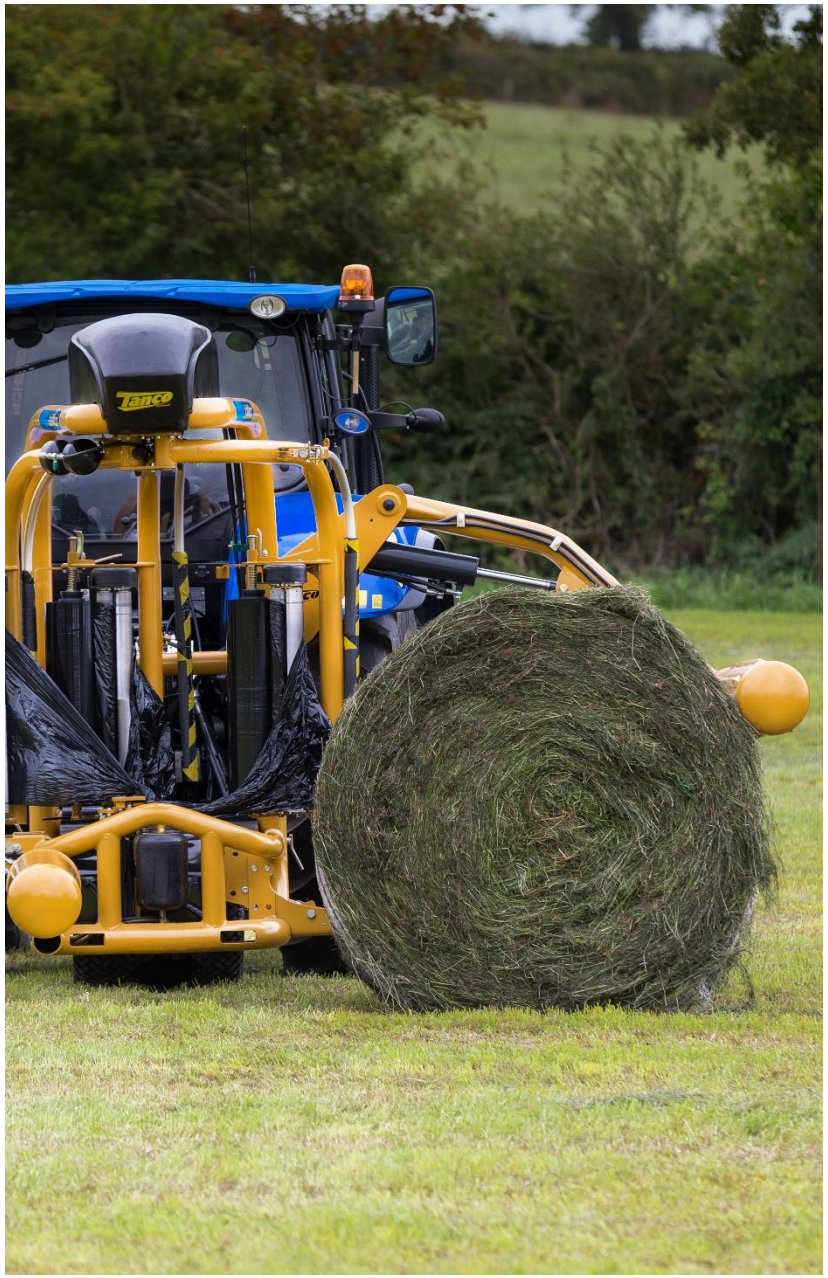
Tanco AUTOWRAP

Bale Wrapping Specialists

Technical Training 2015 | **VariWrap and AutoWrap Series**


Tanco


Tanco
Vanwico


Tanco

Explanation of the new Wrapper model Names

V: specifies the Variwarp range of machines. This is the heavy duty high specification Contractors range .

A: specifies the Autowrap range of machines. This is the single wrap arm lower specification range.

L or S: This specifies the type of bale loading arm on the machine.

L: for the Long single side loading arm.

S: for the Short loading arms (similar to the 1320)

200 or 300: This specifies the number wrapping arms on the machine.

200: for 2 Wrapping arms (similar to 1320)

300: for 3 Wrapping arms

VariWrap

VariWrap

- 2 or 3 wrap arms
- Long or short loading arms
- Integrated tubular steel main frame
- One piece tubular steel wrapping arms
- Slew ring drive with braked drive motor
- Fully automatic controller with large graphic display
- Proportional speed control Hydraulics
- Load Sensing Hydraulics
- Improved wiring loom

