

Attachment for the Servo Control Option on

**Conair Precision Puller (models 3-20,
4-26, 6-39) and the Combination
Puller/Cutter (models SCE and SCX)**

Conair Velocity Servo Belt Puller Operator Control

The Operator Control provides a simple and accurate method to alter parameters for the Conair Velocity Servo Belt Puller. Information entered at the Operator Control is sent directly to the servo amplifier registers via a serial communication link.

The Operator Control is a flat membrane panel consisting of 22-keys and a large 40-character (2x20) backlit LCD screen.



Soft Keys

Under the display are three keys that are known as soft keys. In some screens the lower line of text changes to reflect the usage of the soft keys that are directly underneath them. Think of this text as titles for the soft keys. The title may be abbreviated to fit above the key.

Conair Velocity Servo Belt Puller Operator Control

Fixed Function Keys

Other keys are numeric (for data entry), delete, enter, exit, menu, mute, lower, raise, next and previous. The text and pictorial details shown on the keys are indicative of their purpose. These keys are used as required in various screens. Please read the manual for more information on usage.

LCD Screen

The screen changes as the operator moves around the menu structure and indicates alarms and warnings where necessary.

Start Up Screen

Shortly after the Belt Puller is powered up the start up screen appears. This screen displays for 5 seconds.

CONAIR SERVO PULLER
Version X.X

The screen that follows is based on the mode selected for your Belt Puller. Please go to the section that pertains to your mode. The mode is factory set for your ordered requirements. Please contact the factory if your machine is set to the wrong mode upon arrival.

Modes

Four Modes are available

- ◆ Master Pre-set only
- ◆ Master with Trim
- ◆ Follower using Pulse
- ◆ Follower using Analogue

Contents

Page 3.....Master Basic Instructions
Page 6.....Master Advanced Features
Page 9.....Follower using Pulse Basic Instructions
Page 12.....Follower using Pulse Advanced Features
Page 14.....Master with Trim Basic Instructions
Page 17.....Master with Trim Advanced Features
Page 20.....Follower using Analogue Basic Instructions
Page 21.....Follower using Analogue Advanced Features
Page 23.....Alarms

Basic Instructions Master Mode

Speed Screen

The following screen appears after the initial start up screen when the Puller is set to Master Pre-set only mode. This screen is known as the Speed screen and is used for viewing the speed of the Puller. From here it is possible to set the Puller speed and monitor the Product counter.

SPEED XXXX.X U/M
Sm. Change Prod.

The actual speed of the Belt Puller appears in the top line. The lower line shows the assignment of the three soft keys that are underneath.

Prior to start up, the operator should set the Puller to the required line speed for the product that is to be extruded. In most cases the actual line speed will need to be trimmed either side of this initial setting once the product is being extruded and checked for size. Please see Raise and Lower in the next section.

Soft Key - Change selects the Change Speed screen.

Change Speed Screen

ENTER SPD.XXXX.X U/M
XXXX.X Is Maximum

The previous setting for speed will be shown in the top line.

Keys - Numeric are used to set the speed. The value of each key pressed will appear in the first line of the screen between SPD. and U/M overwriting the previous value. The decimal place for speed is fixed to one-tenth per unit of measure. The operator does not have the ability to enter the decimal place so must remember to include the decimal value or the speed will be one tenth of that required. When entering data the operator should simply key in the numbers until the value appears correct. For example, if the speed is to be 125.0 feet per minute, the operator keys in 1-2-5-0.

If no keys are pressed within a 20-second period the Speed screen will return.

Basic Instructions Master Mode

Key - Exit causes the Speed screen to appear.

Key - Delete is used to correct a mistake during numeric entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Speed screen. The value must not exceed the maximum that is shown on the second line of the Change Speed screen or a 3-second warning message will be displayed, as follows:

Warning Message

The Speed Entered Can't Exceed XXXX.X
--

Keys - Exit and Previous will cause the Change Speed screen to be displayed.

Once the Puller speed has been set the operator should start the Puller to confirm that the speed is correct. Use Change Speed again as necessary from the Speed screen. It is possible to alter the Puller speed while it is running, so there is no need to stop the Puller to make further changes.

