



## ServoCam™ Start-up Check List

1. Insert a Cam Diskette.
2. Turn the controller switch On (clockwise).
3. Wait for the controller to initialize and the Main Menu to appear, as shown below. This takes up to 40 seconds.
 

```
Part Cycle Name
>Run Part Cycle
  EDIT Tool AutoAdjs
  LOAD Part Cycle
```
4. Select *RUN Part Cycle*, then press **ENTER**.
5. **Locate the turret slide.** Press the AUTO key until the yellow light on the front of the controller goes off.
6. **Locate the camshaft.** Jog or hand-crank the camshaft until the display changes.
7. **Put the controller on-cam.** Press the AUTO key until the green light illuminates.
8. **Cock the camshaft override device. (2G only)**
9. The screw machine is now ready for normal operation.

## Selecting Controller Menu Options and Using the Keypad

The ServoCam™ controller displays up to four text lines.

A caret (>) beside a menu item indicates the item is highlighted. Use the

**↑** and **↓** keys to scroll through all menu items.

Press **ENTER** to select the highlighted menu item.

Press **ESC** to exit the current display and return to previous display.

Use the keys **0** through **9** to jump to the beginning, middle or end of a long menu. Use **←** and **BKSP** to page down/up in a long menu.

Use the keys **0** through **9**, **.**, and **←** to enter numeric values. The **BKSP** key is used to erase errors when entering numeric values.

The **←** and **→** keys are used to manually "jog" the turret slide.

The **AUTO** key is used for two purposes: to locate the turret slide (see *Locating the Turret Slide*) and to put the controller on-cam (see *Putting the Controller On-Cam*).

## Operator Alert Light

An amber light is mounted on top of the controller to alert the operator.

Mode	Description
On	Turret-slide force is more than 90% of the maximum allowable force.
Slow flash	System fault has occurred.
Fast flash	Part counter needs operator intervention.

## Inserting the Cam Diskette

1. Open the ServoCam™ controller by turning the access handle (in front) counterclockwise.
2. Insert your Cam Diskette in the disk drive. Make sure the diskette label is facing up.
3. Close the controller. Turn the handle clockwise to lock it.

## Locating the Turret Slide

1. If the yellow light is on or if the controller display shows LOCATE TURRET SLIDE, the turret slide is un-located.
2. Press and hold the **AUTO** key until the controller indicates that it has located the turret slide. The yellow light on the front of the controller turns off when the controller completes this operation.

## Locating the Camshaft

1. If the controller display shows LOCATE CAMSHAFT, then the camshaft is un-located.
2. Jog or hand-crank the camshaft until the display changes. This occurs when the camshaft passes through the 10 hdths position.

## Putting the Controller On-Cam

Before running a part cycle, the controller must be *on-cam*. When the green light is illuminated, the controller is *on-cam*, and operates in the same manner as a conventional cam.

To put the controller on-cam, press the **AUTO** button until the green light illuminates.

*Note that the turret slide begins to move when the AUTO button is pressed. Make sure it is free of obstruction as it moves into place.*

## Cocking the Camshaft Override (2G only)

To cock the camshaft override device, and thus allow the clutch to be engaged, move the clutch lever to the far right (past the detent position).

## Running a Part Cycle

1. From the Main Menu, use the **↑** or **↓** keys to select *RUN Part Cycle*, then press **ENTER**.
2. Put the controller on-cam by pressing the **Auto** button. See *Putting the Controller On-Cam* for information.
3. (2G only) Cock the camshaft override mechanism. See *Cocking the Camshaft Override* for more information.
4. The screw machine is now ready for normal operation.



## Changing a Part Cycle

It is not necessary to turn off the controller when changing part cycles.

1. Insert the new Cam Diskette.
2. Press **[ESC]** to view the controller Main Menu.
3. Use the **[↑]** or **[↓]** keys to select **LOAD Part Cycle**, then press **[ENTER]**.

```
Part Cycle Name
Run Part Cycle
EDIT Tool AutoAdjs
>LOAD Part Cycle
```

4. The display indicates that the part cycle is being loaded.
5. Now Run the part cycle. See *Running a Part Cycle*.

## Single Cycle Mode

In *single cycle mode*, the ServoCam® system will stop automatic operation after each complete part cycle (see "Setting the Part-done Detector"). When in *single cycle mode*, the symbol "1x" is shown at the bottom, right-hand corner of the *Summary Run Screen*.

### Setting the single cycle mode

1. At the Main Menu, select **Part Counter Menu** and press **[ENTER]**.
2. Select **Single-cycle** and press **[ENTER]**.
3. Select ON or OFF and press **[ENTER]**, or press **[ESC]** to cancel.

## Displaying the Summary Run Screen (without AutoTripper™ Option)

After selecting **RUN Part Cycle** from the Main Menu, the *Summary Run Screen* will appear on the display:

```
CS 32.4
LOT 10000 200:59:59
```

Line 1: CS 32.4

where:

CS 32.4 Camshaft position (hundredths)

Line 2: empty (used with AutoTripper™ option)

Line 3: LOT 10000 200:59:59

See "Part Counter Basics" for description.

