



**Innovation In and  
Out of Parlour**

**Herringbone Auto-ID Operating**

**Version - 3.0**

**Date - January 2011**

**Part Number - 39-0220**

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## About Subroutines

There are a host of functions available on the MicroMarque3S which, because they are not used frequently do not have specific keys dedicated to them. Instead, they are accessed through the SHIFT + ENTER (SUBROUTINES) and perform as a small part of the computer program. Having achieved their specific task they then return control to the main program.

Some subroutines simply deliver data- usually to the display and their job is done; others require additional key inputs to modify data that will affect the running of the entire system.

### Running a Subroutine.

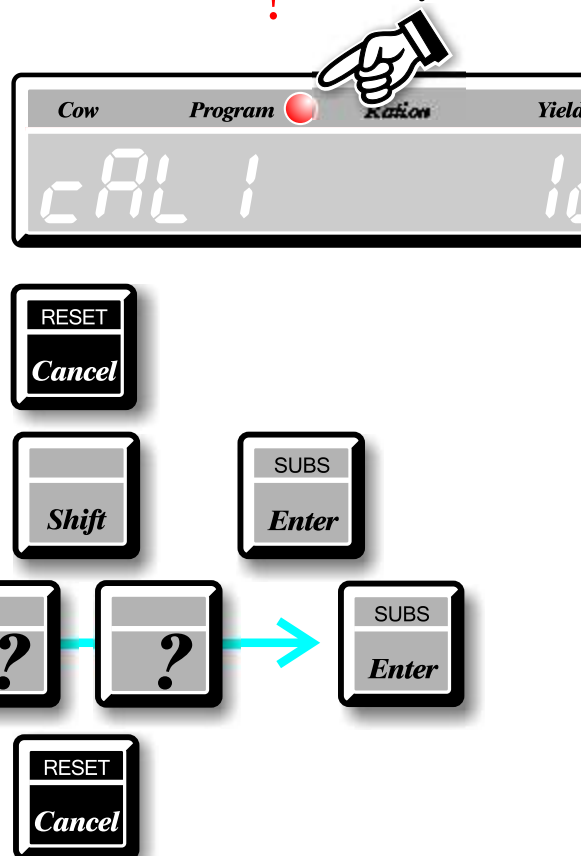
All subroutines are started in the same way:

- Check that the MicroMarque3S is in *Program mode*-the red indicator on the indicator bar should be illuminated. If it is not, run Subroutine 638 (functions in any mode) which toggles between Program and Feeding modes.
- Press RESET.
- Press SHIFT + ENTER (SUBROUTINES). This means pressing and holding down the SHIFT key and then pressing the ENTER key whilst the SHIFT key is still depressed. Then release the ENTER key and finally the SHIFT key. This procedure is referred to as SHIFT + ENTER in the text.  
The Yield/Flags window will clear to three underscore marks.
- Key the number of the subroutine required. Ignore leading zeros.
- Press ENTER.

If the subroutine requires additional key entries, follow the instructions on the following pages.

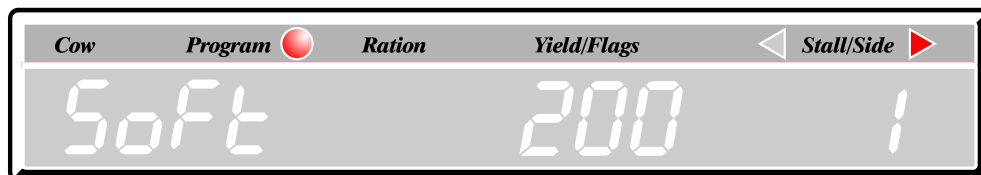
- Press RESET to exit a subroutine.
- In MicroMarque3S software version 4.29 and above, typing an incorrect subroutine number will cause the display to revert to SUB \_\_\_\_.

! Is the control in Program Mode?



### Subroutine 2: Display the Software Version: Subroutine 2:

The program which 'drives' the MicroMarque3S is stored on a silicon chip inside the machine and is occasionally subject to minor changes. When a change is made the Version Number of the software is updated; your current version may be accessed through subroutine 2. This information is important if repairs are being carried out to the system.

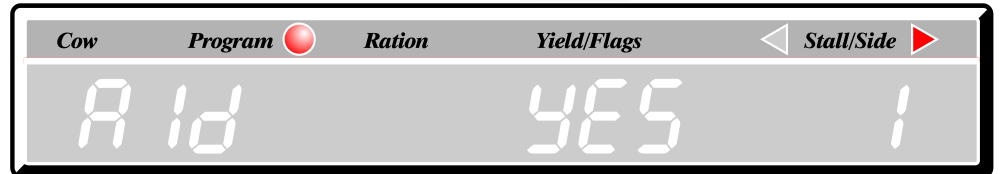


The Software Version Number is displayed in the Yield/Flags window as three digits- 200 in the example. There is an implicit decimal point after the first digit so the version is 2.00

### Enabling Auto-ID: Subroutine 300:

The scanning and ear tag reading system may be switched on and off through this subroutine.

Run Subroutine 300. The display will show 'AId' (AUTO-ID) and the current status- 'YES' or 'no' (enabled/disabled) will appear in the Yield/Flags window.



