%				

Notes :(1) Referred without paper roll and model with plastic front panel.

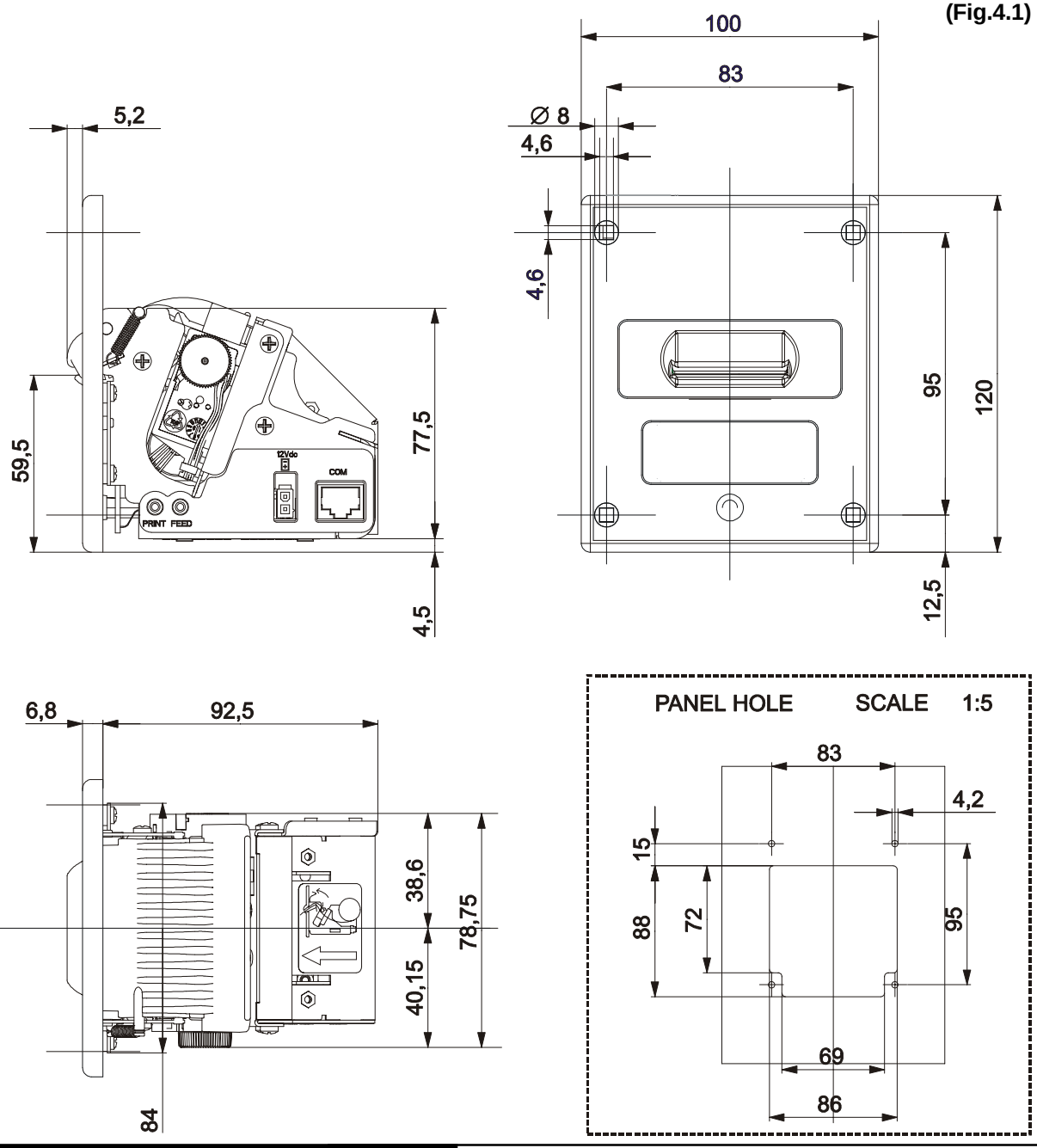
OPTIONS	- Adjustable roll holder support with sensor	
Columns	24 (mod. 58mm) 17 (mod. 35mm)	40 (mod. 58mm) 28 (mod. 35mm)
Matrix of character	16 x 24	8 x 24
Printing speed		
Lines / sec	16,25	16,25
Chars / sec	390	650
Characters (W x H)		
Normal	2 x 3	1 x 3

4.2 DIMENSIONS

4.2.1 Model with plastic front panel

The figure 4.1 shows the dimensions of the printer with plastic front panel.

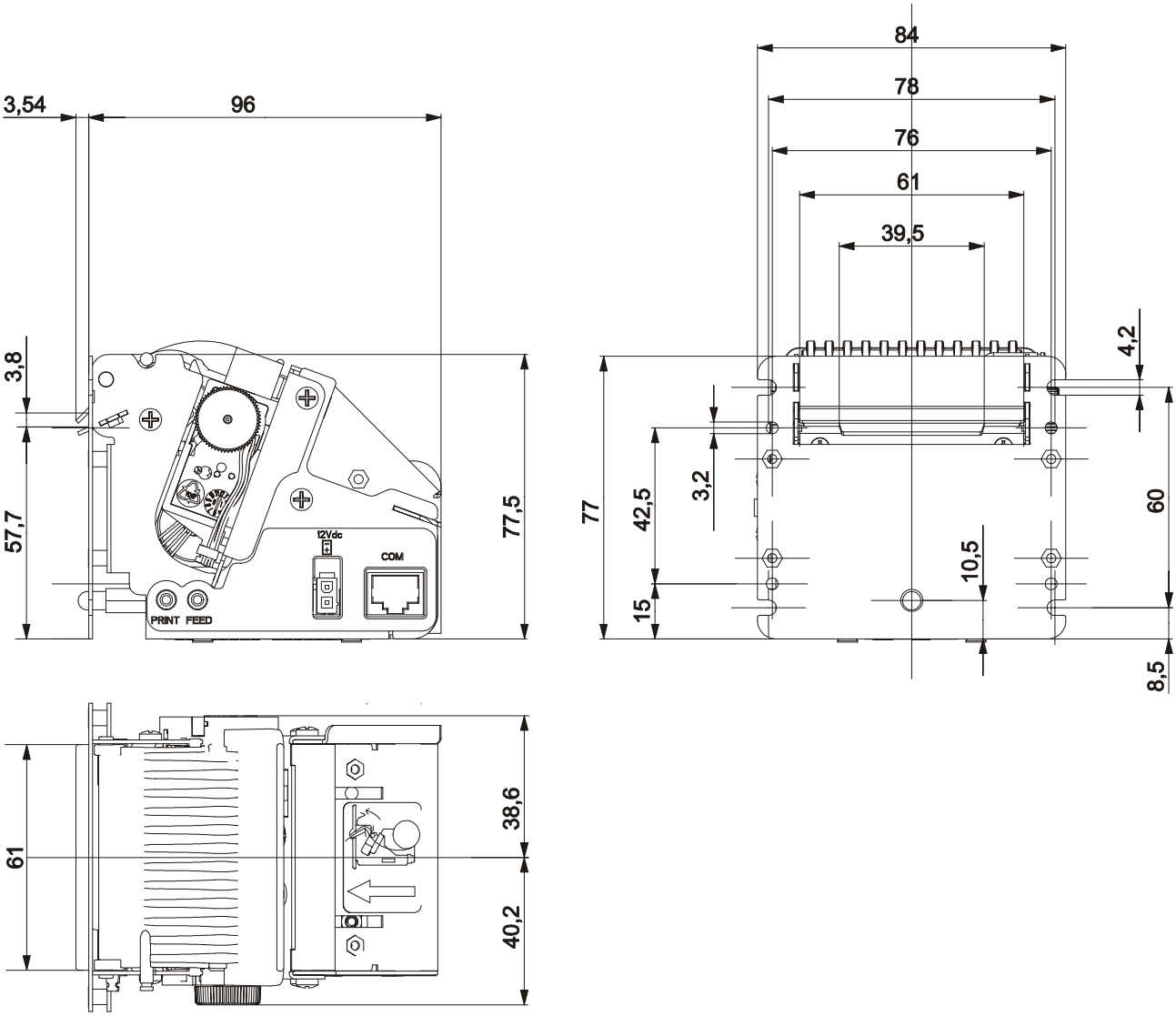
(Fig.4.1)



4.2.2 Model with metallic front panel

The figure 4.2 shows the dimensions of the printer with metallic front panel (35mm version).

