AUTOMATIC CARBIDE ROD CUT OFF SAW
Version 8.0
OPERATOR'S MANUAL

By

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Chapter 1 : General Information

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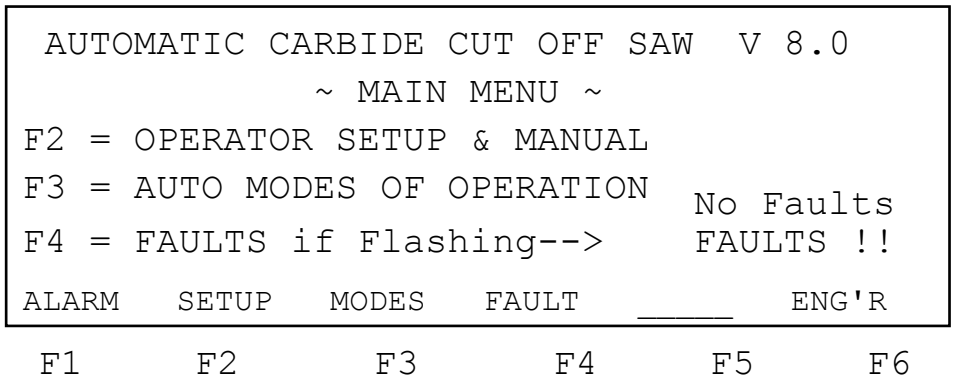
GP #1, MAIN MENU



This is the **Main Menu** Screen for the **Automatic Carbide Cut Off Machine.** When the machine is powered up either by choice or power failure, the "**FAULTS!**" prompt will be flashing. The Operator then needs to press the **'FAULT'** Button (F4) and follow the prompts from the FAULT Screen. When ALL Faults have been solved, the Operator will return back to this Screen. The "FAULTS!" prompt will be gone and **"No Faults"** prompt will be seen.

Next the Operator will be able to select:

F1: ALARM – Press this key to clear any Input over limit values made by Operator. Press IF any Inverted (dark) Message is flashing at the very top of the Operator Screen.

F2: SETUP – Press this key to go to the Operator Setup screen. (Seepage 2-2)

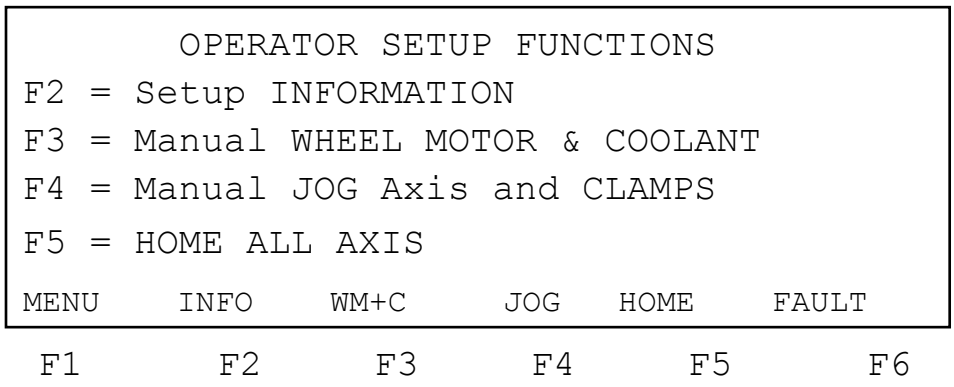
F3: MODES – Press this key to go to the Modes of Operation menu screen. (Seepage 2-14)

F4: FAULT – Press this key to view the faults menu and clear any faults. (Seepage 2-21)

F5: Not used.

F6: ENG'R – Press this key to go to the Engineering screens. (Seepage 3-1)

GP #2, Operator Setup Screen



F1: MENU – Press this key to return to Main Menu screen. (Seepage 2-1)

F2: INFO – Press this key to view the screens necessary to setup or revise the information to cut the carbide rods. (See page 2-3).

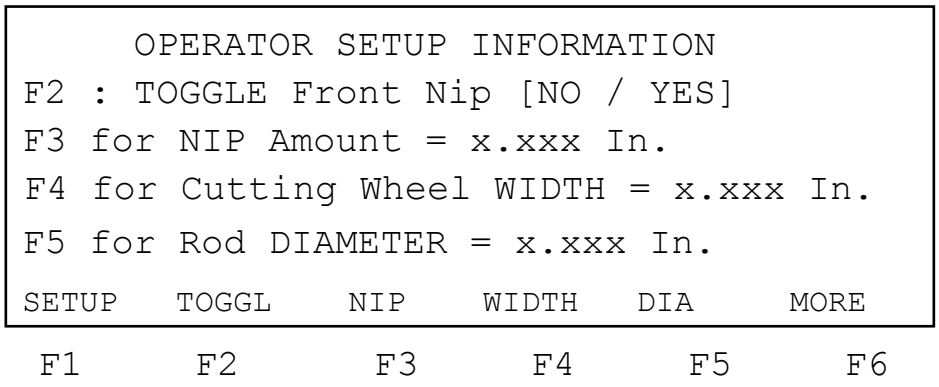
F3: WM+C – Press this key to view the screens necessary to Manually operate the Cutting Wheel Motor and Coolant Solenoid. (See page 2-12).

F4: JOG - Press this key to view the screens necessary to Manually Jog the Axis and operate the Vee Clamps. (Seepage 2-9)

F5: HOME – Press this key to home the Rod Pusher and Wheel Head Axis.

F6: FAULT – Press this key if a "Faults!" is flashing. (Seepage 2-21)

GP #3, Setup Information 1



F1: SETUP – Press this key to return to Operator Setup. (Seepage 2-2)

F2: TOGGL – Press this key to toggle the Front Nip option (No or Yes).

F3: NIP - Press this key to access the Nip Amount value and then use the numeric key pad to input the needed value. Then press the [↵] key to accept the new value. *The Range is 0.062" to 0.200".*

F4: WIDTH - Press this key to access the Cutting Wheel Width value and then use the numeric key pad to input the needed thickness. Then press the [↵] key to accept the new value. *Note: Measure the Wheel thickness and add about 0.005".*

F5: DIA – Press this key to access the Rod Diameter value and then use the numeric keypad to input the needed diameter. Then press the [↵] key to accept the new value. *The Range is 0.062" to 1.062".*

F6: MORE – Press this key to go to the next operator setup screen. (Seepage 2-4)

GP #4, Setup Information 2

```
     OPERATOR SETUP INFORMATION
F2 for PRIMARY Cut Length = x.xxx In.
F3 for Number of Primary CUTS = xx Cuts
F4 for SECONDARY Cut Length = x.xxx In.


BACK     PRI      CUTS     SEC        _____     MORE
```

F1 F2 F3 F4 F5 F6

F1: BACK – Press this key to go back 1 screen. (Seepage 2-3)

F2: PRI – Press this key to access the Primary Cut Length value and then use the numeric key pad to input the needed value. Then press the [↵] key to accept the new value. *The Range is 0.062" to 12.000".*

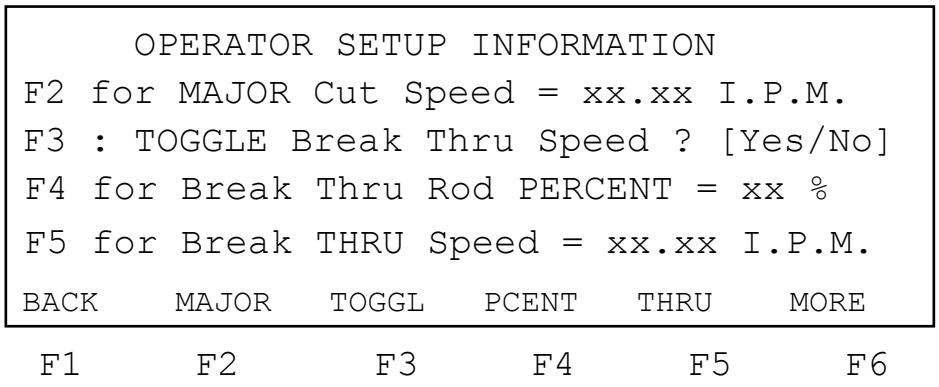
F3: CUTS - Press this key to access the Number of Primary Cuts value and then use the numeric key pad to input the needed value. Then press the [↵] key to accept the new value. After the number of primary cut lengths are done, then the secondary cut length value is used.

F4: SEC - Press this key to access the Secondary Cut Length value and then use the numeric key pad to input the needed thickness. Then press the [↵] key to accept the new value. The default value is 14.000" if no secondary cut lengths are required. This allows the machine to eject the remaining portion of the rod and continue to the next rod. *The Range is 0.062" to 14.000".*

F5: NOT USED.