VariWrap L

VL 200

VL 300

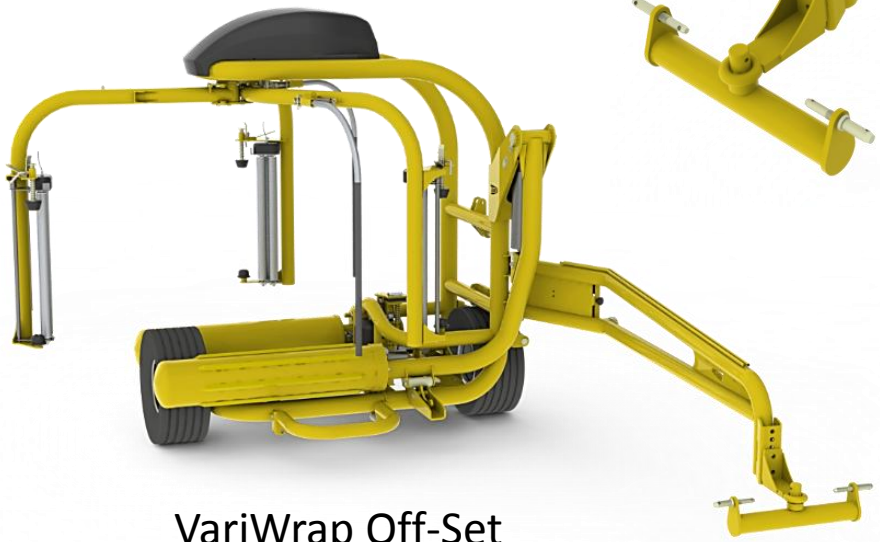
VariWrap S

VS 200

VS 300

Additional Kits

Off-Set Kit



VariWrap Off-Set

AutoWrap Off-Set

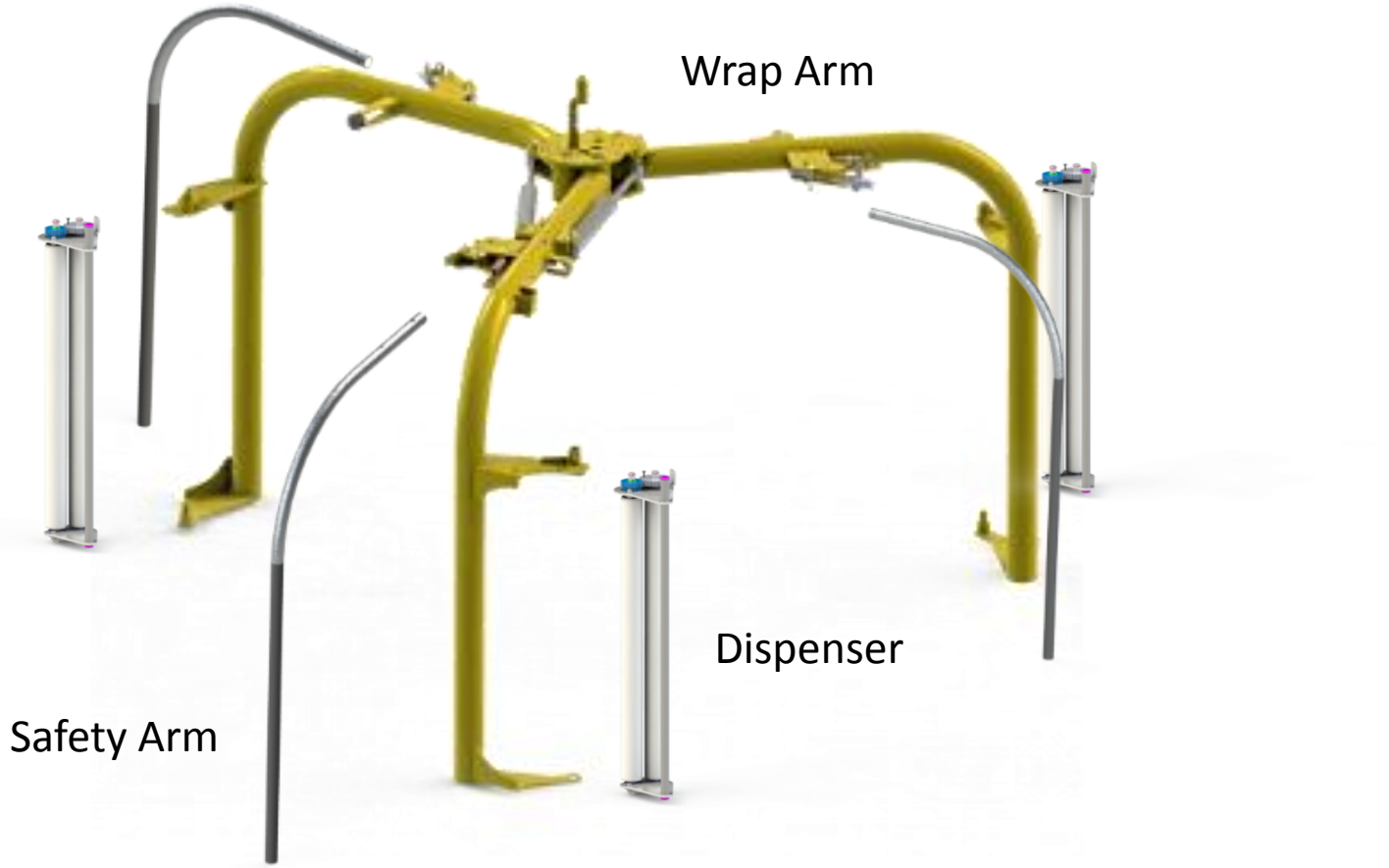
1 meter 500mm Plastic

1.2 meter 750mm Plastic

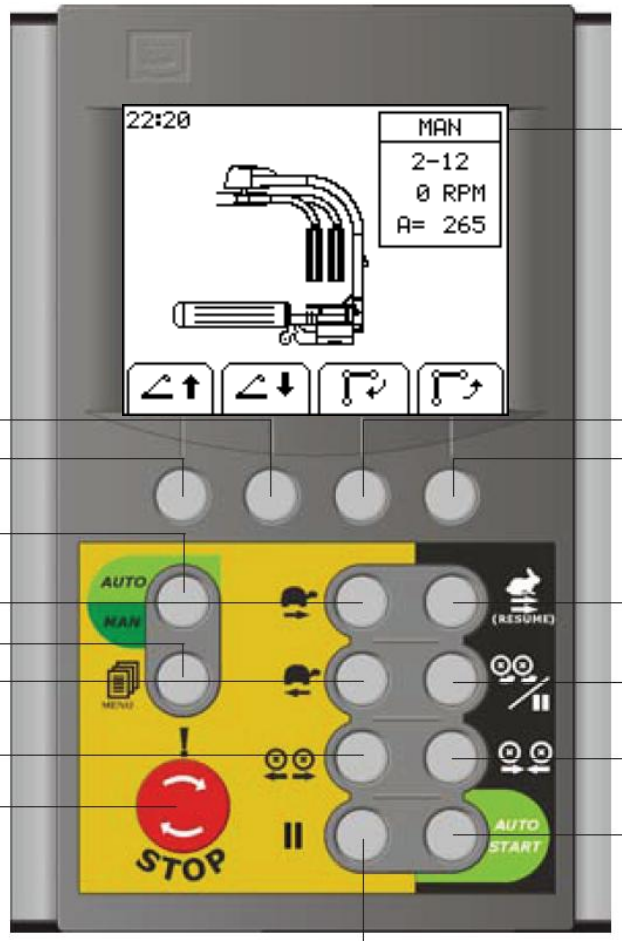
1.5 meter 750mm Plastic

Wrap Arm Assembly

- One, two or three wrap arms.



VariWrap Controller



Display; Shows in normal working mode:
- Current No. of Wraps
- Target No. of Wraps
- Wrapping Speed (R.P.M)
- Bale Total (10 Separate Stores)
- Grand Total No. of Bales
- Mode: M (Manual) / A (Automatic)

S2 - Cut & Grip Film (SPARE in Automatic Mode)

S1 - Release Film Grip (+1 Rotation in Automatic Mode)

F1 - Select Operating Mode: 'M' or 'A'

L1 - Slow Wrap

F2 - Menu Structure

L2 - Reverse Wrap Arm

L3 - Bale Unload

Power On/Off / Emergency Stop

S3 - Arm Fold and (Sequence Reset in Automatic Mode)

S4 - Arm Unfold and (Clear Warning)

R1 - Fast Wrap / Resume Wrap (After Manually Pausing)

R2 - Rolls Rotate
(Pause Bale Rotation in Automatic Mode)

R3 - Bale Load

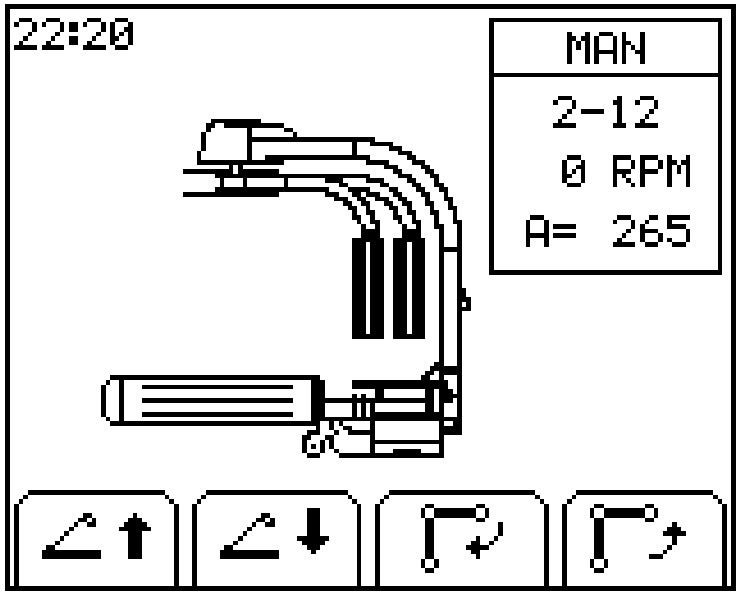
R4 - Start Automatic Wrapping Cycle; press STOP switch to stop cycle

L4 - Pause Wrapping in Automatic Mode

VariWrap Controller Screens

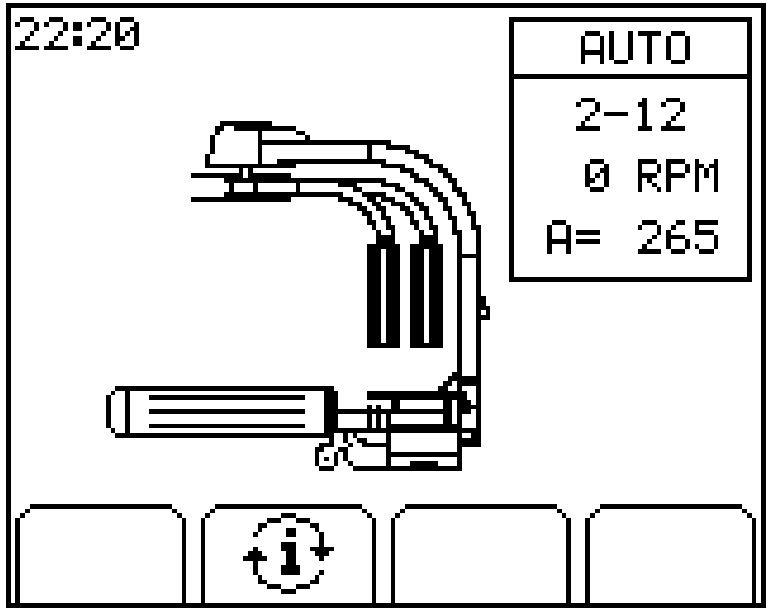
Main Screens

Main Screen MAN.



C&S Open/Close Fold/Unfold

Main Screen Auto



i Changes Information displayed box above

Display shows:
Operating information
Mode
Wrap count.
Arm speed
Bale count.

Or

Diagnostic information:
Voltage
Sensor Inputs
Prop. Valve %

VariWrap Controller Settings

Machine Menu

To get to the Machne Menu press the Menu button.

There are three sub menus in the Machine Menu:

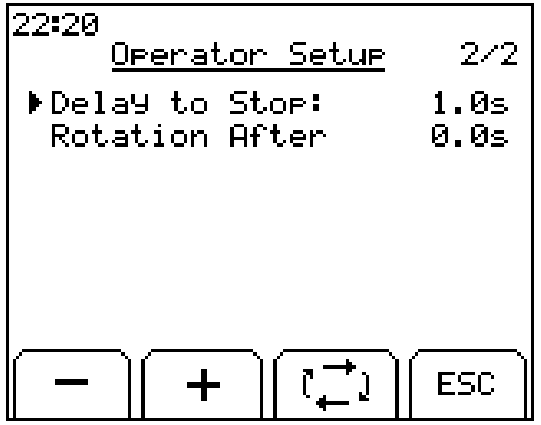
- Operators Setup
- Bale Count
- Technician Setup

Up and Down arrows to move from one menu to the next,
The Enter arrow open the menu to allow changes to be made.

VariWrap Controller Settings

Operator Setup

The operator setup has parameters commonly requiring change by the operator. The arrows button moves the indicator from one parameter to the next, the + and – buttons make changes to the setting. ESC exits the setup when the change is made. There are 2 pages to the setup.



VariWrap Operator Setup

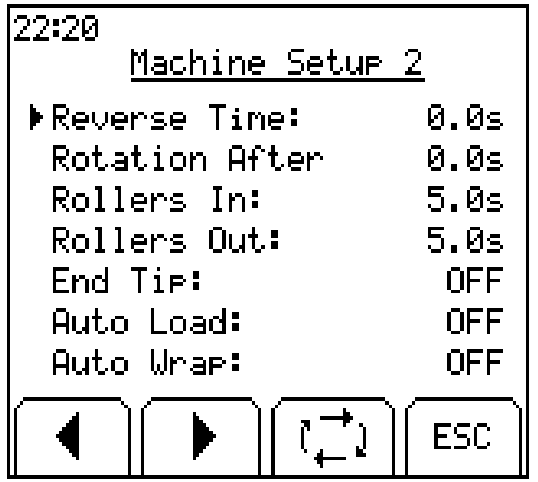
Explanation of these parameters.