Keys - Raise and Lower are used while the Puller is pulling product in order to trim the product size. These keys have been factory set to provide typical step values. *The operator can alter these step values as required. Please see the Advanced Features section for more information on how to do this.* There are two settings for Raise and Lower - a small value and a large value. The factory default value for small is 0.1-u/m steps, and for large it is 10.0-u/m steps.

Soft Key - Sm.(Small) and Lg. (Large) toggles the text above it between Small and Large (Sm. and Lg.). It allows small or large changes to be made via the raise and lower keys. When large changes are possible the display shows the following.

SPEED XXXX.X U/M
Lg. Change Prod.

Basic Instructions Master Mode

The operator can keep either the Raise or Lower key pressed (held down) and the set value will continuously scroll by the step amount until a limit is reached. Due to the motor Ramp times the actual speed reaches the pre-set after the ramp delay. *The operator can alter these Ramp values as required. Please see the Advanced Features section for more information on how to do this.*

Soft Key - Prod. (Product) selects the Product counter screen, which shows the amount of material that has passed through the Belt Puller since the last reset.

PRODUCT COUNTER		
Exit	XXXXXXXX	Rst

Soft Key - Rst (Reset) zeros the Product counter. This would typically be used once the product is correct so that the amount of good material that follows can be recorded.

Key - Exit and Soft Key - Exit select the Speed screen.

Advanced Features Master Mode

Key - Menu while the Speed screen is showing selects the Menu.

Menu Screen

#	SELECT MENU	
Scroll	Ramps	Setup

A number appears in the top left-hand corner (#) to indicate the current mode that is set for your Puller.

- 0 Master Pre-set only
- 1 Follower using Pulse
- 2 Master with Trim
- 3 Follower using Analogue

As this section refers to the Master Pre-set only mode the number shown should be 0.

There are three menu items available to choose from on this screen - Scroll, Ramps and Setup.

Soft Key - Scroll selects the Scroll menu.

Scroll Menu

SPEED INC/DEC VALUES
LqXX.X SmX.X RmXX.X

Three Scroll values are shown.

Lg. (Large) This value is assigned to the Raise and Lower keys when Lg. (Large) is showing on the Speed screen. Allowable range is 0.1 to 99.9.

Sm. (Small) This value is assigned to the Raise and Lower keys when Sm. (Small) is showing on the Speed screen. Allowable range is 0.1 to 9.9.

Rm. (Remote) This value is assigned to the remote control Raise and Lower inputs. An optional remote control or automated speed control such as a laser gauge system can modify the Belt Puller speed by using these inputs. Allowable range is 0.1 to 99.9.

Keys - Numeric are used to change the scroll amounts. As this screen appears the data entry cursor will be waiting in the tenths position of the large value. The first

Advanced Features Master Mode

value that can be modified is the large scroll. Keying in a value and pressing enter replaces the previous large scroll value and moves the cursor on to the small value. Similarly entering a small scroll value will move the data entry cursor to the remote value.

Keys - Next and Previous are used to select a different pre-set.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the chosen pre-set and moves the data entry cursor on to the next value. Movement occurs across the screen from left to right. After entering a remote scroll value the Menu screen will appear.

Key - Exit selects the Menu screen.

Soft Key - Ramps selects the Ramps menu.

Ramps Menu

Preset Acc/Dec Ramp X.XXX Sec/kRPM

Keys - Numeric are used to enter a new value. The ramp may be adjusted between 500 (0.500) and 9999 (9.999). The value entered here is used during acceleration and deceleration to define the time it takes for the motor to increase or decrease by 1,000 RPM. In most cases the motor is a 3,000 RPM motor so to go from zero to full speed will take three times the value that is entered. Usually, the top speed of the motor will be lower than maximum due to mechanical restrictions. The motor gets to a new speed faster when the number is smaller.

Key - Exit selects the Menu screen to be displayed.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Menu screen. The value must not exceed the range or a warning message will be displayed for 3 seconds as follows:

Advanced
Features
Master Mode

Out of Range Value

Warning Message

The Range For This Value is 9.999-0.500
--

Keys - Exit and Previous select the Ramps Menu screen.

Soft Key - Setup selects the Set up menu.

Set up Menu

SETUP CONTROL
Mode Scale Tune

Each of these menu items is password protected. They are intended for factory use. Different passwords are required for access into each of the sub-menu screens. Please do not attempt to adjust values in these protected menus, as the Puller may not function correctly if these parameters are tampered with.