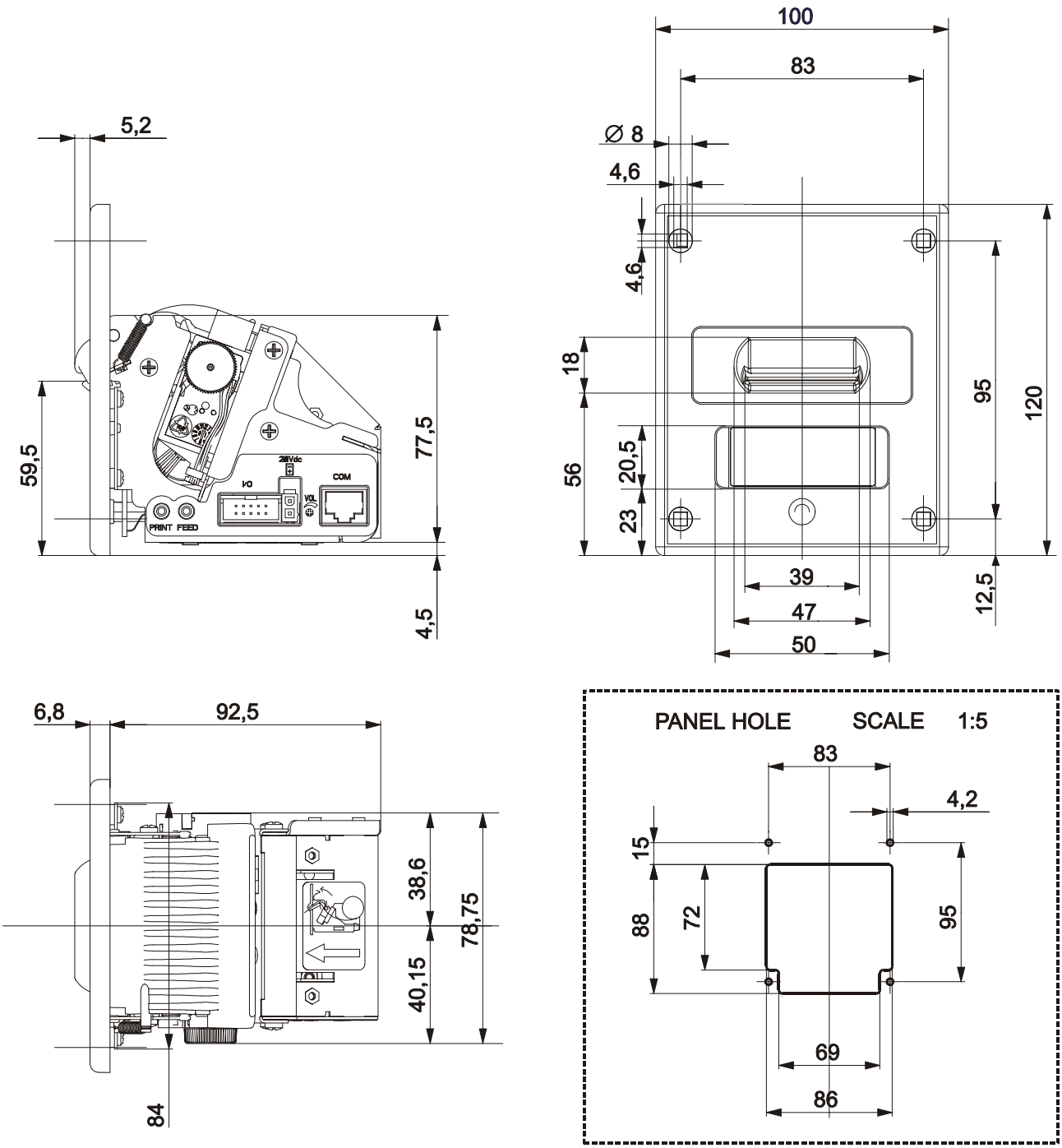
(Fig.4.2)



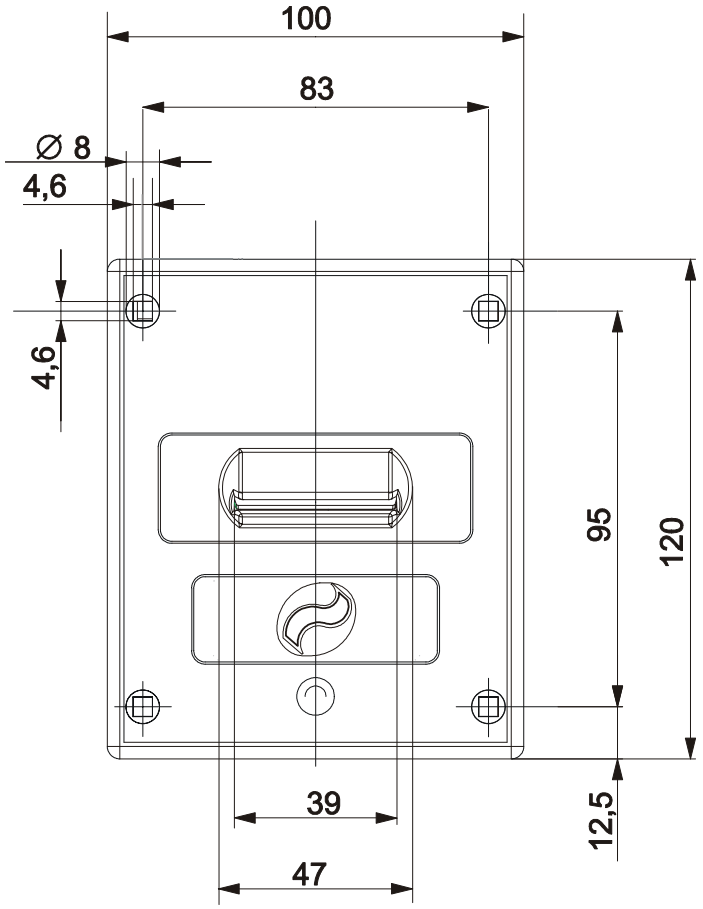
4.2.3 Model with Display

The figure 4.3 shows the dimensions of the printer with display (35mm version).