F6: MORE – Press this key to go to the next operator setup screen. (Seepage 2-5)

GP #5, Setup Information 3



F1: BACK – Press this key to go back 1 screen. (Seepage 2-4)

F2: MAJOR – Press this key to access the Major Cut Speed value and then use the numeric key pad to input the needed speed in IPM. Then press the [↵] key to accept the new value. *The Range is 0.10 IPM to 4.00 IPM.*

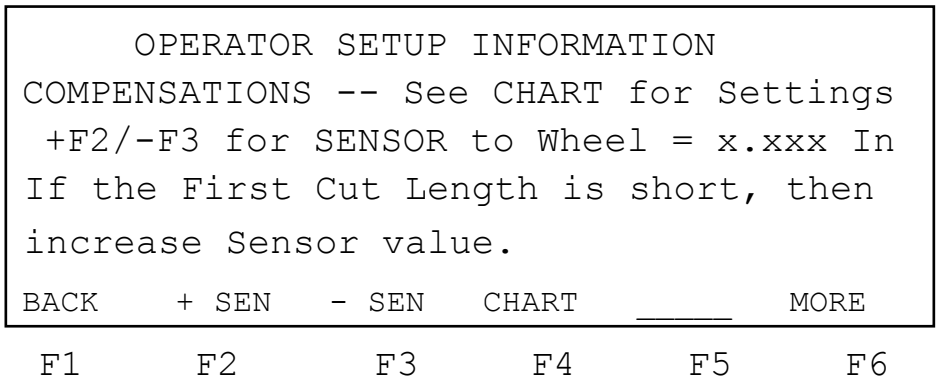
F3: TOGGL - Press this key to toggle the Break Through Speed option "No or Yes".

F4: PCENT - Press this key to access the Break Through Rod Percentage value of total rod diameter and then use the numeric key pad to input the needed percent. Then press the [↵] key to accept the new value. *The Range is 25% to 95%.*

F5: THRU - Press this key to access the Break Through Speed value and then use the numeric key pad to input the needed speed in IPM. Then press the [↵] key to accept the new value. *The Range is 0.10 IPM to 4.00 IPM, but normally this value is less than the "Major Cut Speed" value.*

F6: MORE – Press this key to go to the next operator setup screen. (Seepage 2-6)

GP #6, Setup Information 4



F1: BACK - Press this key to go back 1 screen. (Seepage 2-5)

F2: + SEN - Press this key to increase the Sensor to Wheel distance.

F3: - SEN - Press this key to decrease the Sensor to Wheel distance.

The Sensor to Wheel distance determines whether the first rod cut length is the correct amount. If the first rod cut length is short, then increase the Wheel to Sensor amount.

F4: CHART - Press this key to view the chart for the approximate offset distance factor from the mean sensing distance for each diameter listed. (Seepage 2-8)

F5: Not used.

F6: MORE – Press this key to go to the next operator setup screen. (Seepage 2-7)

GP #7, Setup Information 5

```
     OPERATOR SETUP INFORMATION
 +F3/-F4 for WHEEL Wear Comp = x.xxx In
If the Wheel does not cut through the
Rod, then increase Wheel Wear value.
   F5 : To Reset Value to Default
BACK    MENU2    + WHL    - WHL    RESET    _____
 F1      F2       F3       F4       F5       F6
```

F1: BACK – Press this key to go back 1 screen. (Seepage 2-6)

F2: MENU2 – Press this key to return to the Operator Setup Functions Menu Screen. (Seepage 2-2)

F3: + WHL -- Press this key to increase the amount of Wheel Wear.

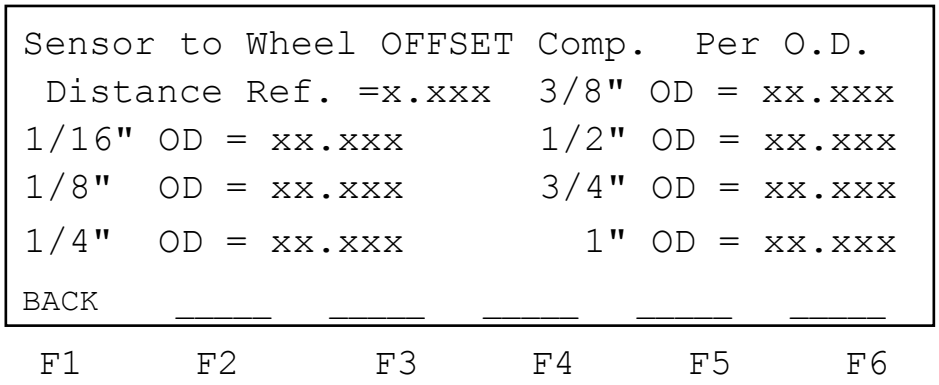
F4: - WHL -- Press this key to decrease the amount of Wheel Wear.

The Wheel Wear amount determines whether the cutting wheel passes through the rod. If the rod has not been cut through, then increase the wheel wear amount.

F5: RESET – Press this key to reset the Wheel Wear Compensation to its default value.

F6: Key not used.

GP #8, Setup Information 6



This is a chart with the approximate offset values to be added or subtracted, check sign (-), from the reference distance. The Supervisor or Engineer sets these values in the Engineering section.

F1: BACK – Press this key to go to screen #6. (Seepage 2-6)

F2: Not used.

F3: Not used.

F4: Not used.

F5: Not used.

F6: Not used.

GP #9, Setup Manual Jog Tool Bed axis

```
Manual Jog: TOOL BED Axis      [FAULTS!!]
POSITION = xx.xxx In   SPEED =[Fast/Slow]
Note: Jog Axis Up/Back to Fill with Rods
 Then Jog Axis UP until Rod falls in VEE
F3: Toggle Rod Vee CLAMPS =[CLOSED/OPEN]
MENU2    SPEED    CLAMP    FAULT    _____    NEXT
  F1       F2       F3       F4       F5       F6
```

This screen is used to allow the Operator to jog the Tool Bed Axis up or back to make room to load the rods to be cut on the flat bed. After filling the flat bed, then the Operator needs to jog the axis up until the rods falls onto the Pusher Vee. This will set the Tool Bed Axis starting position and the index timing.

F1: MENU2 – Press this key to return to the Operator Setup Functions Menu Screen. (See page 2-2).

F2: SPEED – Press this key to toggle the Axis speed to either Fast or Slow.

F3: CLAMP – Press this key to toggle the Rod Vee Clamps state of either closed or open.

F4: FAULT – Press this key if "Faults!" is flashing. (Seepage 2-21)

F5: Not used.

F6: NEXT – Press this key for the next screen to operate the Rod Pusher Axis, or next again for the Wheel Head Axis. (Seepage 2-10)

GP #10, Setup Manual Jog Rod Pusher axis

```
Manual Jog: ROD PUSHER Axis    [FAULTS!!]
POSITION = xx.xxx In   SPEED =[Fast/Slow]
Note: Use to Jog and Set Rear Limit
  Switch and to Test Axis Movement.
F3: Toggle Rod Vee CLAMPS =[CLOSED/OPEN]
BACK    SPEED   CLAMP   FAULT   _____   NEXT
 F1      F2      F3      F4      F5      F6
```

This screen is used to allow the Operator to jog the Rod Pusher Axis forward or backward to make adjustments and set the Rear limit switch for the length of rods used. The Jog function is also used to test the axis for trouble shooting problems. The Forward limit switch has been set by the manufacturer and should not be moved.

The Clamps must be open (up) to allow this axis to jog.

F1: BACK – Press this key to go back to the previous Axis screen. (Seepage 2-9)

F2: SPEED – Press this key to toggle the Axis speed to either Fast or Slow.

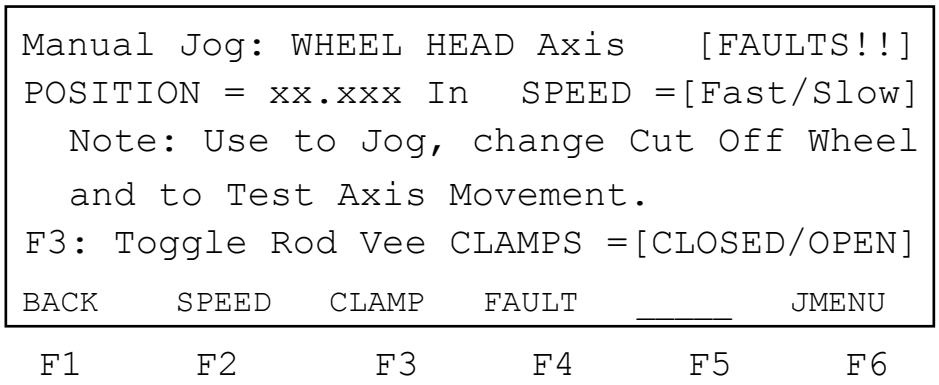
F3: CLAMP – Press this key to toggle the Rod Vee Clamps state of either closed or open.

F4: FAULT – Press this key if "Faults!" is flashing. (Seepage 2-21)

F5: Not used.

F6: NEXT – Press this key for the next screen to operate the Wheel Head Axis. (Seepage 2-11)

GP #11, Setup Manual Jog Wheel Head axis



This screen is used to allow the Operator to jog the Wheel Head Axis forward or backward to change the Cut Off Wheel, to clear a jamb, or view the maximum forward travel distance to set the software over travel. The Jog function is also used to test the axis for trouble shooting problems. The limit switches have been set by the manufacturer and should not be moved.

The Clamps must be closed (down) to allow this axis to jog.

F1: BACK – Press this key to go back to the previous Axis screen. (Seepage 2-10)

F2: SPEED – Press this key to toggle the Axis speed to either Fast or Slow.