Parameter	Default		Description
Target Wraps	18		This sets the number of film wraps to be applied to the bale. Note: that the controller counts in steps of 2 or 3 depending on the number of wrapping arms.
Bale Total	A		This selects the counter to be used to count the wrapped bales. The number of bales in the counter is displayed in the top level display.
Film Break	Off		This switches On or Off film break sensors.
Auto Load	Off		If the optional Auto Load sensor is fitted on the machine this parameter enables of disables this sensor. When it is set to off the (R3) must be pressed to stat loading.
Auto Wrap	Off		When loading has finished it is possible to automatically start wrapping without having to press the (R4) Autostart button. Setting this parameter to On enables auto starting.
Roller In	5.0s		This sets the time duration for one touch loading. When this parameter is set to 0.0 the (R3) button must be kept pressed for loading.
Rollers Out	5.0s		This sets the time duration for one touch unloading.
Page 2/2			
Delay to Stop	1.0		This set the time duration the wrapping arms move past the opened film cutter at the end of wrapping. Increasing this time will get the arms to move further.
Rotation After	0.0		It is possible to get the wrapped bale to rotate on the rollers when wrapping has finished. This can be used to place the loose ends of the film under the bale when it is unloaded (to prevent the film from unravelling from the bale)

Machine Setup

Machine Setup 2

Function	Default		Description
Reverse Time	0.0		Time wrap arm reverses at the end of wrapping (if Park Posn. Is set Off, if set On the wrap arm reverses to park position))
Rotation After	0.0		Time the bale is automatically rotated after wrapping.
Rollers In:	5.0s		Sets the time for roller arms to close automatically for loading. If set to 0.0 the R3 button must be held down for loading
Rollers Out:	5.0s		Sets the time for Automatic unloading (as with loading above).
End Tip:	Off		Not Used.
Auto Load	Off		If optional Auto load sensor is fitted then this switches the Autoload function On.
AutoWrap	Off		Is set to On the wrapping will automatically start when Autoloading has finished. If set to Off then Auto/Start button must be pressed to start wrapping.



Technician Setup

Technician Setup

The parameters in the Technician Setup should only be changed by an experienced technician.
It is protected with a pin code, 1,2,3,4

The Technician setup has 8 sub menus:

Technician Setup

Load Setup

The Load Setup contains parameters related to loading and unloading.

Function	Default		Description
Load freewheel	0.0s		Time at the beginning of loading that the gripped roller rotates with limited force on the loading arm. Used on L model to start the bale rolling in for loading
Auto load wait	6.0s		Time delay from (optional) autoload sensor detecting bale to auto loading starting. The optional Autoload sensor will trigger loading to start without the operator pushing a button.
End tip wait	0.0s		Time delay from bale offloading to end tip retracting. End tip time must also be set.
End tip time	0.0s		Time end tip retracts before next bale stats to load. If this is set to 0.0 then the end tip will not retract until the next bale starts to load.

Technician Setup

Cut and Start Setup

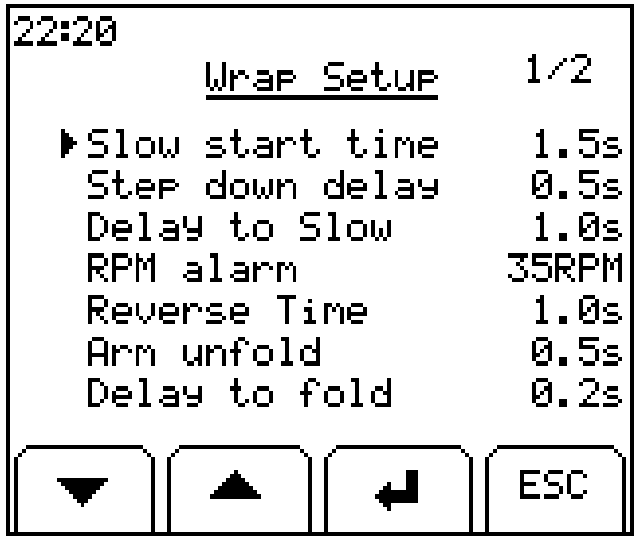
The C&S Setup contains parameters related to the operation of the film Cut and Start.

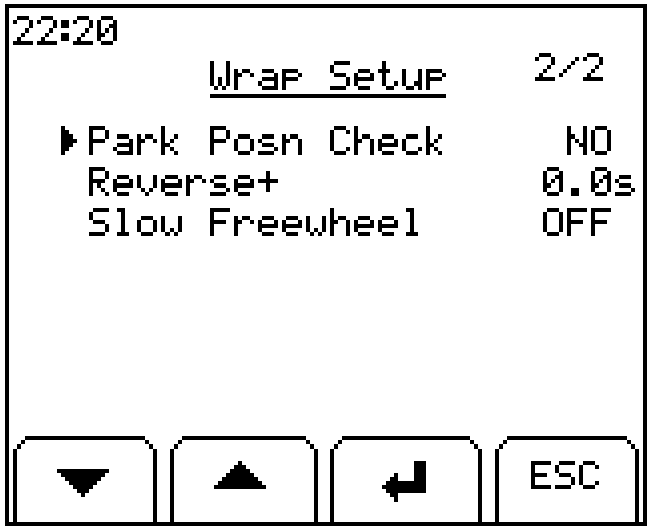
Function	Default		Description
Puls. To Release	1		Number of revolutions of the wrapping arm before the Cut and Start pops open to release the film.
Release Delay	0.1		Delay to Cut and Start popping open on to release film on second revolution of the wrapping arm.
C+S open time 1	0.3s		Time the Cut and Start pops open to release the gripped film.
C+S close time 1	3.0s		Time the Cut and Start snaps closed after releasing the gripped film.
C+S open delay	0.1s		Time delay to Cut and Start opening on the last revolution of the wrapping arm.
C+S close time 1	2.0		Time for Cut and Start to close to cut the film when wrapping is finished.

Technician Setup

Wrap Setup

The Wrap Setup contains parameter related to the wrapping process.
There are 2 pages.





Technician Setup

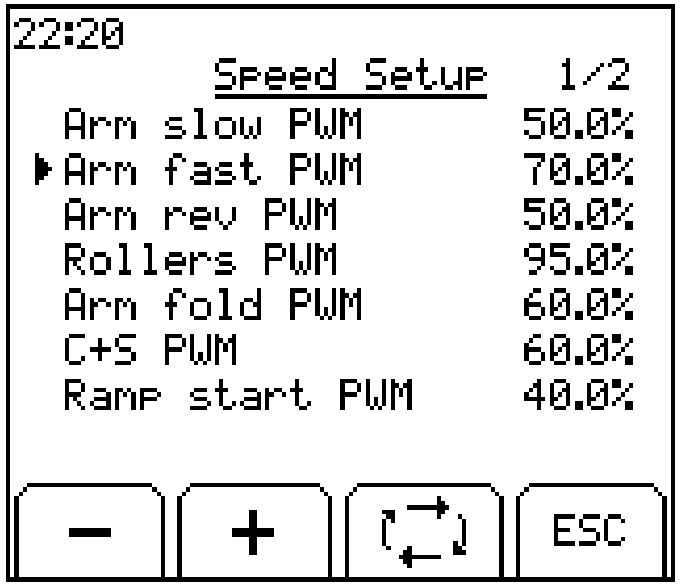
Wrap Setup

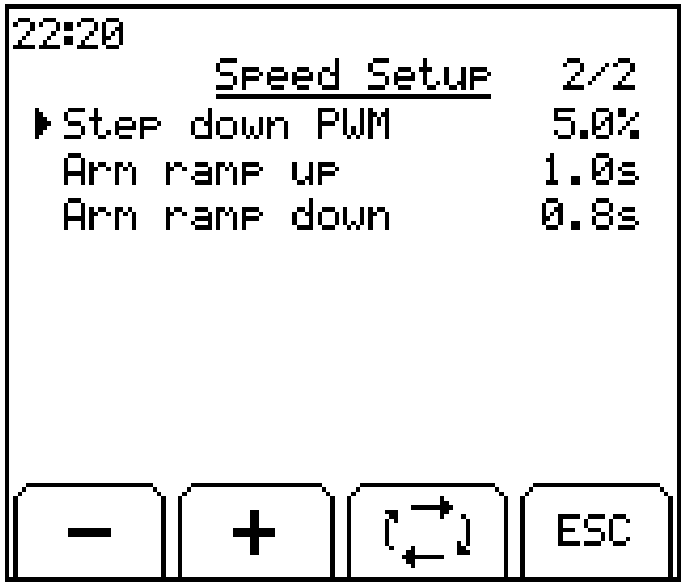
Parameter	Default		Description
Slow start time	1.5s		Time that the wrapping arm moves in slow speed at the beginning of the automatic wrapping cycle
Step down delay	0.5s		It is possible to automatically reduce the speed of the wrapping arm during the second last revolution of the wrapping cycle to give more time for folding the arm and opening the cut and start. The reduction in speed is set in the Speed Setup. This Step down delay is the time from the beginning of the second last revolution to when the speed reduces.
Delay to Slow	1.0s		This is the time delay from the beginning of the last revolution of the wrapping cycle to when the wrapping arm changes from fast to slow speed.
RPM Alarm	35 RPM		This sets the wrapping arm speed that triggers the over speed alarm.
Reverse Time	1.0s		This is the time the wrapping arm reverses at the end of wrapping (If Park Posn Check is set to No, see below)
Arm unfold	0.5s		There is a sensor on the folding wrapping arm that tells the controller that it has unfolded to the wrapping position. This Arm unfold sets the time the wrapping arm continues to unfold when it reaches the sensor.
Delay to fold	0.2s		This is the time delay from the beginning of the last revolution of wrapping to when the wrapping arm starts to fold.
Page 2/2			
Park Posn Check	No		When this is set to Yes, the wrapping arm reverses to a definite park position at a sensor. The machine will not load or unload if the arm is not parked in this position. When this is set to No the wrapping arm reverses for Reverse time.
Reverse +	0.0s		This sets the additional time the wrapping arm reverses when it reaches the park position. This helps get the wrapping arm to park centrally in the park position
Slow Freewheel	Off		When set to On, the bale rollers will stop turning when the wrapping arms are in slow speed

Technician Setup

Speed Setup

The Speed Setup menu is used change the proportional valve flow settings for the various function on the machine. It sets the percentage opening of the valve. There are 2 pages.