Line 4: empty (used with AutoTripper™ option)

## Using the Tool Auto-Adjust Feature

1. From the Main Menu, use the **[↑]** and **[↓]** keys to select **EDIT Tool AutoAdjs**, then press **[ENTER]**.

```
Part Cycle Name
Run Part Cycle
>EDIT Tool AutoAdjs
LOAD Part Cycle
```

2. A display shows the sequence of tools in the part cycle.

```
Stn Descrip Adj[in]
1 Feed St -0.0186
2 Center 0.0032
>3 3/16 Tw -0.0050
4 3/16 Ta 0.0244
5 Chamfer -0.0311
```

3. Use the **[↑]** and **[↓]** keys to select the tool station you want to adjust, then press **[ENTER]**.
4. The edit display for that tool appears:

```
Tool AutoAdj [in]
3 3/16 Twist Drill
Old AutoAdj -0.0050
New AutoAdj>
```

Original setting

Enter New Setting

5. Enter the adjustment, or press **[ESC]** to cancel.
  - Ø To *replace* the original setting, type in the new value, then press **[ENTER]**.
  - Ø To *increase* the original setting, press the **[↑]** key, type in the amount to increase, then press **[ENTER]**.
  - Ø To *decrease* the original setting, press the **[↓]** key, type in the amount to decrease, then press **[ENTER]**.

Note: A *positive* value is like tapping the tool longer.  
A *negative* value is like tapping the tool shorter.
6. Repeat steps 3 - 5 for each tool that needs adjustment.
7. Press **[ESC]**. The controller main menu appears.
8. Now Run the part cycle. See *Running a Part Cycle*.

## Controller Front Panel Lights

GREEN	On-cam (behaves like a conventional cam)
BLUE	Manual (responds to <b>[←]</b> and <b>[→]</b> keys)
BLUE <i>flashing</i>	Disabled (TOOL STOP is engaged)
YELLOW	Unlocated turret slide (use caution near ends of travel because it will NOT stop automatically)
YELLOW <i>flashing</i>	Camshaft over-speed
RED	Fault (further operation not possible)
ALL	Controller startup and initialization



## Displaying the Turret-Slide Run Screen

When running a part cycle, several run screens are available to be displayed. By default, the *Summary Run Screen* is displayed. There is also a display for the turret-slide axis.

Use the or keys to cycle through the displays. Line 1 indicates which screen is displayed. Below is an example of the *Turret Slide Run Screen*:

```
Turret Slide
CS 32.4 TS 6.0957 in
                F 35%
3/16 Twist  FDI 14.4
```

Line 1: Turret Slide

Line 2: CS 32.4 TS 6.0957 in

where:

CS 32.4            Camshaft position (hundredths)  
 TS 6.0957 in    Distance from turret to collet

Line 3: F 35%

where:

F 35%            Turret-slide force (percent of maximum)

Line 4: 3/16 Twist    FDI 14.4

where

3/16 Twist        Description of current tool  
 FDI 14.4        Current operation and beginning hundredth  
 14.4 = beginning hundredth

and where:

FCI	Feed Change - In
FCO	Feed Change - Out
FDI	Feed In
C / I	Clear/Index
DWL	Dwell
POS	Position

## Setting the Part-done Detector

1. At the Main Menu, select *Part Counter Menu* and press .
2. Select *Part-done detector* and press .
3. Select *CyclePhase:* and press .
4. Type the cycle phase (in hundredths) where the part should be considered *done* and press , or press to cancel.

## Part Counter Basics

### Part-done detector

Before the ServoCam® system can count parts, it must know when to consider a part *done* (or complete). For this, a *part-done detector* is used. (See "*Setting the Part-done Detector*").

### Lot counter (see "*Setting the Lot Counter*")

The ServoCam® system increments the *#Parts Done* (in Lot) every time a part is done – always (AutoTripper™ option not installed), or only if the Bar Feeder Switch is set to *Auto* (AutoTripper™ option installed).

If the *#Parts/Lot* (Lot size) is set to UNLIMITED, then the ServoCam® display counts *up* the number of parts done (or *made*), for example:

```
LOT 1021 made
```

If the *#Parts/Lot* (Lot size) is set to a value other than UNLIMITED, then the ServoCam® display counts *down* the number of parts and time remaining (hh:mm:ss) until the Lot is finished, for example:

```
LOT 10000 200:59:59
```

When the Lot is finished (*#Parts Done* equals *#Parts/Lot*), then the ServoCam® system will stop the machine, flash the Operator Alert Light, and the display will show "LOT finished". To stop the Operator Alert Light, escape to the Main Menu. The machine will not run automatically until *#Parts Done* is less than *#Parts/Lot* or until *#Parts/Lot* is set to UNLIMITED.

If the AutoTripper™ option is installed, and if the Bar Feeder Switch is NOT set to *Auto*, then the *#Parts Done* (in Lot) is not incremented, and the display will show "NC" on the right-hand side for *not counting*. If the AutoTripper™ option is not installed, all parts are counted.

### Bar-end counter

This feature is only available with AutoTripper™ option.

## Setting the Lot Counter

To change the *#Parts/Lot* (lot size):

1. At the Main Menu, select *Part Counter Menu* and press .
2. Select *Lot Counter* and press .
3. Select *#Parts/Lot:* and press .
4. Type the lot size and press , or press to cancel.

To change the *#Parts Done* (number of parts already done in the lot):

1. At the Main Menu, select *Part Counter Menu* and press .
2. Select *Lot Counter* and press .
3. Select *#Parts Done:* and press .
4. Type the number of parts already completed and press , or press to cancel.