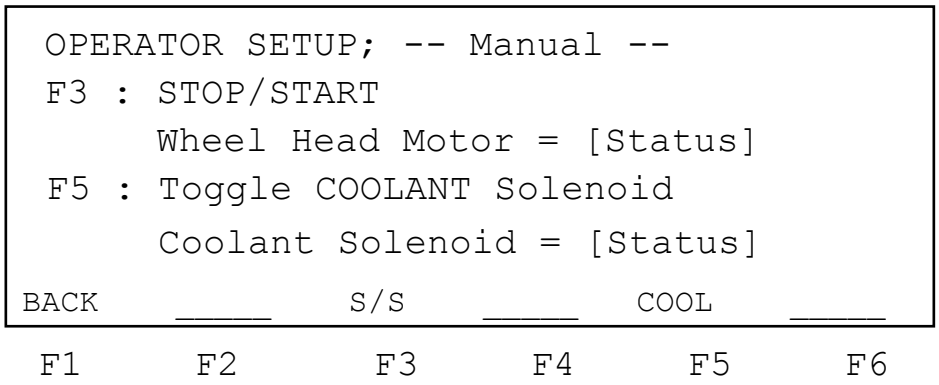
F3: CLAMP – Press this key to toggle the Rod Vee Clamps state of either closed or open.

F4: FAULT – Press this key if "Faults!" is flashing. (Seepage 2-21)

F5: Not used.

F6: JMENU – Press this key to go to the Tool Bed Axis screen. (Seepage 2-9)

GP #12, Manual Motor & Coolant



This screen is used to allow the Operator to manually stop or start the Wheel Head Motor to check the status of the Cut Off Wheel or to check the motor for noise.

Also, a new Vee Clamp assembly may need to be checked for clearance to allow the cut off wheel to move through the slot between the carbide wear strips. Use this and Manual Jog Axis function to check for clearance, left/right alignment, and parallel to slot.

F1: BACK –Press this key to return to the Operator Setup screen. (Seepage 2-2)

F2: Not used.

F3: S / S – Press this key to stop or start the Wheel Head Motor.

[Status] will show active state of [Off] or [On].

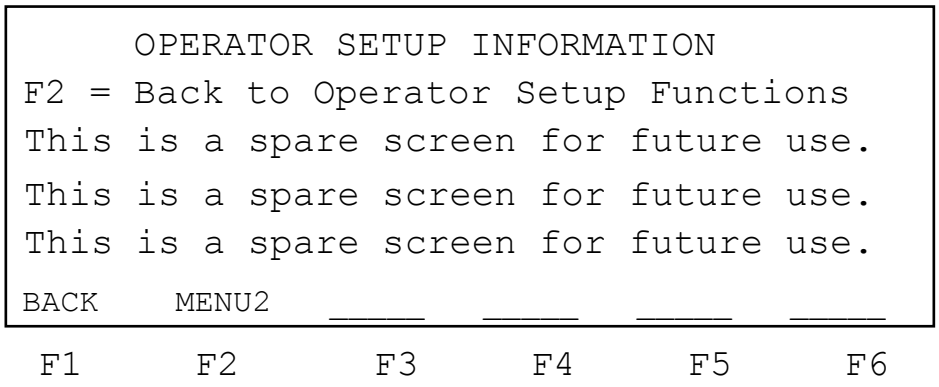
F4: Not used.

F5: Not used.

F6: COOL -- Press this key to toggle the Coolant Solenoid off or on.

[Status] will show active state of [Off] or [On].

GP #13, Setup, Spare Screen



This is a spare screen set up for future use.

F1: BACK – Press this key to go back 1 screen. (Seepage 2-1)

F2: MENU2 – Press this key to return to the Operator Setup Functions Menu Screen. (Seepage 2-1)

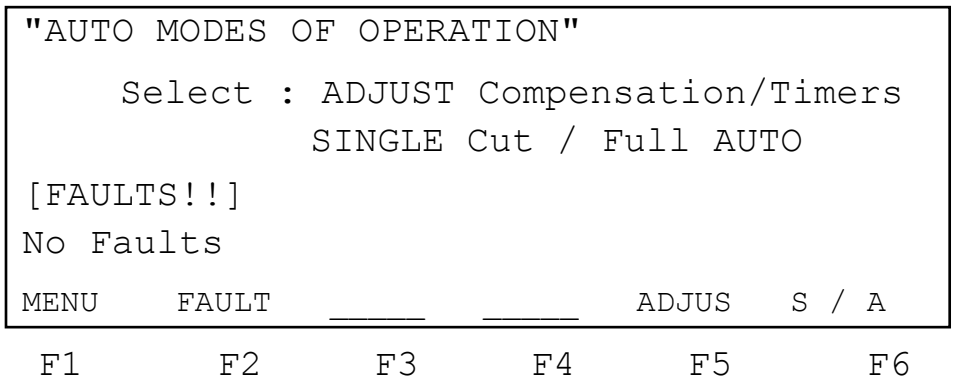
F3: Not used.

F4: Not used.

F5: Not used.

F6: Not used.

GP #14, Operator Modes



F1: MENU - Press this key to return to Main Menu. (Seepage 2-1)

F2: FAULT - Select this Key if the "FAULTS!" prompt is flashing to go to the main Faults screen. (Seepage 2-21)

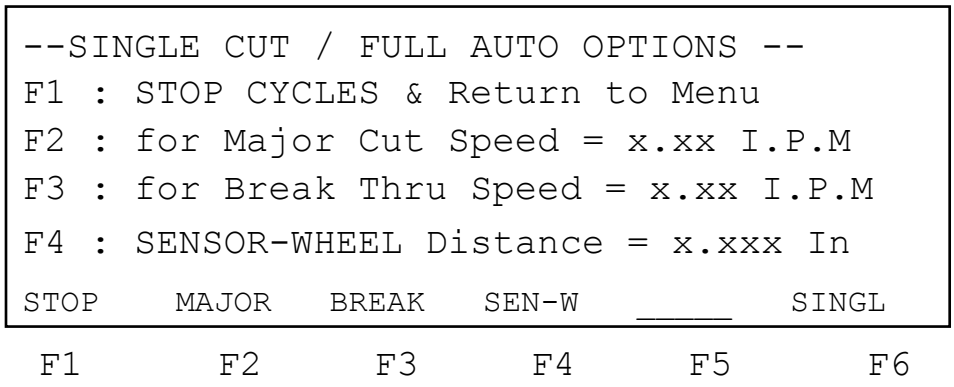
F3: Key not used.

F4: Key not used.

F5: ADJUS – Press this key to access the screens to adjust the Wheel Wear compensation, Sensor to Cut Off Wheel, and Timers and Machine Oiler. (Seepage 2-18)

F6: S / A - Select this Key to access the Single Cut and Full Auto Cut Options and the select Single or Full Auto. (Seepage 2-15)

GP #15, Operator Mode Options



F1: STOP - STOP all cutting cycle and return to Auto Modes of Operation Menu. (Seepage 2-14)

F2: MAJOR – Press this key to access the Major Cut Speed value to modify it. *The Range is 0.10 IPM to 4.00 IPM.*

F3: BREAK - Press this key to access the Break Through Speed value to modify it. *The Range is 0.10 IPM to 4.00 IPM, but normally this value is less than the "Major Cut Speed" value.*

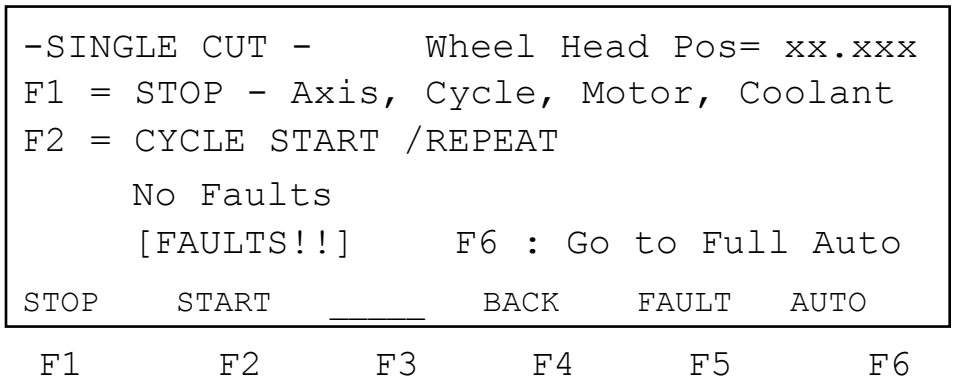
F4: SEN-W – Press this key to revise the value for the "Rod End Sensor" to Cutting Wheel distance.

The Sensor to Wheel distance determines whether the first rod cut length is the correct amount. If the first rod cut length is short, then increase the Wheel to Sensor amount.

F5: Not used.

F6: SINGL – Press this key to access the Single Cut operation screen. (Seepage 2-16)

GP #16, Operator Mode, Single Cut



F1: STOP - STOP Single Cut Cycle, axis movement, wheel motor, and coolant. Then return to the Auto Modes of Operation screen. (Seepage 2-14)

F2: START - START Single Cut Cycle and repeat single cut cycle.

F3: Key not used.