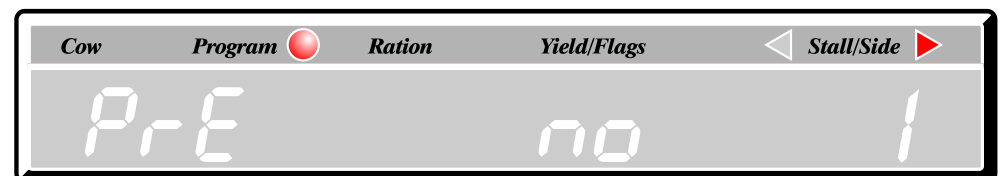
Toggle between the two states by using the Change key  
Press Enter to store the selection.



### Turn Ration Pre-feed On and Off: Subroutine 304:

The Auto-ID system will allow a small portion of feed to be delivered to each cow as soon as they arrive at a stall. This can help to calm nervous cows during the first few days of using the system. All of the cows are fed including those that do not have a ration. The portion of cake that is delivered is subtracted from the cow's actual ration.

Run Subroutine 304. The current status (YES = on/no = off) will be shown in the Yield/Flags window with the code 'Pre' (Pre-feed) in the Cow Number window.



Turn Pre-feed on or off using the Change key to toggle.  
Press Enter to store the selection.



NB - In software V4.14 and above the Pre-feed can be turned on for either the left or right-hand side using subroutines 302 and 303 overleaf.

**! During testing, turn Pre-feed OFF.**

### Enable/Disable Pre-Feed for Auto-ID for Left-Hand Side of Parlour: Subroutine 302: *Default = On*

Please refer to Subroutine 304 for more information.

Check that Program mode is selected.

Run subroutine 302. The message 'PrEL' will be displayed with the current setting - 'YES' or 'no'.



Use the Change key to toggle between 'YES' (Pre-feed ON) or 'no' (Pre-feed OFF).

Press Enter to store the setting.

NB - This is only available on MicroMarque3S software v4.14 or above. Please run subroutine 2 to check.



### Enable/Disable Pre-Feed for Auto-ID for Right-Hand Side of Parlour: Subroutine 303: *Default = On*

Please refer to Subroutine 304 for more information.

Check that Program mode is selected.

Run subroutine 303. The message 'PrEr' will be displayed with the current setting - 'YES' or 'no'.



Use the Change key to toggle between 'YES' (Pre-feed ON) or 'no' (Pre-feed OFF).

Press Enter to store the setting.

NB - This is only available on MicroMarque3S software v4.14 or above. Please run subroutine 2 to check.

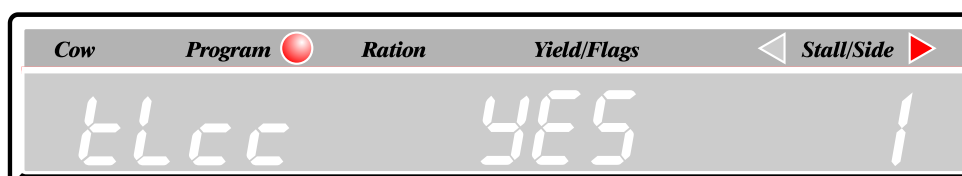


### Create Cow Record during In-Still Auto-ID Tag Linking Process: Subroutine 308: *Default = On*

When this Subroutine is turned ON, cows that are linked that do not yet have a record will automatically have a record created as the tag is linked, the cow number is created and given a ration of '1'.

Check that Program mode is selected.

Run subroutine 308. The message 'tLcc' will be displayed with the current setting - 'YES' or 'no'.



Use the Change key to toggle between 'YES' (Create Cow Record ON) or 'no' (Create Cow Record OFF).

Press Enter to store the setting.

NB - This is only available on MicroMarque3S software v4.29 or above. Please run subroutine 2 to check.



### Select Antenna and Check Voltage Levels: Subroutine 305:

This subroutine allows a specific stall and antenna to be selected; the system will activate the antenna continuously and, if an ear tag is within reading distance, the MicroMarque3S buzzer will sound.

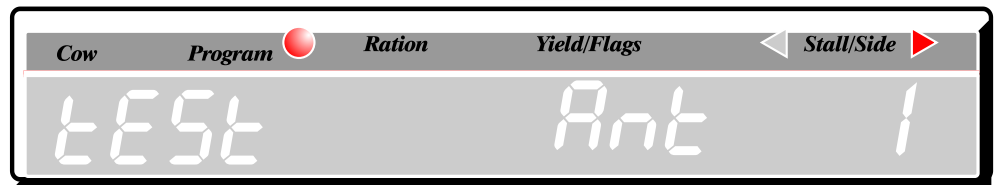
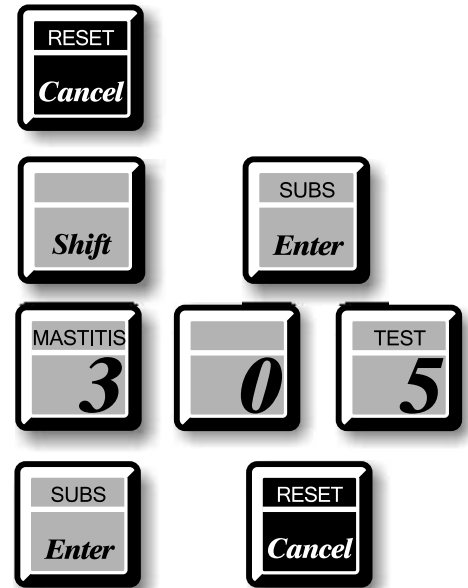
#### Checking the Voltage Levels.