Key - Exit selects the Menu screen.

Basic Instructions Follower using Pulse Mode

Speed Screen

The following screen appears after the initial start up screen when the Puller is set to Follower using Pulse mode. This screen is known as the Speed screen and is used for viewing the speed of the Puller. From here it is possible to set the pulse ratio and monitor the Product counter.

SPEED	XXXX.X	U/M
Sm.	Change	Prod.

The actual speed of the Belt Puller appears in the top line. The lower line shows the assignment of the three soft keys that are underneath.

Follower using Pulse mode is generally used to make the Puller run at the same speed of another (master) machine. This method is also known as slave or tracking. The master machine must provide quadrature pulses to the Puller so that it can stay in synchronisation. Some systems use a signal generator to provide the master signal for all equipment in the system to follow.

Prior to first time start up, the operator should set the ratio to match the machine that the Puller is to follow. It is easier to have both machines running so that comparisons can be made. In most cases the ratio will need to be trimmed either side of this initial value. Please see Raise and Lower in the next section. *The ratio may have already been set to suit the application at the factory prior to shipping.*

Soft Key - Change selects the Change Ratio screen.

Change Ratio Screen

ENTER FOLLOWER RATIO
X.XX:1

Keys - Numeric are used to enter the ratio. The value of each key pressed will appear under the word follower overwriting the previous value. The decimal place for ratio is fixed to one-hundredths. The operator does not have the ability to enter the decimal place so must remember to include the numbers after the decimal place or the ratio will be much smaller than expected. When entering data the operator should simply key in the numbers until the value appears correct. For example, if the ratio is to be set to 1.00:1, the operator keys in 1-0-0.

Basic Instructions Follower using Pulse Mode

If no keys are pressed within a 20-second period the Speed screen will return.

Key - Exit causes the Speed screen to appear.

Key - Delete is used to correct a mistake during numeric entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Speed screen. The value must not exceed the allowable range or a warning message will be displayed for 3 seconds as follows:

Warning Message

The Range for This Value Is 2.00 - 0.01
--

Keys - Exit and Previous will cause the Change Ratio screen to be displayed.

When the extrusion line is running the operator should check for stretching or slackening of the product between the master and Puller. Small changes to compensate for errors can then be made through the Raise and Lower keys.

Keys - Raise and Lower are normally used while the Puller is pulling product in order to trim the product size or to match speeds. These keys have been factory set to provide typical step values. *The operator can alter these step values as required. Please see the Advanced Features section for more information on how to do this.* There are two settings for Raise and Lower - a small value and a large value. The factory default value for small is 0.01:1 steps, and for large it is 0.10:1 steps.

Soft Key - Sm.(Small) and Lg. (Large) toggles the text above it between Small and Large (Sm. and Lg.). It allows small or large changes to be made via the raise and lower keys. When large changes are possible the display shows the following.

SPEED XXXX.X U/M
Lg. Change Prod.

Basic Instructions Follower using Pulse Mode

The operator can keep either the Raise or Lower key pressed (held down) and the ratio setting will continuously scroll by the step amount until a limit is reached. Due to the motor Ramp times the actual speed reaches the pre-set after the ramp delay. It is not possible to change the ramp setting for this mode.

Soft Key - Prod. (Product) selects the Product counter screen, which shows the amount of material that has passed through the Belt Puller since the last reset.

PRODUCT COUNTER		
Exit	XXXXXXXX	Rst

Soft Key - Rst (Reset) zeros the Product counter. This would typically be used once the product is correct so that the amount of good material that follows can be recorded.

Key - Exit and Soft Key - Exit select the Speed screen.

Advanced
Features
Follower using
Pulse Mode

Key - Menu while the Speed screen is showing selects the Menu.

Menu Screen

#	SELECT MENU	
Scroll	Ramps	Setup

A number appears in the top left-hand corner (#) to indicate the current mode that is set for your Puller.

- 0 Master Pre-set only
- 1 Follower using Pulse
- 2 Master with Trim
- 3 Follower using Analogue

As this section refers to the Follower using Pulse mode the number shown should be 1.

