Lotem 400 Plate Loading Sequence

Overview

This eight-page document describes the Lotem® 400 platesetter plate loading sequence and parameters for software version 1.60.09.

The loading sequence is a series of actions (motions) performed by the machine that remove the plate from the cassette, transport it to the drum, and security it to the drum. The loading sequence consists of four stages:

(a) **Cassette entry to punch entry**—the XY bar transports the plate from the cassette into the punch entry.

(b) **Punch entry to drum entry**—the XY bar inserts the plate into the punch and, after punching, removes the plate from the punch and transports the plate to the drum entry.

(c) **Drum entry to drum**—the plate is moved from the drum entry to the drum, secured to the drum, and then the loading system prepares to load another plate.

(d) **Paper disposal tasks**—if, after the third step of stage a (a3-y), the paper/metal detector detects paper in the cassette, the loading system removes the paper from the cassette and transports it to the disposal system.

Each significant movement that occurs during each stage is described in the tables that follow.

Notes:

- Relative values are enclosed in parenthesis, for example: (161)
- The values shown are default.
- The values shown relate to cassette number 2.

XY bar movement
← = toward cassette
→ = toward drum
↓ = down
↑ = up

Cassette Entry to Punch Entry (a)

Table a describes the relevant actions that occur during the cassette entry to punch entry stage.

During stage a, the loading system removes the plate from the cassette and transports it to the punch.

Table a – Cassette Entry to Punch Entry

Movement	Notes	Parameter	Value (mm)
a1-x →	The XY bar moves to the relevant cassette.	Load Plate > From Cassette to Punch Entry Stage > **X Prepare to Catch Plate (mm)**	Cassette 1 +305 Cassette 2 +161 Cassette 3 +16
a2-y ↓	The XY bar descends to the bar flag. **Y Move to Det**		Bar flag
a3-y ↑	The paper/metal detector identifies the presence of a plate or paper in the cassette. If paper is detected, the *Paper Disposal stage* (page 7) is initiated.	Loading System > Loading System Setup > **Y Rel to Read Paper Metal Det (mm)**	(-15)
a4-y ↓	The vacuum is automatically activated, and the suction cups are activated. The XY bar descends to the bar flag. **Y Move to Det**		Bar flag
a5-y ↓	Extra. All suction cups firmly touch the plate so that the plate is properly secured to the suction cups near the lead edge of the plate.	Loading System > Loading System Setup > **Y extra to detector**	(+10)
a6-x ←	**Separation of plate from paper sequence** The purpose of this motion and the next (a8-y) is to separate the plate from the paper underneath it. The paper disposal is activated, and the plate is slightly bent, to separate the paper.	Load Plate > From Cassette to Punch Entry Stage > **X Plate Rel Backward in Cassette (mm)**	(-3)
a7-y ↑		Load Plate > From Cassette to Punch Entry Stage > **Y Plate High Up in Cassette (Rel) = -30** **Y Plate Rel Up In Cassette = -16**	(-46)

Movement	Notes	Parameter	Value (mm)
a8-x ←		Load Plate > From Cassette to Punch Entry Stage > **X Backward Rel For 0.3 Plate**	(+20)
a9-y ↓		Load Plate From Cassette to Punch Entry Stage > **Y After Plate Separation**	(+7)
a10-y ↓	The fufu is activated to blow the paper downward. The centering pins are activated and move (±5 mm) to accommodate the plate.	Load Plate > From Cassette to Punch Entry Stage > **Y Above Air Nozzle in Tray 1 (mm)**	Tray 1 +181 Tray 2 +110 Tray 3 +37
a11-x →	The XY bar transports the plate toward the punch. The centering pins are activated. The paper disposal rollers are activated to remove any remaining paper.	Load Plate > From Cassette to Punch Entry Stage > **X Half Way (mm)**	855
a12-y ↓	Y in punch	Load Plate > From Cassette to Punch Entry Stage > **Y in Punch (mm)**	90
a13-x →	X in punch	Load Plate > From Cassette to Punch Entry Stage > **X in Punch (mm)**	880
a14-y ↓	The paper disposal is de-activated. The centering pins move back and forth to center the plate.	Load Plate > From Cassette to Punch Entry Stage > **Y After in Punch Before Leave Plate (mm)**	92
a15-y ↑	These four steps enable the XY bar to attach to the plate closer to the plate center to facilitate inserting the plate in the punch. The suction cup vacuum stops and the plate is detached from the suction cups.	Load Plate > From Cassette to Punch Entry Stage > **Y Up After Punch = -15** **Y Up For Centering = -15**	(-30)
a16-x ←	The suction cup vacuum is activated.	Load Plate > From Cassette to Punch Entry Stage > **X in After Punch (mm)**	740
a17-y ↓	The presence of the plate is detected, and the plate is re-attached		

Movement	Notes	Parameter	Value (mm)
a18-y ↓	to the suction cups, closer to the middle of the plate. (Y To Detector) The centering pins move to center the plate.	Load Plate > From Cassette to Punch Entry Stage > **Y Down After Punch**	(+9)
a19-y ↑	The XY bar lifts the plate to punch level.	Load Plate > From Punch to Drum Entry Stage > **Y Up After Centering (mm)**	90
a20-x ⟶	The XY bar inserts the plate into the punch.	Load Plate > From Cassette to Punch Entry Stage > **X Pre Extra To Short Pins**	(+10)
a21-x ⟶	The leading edge of the plate presses against the short pins. This movement occurs several times until the plate touches the short pins.	Loading System > Loading System Setup > **X Rep Extra In Punch**	(+8)

Punch entry to drum entry (b)

Table b describes the relevant actions that occur during the punch entry to drum entry stage.