Connect a high quality voltmeter set to the 200v DC range across the Voltage Test Points on the Bank Distribution Board on the Auto-ID Interface (see Page 10 of the installation manual). Ensure the polarity is correct.

Reset the MicroMarque3S.

Run Subroutine 305. The code 'tEst Ant' (Test Antenna) will appear in the Cow Number window, the side will default to the 'reset' side and the stall to number 1. That antenna is now active

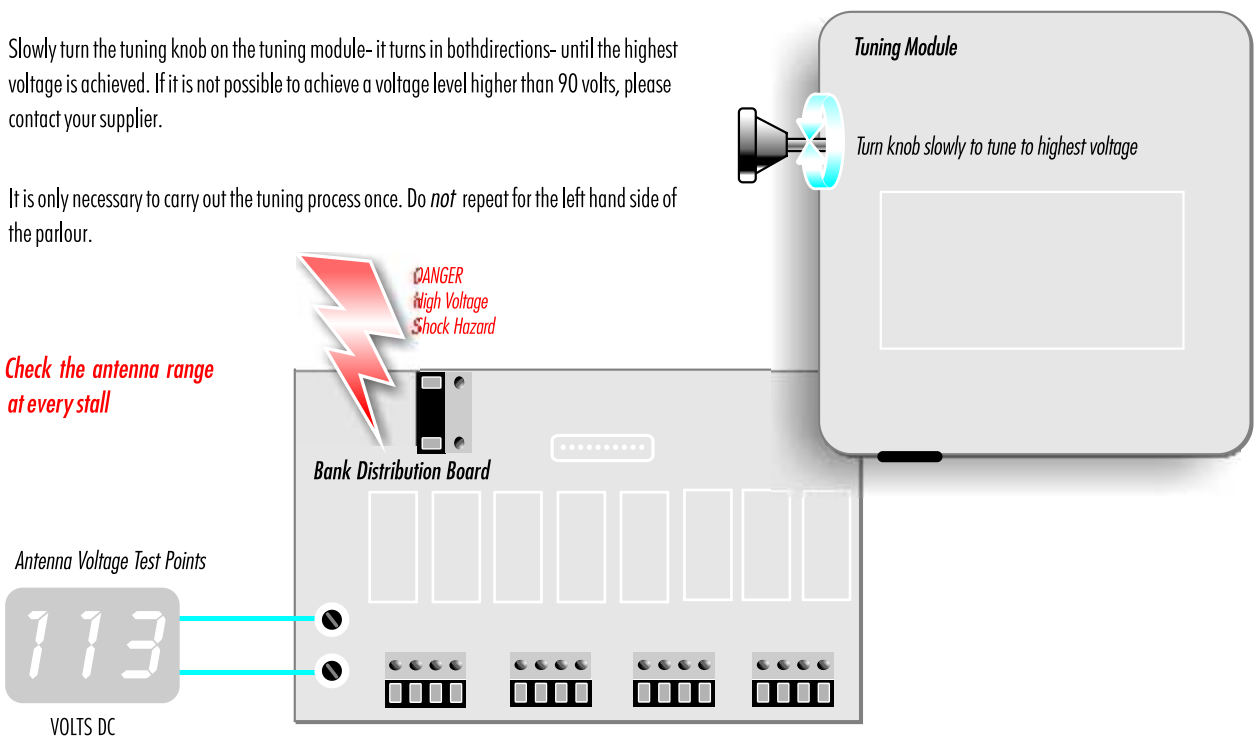
The voltmeter should read in the range 90 to 180 volts DC.

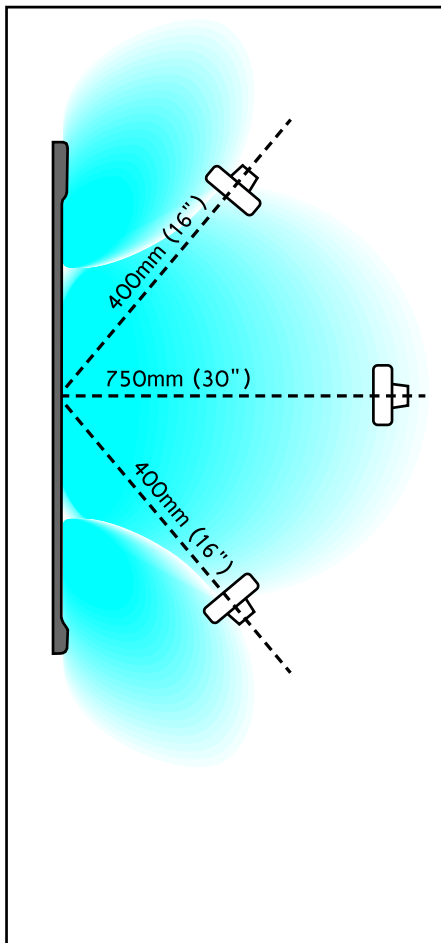


Slowly turn the tuning knob on the tuning module- it turns in both directions- until the highest voltage is achieved. If it is not possible to achieve a voltage level higher than 90 volts, please contact your supplier.