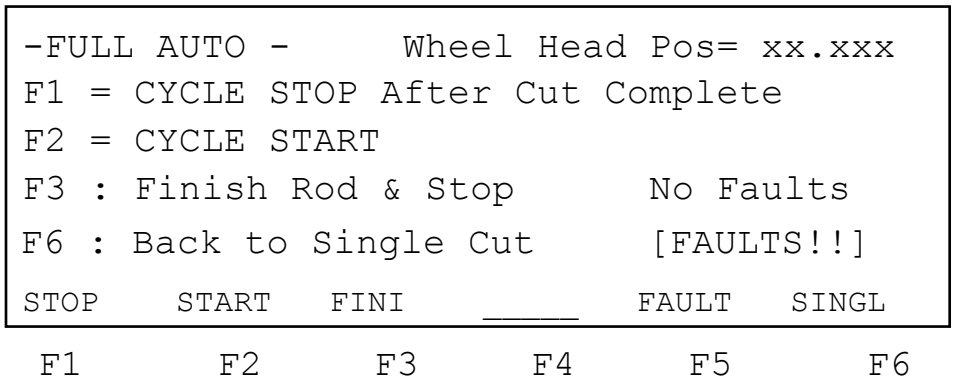
F4: BACK – Press this key to go back to Options. (Seepage 2-15)

F5: FAULT – Press this key if "Faults!" is flashing. This will return to the Auto Modes of Operation screen. (Seepage 2-14)

F6: AUTO – Press this key to go to the Full Auto Mode. If the Single Cut has been started, the Auto cycle will be active to make the next cut. (Seepage 2-17)

Faults status: displays either "No Faults" or "FAULTS!" flashing.

GP #17, Operator Mode, Full Auto



F1: STOP – Cycle Stop after the rod cut is complete.

F2: START - START Auto Cycle or restart after a cycle stop.

F3: FINI – Press this key to finish the Rod being cut and then stop cycle. This will cause cycle stop and shut down the machine.

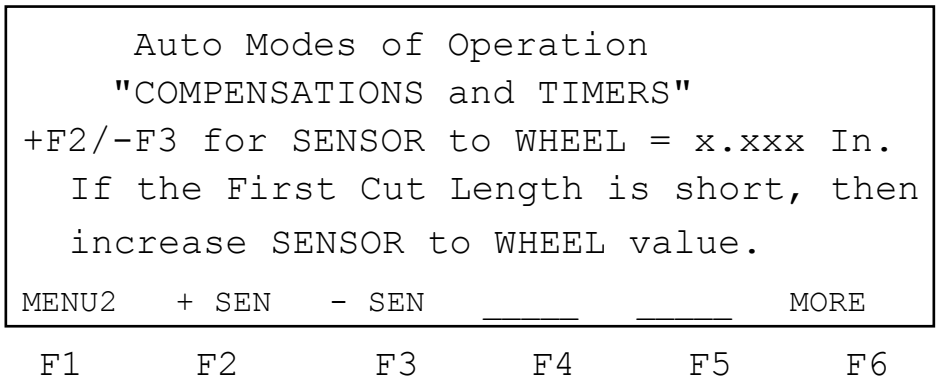
F3: Key not used.

F5: FAULT – Press this key if "Faults!" is flashing. This will return to the Auto Modes of Operation screen. (Seepage 2-14)

F6: SINGL – Press this key to go to the Single Cut Mode. If a cut is in progress, it will finish and then be ready to restart or stop. (Seepage 2-16)

Faults status: displays either "No Faults" or "FAULTS!" flashing.

GP #18, Adjustments and Compensations



F1: MENU2 – Press this key to return to the Auto Modes of Operation Menu Screen. (Seepage 2-14)

F2: + SEN – Press this key to increase the Sensor to Wheel distance.

F3: - SEN - Press this key to decrease the Sensor to Wheel distance.

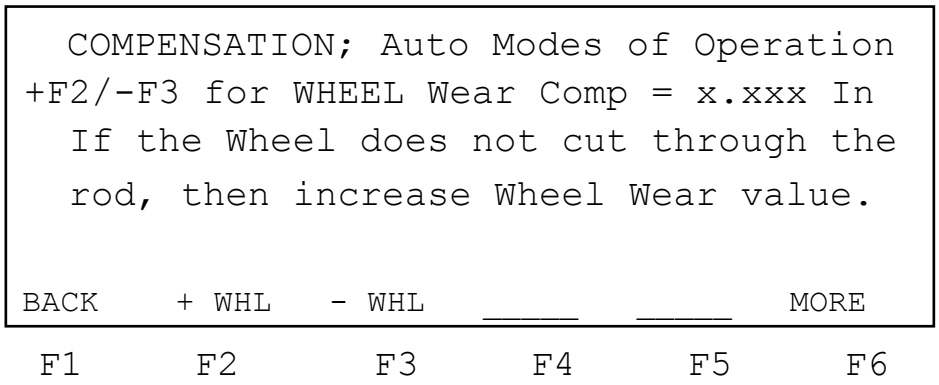
The Sensor to Wheel distance determines whether the first rod cut length is the correct amount. If the first rod cut length is short, then increase the Wheel to Sensor amount.

F4: Key not used.

F5: Key not used.

F6: MORE – Press this key to go to the next set of operator screens. (Seepage 2-19)

GP #19, Adjustments and Compensations



F1: BACK – Press this key to go back 1 screen. (Seepage 2-18)

F2: + WHL - Press this key to increase the amount of Wheel Wear.

F3: - WHL – Press this key to decrease the amount of Wheel Wear.

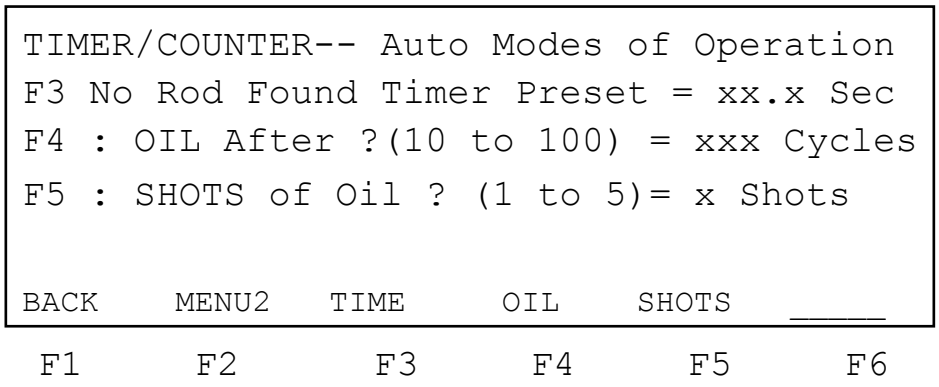
The Wheel Wear amount determines whether the cutting wheel passes through the rod. If the rod has not been cut through, then increase the wheel wear amount.

F4: Key not used.

F5: Key not used.

F6: MORE – Press this key to go to the next set of operator screens. (Seepage 2-20)

GP #20, Adjustments and Compensations



F1: BACK – Press this key to go back 1 screen. (Seepage 2-19)

F2: MENU2 – Press this key to return to the Auto Modes of Operation Menu Screen. (Seepage 2-14)

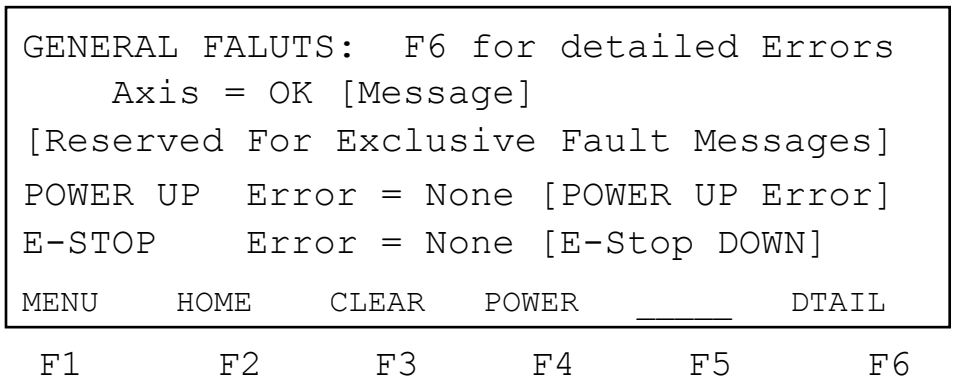
F3: TIME – Press this key to revise the amount of time to allow the Rod Pusher to push the rod to the Sensor. The valid range is 3.0 Seconds to 15.0 Seconds.

F4: OIL - Press this key to access the value of cycles for the machine to make before turning on the Machine Oiler.

F5: SHOTS – Press this key to access the value of shots of oil that the machine oiler will make. The run time for the oiler is set in the engineering section.

F6: Key not used.

GP #21, Faults Menu Screen



F1: MENU – Press this key to return to the Main Menu screen. (Seepage 2-1)

Fault status: [None or OK] = No faults, take no action.

Reserved for exclusive fault messages: Perform action as stated. This area will prompt the operator for a key to press.

F2: HOME – Press this key to home the Axis if the "Home Required" status is flashing.

F3: ALARM - Select this Key if Alarm Tag is flashing in upper screen area.