There are three menu items available to choose from on this screen - Scroll, Ramps and Setup. Although ramp is shown it is not available for this mode.

Soft Key - Scroll selects the Scroll menu.

Scroll Menu

RATIO INC/DEC VALUES
Lg .XX Sm .XX Rm .XX

Three Scroll values are shown.

Lg. (Large) This value is assigned to the Raise and Lower keys when Lg. (Large) is showing on the Speed screen. Allowable range is 0.01 to 0.99.

Sm. (Small) This value is assigned to the Raise and Lower keys when Sm. (Small) is showing on the Speed screen. Allowable range is 0.01 to 0.99.

Rm. (Remote) This value is assigned to the remote control Raise and Lower inputs. An optional remote control or automated speed control such as a laser gauge system can modify the Belt Puller speed by using these inputs. Allowable range is 0.01 to 0.99.

Advanced Features Follower using Pulse Mode

Keys - Numeric are used to change the scroll amounts. As this screen appears the data entry cursor will be waiting in the hundredths position of the large value. The first value that can be modified is the large scroll. Keying in a value and pressing enter replaces the previous large scroll value and moves the data entry cursor on to the small value. Similarly entering a small scroll value will move the data entry cursor to the remote value.

Keys - Next and Previous are used to select a different pre-set.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the chosen pre-set and moves the data entry cursor on to the next value. Movement occurs across the screen from left to right. After entering a remote scroll value the Menu screen will appear.

Key - Exit selects the Menu screen.

Soft Key - Ramps is not available in Follower using Pulse Mode, so pressing this key will produce the following 3 second warning message.

Warning Message

There Are No Ramps In Pulse Mode !

Keys - Exit and Previous select the Menu screen.

Soft Key - Setup selects the Set up menu.

Set up Menu

SETUP CONTROL
Mode Scale Tune

Each of these menu items is password protected. They are intended for factory use. Different passwords are required for access into each of the sub-menu screens. Please do not attempt to adjust values in these protected menus, as the Puller may not function correctly if these parameters are tampered with.

Key - Exit selects the Menu screen.

Basic Instructions Master with Trim Mode

Speed Screen

The following screen appears after the initial start up screen when the Puller is set to Master with Trim mode. This screen is known as the Speed screen and is used for viewing the speed of the Puller. From here it is possible to set the Puller speed and monitor the Product counter.

SPEED XXXX.X U/M
Sm. Change Prod.

The actual speed of the Belt Puller appears in the top line. The lower line shows the assignment of the three soft keys that are underneath.

Master with Trim is a type of Follower mode that is used for flexible material. It is called Master because the operator must set a speed. With Trim means that the speed can vary either side of the set point by using an additional signal. An analogue voltage such as that provided by a dancing arm or ultrasonic sensor provides the trim value. The effect and range of this voltage is set through the Scaling menu.

Prior to start up, the operator should set the Puller to match the required line speed for the product that is being extruded.

Soft Key - Change selects the Change Speed screen.

Change Speed Screen

ENTER SPD.XXXX.X U/M
XXXX.X Is Maximum

The previous setting for speed will be shown in the top line.

Keys - Numeric are used to set the speed. The value of each key pressed will appear in the first line of the screen between SPD. and U/M overwriting the previous value. The decimal place for speed is fixed to one-tenth per unit of measure. The operator does not have the ability to enter the decimal place so must remember to include the decimal value or the speed will be one tenth of that required. When entering data the operator should simply key in the numbers until the value appears correct. For example, if the speed is to be 125.0 feet per minute, the operator keys in 1-2-5-0.

Basic Instructions Master with Trim Mode

If no keys are pressed within a 20-second period the Speed screen will return.

Key - Exit causes the Speed screen to appear.

Key - Delete is used to correct a mistake during numeric entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Speed screen. The value must not exceed the maximum that is shown on the second line of the Change Speed screen or a 3-second warning message will be displayed as follows:

Warning Message

The Speed Entered Can't Exceed XXXX.X
--

Keys - Exit and Previous will cause the Change Speed screen to be displayed.

When the extrusion line is running the operator should attempt to get a comfortable product loop between the master and Puller. Small changes to compensate the loop can be made through the Raise and Lower keys.