It is only necessary to carry out the tuning process once. Do *not* repeat for the left hand side of the parlour.

**! Check the antenna range at every stall**





### Testing Antenna Reading.

The magnetic field surrounding an antenna is not uniform and will be distorted by metal objects close by. The reading range is further complicated by the ear tag orientation; the best range will be achieved with the tag flat face toward the antenna with a noticeable deterioration if the tag is held edge on. However, this is not a cause for concern since cows seldom, if ever keep their ears stationary for more than a few seconds at a time!

But for the sake of consistent testing, hold the ear tag flat face toward the antenna as shown in the diagram. To test the reading range:

Run Subroutine 305 shown on Page (3).

When measuring the range, use a wooden or plastic lathe marked in cms or inches; do not use a metal rule.

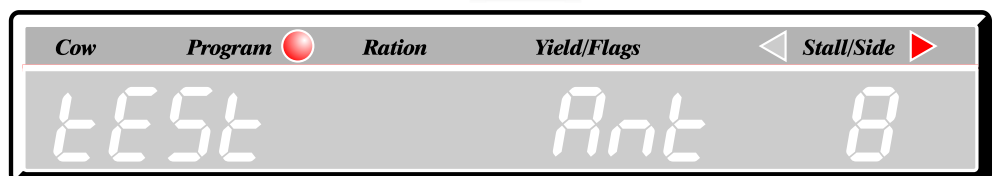
Hold an ear tag with the hole pointing toward the *centre* of the antenna. Move the tag toward the antenna until the beeper sounds then move it away until the beeper ceases. Make a note of the distance.

Use the STEP key to step to the next stall and repeat the process.

When the right hand side is complete, press the SIDE key to change to the left hand side and repeat the process.

Press RESET to exit the subroutine

**If any antenna exhibits a significantly shorter read range than the average, or is less than 750mm (30") contact ATL.**



## The Stall Lag Facility.

Parlours in which the stalls are unusually close together or those that have metal work which tends to distort the scanning field, may occasionally experience two *different* tags being read at the *same* stall. The combination of the parlour structure and cows that swing their heads about can bring an ear tag into the field of an adjacent stall where it will be read.

To overcome this problem the Stall Lag facility double checks the location of each tag. The 'lag' period is determined by the number of stalls you ask the system to check before feeding. So, if the lag is set to 2, stalls 1, 2 and 3 will be checked and confirmed as being consistent before stall 1 is fed. In other words, a lag of 2 reads and confirms 2 stalls ahead of the current stall. With this setting, when the current stall reaches 7, stalls 8 and 9 will be checked before the cow in stall 7 is fed.

To set the Stall Lag:

Press Reset.

Run subroutine 306 which is the Stall Lag subroutine number. The display will show 'Lag' in the Cow Number window and the existing lag value (if there is one) in the Milk Yield window.

Press the Change key to alter the value. Either one or two underscores will appear in the Milk Yield window.

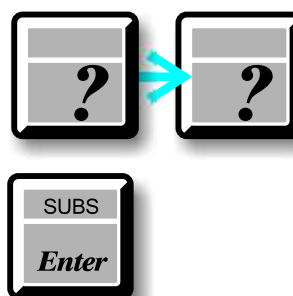
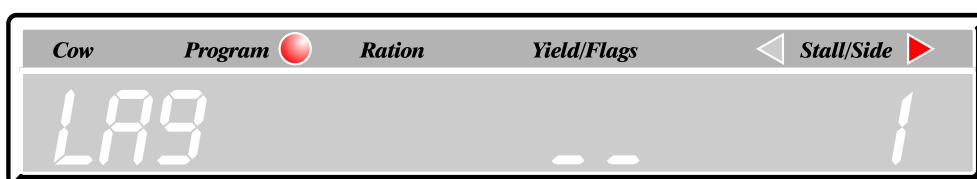
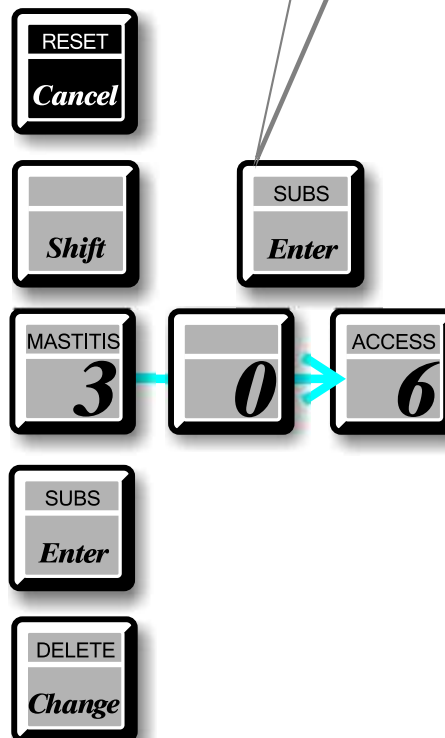
Key the new lag value. Generally 2 or 3 is sufficient and you may not enter a figure greater than the total stalls in a side. No need to enter leading zeros.