(Fig.4.3)

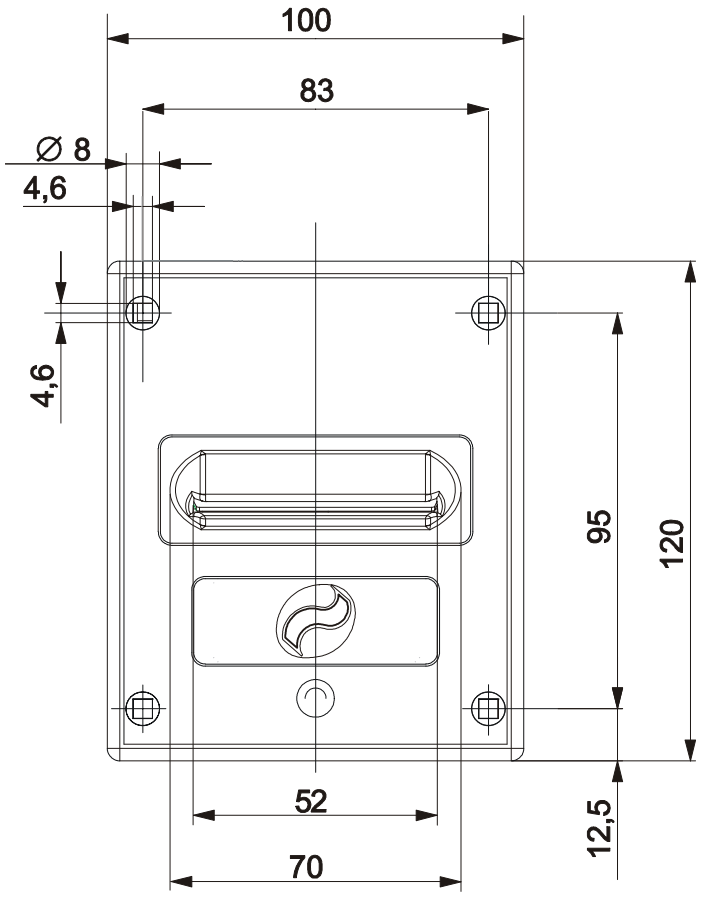


The figures 4.4 and 4.5 show the dimensions of TG558 front panel .



Front Panel
TG558 35 mm

(Fig.4.4)



Front Panel
TG558 58 mm

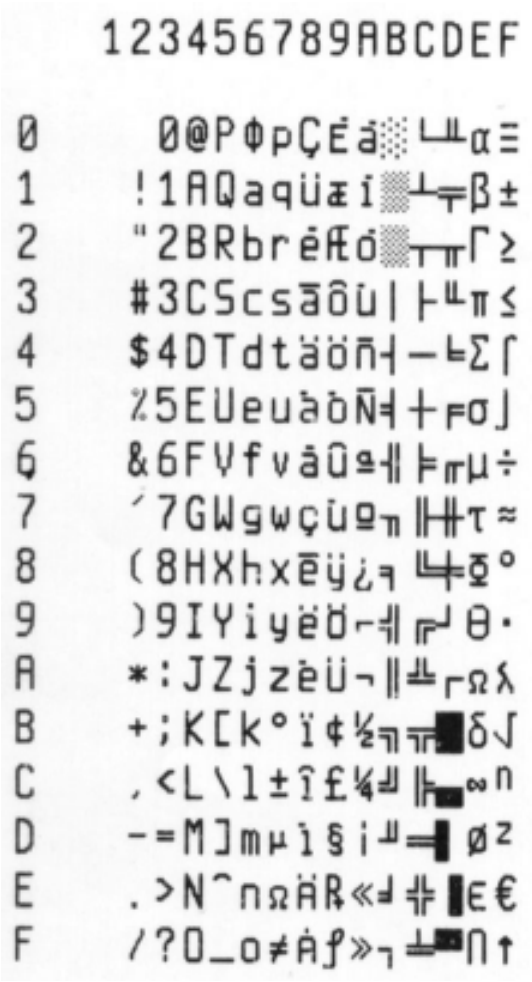
(Fig.4.5)

5. CHARACTER SET

5.1 CHARACTER SETS

The printer has 2 fonts each width 224 characters (font 1 and font 2). Shown below in figure 5.1 is an example.

24 COLUMNS (font 16 x24)



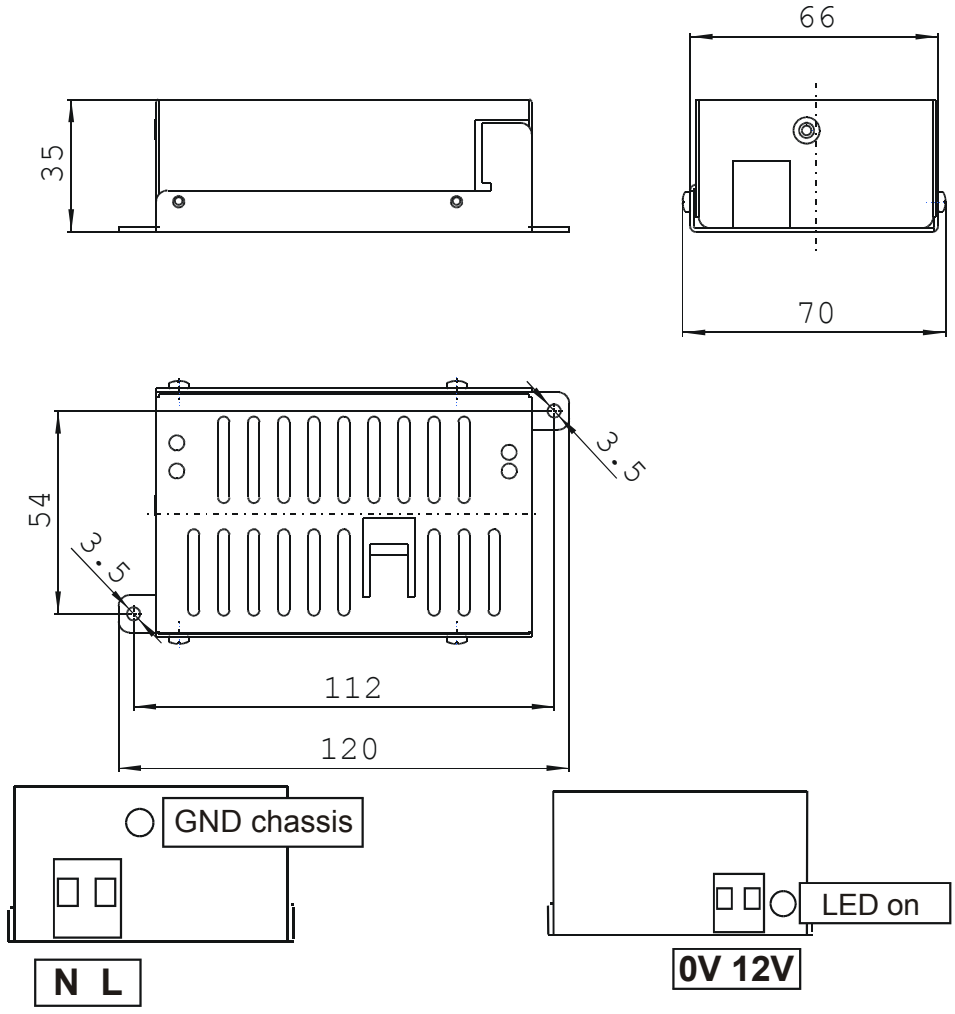
(Fig.5.1)

A.1 ACCESSORIES

A.1.1 Power Supply

The figure below illustrates the 12V power supply provided by Custom to be used for printer operation.