Keys - Raise and Lower are used while the Puller is pulling product in order to trim the loop. These keys have been factory set to provide typical step values. *The operator can alter these step values as required. Please see the Advanced Features section for more information on how to do this.* There are two settings for Raise and Lower - a small value and a large value. The factory default value for small is 0.1-u/m steps, and for large it is 10.0-u/m steps.

Basic Instructions Master with Trim Mode

Soft Key - Sm.(Small) and Lg. (Large) toggles the text above it between Small and Large (Sm. and Lg.). It allows small or large changes to be made via the raise and lower keys. When large changes are possible the display shows the following.

SPEED XXXX.X U/M
Lg. Change Prod.

The operator can keep either the Raise or Lower key pressed (held down) and the set value will continuously scroll by the step amount until a limit is reached. Due to the motor Ramp times the actual speed reaches the pre-set after the ramp delay. *The operator can alter these Ramp values as required. Please see the Advanced Features section for more information on how to do this.*

Soft Key - Prod. (Product) selects the Product counter screen, which shows the amount of material that has passed through the Belt Puller since the last reset.

PRODUCT COUNTER
Exit XXXXXXXX Rst

Soft Key - Rst (Reset) zeros the Product counter. This would typically be used once the product is correct so that the amount of good material that follows can be recorded.

Key - Exit and Soft Key - Exit select the Speed screen.

Advanced Features Master with Trim Mode

Key - Menu while the Speed screen is showing selects the Menu.

Menu Screen

#	SELECT MENU	
Scroll	Ramps	Setup

A number appears in the top left-hand corner (#) to indicate the current mode that is set for your Puller.

- 0 Master Pre-set only
- 1 Follower using Pulse
- 2 Master with Trim
- 3 Follower using Analogue

As this section refers to the Master with Trim mode the number shown should be 2.

There are three menu items available to choose from on this screen - Scroll, Ramps and Setup.

Soft Key - Scroll selects the Scroll menu.

Scroll Menu

SPEED INC/DEC VALUES
LqXX.X SmX.X RmXX.X

Three Scroll values are shown.

Lg. (Large) This value is assigned to the Raise and Lower keys when Lg. (Large) is showing on the Speed screen. Allowable range is 0.1 to 99.9.

Sm. (Small) This value is assigned to the Raise and Lower keys when Sm. (Small) is showing on the Speed screen. Allowable range is 0.1 to 9.9.

Rm. (Remote) This value is assigned to the remote control Raise and Lower inputs. An optional remote control or automated speed control such as a laser gauge system can modify the Belt Puller speed by using these inputs. Allowable range is 0.1 to 99.9.

Keys - Numeric are used to change the scroll amounts. As this screen appears the data entry cursor will be waiting in the tenths position of the large value. The first

Advanced Features Master with Trim Mode

value that can be modified is the large scroll. Keying in a value and pressing enter replaces the previous large scroll value and moves the cursor on to the small value. Similarly entering a small scroll value will move the data entry cursor to the remote value.

Keys - Next and Previous are used to select a different pre-set.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the chosen pre-set and moves the data entry cursor on to the next value. Movement occurs across the screen from left to right. After entering a remote scroll value the Menu screen will appear.

Key - Exit selects the Menu screen.

Soft Key - Ramps selects the Ramps menu.

Ramps Menu

Select Acc/Dec Ramp
Preset Analog

As there are two signal sources two ramp options are given - Preset and Analog. The ramp values and key operations that follow are similar except one acts on changes in pre-set value and the other acts on changes in analogue value.

Soft Key - Preset selects the Preset Ramp Menu.

Preset Ramp Menu

Preset Acc/Dec Ramp
X.XXX Sec/kRPM

Soft Key - Analog selects the Analogue Ramp Menu.

Analogue Ramp Menu

Analog Acc/Dec Limit
X.XXX Sec/kRPM

Keys - Numeric are used to enter a new value. The ramp may be adjusted between 500 (0.500) and 9999 (9.999). The value entered here is used during acceleration and deceleration to define the time it

Advanced Features Master with Trim Mode

takes for the motor to increase or decrease by 1,000 RPM. In most cases the motor is a 3,000 RPM motor so to go from zero to full speed will take three times the value that is entered. Usually, the top speed of the motor will be lower than maximum due to mechanical restrictions. The motor gets to a new speed faster when the number is smaller.

