3-5-3 Example of Machining with E.S.P.E.R Light 1 (Punch shape - single part/2nd cut machining)
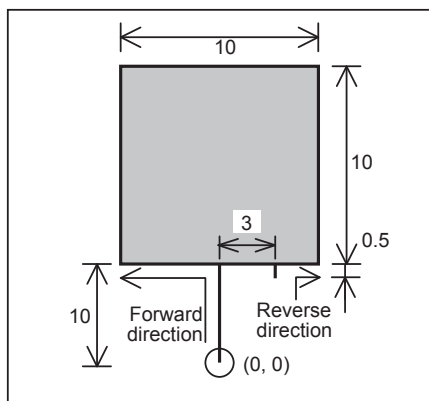
<Machining shape>

<Example of machining conditions>

Wire diameter and type	=	ø0.2mm, brass
Workpiece material	=	SKD11
Surface roughness	=	4μmRmax
Workpiece thickness	=	20mm
Finish margin	=	0 (one side)
Approach machining distance	=	3.0mm

<Machining procedure>

1) Install the workpiece, and set the flatness and parallelism.
2) Position, and then move the axis to the start point
3) Insert the wire, and adjust the nozzle height.
4) Input the program, and then input the parameters on the "E.S.P.E.R LT" screen.
5) Press "Machining OK", and start machining.

- Machining is carried out to finishing in the uncut state.
  Three programs are required, one for the forward direction, one for the reverse direction and one for cutoff.
- E No. (E), machining speed (FA) and offset (H) are not required as these are automatically set when the "E.S.P Light Search" is used.

Example of creating NC program

<Forward direction>	<Reverse direction>	<Cut off>
M80M82M84	M80M82M84	M00 (Stop)
G90	G90	M80M82M84
G92X0.Y0.	G92X3.Y4.5	G90
G41G01X0.Y5.	G42G01X3.Y5.	G92X0.Y0.
G01X-5.Y5.	G01X5.Y5.	G42G01X0.Y5.
G01X-5.Y15.	G01X5.Y15.	G01X3.Y5.
G01X5.Y15.	G01X-5.Y15.	M00
G01X5.Y5.	G01X-5.Y5.	M21 (Cut wire)
G01X3.Y5.	G01X0.Y5	M91 (Optimum feed OFF)
G40G01X3.Y4.5	G40G01X0.Y0	G40G01X3.Y4.5
G23 (Return to main program)	G23 (Return to main program)	G01X0.Y0.F60.
%	%	G23 (Return to main program)
		%

Insert M00 since the scrap will drop off.

Insert G23 at the end (after G40) to make this a subprogram

Example of machining operation 1 (Punch shape - single part/2nd cut machining)

(1) Input the program to be machined (L101, L102, L103 for this example)

(2) Press [Reset] [Reset] twice.

(3) Press the main menu [Monitor]. → The "MONITOR" screen will open.

(4) Press the submenu [M1] (E.S.P Light Search). → The "E.S.P.E.R LT" screen will open.

(5) Set the highlighted fields on the screen. → The machining conditions will be searched for automatically, and when completed, the "Search Successful. OK to machine after checking results" message will appear at the lower right of the screen.
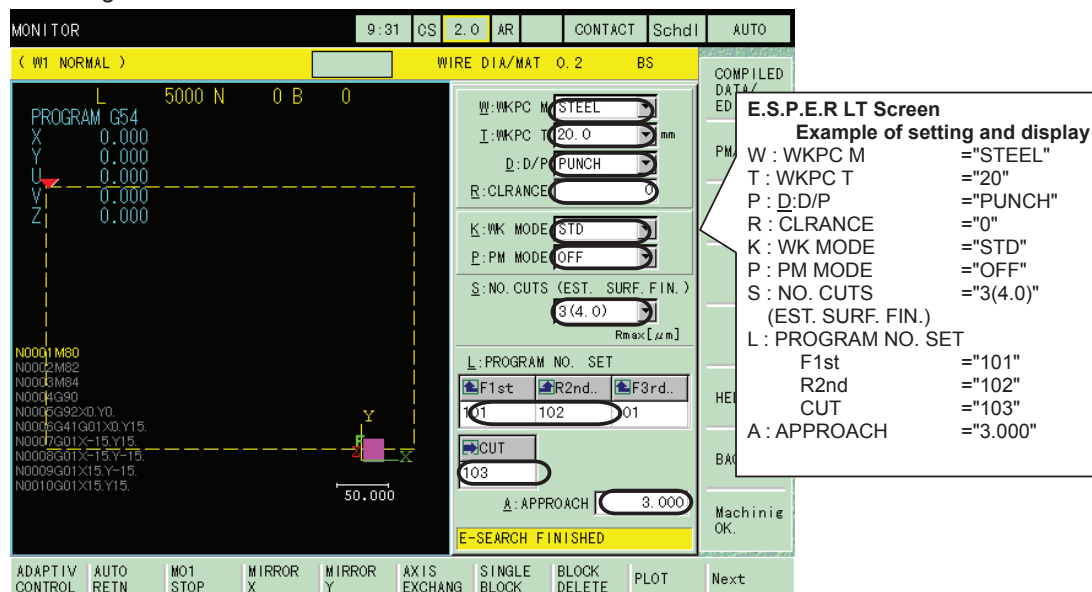
(6) Press the submenu [M1] (search results/edit). → The "SEARCH RESULTS/EDIT" screen will open, and the number of cuts, offset amount, machining conditions, machining speed and predicted surface roughness will be displayed.

(7) Check the machining conditions and number of cuts, and then press "CLOSE".

(8) Press the submenu [M8] (machining OK).
     → The machining shape will be automatically drawn and checked.

(9) Press [Start]. → 2nd cut will be executed, and then operation will stop.

(10) Press [Start]. → Cutoff machining will be executed, and then operation will stop.

(11) Press [Manual/Auto], enter the manual mode, raise the upper guide, and remove any scraps.

(12) Press [Manual/Auto] to return to the automatic mode, and then press [Start]. → The axis will return to the start point, and machining will end.