Technician Setup

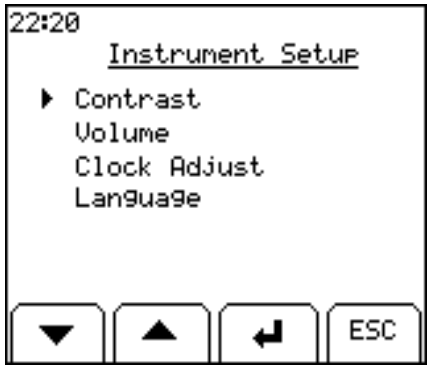
Speed Setup

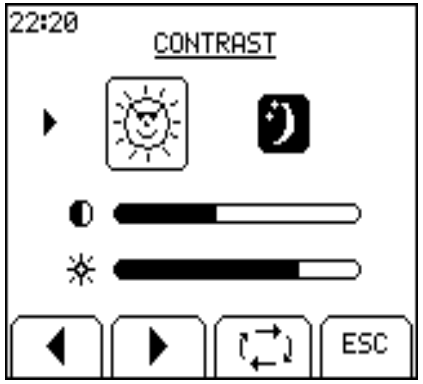
Function	Default		Description
Arm slow PWM	50%		Sets the slow wrapping arm speed at the beginning and end of the wrapping cycle
Arm fast PWM	70%		Sets the fast wrapping arm speed.
Arm rev PWM	50%		Sets the wrapping arm speed in the reverse direction.
Rollers PWM	95%		Sets the speed of the roller arms for loading and unloading the bale
Arm fold PWM	60%		Sets the speed of unfolding the wrapping arms.
C+S PWM	60%		Sets the speed of the film cutter opening and closing
Ramp start PWM	60%		This is the minimum setting of the proportional valve, it should be set at 40% on this machine.
Page 2			
Step down PWM	5.0%		It is possible to reduce the arm speed on the second last revolution of the wrapping cycle to go give more time for folding and opening the cutter. This sets the speed reduction.
Arm ramp up	1.0s		Sets the time for the wrapping arm to accelerate from slow to fast speed.
Arm ramp down	0.8s		Sets the time the wrapping arm to decelerate from fast to slow speed

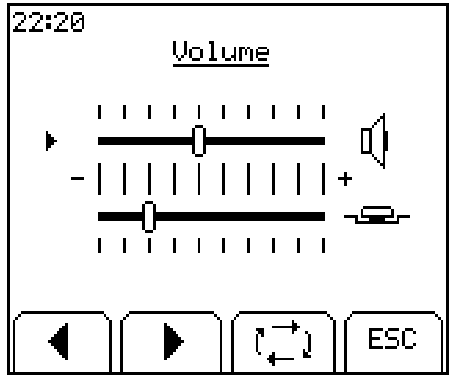
Technician Setup

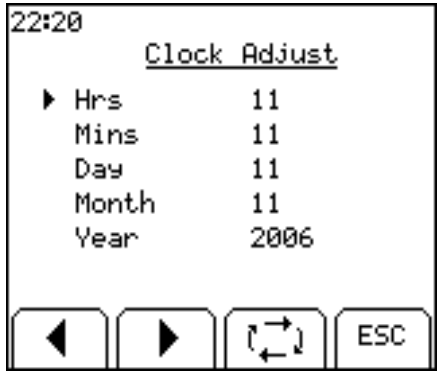
Instrument Setup

The Instrument Setup set parameter of the controller itself. The contrast and brightness of the display, the volume of the warning buzzer and the button bleeper. The time and language are also set here.







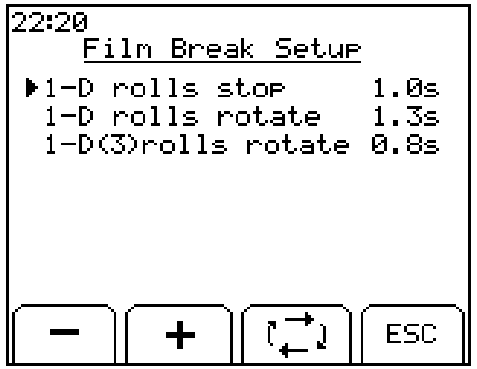


Technician Setup

Film Break Setup

The film break sensing can be set On or Off in the Operator Setup.

The Film Break Setup set the technical parameters related the film break when it is set On. The rollers are pulsed on and off to reduce their speed if one (or two on the 3 wrapping arm models) have broken. The time periods the rollers are rotating and stopped are set here. The controller also automatically changes the counting of the rotations of wrapping arm in steps of one rather than in steps of two or three because only one film is being applied per revolution.

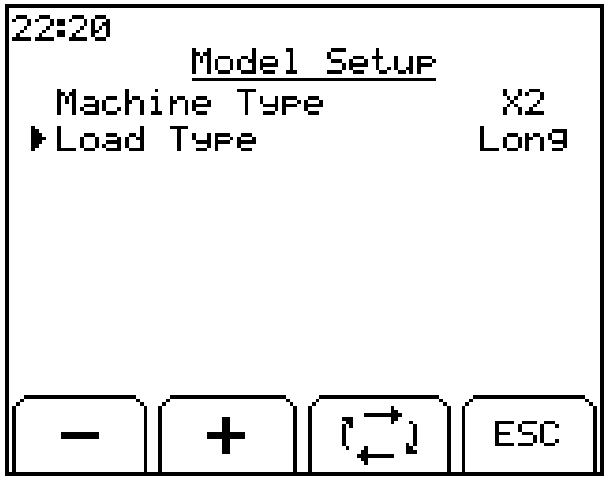


Function	Default		Description
1-D rolls stop	1.0s		Sets the time period the rollers stop when a film break is detected.
1-D rolls rotate	1.3s		Sets the time period the rollers rotate on a 2 wrapping arm machine when a film break is detected.
1-D(3) rolls rotate	0.8s		Sets the time period the rollers rotate on a 3 wrapping arm machine when a film break is detected.

Technician Setup

Model Setup

The Model Setup sets the parameters for the number of wrapping arms and the type of loading arm.

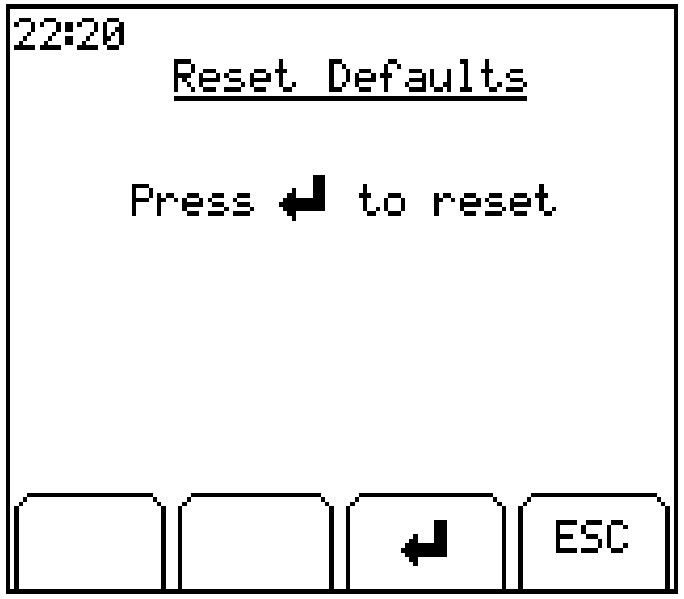


Function	Default		Description
Machine Type	X2		Sets the number of wrapping arms. X2 for 2 wrapping arms, X3 for 3 wrapping arms.
Load Type	Long		Sets the type of loading arm (s) Long or Short

Technician Setup

Reset Defaults

This will reset all the controller setting back to the original default settings. The controller may have many altered setting to suit different situations so resetting should only be carried out as a last resort as there may be a lot of adjusting of settings afterwards.