Key - Exit selects the Ramps Menu screen.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Ramps Menu screen. The value must not exceed the range or a warning message will be displayed for 3 seconds as follows:

Out of Range Value

Warning Message

The Range For This Value is 9.999-0.500
--

Keys - Exit and Previous select the Preset Ramp Menu screen.

Soft Key - Setup selects the Set up menu.

Set up Menu

SETUP CONTROL		
Mode	Scale	Tune

Each of these menu items is password protected. They are intended for factory use. Different passwords are required for access into each of the sub-menu screens. Please do not attempt to adjust values in these protected menus, as the Puller may not function correctly if these parameters are tampered with.

Key - Exit selects the Menu screen.

Basic Instructions Follower using Analogue Mode

Speed Screen

The following screen appears after the initial start up screen when the Puller is set to Follower using Analogue mode. This screen is known as the Speed screen and is used for viewing the speed of the Puller. From here it is possible to monitor the Product counter.

SPEED XXXX.X U/M
Sm. Change Prod.

The actual speed of the Belt Puller appears in the top line. The lower line shows the assignment of the three soft keys that are underneath.

Follower using Analogue mode is used for setting the speed of the Puller by an analogue voltage. Generally, this is a 0 to 10 volt signal in which zero sets zero speed and 10 volts sets maximum speed. The analogue range can be modified through the Setup Menu, i.e. to use a 0 to 5 volt signal. *The analogue settings may have already been set to suit the application at the factory prior to shipping.*

Prior to first time start up, the operator should set the ratio to match the machine that the Puller is to follow. It is easier to have both machines running so that comparisons can be made. In most cases the ratio will need to be trimmed either side of this initial value. Please see Raise and Lower in the next section. *The ratio may have already been set to suit the application at the factory prior to shipping.*

Soft Key - Change selects the Change Ratio screen.

Change Ratio Screen

ENTER FOLLOWER RATIO
X.XX:1

Keys - Numeric are used to enter the ratio. The value of each key pressed will appear under the word follower overwriting the previous value. The decimal place for ratio is fixed to one-hundredths. The operator does not have the ability to enter the decimal place so must remember to include the numbers after the decimal place or the ratio will be much smaller than expected. When entering data the operator should simply key in the numbers until the value appears correct. For example, if the ratio is to be set to 1.00:1, the operator keys in 1-0-0.

Basic Instructions Follower using Pulse Mode

If no keys are pressed within a 20-second period the Speed screen will return.

Key - Exit causes the Speed screen to appear.

Key - Delete is used to correct a mistake during numeric entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Speed screen. The value must not exceed the allowable range or a warning message will be displayed for 3 seconds as follows:

Warning Message

The Range for This Value Is 2.00 - 0.01
--

Keys - Exit and Previous will cause the Change Ratio screen to be displayed.

When the extrusion line is running the operator should check for stretching or slackening of the product between the master and Puller. Small changes to compensate for errors can then be made through the Raise and Lower keys.

Keys - Raise and Lower are normally used while the Puller is pulling product in order to trim the product size or to match speeds. These keys have been factory set to provide typical step values. *The operator can alter these step values as required. Please see the Advanced Features section for more information on how to do this.* There are two settings for Raise and Lower - a small value and a large value. The factory default value for small is 0.01:1 steps, and for large it is 0.10:1 steps.

Soft Key - Sm.(Small) and Lg. (Large) toggles the text above it between Small and Large (Sm. and Lg.). It allows small or large changes to be made via the raise and lower keys. When large changes are possible the display shows the following.

SPEED XXXX.X U/M
Lg. Change Prod.

Basic Instructions Follower using Pulse Mode

The operator can keep either the Raise or Lower key pressed (held down) and the ratio setting will continuously scroll by the step amount until a limit is reached. Due to the motor Ramp times the actual speed reaches the pre-set after the ramp delay. It is not possible to change the ramp setting for this mode.

Soft Key - Prod. (Product) selects the Product counter screen, which shows the amount of material that has passed through the Belt Puller since the last reset.

PRODUCT COUNTER		
Exit	XXXXXXXX	Rst

Soft Key - Rst (Reset) zeros the Product counter. This would typically be used once the product is correct so that the amount of good material that follows can be recorded.