(Fig.A.1)



(Tab.A.1)

Input specifications	
Input voltage	100 Vac to 240 Vac
Input frequency	50 Hz to 60 Hz

Output specifications		
Output voltage		12 V
Output current	Maximum	4 A
	Peak	6 A
	Short Circuit	6 A

A.1.2 Adjustable paper holder suport

An adjustable paper holder support kit (see fig. A.2 and A.3) is available for the printer to make it possible to use larger-width rolls of paper (80mm max.).

(Tab.A.2)

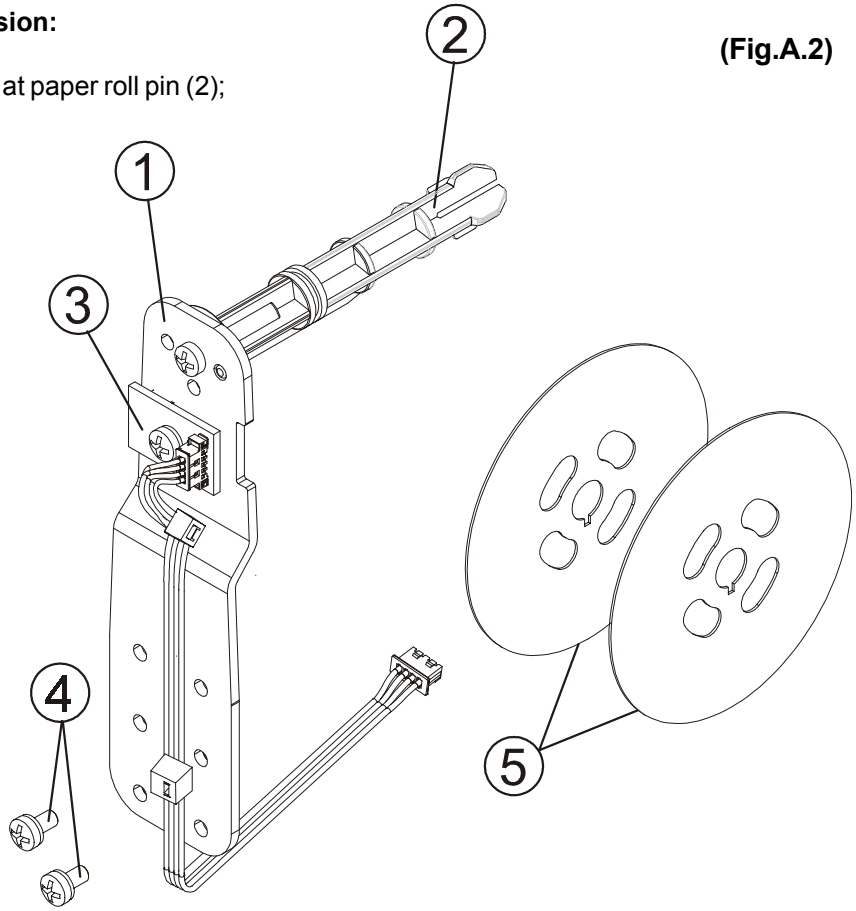
PCXSP-TG558-35	**Paper roll holder kit for 35mm version with QFC sensor**
PCXSP-TG558-58	**Paper roll holder kit for 58mm version with QFC sensor**

The kit is provided already installed ad shown in figures A.2 and A.3.

Paper roll holder Kit for 58mm version:

(Fig.A.2)

- Paper holder support (1) assembled at paper roll pin (2);
- Near paper end sensor board (3);
- Two M3x6 fixing screws (4);
- Two control discs (5).

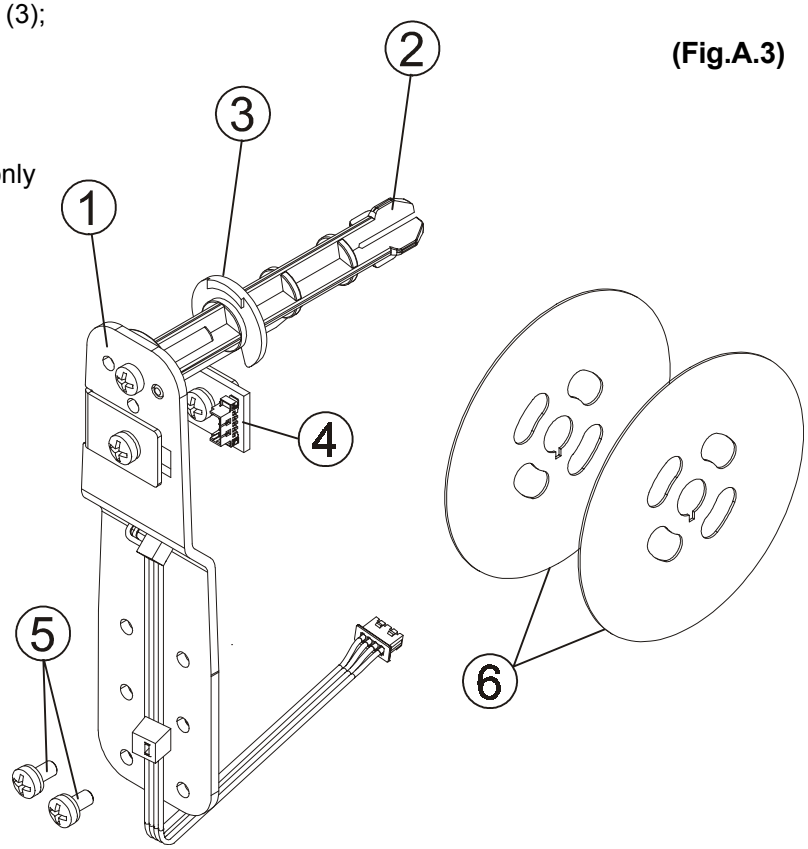


Paper roll holder Kit for 35mm version:

(Fig.A.3)