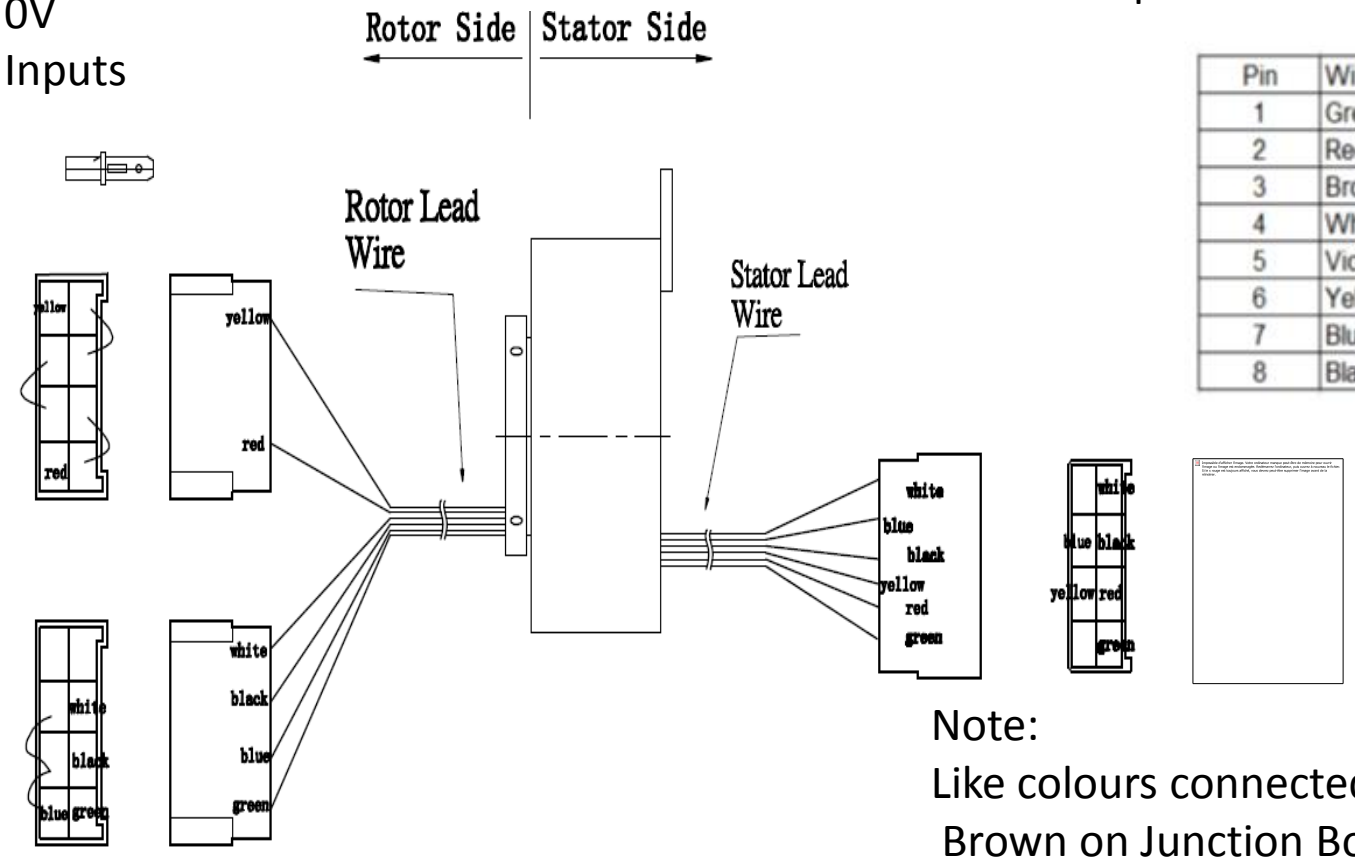


VariWrap Slip Ring and Sensors

6 Way Electrical slip ring.
- 2 x 0V
- 4 x Inputs

3 E-stop+
Arm Unfold
All connected in series.
1 Input, No 3

3 Film Sensors
All connected in parallel.
3 Inputs No 2,5,6



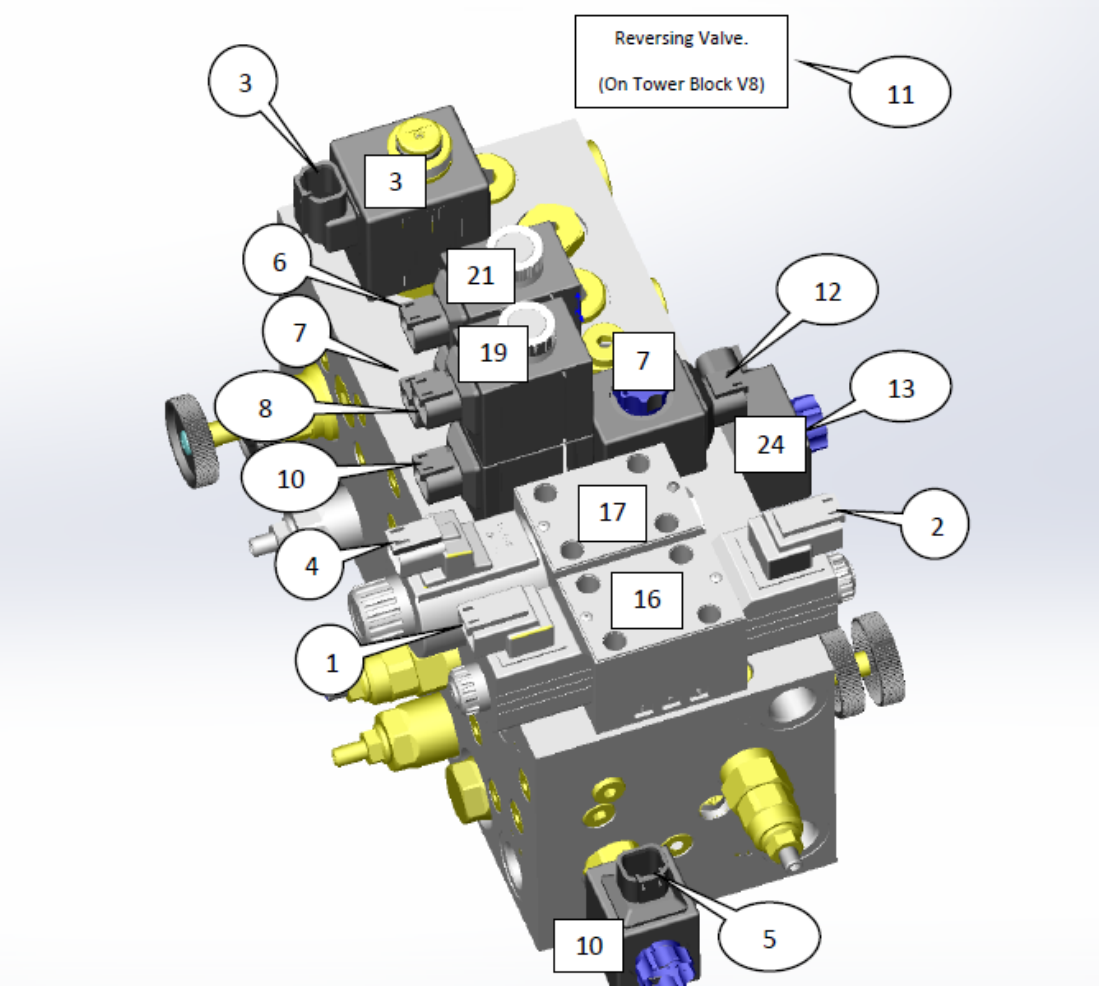
Input Connector Wiring (on Junction Box)

Pin	Wire colour	Function	
1	Green	Film sensor 1	IP2
2	Red	E-stop / Arm unfold	IP3
3	Brown	Film sensor 2	IP5
4	White	Film sensor 3	IP6
5	Violet	12 volts	
6	Yellow	0 volts	
7	Blue	0 volts	
8	Black	0 volts	

Note:
Like colours connected except
Brown on Junction Box to Black on Slip Ring

VariWrap Hydraulics

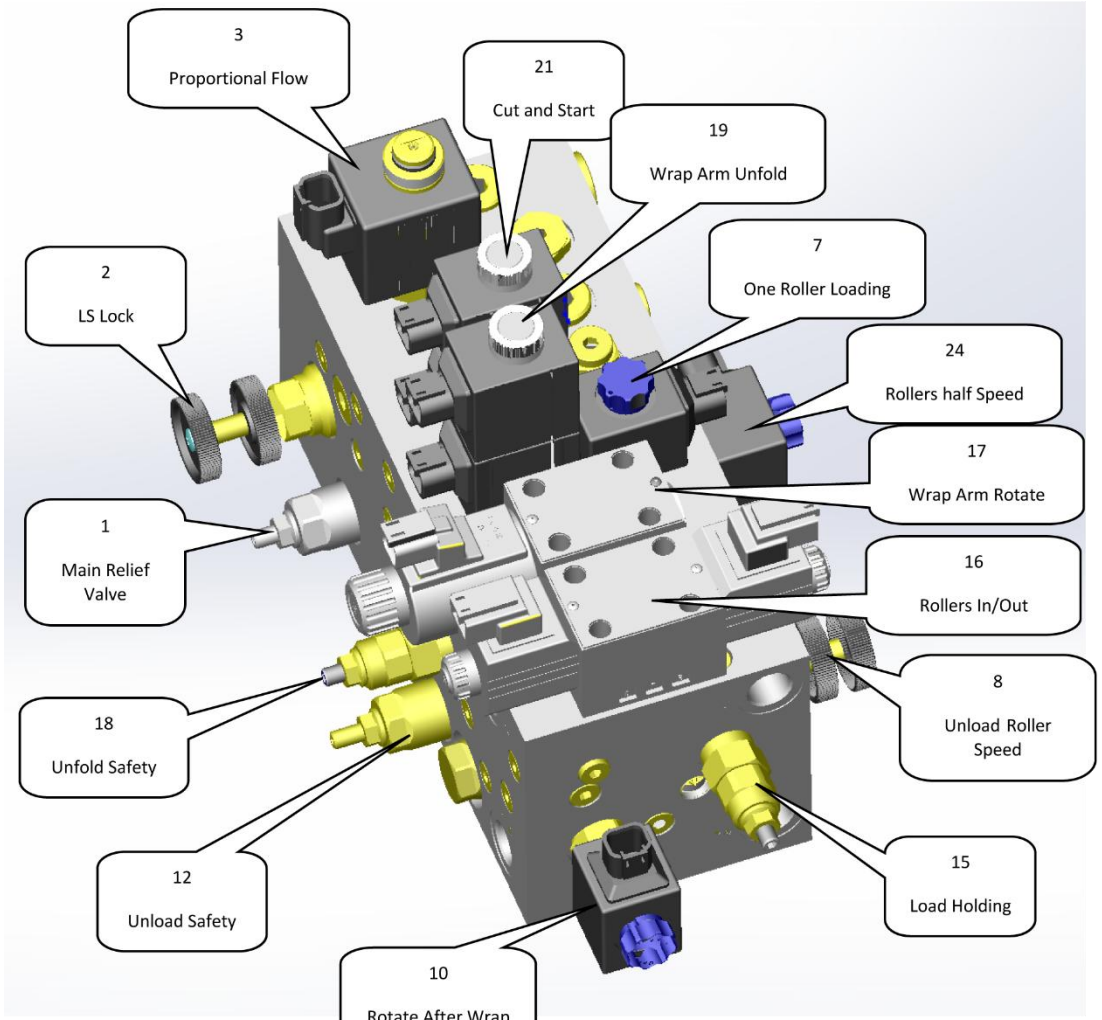
Vari Control Valve Leads



Valve Lead no. x	Function	Valve no. x
1	Rollers In (Loading)	16
2	Roller Out (Unloading)	16
3	Proportional Flow Control	3
4	Wrap Arm Forward Rotate	17
5	Rotate After Wrap	10
6	Cut and Start Open	21
7	Cut and Start Close	21
8	Wrap Arm Unfold	19
10	Wrap Arm Fold	19
11	Wrap Arm Reversing	V8 (on tower block)
12	One Roller Loading	7