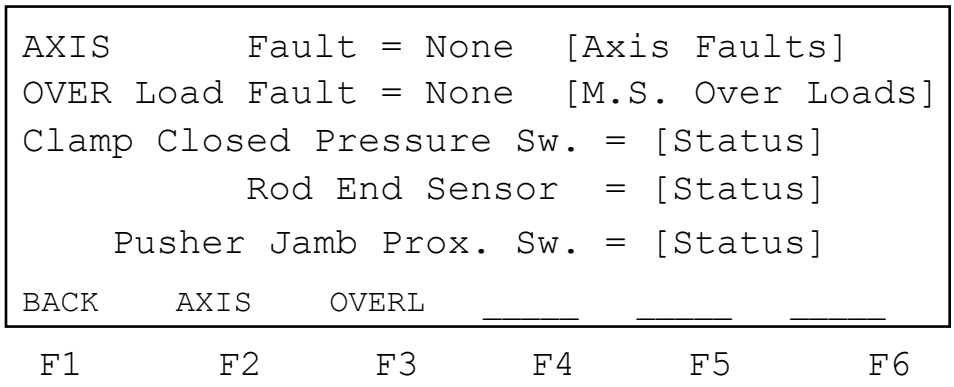
F4: POWER -- Select this Key when "POWER UP ERROR" is flashing.

F5: Key not used.

F6: DTAIL – Press this key for detailed screens of errors if needed. (Seepage 2-22)

When "E-Stop DOWN" is Flashing, **PULL E-STOP.**

GP #22, Fault Details Screen



F1: BACK – Press this key to return to the Fault Menu screen. (Seepage 2-21)

Fault status: [None] = No faults, take no action.

[Fault Type Flashing] = Fault active, select proper Key.

F2: AXIS - Select this Key when "Axis Faults" if flashing to go to the screens to correct the fault. (Seepage 2-23)

F3: OVERL - Select this Key when "M.S. Over Loads" is flashing to view the type of fault. (Seepage 2-27)

F4: Key not used.

F5: Key not used.

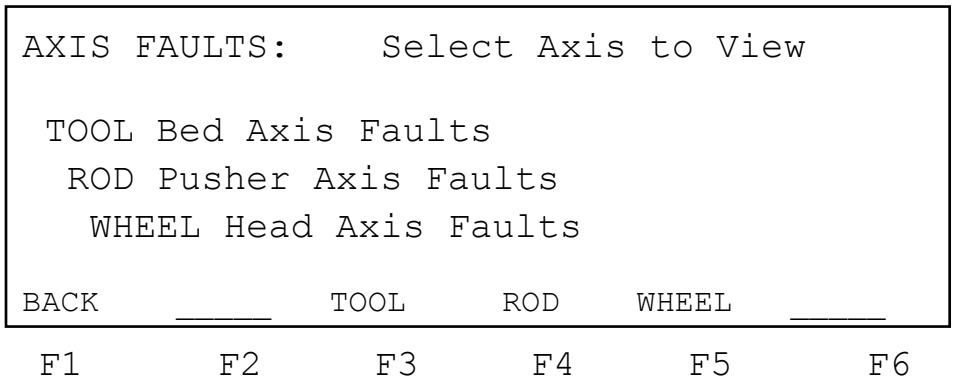
F6: Key not used.

Clamp Closed Pressure Switch displays the status of "Clamp Closed" or "Clamp Opened".

Rod End Sensor displays the status of "Sensor Off" or "Sensor On".

Pusher Jamb Proximity Switch displays the status of "Prox. Off" or "Prox. On".

GP #23, Faults – Select Axis



F1: BACK – Press this key to go back to the Detailed Fault Screen. (Seepage 2-22)

F2: Key not used.

Status: There will be no status of active or none for the axis.

F3: TOOL - Select this Key to view the Tool Bed axis fault screen. (Seepage 2-24)

F4: ROD - Select this Key to view the Rod Pusher axis fault screen. (Seepage 2-25)

F5: WHEEL - Select this Key to view the Wheel Head axis fault screen. (Seepage 2-26)

F6: Key not used.

GP #24, Faults, Tool Bed Axis

```
TOOL BED Axis Position = xxxx.xxx In
     Back / Rear Limit = [Status]
  Forward / Done Limit = [Status]
Current Position Valid = Ok [NOT VALID]
Illegal Move Error = None [MOVE ERROR]
BACK      _____    _____   CLEAR    _____   SET-P
```

F1 F2 F3 F4 F5 F6

F1: BACK – Press this key to go back to Axis Fault screen. (Seepage 2-23)

F2: Key not used.

F3: Key not used.

F4: CLEAR - Press this Key if "MOVE ERROR" is flashing. This will clear the error. Next, the "SET-P" should be pressed. This will set the axis position to Zero.

The axis normal status are shown below:

Back Limit = The status of "Limit ON" means cannot jog back.

Forward Limit = The status of "Limit ON" means cannot jog forward.

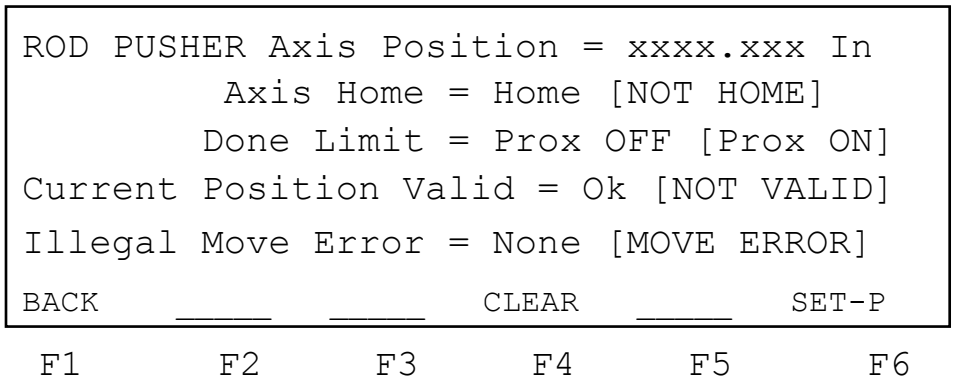
Current Position Valid = Ok

Illegal Move Error = Not Active

F5: Key not used.

F6: SET-P – Press this key to set the axis position to Zero.

GP #25, Faults, Rod Pusher Axis



F1: BACK - Press this key to go back to Axis Fault screen. (Seepage 2-23)

F2: Key not used.

F3: Key not used.

F4: CLEAR - Press this Key if "MOVE ERROR" is flashing. This will clear the error. Next, the "SET-P" should be pressed. This will set the axis position to Zero.

The axis normal status are shown below:

Axis Home = Home

Done Limit = Prox OFF

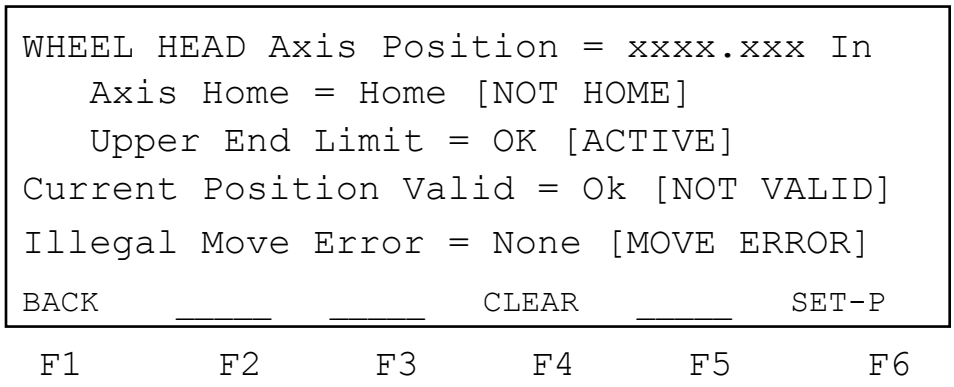
Current Position Valid = Ok

Illegal Move Error = Not Active

F5: Key not used.

F6: SET-P – Press this key to set the axis position to Zero.

GP #26, Faults, Wheel Head Axis



F1: BACK - Press this key to go back to Axis Fault screen. (Seepage 2-23)

F2: Key not used.

F3: Key not used.

F4: CLEAR - Press this Key if "MOVE ERROR" or "Upper End Limit" is flashing. This will clear the error. Next, the "SET-P" should be pressed. This will set the axis position to Zero.

The axis normal status are shown below:

Tool Bed Axis Home = Home

Upper End Limit = Ok

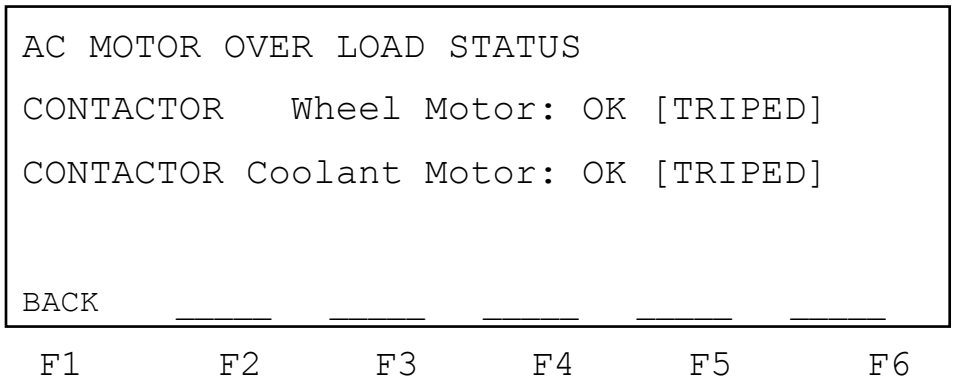
Current Position Valid = Ok

Illegal Move Error = Not Active

F5: Key not used.