In this stage, the loading system inserts the plate into the punch, and after it is punched, removes the plate from the punch and transports it to the drum entry.

Table b – Punch entry to drum entry

Movement	Notes	Parameter	Value (mm)
b1-y ↓	After the punch is activated, the centering pins move to HP and the XY bar moves down slightly.	Load Plate > From Punch Entry to Drum Entry Stage > **Y Up After Centring (mm)**	90
b2-y ↑	The XY bar lifts the tail edge of the plate so that when the plate is removed from the punch in the next step, the plate will not hit any parts of the machine.	Load Plate > From Punch Entry to Drum Entry Stage > **Y Up After Do Punch**	70
b3-x ←	The plate is removed from the punch. Verify that the plate is completely removed from the punch, and that it does not touch the punch guides or the plate support rollers.	Loading System > Loading System Setup > **X Prepare To Drum (mm)**	705
b4-y ↑		Loading System > Loading System Setup > **Y Max Up** * Parameter value appears in ask before do as -4, in registry as 1	1
b5-x →	X in drum Parameter located in stage c of application.	Load Plate > From Drum Entry to Drum Stage > **X Near To Drum (mm)**	880
b6-y ↓	(Cobra position)	Load Plate > From Punch Entry to Drum Entry Stage > **Y To Drum**	27

Drum entry to drum (c)

Table c describes the relevant actions that occur during the drum entry to drum stage.

In this stage, the plate is transported from the drum entry and fully secured to the drum.

At the end of this stage, the loading system repositions itself in preparation for loading another plate.

Table c – Drum entry to drum

Movement	Notes	Parameter	Value (mm)
c1-x →	(This occurs after the drum rotates until it is positioned to secure the plate and the head grippers open.)	Loading System > Loading System Setup > **X In Drum (mm)**	1000
c2-x →	X in drum final The leading edge of the plate is inserted into the head grippers.	Loading System > Loading System Setup > **X In Drum Final (mm)**	(+10)
c3-y ↑	The head grippers close on the plate, and the leading edge is secured on the drum.	Load Plate > From Drum Entry to Drum Stage > **Y After Extra to Drum**	(-2)
c4-y ↑	The suction cups vacuum stops, and the plate is released. The drum vacuum is activated.	Load Plate > From Drum Entry to Drum Stage > **Y Down Before Plate Drop Abs (mm)**	(+12)
c5-y ↓		Load Plate > From Drum Entry to Drum Stage > **Y Up Before Back Abs**	14
c6-x ←	The drum rotates and the plate is wrapped around the drum, secured to the drum by vacuum, and the tail grippers secure the tail edge of the plate.	Load Plate > From Drum Entry to Drum Stage > **X Back After Plate Drop Abs (mm)**	900
c7-y ↑	The XY bar returns to the y-axis HP.	**Init XY**	HP
c8-x ←	The XY bar returns to the x-axis HP.	**Init XY**	HP

Paper Disposal (d)

Table d describes the relevant actions that occur during the paper disposal task stage.

In this stage, the XY bar transports the paper from the cassette to the disposal system. This stage occurs only when paper is detected in the cassette, and begins after step **a3**.

Table d – Paper disposal

Movement	Notes	Parameter	Value (mm)
d1-y ↑			HP
d2-y ↑	The XY bar moves up to open the tweezers.	Load plate > From Cassette to Punch Entry Stage > **Y Up For Init Catcher**	-30
d3-y ↓	The XY bar descends to the bar flag, and the tweezers touch the paper.	Load plate > From Cassette to Punch Entry Stage > **Y Move To Detector**	(Bar flag)
d4-y ↑		Loading System > Loading System Setup > **Paper (Y) Down In Cassette**	(+6)
d5-y ↑			(-5)
d6-y ↓	The tweezers close, catching the paper.	Loading System > Loading System Setup > **Paper (Y) Down In Cassette**	(+6)
d7-y ↑	The paper disposal rollers begin to revolve, and the XY bar lifts the paper.	Load Plate > Paper Disposal States > **Y Up Before Enter To Plate Disposal**	10

Movement	Notes	Parameter	Value (mm)
d8-x →	The tweezers are positioned directly above and between the disposal rollers.	Load Plate > Paper Disposal States > **X Paper in Motor (mm)**	644
d9-y ↓	The XY bar descends with the paper until the paper is caught between the rollers and transferred to the paper bin. After this step, the process starts again from Cassette Entry to Punch Entry (a).	Load Plate > Paper Disposal States > **Y Down to Paper Disposal (mm)**	127