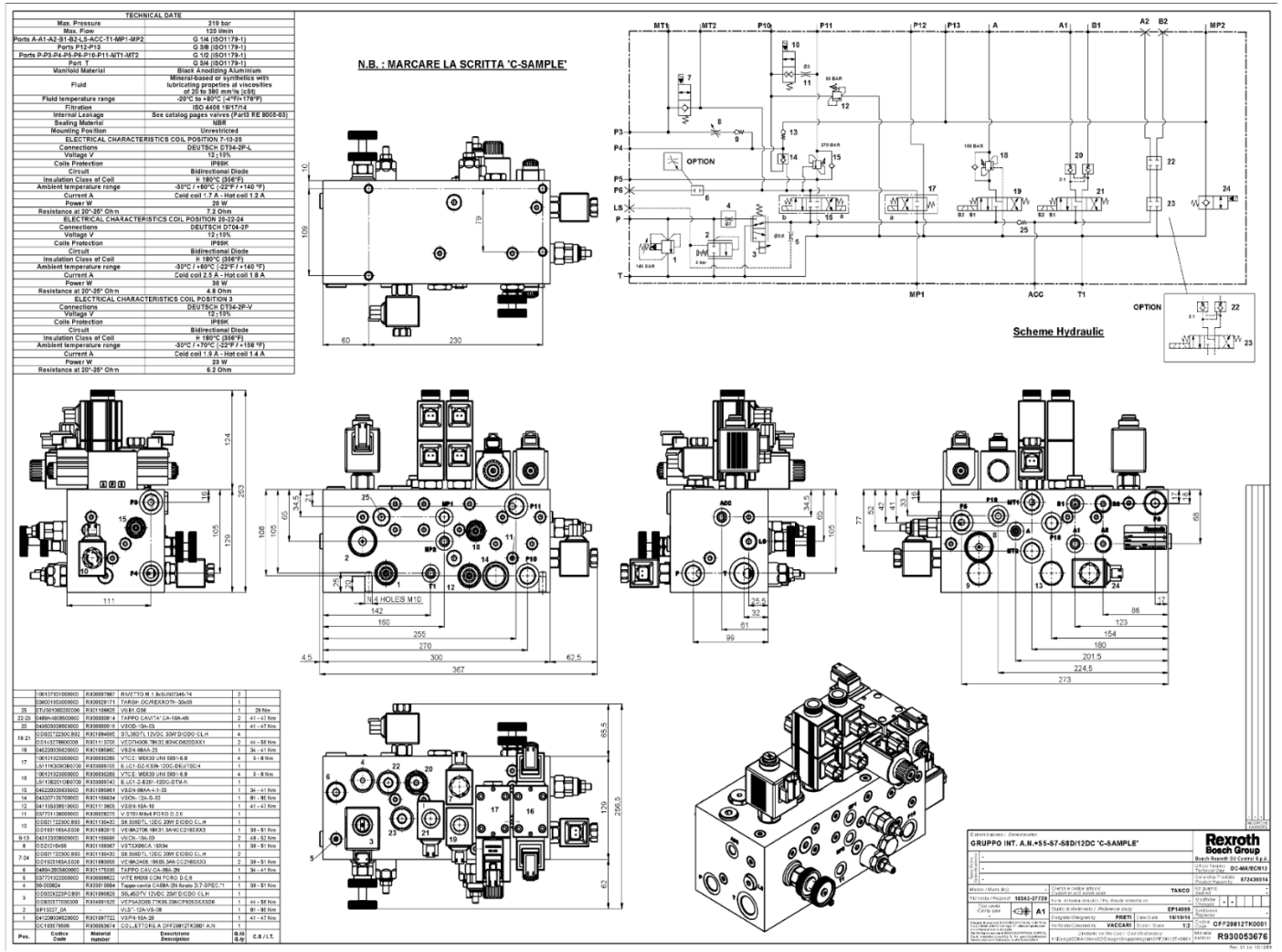
VariWrap Hydraulics

Vari Control Valve Information



VariWrap Hydraulics

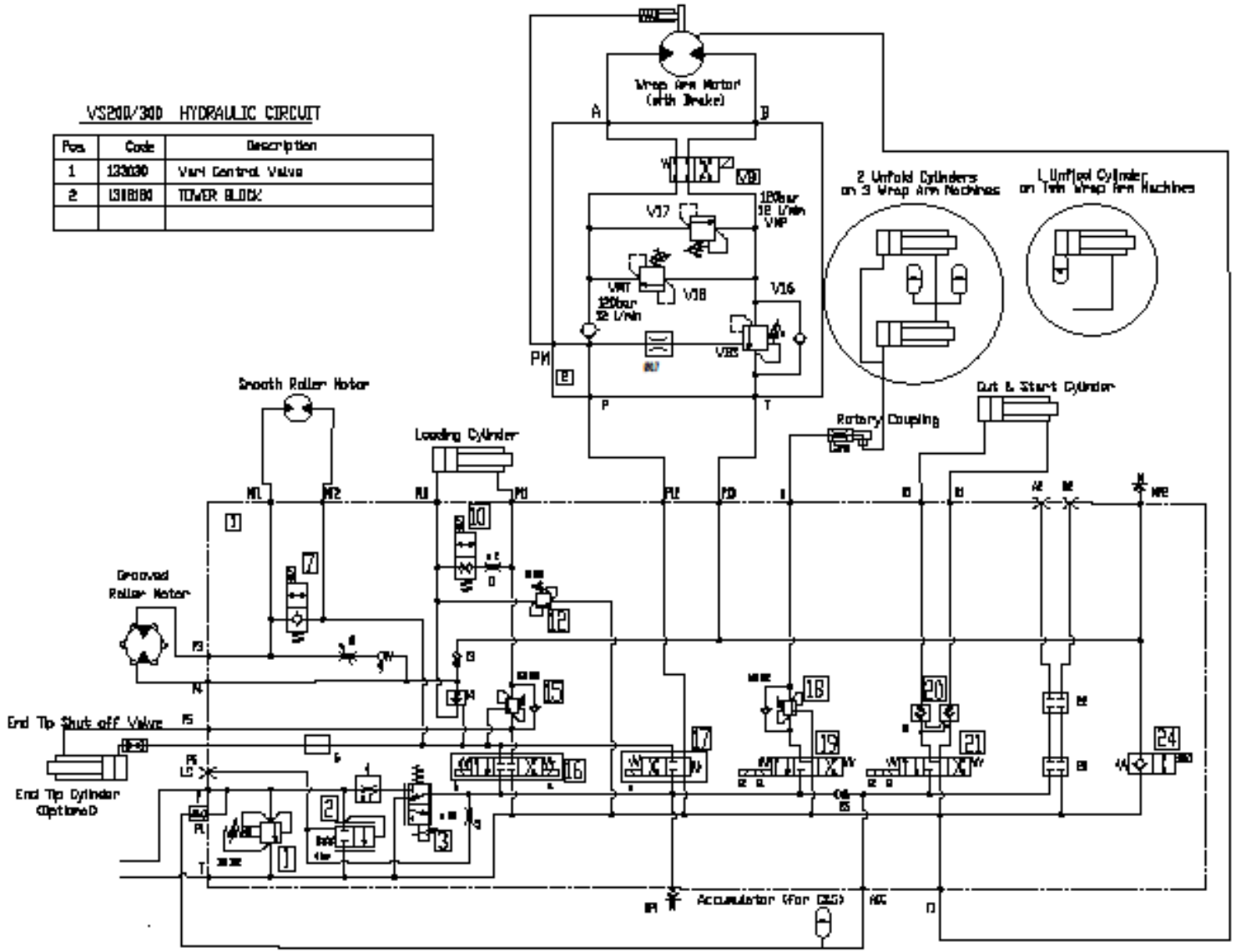
VariWrap Control Valve



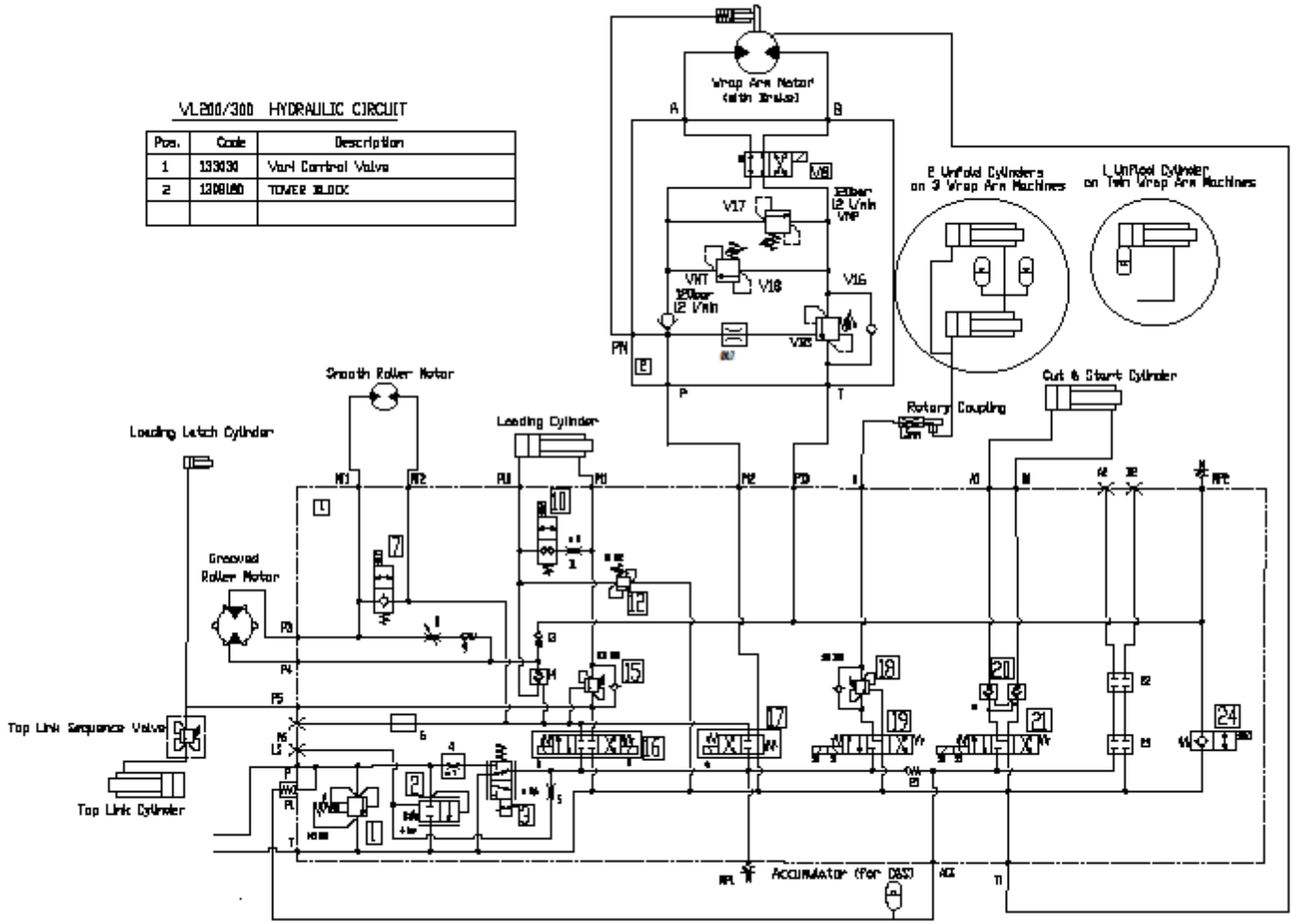
VariWrap Hydraulics

VS200/300 HYDRAULIC CIRCUIT

Pos.	Code	Description
1	133030	Vari Control Valve
2	L318180	TOWER BLOCK



VariWrap Hydraulics



AutoWrap

AutoWrap

AL 100

- Light Weight integrated tubular frame
- Single Wrap Arm
- Long and short loading arm models
- Telescopic Cut & Start
- Fully automatic control.
- Slew Ring Drive
- **Options:**
  - Hydraulic End Tip on S model.

AS 100

AutoWrap Static Remote Control

AS 100-S

Autowrap Controller

4-Way Menu Switch:
- Set No. of Wraps
- Change / Reset Bale Sub-Total
- Access Operator Setup Menu
- Access Technician Setup Menu