F6: SET-P – Press this key to set the axis position to Zero.

GP #27, Faults – Motor Contactors

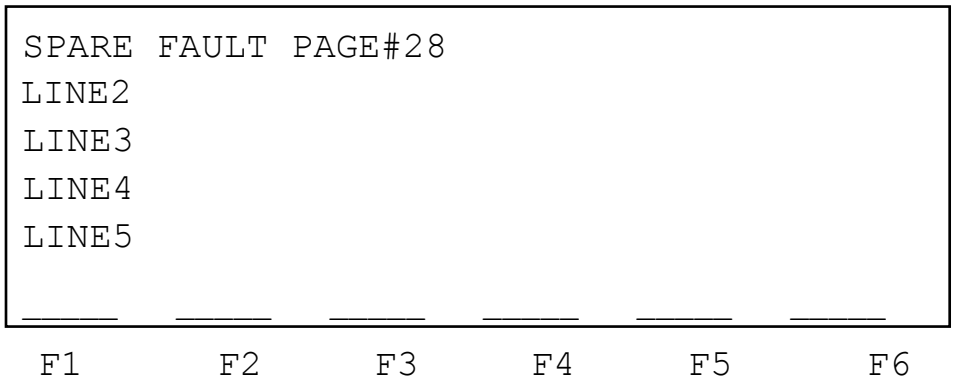


F1: BACK - Press this key to go back to the Detailed Fault Screen. (Seepage 2-22)

CONTACTOR Wheel Motor: - "OK" or if "TRIPPED" then check Coolant Overload Relay.

CONTACTOR Coolant Motor: - "OK" or if "TRIPPED" then check Coolant Overload Relay.

GP #28, Faults Spare screen



F1: Key not used. (Seepage 2-22)

F2: Key not used.

F3: Key not used.

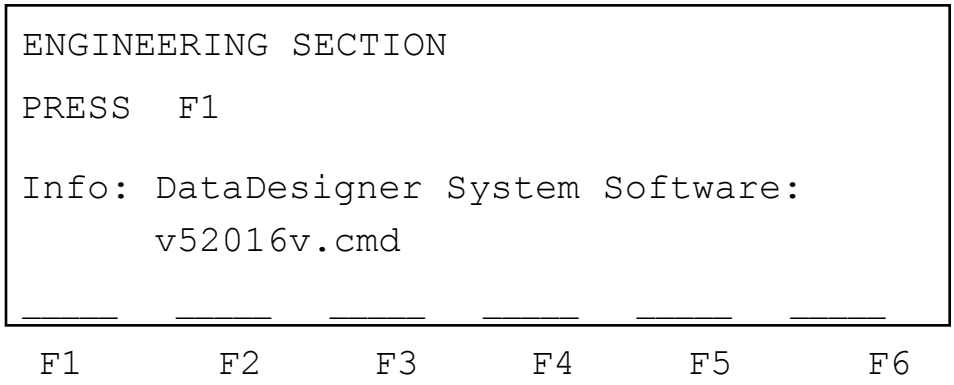
F4: Key not used.

F5: Key not used.

F6: Key not used.

Chapter 3 : Engineering Section

GP #29, Engineering Menu Screen

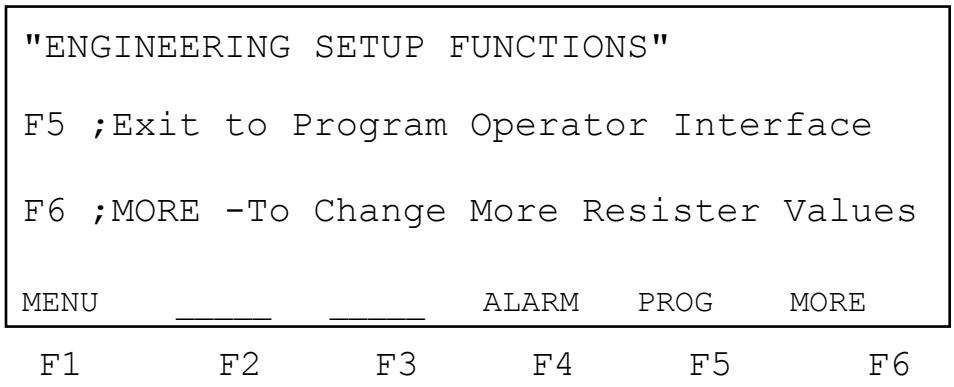


The Engineering section is for use by the "Programmer" or "Supervisor" or "head of Maintenance" only. The pages referring to the Engineering section should not be printed out for the operators.

F1: MASKED – Press this key to return to the MAIN MENU. (Seepage 2-1)

F4: MASKED – Press this key to go to the ENGINEERING screens. (Seepage 3-2)

GP #30, Engineering Setup Screen 1



This screen and the following screens are to be accessed by a SUPERVISOR or ENGINEERING ONLY!

F1: MENU – Press this key to return to the Main Menu screen. (Seepage 2-1)

F2: Key not used.

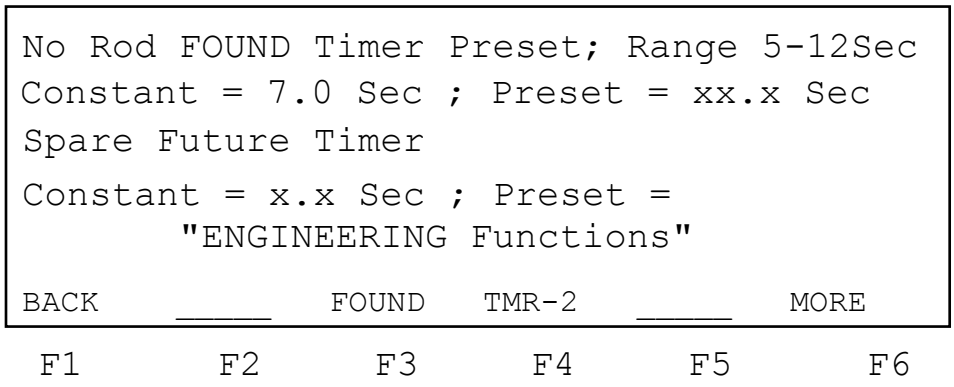
F3: Key not used.

F4: ALARM – Reset Any Alarm Tag that Exceeds an Over or Under Value.

F5: PROG – Press this key to exit the run mode of the Operator Interface and enter the Setup/Program mode.

F6: MORE – Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-3)

GP #31, Engineering Setup Screen 2



F1: BACK – Press this key to return to the previous screen. (Seepage 3-2)

F2: Key not used.

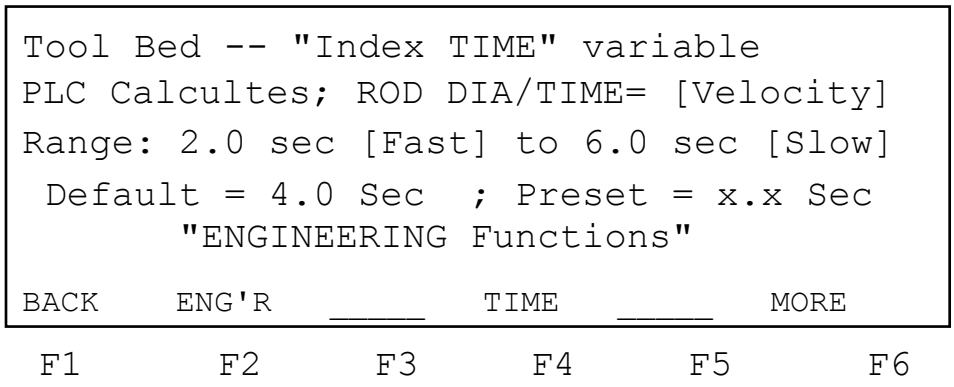
F3: FOUND - Press this key to access the register to write a New Value.

F4: TMR-2 – Future use, press to Write New Value.

F5: Key not used.

F6: MORE -- Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-4)

GP #32, Engineering Setup Screen 3



F1: BACK - Press this key to return to the previous screen. (Seepage 3-3)

F2: ENG'R – Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

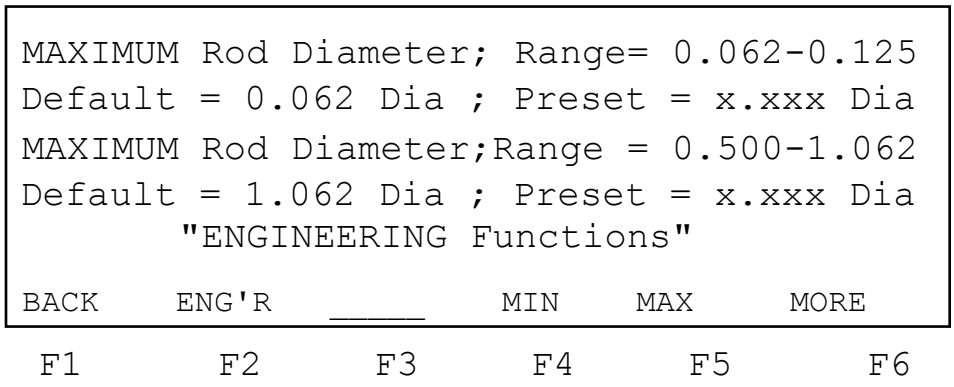
F3: Key not used.