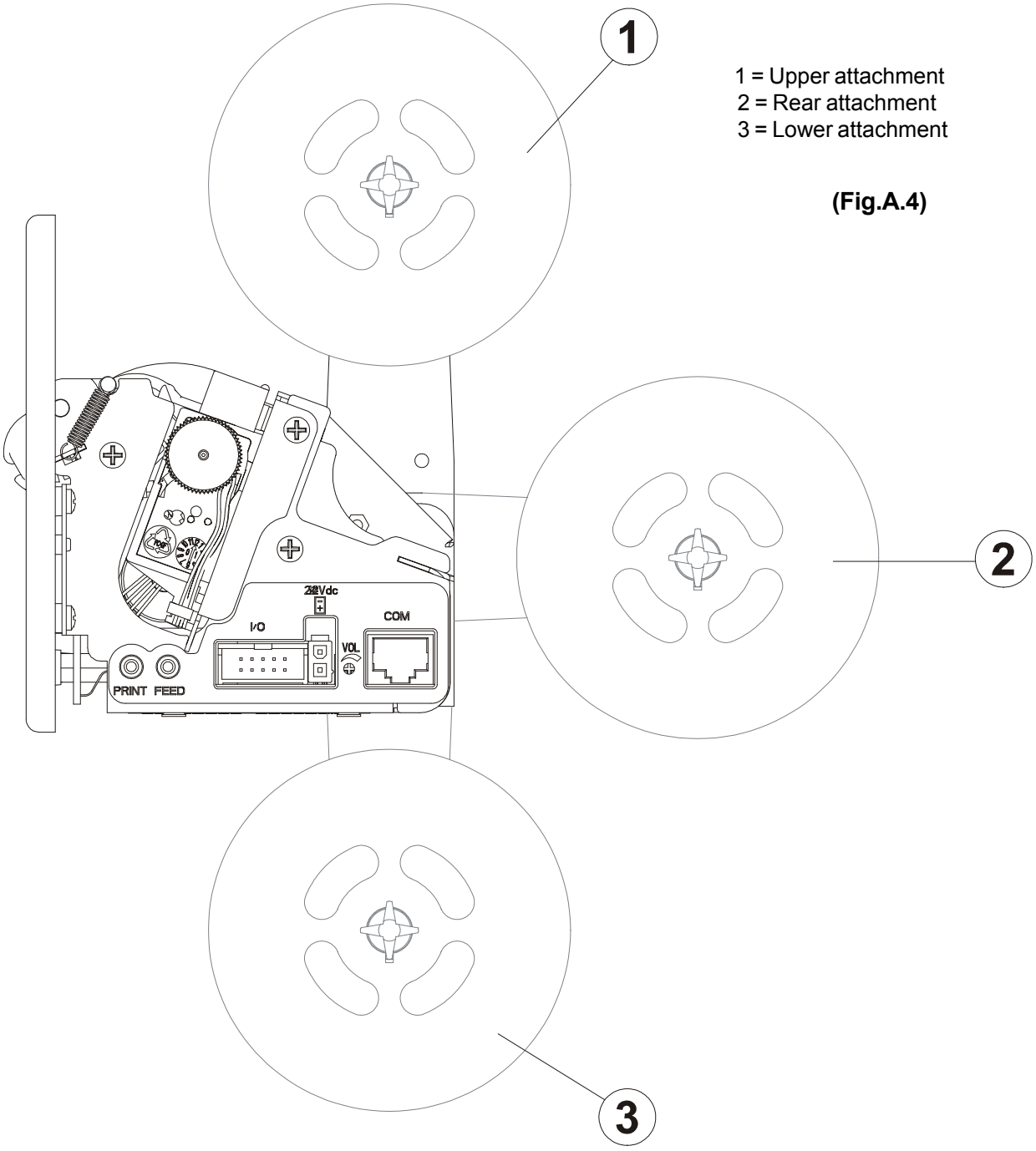
- Paper holder support (1) assembled at paper roll pin (2);
- Stop ring (1) for paper width adjustement (3);
- Near paper end sensor board (4);
- Two M3x6 fixing screws (5);
- Two control discs (6).

(1) **NOTE***:* The stop ring is present only in the 35mm version.



Assembly instructions

The position of the roll holder support is not fixed and its rear, lower and upper position may be adjusted as shown in figure A.4.



1 = Upper attachment
2 = Rear attachment
3 = Lower attachment

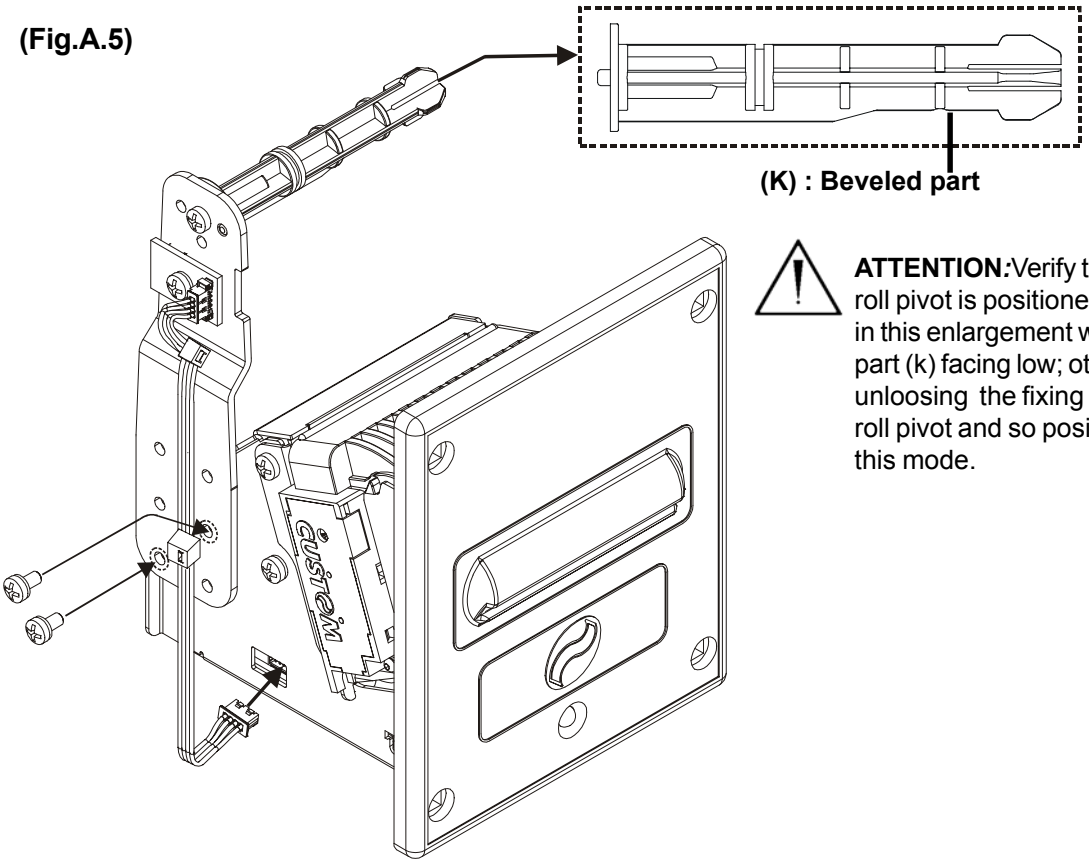
(Fig.A.4)

Upper attachement

58mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.5.
2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.5.

(Fig.A.5)



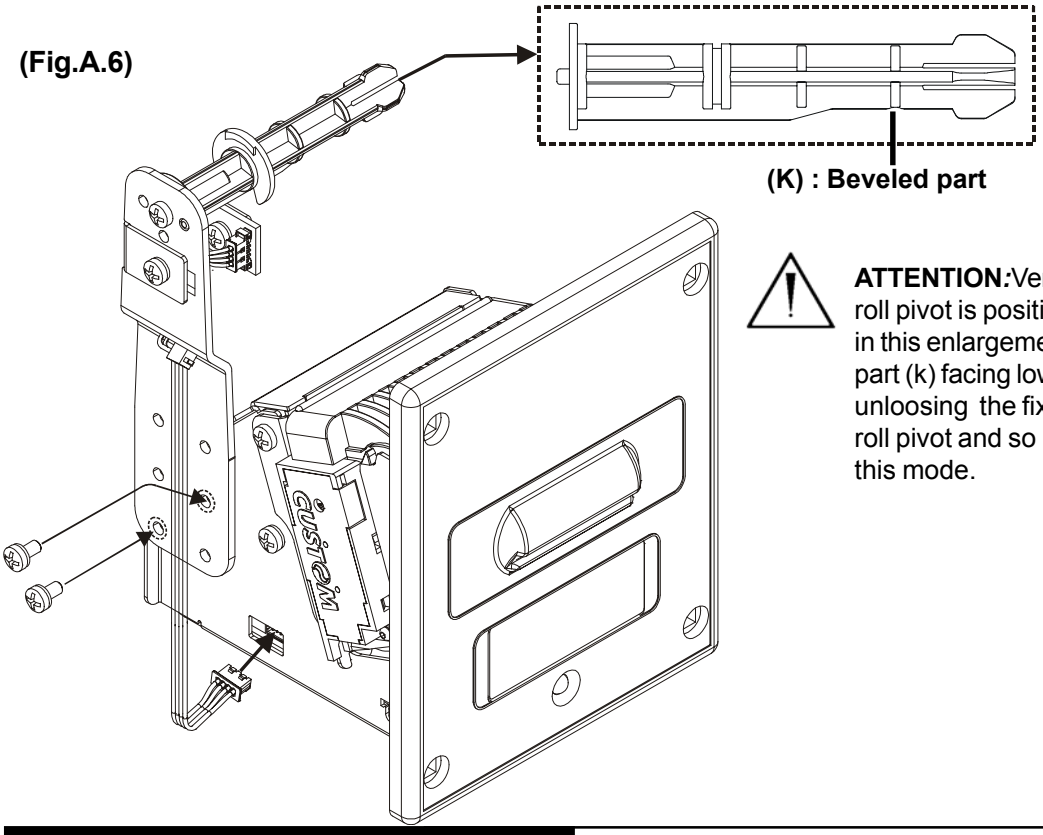
ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

35mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.6.

2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.6.

(Fig.A.6)



ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

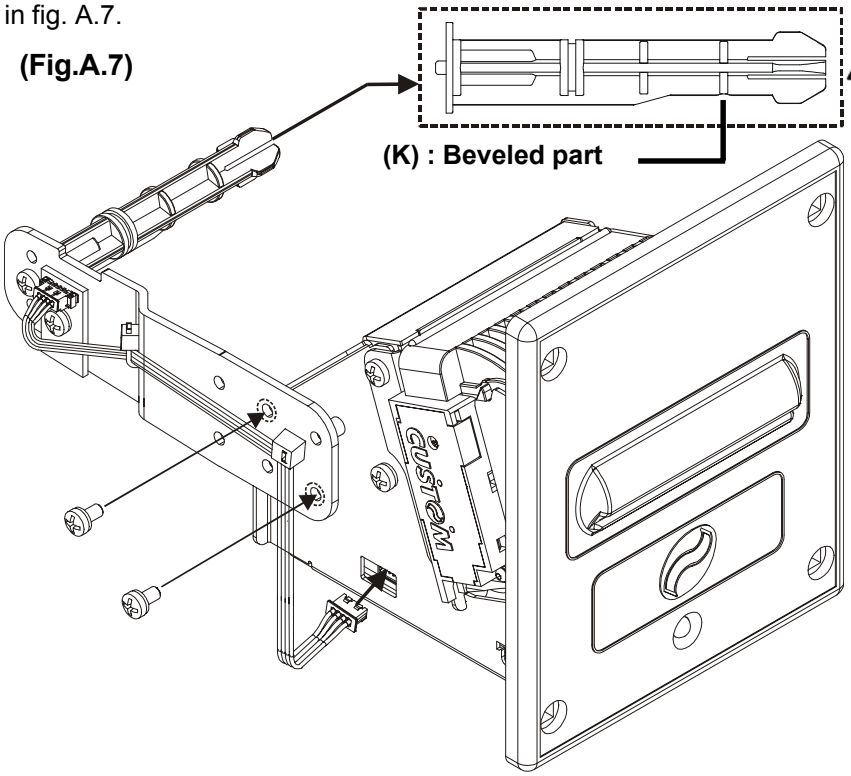
Rear attachement

58mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.7.

2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.7.

(Fig.A.7)



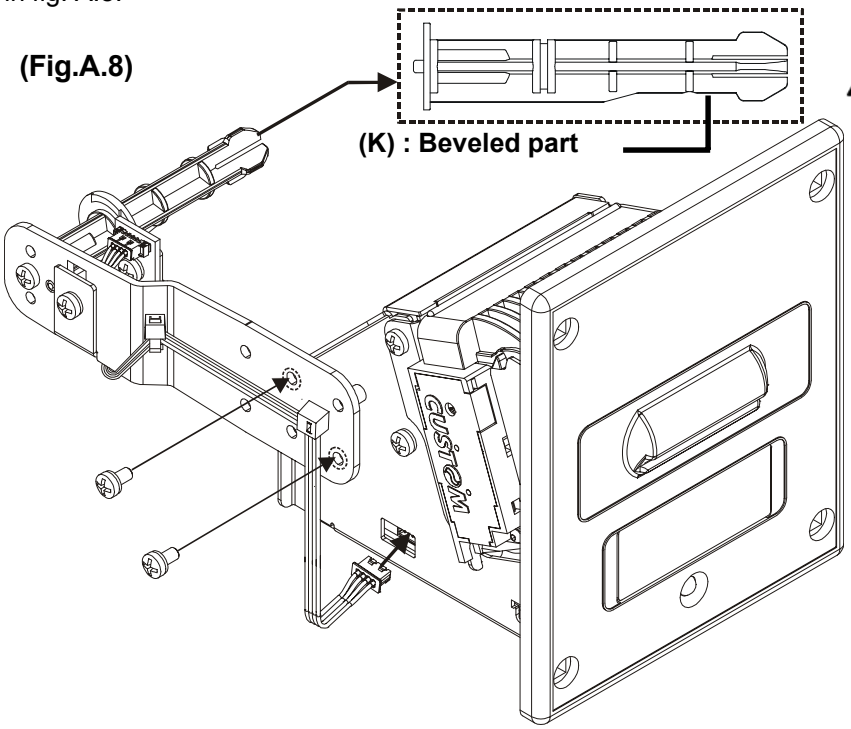
ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

35mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.8.

2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.8.

(Fig.A.8)



ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

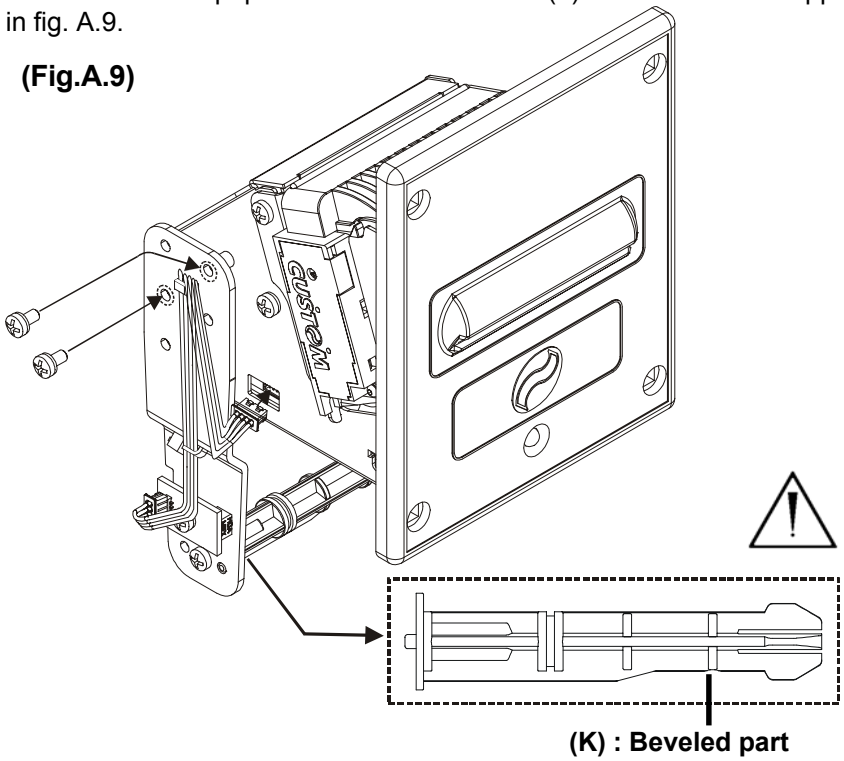
Lower attachement

58mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.9.