- Access Manual Wrap Arm Fold
(Second Function on L5 / R5)

L1 - Add 1 Wrap to current (or next) bale

L2 - Cut & Grip Film

L3 - Slow Wrap

L4 - Reverse Wrap Arm

L5 - Bale Unload or Arm Unfold

Power On/Off / Emergency Stop

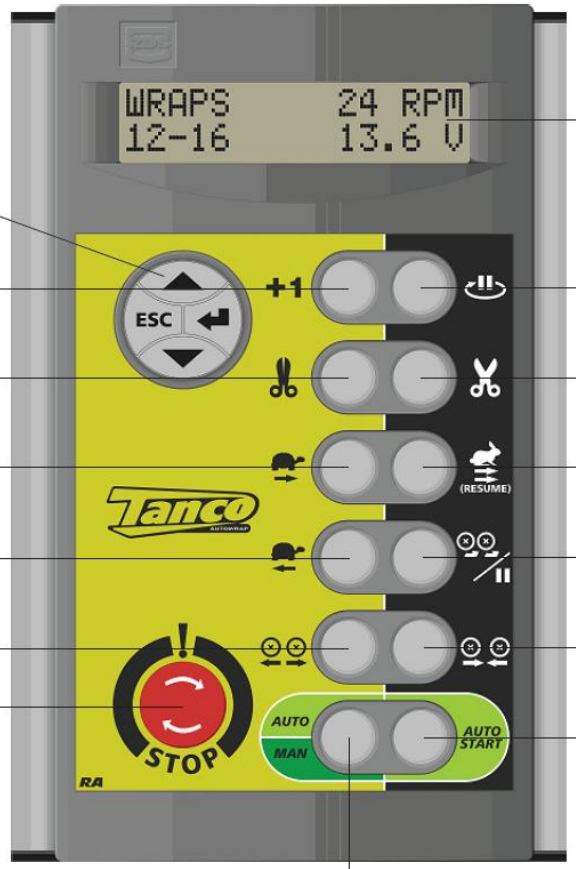


Fig. 7.1

Dispaly; Shows in normal working mode:
- Current No. of Wraps
- Target No. of Wraps
- Wrapping Speed (R.P.M)
- Bale Total (10 Separate Stores)
- Grand Total No. of Bales
- Mode: M (Manual) / A (Automatic)

R1 - Pause Wrapping

R2 - Release Film Grip

R3 - Fast Wrap / Resume Wrap (After Manually Pausing)

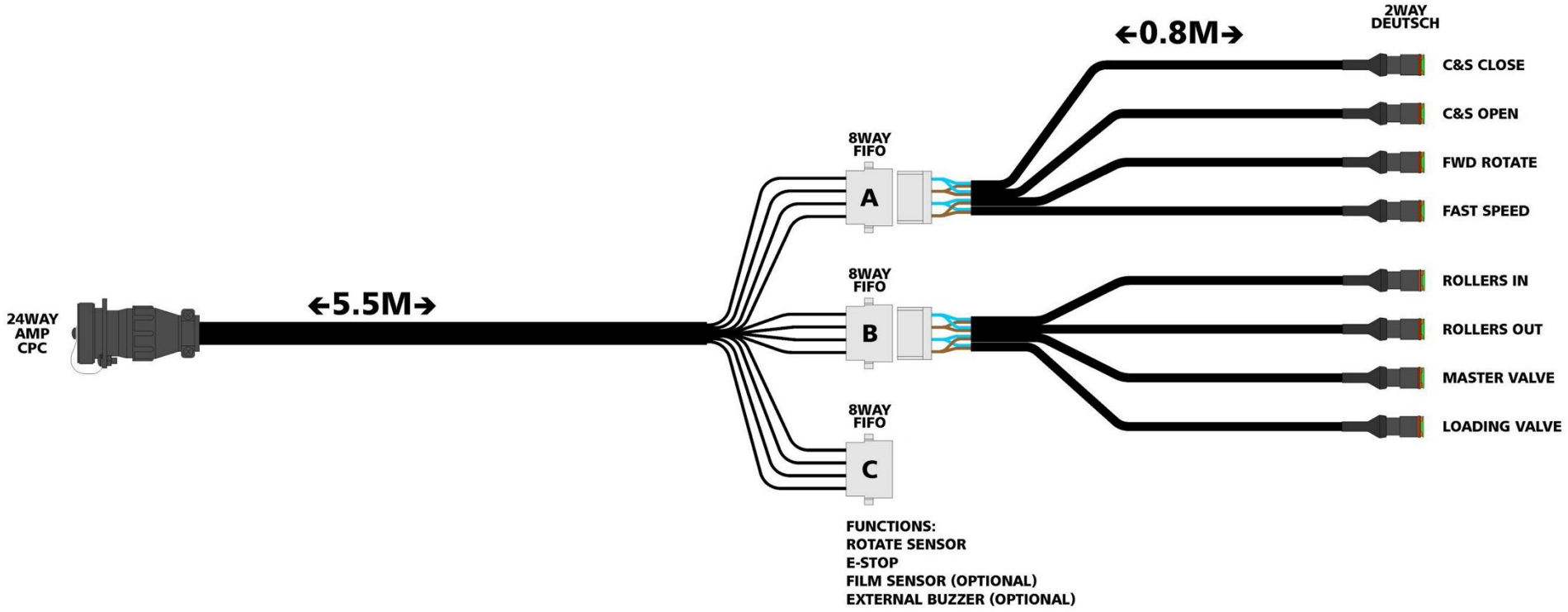
R4 - Pause Bale Rotation (During Auto-Wrap Cycle)

R5 - Bale Load or Arm Fold

R6 - Start Automatic Wrapping Cycle; press STOP switch to stop cycle

L6 - Select Opertating Mode: 'M' or 'A'