Key - Exit and Soft Key - Exit select the Speed screen.

Advanced
Features
Follower using
Analogue Mode

Key - Menu while the Speed screen is showing selects the Menu.

Menu Screen

#	SELECT MENU	
Scroll	Ramps	Setup

A number appears in the top left-hand corner (#) to indicate the current mode that is set for your Puller.

- 0 Master Pre-set only
- 1 Follower using Pulse
- 2 Master with Trim
- 3 Follower using Analogue

As this section refers to the Follower using Analogue mode the number shown should be 3.

There are three menu items available to choose from on this screen - Scroll, Ramps and Setup. Although scroll is shown it is not available for this mode.

Soft Key - Scroll selects the Scroll menu.

Scroll Menu

RATIO INC/DEC VALUES
Lg .XX Sm .XX Rm .XX

Three Scroll values are shown.

Lg. (Large) This value is assigned to the Raise and Lower keys when Lg. (Large) is showing on the Speed screen. Allowable range is 0.01 to 0.99.

Sm. (Small) This value is assigned to the Raise and Lower keys when Sm. (Small) is showing on the Speed screen. Allowable range is 0.01 to 0.99.

Rm. (Remote) This value is assigned to the remote control Raise and Lower inputs. An optional remote control or automated speed control such as a laser gauge system can modify the Belt Puller speed by using these inputs. Allowable range is 0.01 to 0.99.

Advanced Features Follower using Analogue Mode

Keys - Numeric are used to change the scroll amounts. As this screen appears the data entry cursor will be waiting in the hundredths position of the large value. The first value that can be modified is the large scroll. Keying in a value and pressing enter replaces the previous large scroll value and moves the data entry cursor on to the small value. Similarly entering a small scroll value will move the data entry cursor to the remote value.

Keys - Next and Previous are used to select a different pre-set.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the chosen pre-set and moves the data entry cursor on to the next value. Movement occurs across the screen from left to right. After entering a remote scroll value the Menu screen will appear.

Key - Exit selects the Menu screen.

Soft Key - Ramps selects the Analogue Ramp Menu.

Analogue Ramp Menu

Analog Acc/Dec Limit X.XXX Sec/kRPM
--

Keys - Numeric are used to enter a new value. The ramp may be adjusted between 500 (0.500) and 9999 (9.999). The value entered here is used during acceleration and deceleration to define the time it takes for the motor to increase or decrease by 1,000 RPM. In most cases the motor is a 3,000 RPM motor so to go from zero to full speed will take three times the value that is entered. Usually, the top speed of the motor will be lower than maximum due to mechanical restrictions. The motor gets to a new speed faster when the number is smaller.

Key - Exit selects the Menu screen.

Key - Delete is used to correct a mistake during entry.

Key - Enter accepts the value that has just been keyed in and reverts back to the Menu screen. The value must

not exceed the range or a warning message will be displayed for 3 seconds as follows:

Out of Range Value

Warning Message

The Range For This Value is 9.999-0.500
--

Keys - Exit and Previous select the Menu screen.

Soft Key - Setup selects the Set up menu.

Set up Menu

SETUP CONTROL
Mode Scale Tune

Each of these menu items is password protected. They are intended for factory use. Different passwords are required for access into each of the sub-menu screens. Please do not attempt to adjust values in these protected menus, as the Puller may not function correctly if these parameters are tampered with.

Key - Exit selects the Menu screen.

Alarms All Modes

There are four alarm messages that relate to faults in the Servo Drive or Communications. **Please contact the factory if any of these serious faults occur.**

Drive Fault

001 DRIVE FAULT
ACCEPT ALL

Torque Limit

002 TORQUE LIMIT
ACCEPT ALL

Current Foldback

004 CURRENT FOLDBACK
ACCEPT ALL

Communications Failure

003 COMMS FAILURE
ACCEPT ALL

An alarm sound accompanies the messages and two choices are offered - Accept and All.

Soft Key - Accept is used to clear the message. Steps should now be taken to ensure that the fault has been fixed or being attended to.

Soft Key - All is used to clear all messages. Steps should now be taken to ensure that the fault(s) have been fixed or being attended to.

Priority

The above alarms have a priority order so the fault showing may not be the original cause of the fault. Use Accept rather than All to see if any other alarms have occurred.