Press Enter and the value is stored.

The Stall Lag facility is 'invisible' inasmuch as it will not change the way you milk your cows or be perceptible during the scanning process. However, it will delay feeding slightly- the higher the lag value the greater the delay.

Be aware that the Stall Lag facility is not a 'cure' for parlours which are inherently unsuitable for scanning Auto-ID.

- The system **MUST** function properly before applying Stall Lag as a 'fine tuning' process.



## Linking Cows to Ear Tags using MicroMarque3S Software v4.28 or below

The cow number (freeze brand) and its electronic ear tag number are different; the first is just a few digits long, the latter is a huge 16-digit number. When the MicroMarque3S reads an ear tag it needs to associate it with the cow number so that the correct record can be accessed and the ration data extracted.

The process of associating the cow number and tag number is called *linking*. It occurs just once for each cow and thereafter identification becomes fully automatic.

To link the herd:

Ensure that the MicroMarque3S is in program mode (subroutine 638).

Make sure that each cow has been allocated a record prior to linking. (Refer to the MicroMarque3S Operation Manual for details).

Fill one side of the parlour with cows ready for milking.

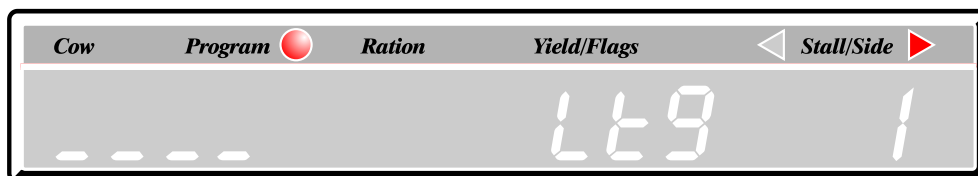
All of the stalls **MUST** be occupied and all of the cows **MUST** be fitted with ear tags- preferably in the left ear.

Press SHIFT + RESET. The MicroMarque3S will default to stall(1) on the default side.

Press the Scanning Switch mounted on the bottom edge of the control towards the side to be scanned. This will start the scanning process. Starting at stall (1), the MicroMarque3S will attempt to read an ear tag at each stall on that side. The stall being read currently will be displayed in the Stall/Side window and the message ScAn' will flash in the CUMULATIVE TOTALS window.

When scanning is complete the display will show 'ScAn End' and the CUMULATIVE TOTALS window will clear. The MicroMarque3S now has a 'map' of the stalls in its memory with an ear tag number allocated to each. **The buzzer will be bleeping.**

Press the ATTN key. The display will now have 3 underscore prompts in the COW NUMBER window, the message 'Ltg' (Link Tag) in the RATION window and the current stall in the STALL/SIDE window, starting with stall(1).



Key in the number (freeze brand) of the cow at that stall.

Press FEED. Cow and tag are now linked and the cow will be fed the appropriate ration. The MicroMarque3S increments to the next stall ready for the next cow number to be entered.

When the cow occupying the last stall is linked and fed, the display shows the message 'Attn End' and the buzzer stops.

If a cow number without a previously programmed record is entered, that cow's number will not be accepted. The display will revert to \_\_\_ at the same stall.

Ensure all cow numbers are pre-programmed.

Cow records can be programmed "on-the-fly" during the scanning. At this point:

Press CANCEL. The display will revert to ATL but the buzzer will still be sounding.

Program the cows record by typing its freeze brand number followed by the RATION Key. The display will show the cow number and \_\_\_.

Key in a ration value.

Press ENTER.

Now press the ATTN key to return to the tag linking process and continue by keying in newly programmed cow numbers and pressing the FEED key.



## Linking Cows to Ear Tags using MicroMarque3S Software v4.29 or above

The cow number (freeze brand) and its electronic ear tag number are different; the first is just a few digits long, the latter is a huge 16-digit number. When the MicroMarque3S reads an ear tag it needs to associate it with the cow number so that the correct record can be accessed and the ration data extracted.

The process of associating the cow number and tag number is called *linking*. It occurs just once for each cow and thereafter identification becomes fully automatic.

To link the herd:

Ensure that the MicroMarque3S is in program mode (subroutine 638).

Make sure subroutine 308 is enabled.

Fill one side of the parlour with cows ready for milking.

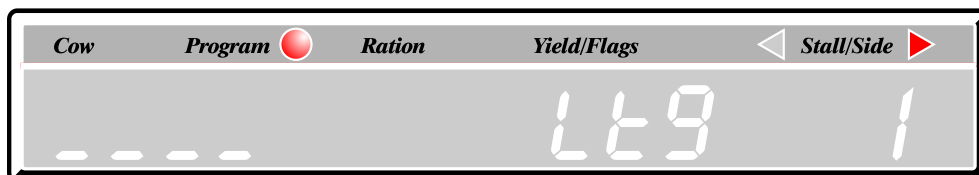
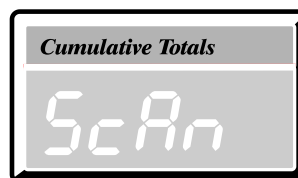
All of the stalls **MUST** be occupied and all of the cows **MUST** be fitted with ear tags- preferably in the left ear.