F4: TIME – This value adjusts the Tool Bed time to index the next part.

F5: Key not used.

F6: MORE -- Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-5)

GP #33, Engineering Setup Screen 4



F1: BACK - Press this key to return to the previous screen. (Seepage 3-4)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

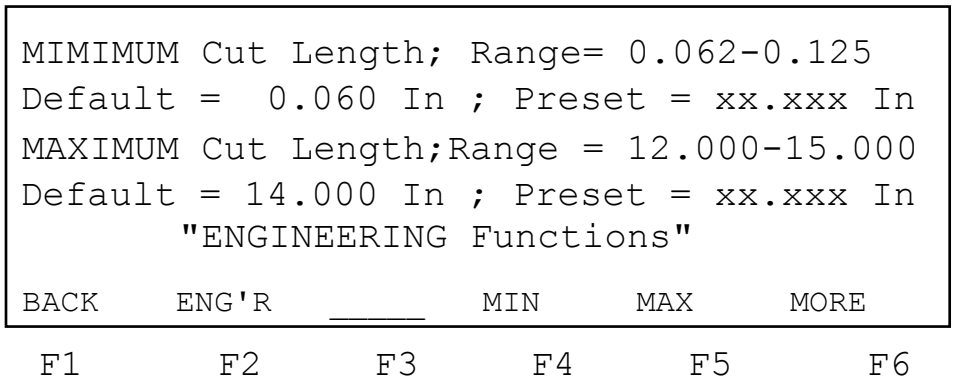
F3: Key not used.

F4: MIN - Select to key to write new value for the Minimum Rod Diameter.

F5: MAX - Select to key to write new value for the Maximum Rod Diameter.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-6)

GP #34, Engineering Setup Screen 5



F1: BACK - Press this key to return to the previous screen. (Seepage 3-5)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

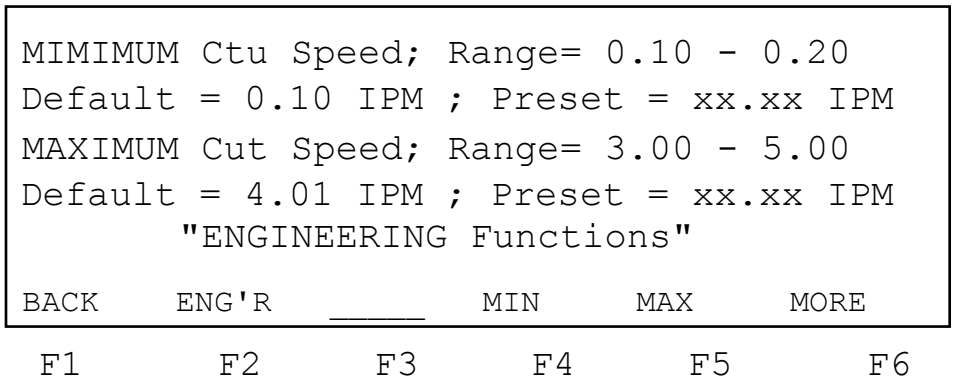
F3: Key not used.

F4: MIN - Select to key to write new value for the Minimum Rod Cut Length.

F5: MAX - Select to key to write new value for the Maximum Rod Cut Length. Range is dependent upon machine build.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-7)

GP #35, Engineering Setup Screen 6



F1: BACK - Press this key to return to the previous screen. (Seepage 3-6)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

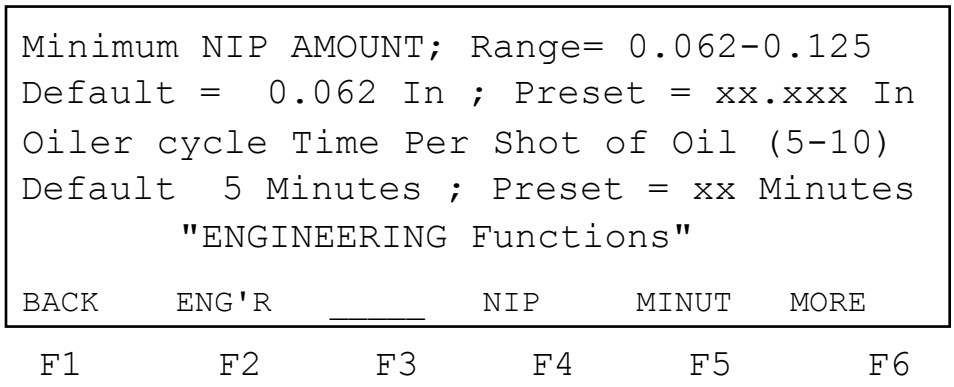
F3: Key not used.

F4: MIN - Select to key to write new value for the Minimum Cut Speed.

F5: MAX - Select to key to write new value for the Maximum Cut Speed.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-8)

GP #36, Engineering Setup Screen 7



F1: BACK - Press this key to return to the previous screen. (Seepage 3-7)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

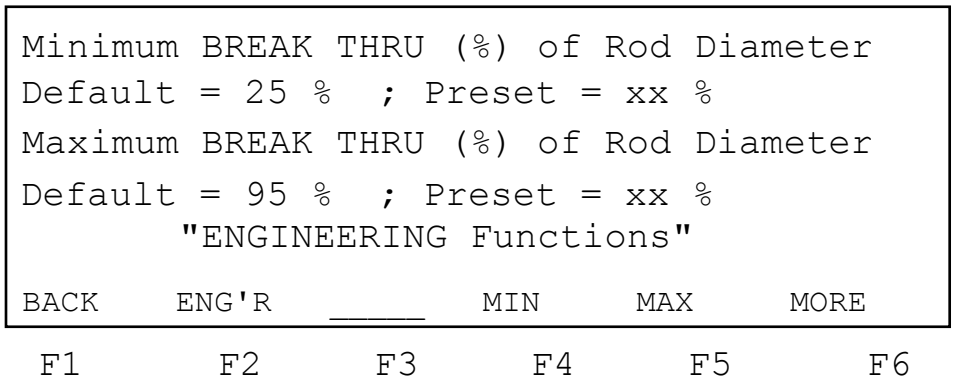
F3: Key not used.

F4: NIP - Select this key to write a value for the Minimum Nip amount.

F5: MINUT – Press this key to write a value for the cycle time of the oiler motor from the specifications.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (See page 3-9)

GP #37, Engineering Setup Screen 8



F1: BACK - Press this key to return to the previous screen. (Seepage 3-8)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

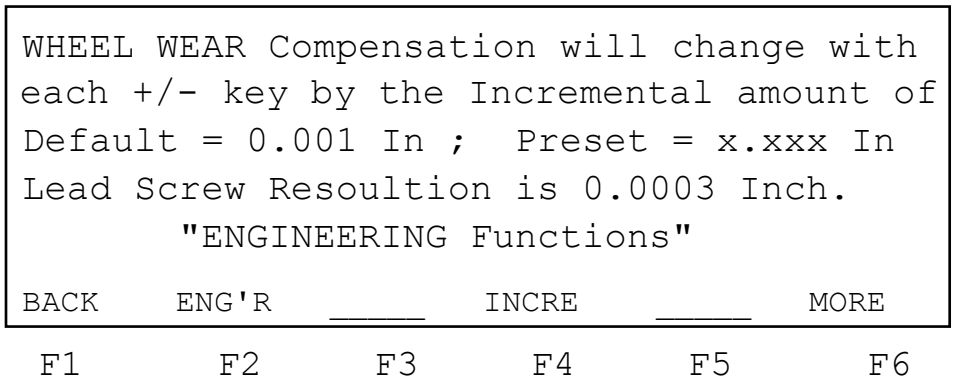
F3: Key not used.

F4: MIN - Select to key to write a new value for the Minimum Break through percentage of the rod diameter. The valid range is 50% to 75%.

F5: MAX - Select to key to write a new value for the Maximum Break through percentage of the rod diameter. The valid range is 80% to 95%.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-10)

GP #38, Engineering Setup Screen 9



F1: BACK - Press this key to return to the previous screen. (Seepage 3-9)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

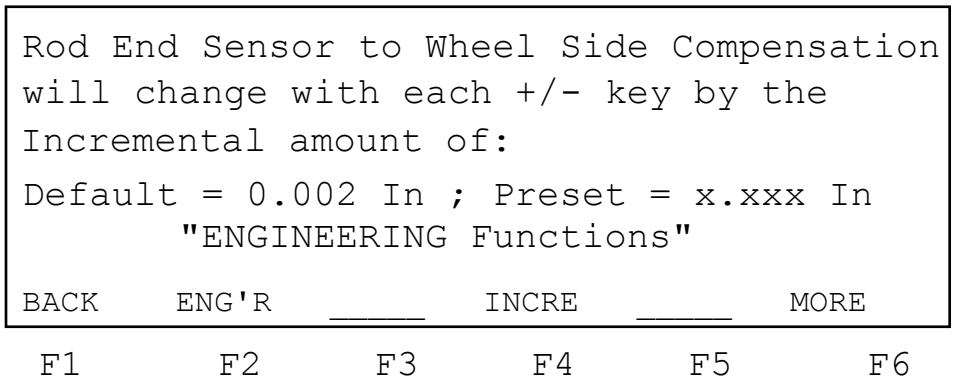
F3: Key not used.