2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.9.

(Fig.A.9)



ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

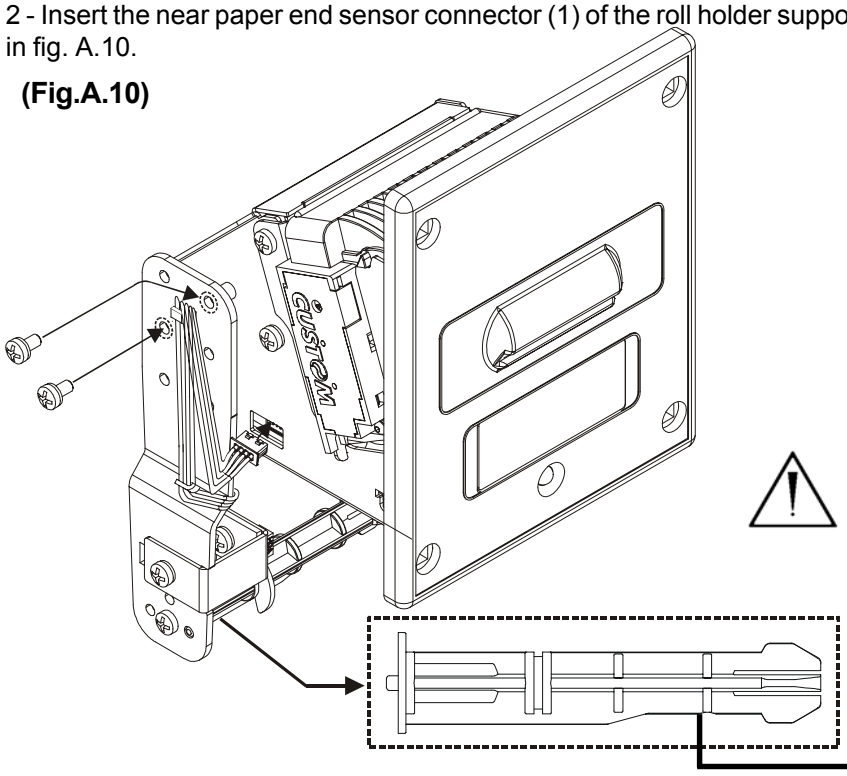
(K) : Beveled part

35mm Version

1- Attach the support to the printer body using the two M3x6 fixing screws (3) supplied with the kit, as shown in fig. A.10.

2 - Insert the near paper end sensor connector (1) of the roll holder support into the printer connector as shown in fig. A.10.

(Fig.A.10)



ATTENTION: Verify that the paper roll pivot is positioned as indicated in this enlargement with beveled part (k) facing low; othervwise unloosing the fixing screw of paper roll pivot and so positioning itself in this mode.

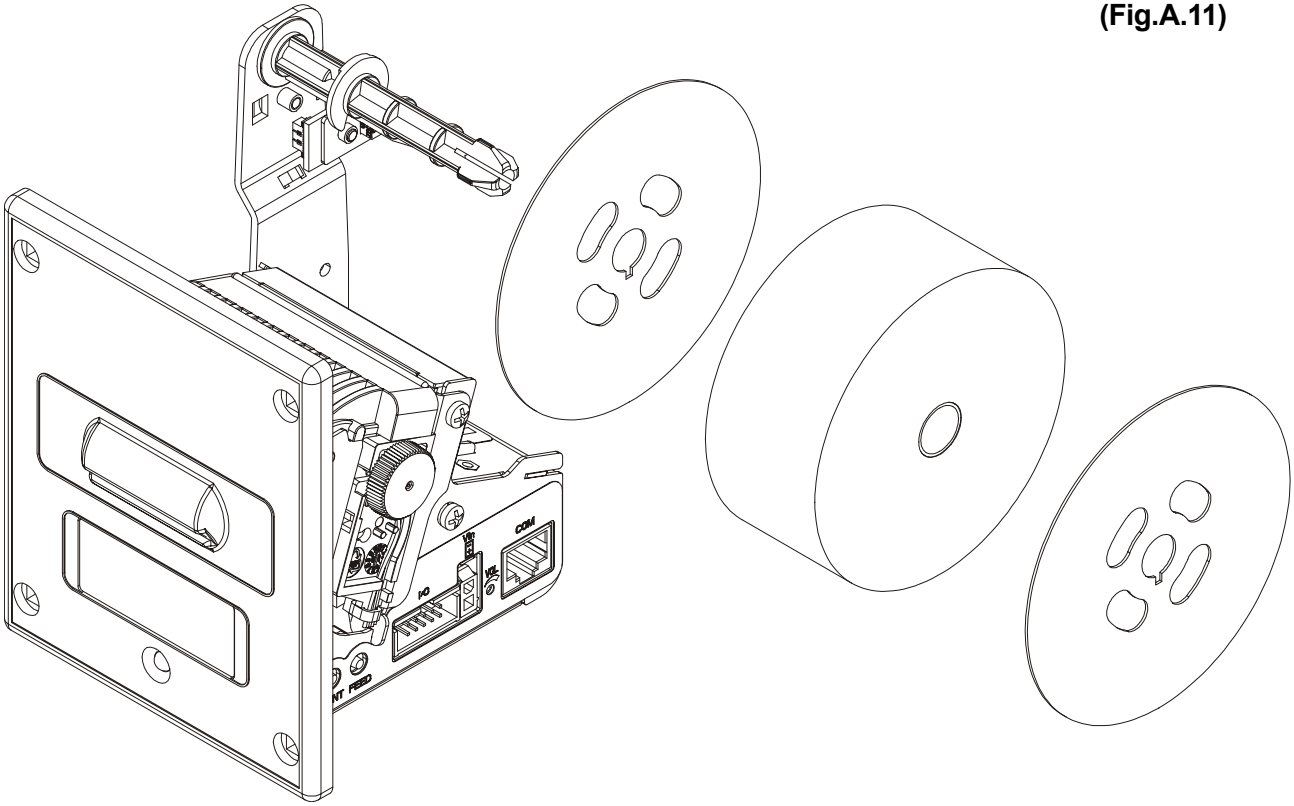
(K) : Beveled part

Using the control discs

Assembly the control discs with the paper roll pivot as shown in the fig. A.11.

(2) **NOTE***:* The model indicated in fig. A.11 is indicative to show the assembly so the following informations are corrects for all models.