Press SHIFT + RESET. The MicroMarque3S will default to stall(1) on the default side.

Press the Scanning Switch mounted on the bottom edge of the control towards the side to be scanned. This will start the scanning process. Starting at stall (1), the MicroMarque3S will attempt to read an ear tag at each stall on that side. The stall being read currently will be displayed in the Stall/Side window and the message 'ScAn' will flash in the CUMULATIVE TOTALS window.

When scanning is complete the display will show 'ScAn End' and the CUMULATIVE TOTALS window will clear. The MicroMarque3S now has a 'map' of the stalls in its memory with an ear tag number allocated to each. The buzzer will be bleeping.

Press the ATTN key. The display will now have 4 underscore prompts in the COW NUMBER window, the message 'Ltg' (Link Tag) in the RATION window and the current stall in the STALL/SIDE window, starting with stall(1).



Key in the number (freeze brand) of the cow at that stall. There are now 2 options:

Press FEED. Cow and tag are linked and the cow will be allocated a ration of 1, as well as being fed a ration of 1. The MicroMarque3S increments to the next stall ready for the next cow number to be entered. NB - Pre-programmed cows will be fed their pre-programmed ration.

Press ENTER. Cow and tag are linked and the cow will be allocated a ration of 0, and will not be fed a ration. The MicroMarque3S increments to the next stall ready for the next cow number to be entered.

When the cow occupying the last stall is linked and fed, the display shows the message 'Attn End' and the buzzer stops.

To change a cows ration:

Key in the cow number and press ENTER.

Press the RATION key and the ration window will clear for entry.

Key in the new ration in the range 0 to 99 feed units.

Press ENTER. The ration is changed and written into memory.



## Linking Single Cows using MicroMarque3S Software v4.28 or below

When cows new to the herd are milked for the first time, the Auto-ID system will not be able to recognise them because their number and ear tag have yet to be linked. They must have a record and have an ear tag fitted.

Allow the cows into the parlour in the usual way:

Ensure that the MicroMarque3S is in program mode (subroutine 638).

Ensure that any new cows have their records created before they enter the parlour.

Press SHIFT + RESET. The MicroMarque3S will default to Stall(1) on the default side.

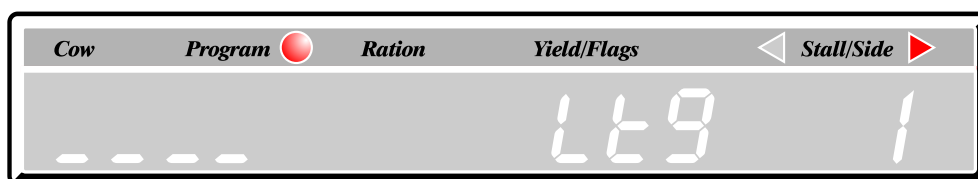
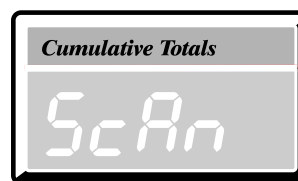
Press the Scanning Switch fitted to the bottom of the control towards the side to be scanned. This will start the scanning process. Starting at stall(1), the MicroMarque3S will attempt to read an ear tag at each stall on that side. The stall being read currently will be displayed in the STALL/SIDE window and the message 'ScAn' will flash in the CUMULATIVE TOTALS window. With each successful tag read, the MicroMarque3S will access the cow's record and deliver the appropriate amount of feed.

New cows will be read but cannot be fed because the computer does not have a link to their records.

*An unlinked tag will cause the buzzer to bleep.*

When scanning is complete, the message 'ScAn End' will be displayed.

Press the ATTN key. The display will now have 4 underscore prompts in the COW NUMBER window, the message 'Ltg' (Link Tag) in the RATION window and the stall occupied by the unlinked cow in the STALL/SIDE window.



Key in the number of the cow at that stall.

Press FEED. Cow and tag are now linked and the cow will be fed the appropriate ration.

The MicroMarque3S will then display the next stall occupied by an unlinked cow if there is one. Proceed in the same way.

When the last cow has been linked and fed, the display shows the message 'Attn End' and the buzzer stops.

If a cow number without a previously programmed record is entered, that cow's number will not be accepted.

The display will revert to \_\_\_\_ at the same stall.

Ensure all cow numbers are pre-programmed.

Cow records can be programmed "on-the-fly" during the scanning. At this point:

Press CANCEL. The display will revert to ATL but the buzzer will still be sounding.

Program the cows record by typing its freeze brand number followed by the RATION Key. The display will show the cow number and \_\_.

Key in a ration value.

Press ENTER.

Now press the ATTN key to return to the tag linking process and continue by keying in newly programmed cow numbers and pressing the FEED key.