F4: INCRE – Press this key to access the register to change the *incremental* value for the Wheel Wear Compensation amount.

F5: Key not used.

F6: MORE -- Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-11)

GP #39, Engineering Setup Screen 10



F1: BACK -- Return to the previous screen. (Seepage 3-10)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

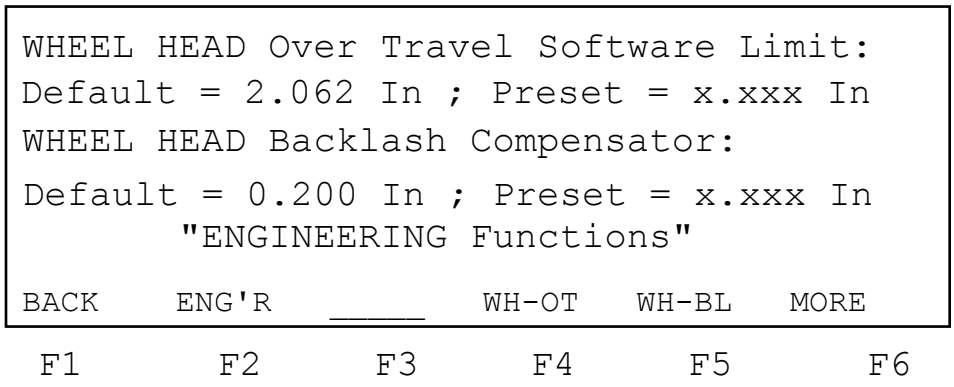
F3: Key not used.

F4: INCR – Press this key to access the register to change the *incremental* value for the Rod Edge Sensor to Wheel Side compensation amount.

F5: Key not used.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-12)

GP #40, Engineering Setup Screen 11



F1: BACK - Press this key to return to the previous screen. (Seepage 3-11)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

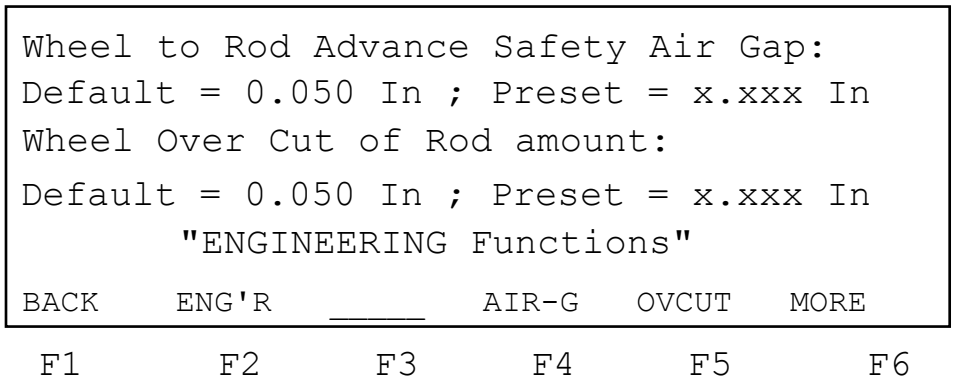
F3: Key not used.

F4: W-O-T - Press this key to access the register to change the Wheel Head Over Travel Software Limit. This distance should be the measured distance from a new wheel, with the Wheel Head axis at home, to the back of the clearance slot.

F5: W-B-C - Press this key to access the register to change the Wheel Head Backlash Compensation.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-13)

GP #41, Engineering Setup Screen 12



F1: BACK - Press this key to return to the previous screen. (Seepage 3-12)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

F3: Key not used.

F4: AIR-G - Press this key to access the register to change the Wheel to Rod Advance Safety Air Gap amount. This is the amount of gap that remains after the rapid travel toward the rod.

F5: OVCUT - Press this key to access the register to change the Wheel Over Cut amount. This is the extra amount of Wheel Head travel that will be applied to the rod diameter distance.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-14)

GP #42, Engineering Setup Screen 13

```
ORIGINAL Distance from the VEE CENTER
to the O.D. of a 8" Cut Off Wheel is:
Default = 1.500 In ; Preset = x.xxx In
Important: Please Measure this Distance
       "ENGINEERING Functions"
BACK    ENG'R   _____   VEE-W   _____   MORE
 F1      F2      F3      F4      F5      F6
```

F1: BACK - Press this key to return to the previous screen. (Seepage 3-13)

F2: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

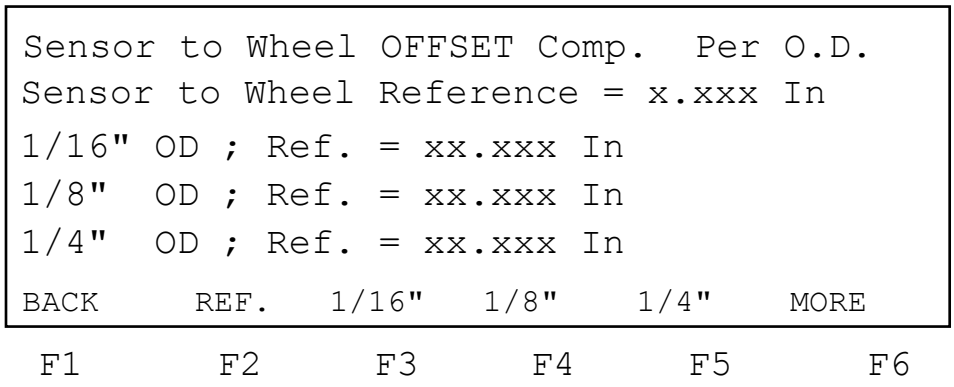
F3: Key not used.

F4: VEE/W - Press this key to access the register to change the Original Vee Center to New Wheel Outside Diameter amount. The PLC uses this dimension to calculate the moves to perform on the rods.

F5: Key not used.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-15)

GP #43, Engineering Setup Screen 14



F1: BACK - Return to the previous screen. (Seepage 3-14)

F2: REF. - Press this key to write the value of Sensor to Wheel distance for Rod diameter to be used. The operator can change this value when they look up the references from their chart.

F3: 1/16” - Press this key to write the value of the Sensor to Wheel distance for a 1/16” diameter rod.

F4: 1/8” - Press this key to write the value of the Sensor to Wheel distance for a 1/8” diameter rod.

F5: 1/4” - Press this key to write the value of the Sensor to Wheel distance for a 1/4” diameter rod.

F6: MORE - Press this key to view more screens to change Register Values to customize for each Machine. (Seepage 3-16)

GP #44, Engineering Setup Screen 15

```
Sensor to Wheel Comp. Values  Per O.D.
3/8" OD ; Ref. = xx.xxx In
1/2" OD ; Ref. = xx.xxx In
3/4" OD ; Ref. = xx.xxx In
  1" OD ; Ref. = xx.xxx In
BACK    3/8"    1/2"    3/4"     1"     ENG'R
 F1      F2      F3      F4      F5      F6
```

F1: BACK - Press this key to return to the previous screen. (Seepage 3-15)

F3: 3/8" -- Press this key to write the value of the Sensor to Wheel distance for a 3/8" diameter rod.

F4: 1/2" -- Press this key to write the value of the Sensor to Wheel distance for a 1/2" diameter rod.

F5: 3/4" -- Press this key to write the value of the Sensor to Wheel distance for a 3/4" diameter rod.

F6: 1" -- Press this key to write the value of the Sensor to Wheel distance for a 1" diameter rod.

F6: ENG'R - Press this key to go back to the Engineering Screen #1. (Seepage 3-2)

Rod End Sensor to Wheel Calculations

The distance from the Proximity Switch to the wheel can established by carefully pushing a selected diameter rod up to the sensor to find where the signal led activates.

First, adjust the sensor gain by placing the edge of a 1/16” diameter rod to the center of the sensor target.

The distances will vary with the sensor gain adjustment.
This will be a static measurement to provide a starting distance.

The Rod End Sensor status can be observed by entering the Fault section of the Operator Interface Panel and then selecting the F6 key (DETAIL. This will allow the operator or technician to easily view the status of the sensor pickup.

The proximity switch sensing distance is proportional to the mass of the target (carbide rod diameter).

The Distance Chart below may change from Machine to Machine because of the mechanical position of the Proximity Switch and the Amplifier Gain Adjustment.

Stock Diameter		Sensor 1/16"Ref.	Difference From Reference	
1/16"	(1.50 mm)	[2.312"]	+0.000"	(0.00 mm)
1/8"	(3.00 mm)		+0.062"	(+3.00 mm)
1/4"	(6.00 mm)		+0.145"	(+3.68 mm)
3/8"	(10.00 mm)		+0.135"	(+3.43 mm)
1/2"	(13.00 mm)		+0.105"	(+2.67 mm)
3/4"	(19.00 mm)		+0.085"	(+2.16 mm)
1"	(25.00 mm)		+0.020"	+(0.51 mm)

Test Run: 1-14-99

Revised: 3/30/2002

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