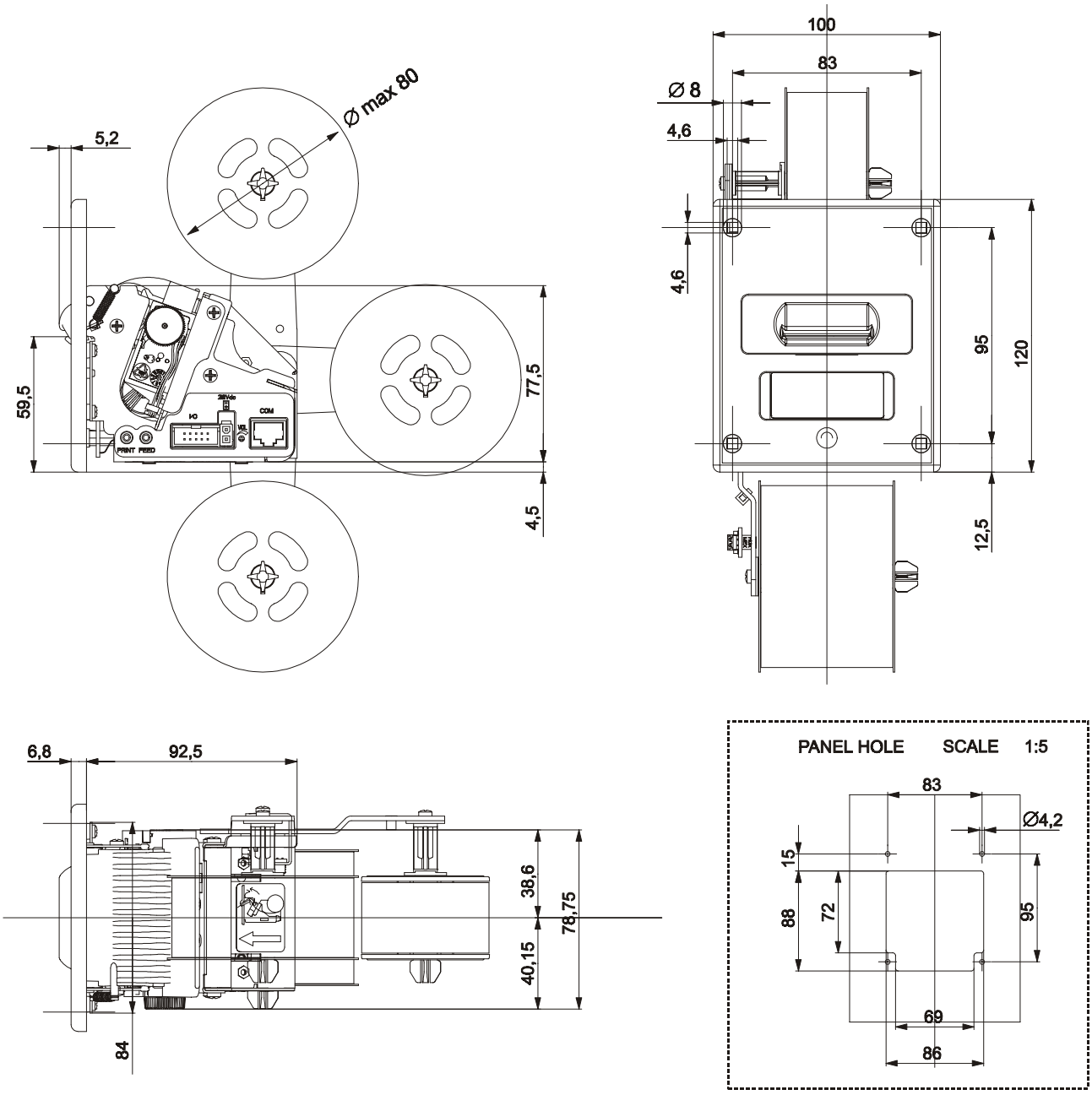
(Fig.A.11)



Printer dimensions with Paper holder support

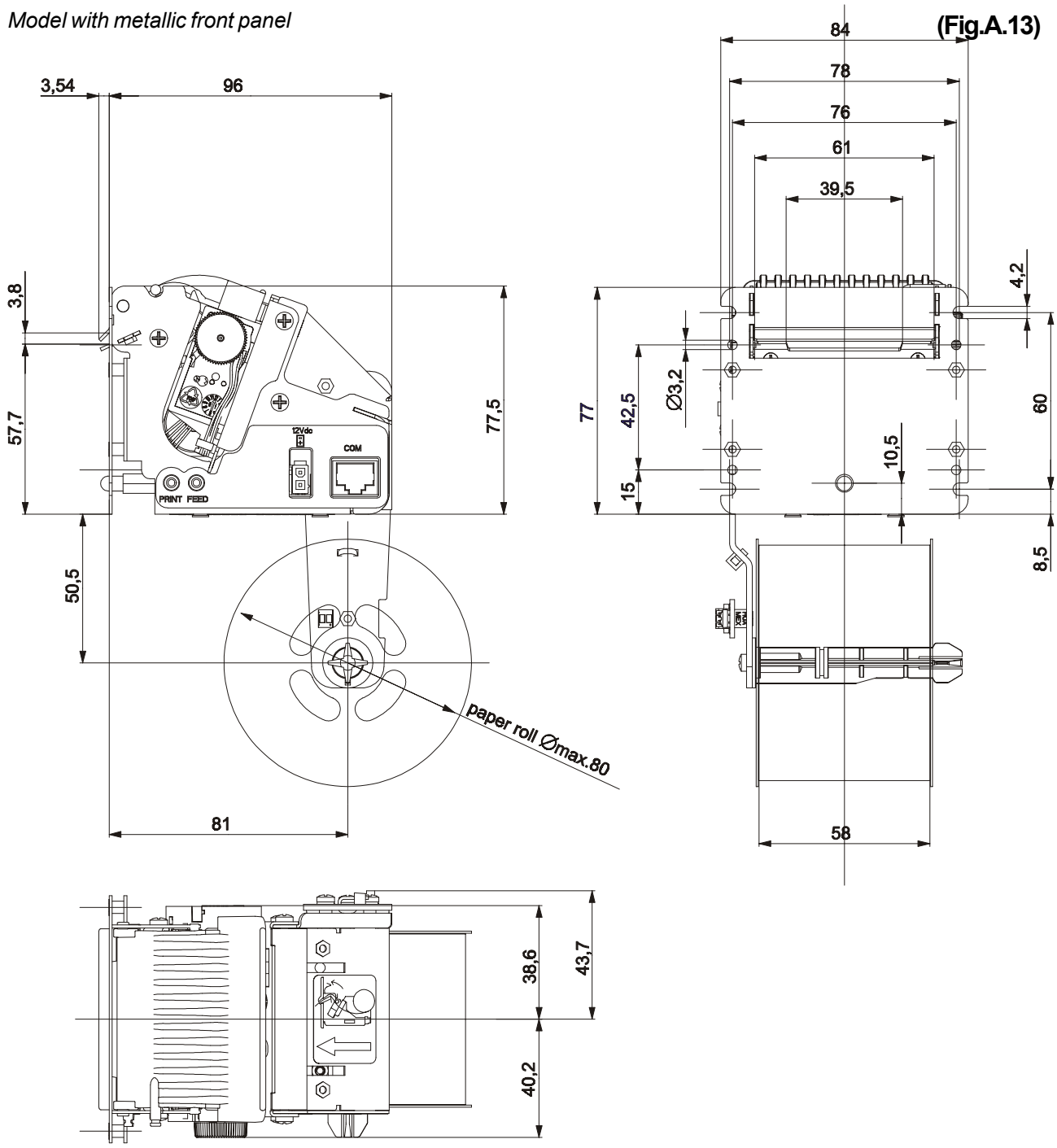
Model with plastic front panel

(Fig.A.12)



Model with metallic front panel

(Fig.A.13)



A.2 SPARE PARTS

Paper rolls

(Tab.A.4)

RCT35X70-AF	35mm Model thermal roll paper fraud preventing

(Tab.A.5)

RCT35X70-RS	35mm model of thermal roll paper back side pre-printed
RCT58X70-RS	58mm model of thermal roll paper back side pre-printed
	Customized pre-printed logo for 2000 rolls order minimum