## Linking Single Cows using MicroMarque3S Software v4.29 or above

When cows new to the herd are milked for the first time, the Auto-ID system will not be able to recognise them because their number and ear tag have yet to be linked. Make sure subroutine 308 is enabled.

Allow the cows into the parlour in the usual way:

Ensure that the MicroMarque3S is in program mode (subroutine 638).

Press SHIFT + RESET. The MicroMarque3S will default to Stall(1) on the default side.

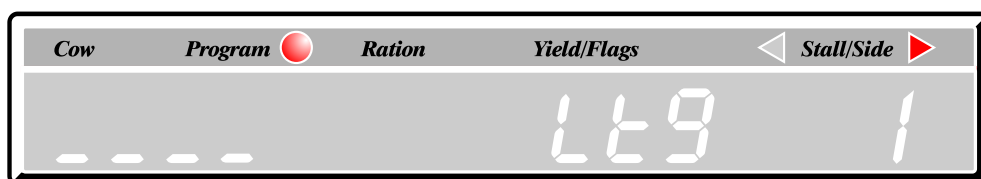
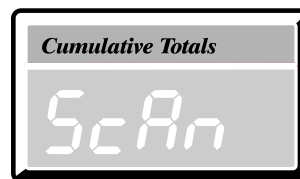
Press the Scanning Switch fitted to the bottom of the control towards the side to be scanned. This will start the scanning process. Starting at stall(1), the MicroMarque3S will attempt to read an ear tag at each stall on that side. The stall being read currently will be displayed in the STALL/SIDE window and the message 'ScAn' will flash in the CUMULATIVE TOTALS window. With each successful tag read, the MicroMarque3S will access the cow's record and deliver the appropriate amount of feed.

New cows will be read but cannot be fed because the computer does not have a link to their records.

*An unlinked tag will cause the buzzer to bleep.*

When scanning is complete, the message 'ScAn End' will be displayed.

Press the ATTN key. The display will now have 4 underscore prompts in the COW NUMBER window, the message 'Ltg' (Link Tag) in the RATION window and the stall occupied by the unlinked cow in the STALL/SIDE window.



Key in the number of the cow at that stall. There are now 2 options:

Press FEED. Cow and tag are linked and the cow will be allocated a ration of 1, as well as being fed a ration of 1. The MicroMarque3S increments to the next stall ready for the next cow number to be entered. NB - Pre-programmed cows will be fed their pre-programmed ration.

Press ENTER. Cow and tag are linked and the cow will be allocated a ration of 0, and will not be fed a ration. The MicroMarque3S increments to the next stall ready for the next cow number to be entered.

The MicroMarque3S will then display the next stall occupied by an unlinked cow if there is one. Proceed in the same way.

When the last cow has been linked and fed, the display shows the message 'Attn End' and the buzzer stops.

### Note:

If the control is not in program mode when an unidentified tag is read, the system will 'remember' this tag and continue identify and feed all 'linked' cows.

At 'ScAn End' press ATTN and the display will show 'rAtn \_\_\_'.

The cow number cannot be 'linked' but a ration can be entered and fed manually.



### Unoccupied Stalls and Cows without Tags.

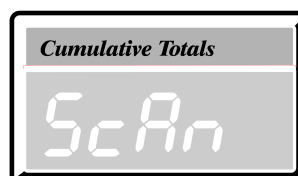
In these situations the Auto-ID control cannot obtain a valid tag read and will require immediate attention. The system will read and feed properly tagged cows up to the vacant stall or untagged cow then Scanning will cease.

Proceed as follows:

Press the Scanning Switch fitted to the bottom of the control; This will start the scanning process.

Starting at stall(1), the MicroMarque3S will attempt to read an ear tag at each stall on that side. The stall being read currently will be displayed in the STALL/SIDE window and the message 'ScAn' will flash in the Cumulative Totals window.

With each successful tag read, the MicroMarque3S will access the cow's record and deliver the appropriate amount of feed.



The scanning process will cease when the system encounters an empty stall or a cow without an ear tag- an unsuccessful read. Indicate that you have recognised the problem by:

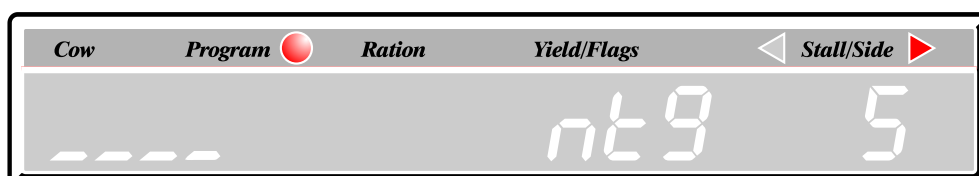
Press STEP key. The system will 'remember' that there is a 'fault' at that stall and continue to scan and deliver feed to the remaining stalls. When scanning is complete, the message 'ScAn End' will be displayed:



Press the ATTN key. The display will now have 4 underscore prompts in the COW NUMBER window, the message 'ntg' (No Tag) in the RATION window and the stall at which the unsuccessful read occurred in the STALL/SIDE window.



**! The buzzer will NOT sound for a stepped stall.**



Three options are now available:

- 1: If the stall is occupied by an untagged cow that has a record, its number may be keyed in and it will be fed in the usual way.
- 2: If the stall is occupied by an untagged cow that does NOT have a record, it may be fed a ration keyed into the control. However, the ration value will be added to the Cumulative Feed Total only.
- 3: If the stall is unoccupied or occupied by a cow that does not require feeding, it may be skipped.

These options are detailed on the following page.

## Unoccupied Stalls and Cows without Tags: No Tag Options.

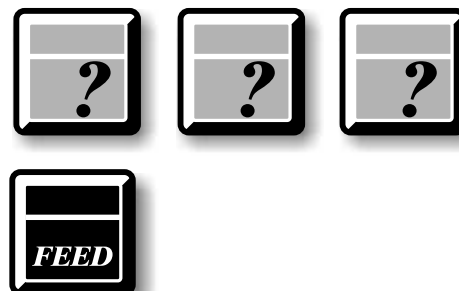
### 1: The stall is occupied by an untagged cow that has a record and you want to feed the cow:

Key in the cow number.

Press FEED. The cow's record will be accessed and she will be fed the appropriate amount of cake.

The system will then move on to any subsequent stall with an error.

*This cow will need to be 'stepped' at each milking*



### 2: The stall is occupied by an untagged cow that does NOT have a record and you want to feed the cow:

Press FEED. The display will change to request a ration

Key in the ration value required.

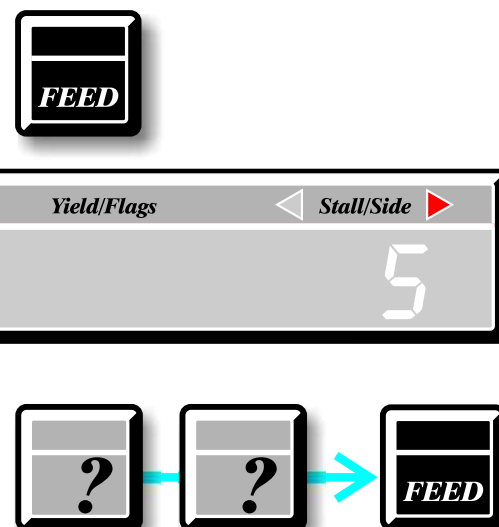
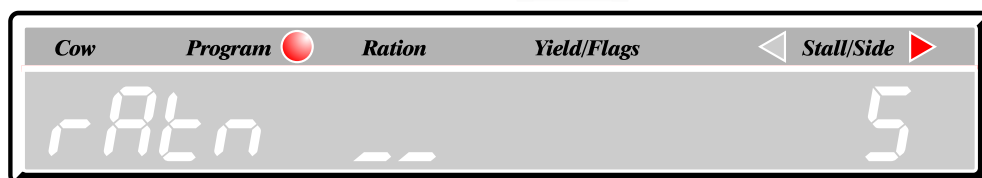
Press FEED.

The cow will be fed the ration

value entered and the system will move

on to any subsequent stall with an error.

*This cow will need to be 'stepped' at each milking*



### 3: The stall is unoccupied or is occupied by a cow that does not require feeding.

Press the FEED key TWICE. The system will step over the current stall and move on to any subsequent stall with an error.

After all 'problem' cows have been dealt with, the display shows 'SCAN END'. The next side may now be scanned.



### 4: Skipping stalls during the last side of milking (MicroMarque3S software version 4.21 or above).

For the 'last row/side' of cows where the end stalls are unoccupied.

Once the Auto-ID system has identified all the cows that are present (the stall number window on the MicroMarque3S is showing the first unoccupied stall number), hold the shift key down and press the 0 key.

This will cause the Auto-ID system to skip immediately to 'SCANEND' thus avoiding having to step unoccupied stalls and potentially dropping "pre-feed" ration to those stalls.



## Cow Number Errors.

During the tag linking process, a quite common error is to transpose digits in the cow number so that the 'right' ear tag is linked to the 'wrong' cow. When milking begins the situation shown in the diagram occurs:

The cow number is actually 671.

The system has read the ear tag and associated it with cow 617 which appears in the MicroMarque3S cow window.

The tag number is correct; the digits '7' and '1' have been transposed during linking due to mis-keying.

The most expedient way to correct the error is to delete both cows- 617' and '671' and re-link to the correct cow numbers.



When the current side has finished scanning and feeding:

Key the first cow number. This displays the cow record.

Press Shift + Change(DELETE) and the record is removed from the system.



Repeat the procedure for the second cow when it comes through for milking so that at the end of milking both cow records are deleted.



*Create new records for both cows using the MicroMarque3S and correct cow numbers.*

When the cows appear at the next milking, they will be scanned in the normal way but the system will 'beep' and report an error because neither cow has been linked.

Link each cow (See Page 8) taking care to key the proper cow numbers.

If the cows have flags set or data that needs to be retained, make a note of it before deletion so that it can be reinstated when the cow records are corrected.

Alternately,

If a cow number is incorrectly entered, Press RECALL, before that side is re-scanned use the Browse key to 'STEP' to the incorrect cow number. Press the 'CHANGE' key. The cow's number will revert to dashes. Key the correct cow number and press 'ENTER'. Press 'CANCEL' to exit the recall routine.