AutoWrap Wiring Loom

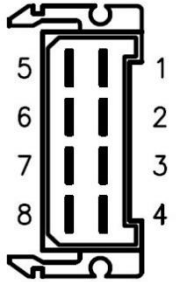


AutoWrap Wiring Loom

Wiring for 'basic' AUTOWRAP machine

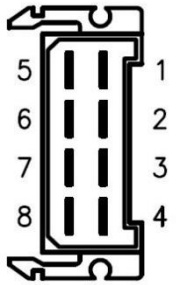
Connector 'A'

FIFO Pin	Function		CPC Pin	Cable I.D
1	C&S Close	OP7	6	7
2	C&S Open	OP6	7	6
3	Forward Rotate	OP4	4	4
4	Fast Speed	OP3	1	3
5	0 volts		14	
6	0 volts			
7	0 volts		15	
8	0 volts			



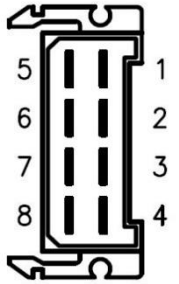
Connector 'B'

FIFO Pin	Function		CPC Pin	Cable I.D
1	Rollers In	OP1	3	1
2	Rollers Out	OP2	2	2
3	Master Valve	OP9	9	9
4	Loading Valve	OP12	12	12
5	0 volts		16	
6	0 volts			
7	0 volts		17	
8	0 volts			



Connector 'C'

FIFO Pin	Function		CPC Pin	Cable I.D
1	Buzzer	OP5	5	
2	E-Stop	IP3	23	
3	Film Sensor	IP2	20	
4	Reverse	OP11	11	
5	Rotate Sensor	IP1	21	
6	0 volts		18	
7	0 volts		18	
8	0 volts		19	

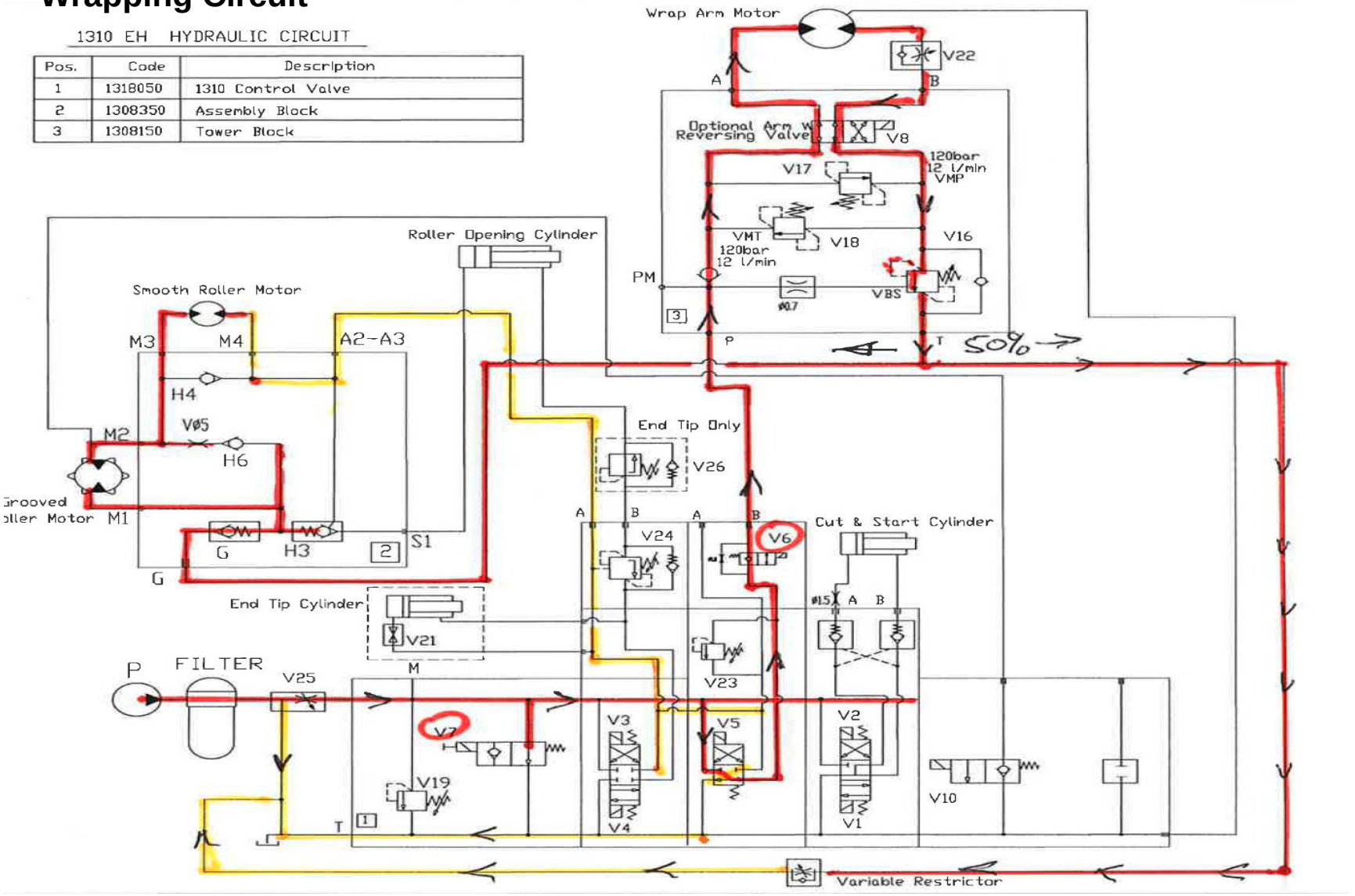


AutoWrap Hydraulic Circuit

Wrapping Circuit

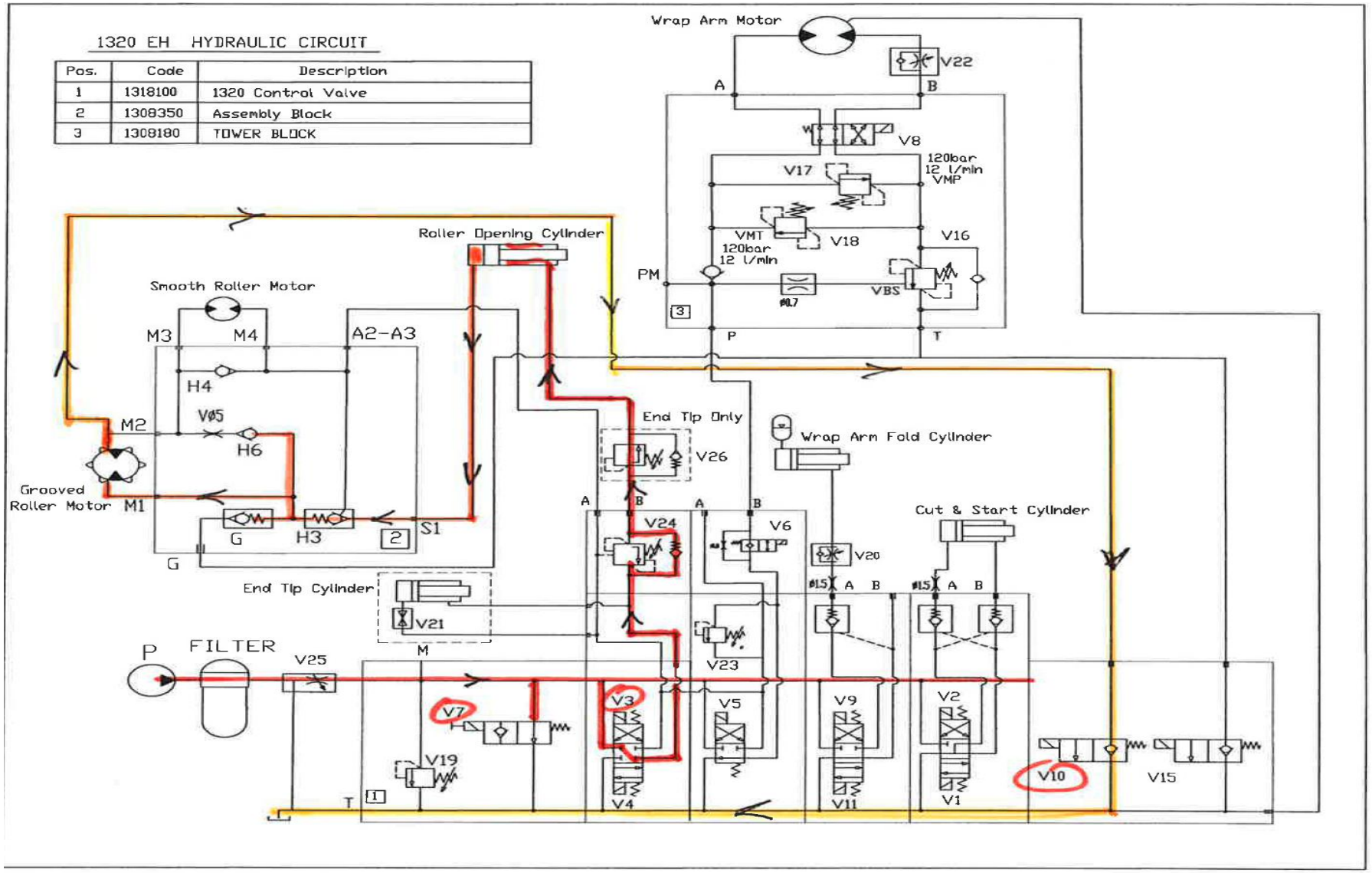
1310 EH HYDRAULIC CIRCUIT

Pos.	Code	Description
1	1318050	1310 Control Valve
2	1308350	Assembly Block
3	1308150	Tower Block



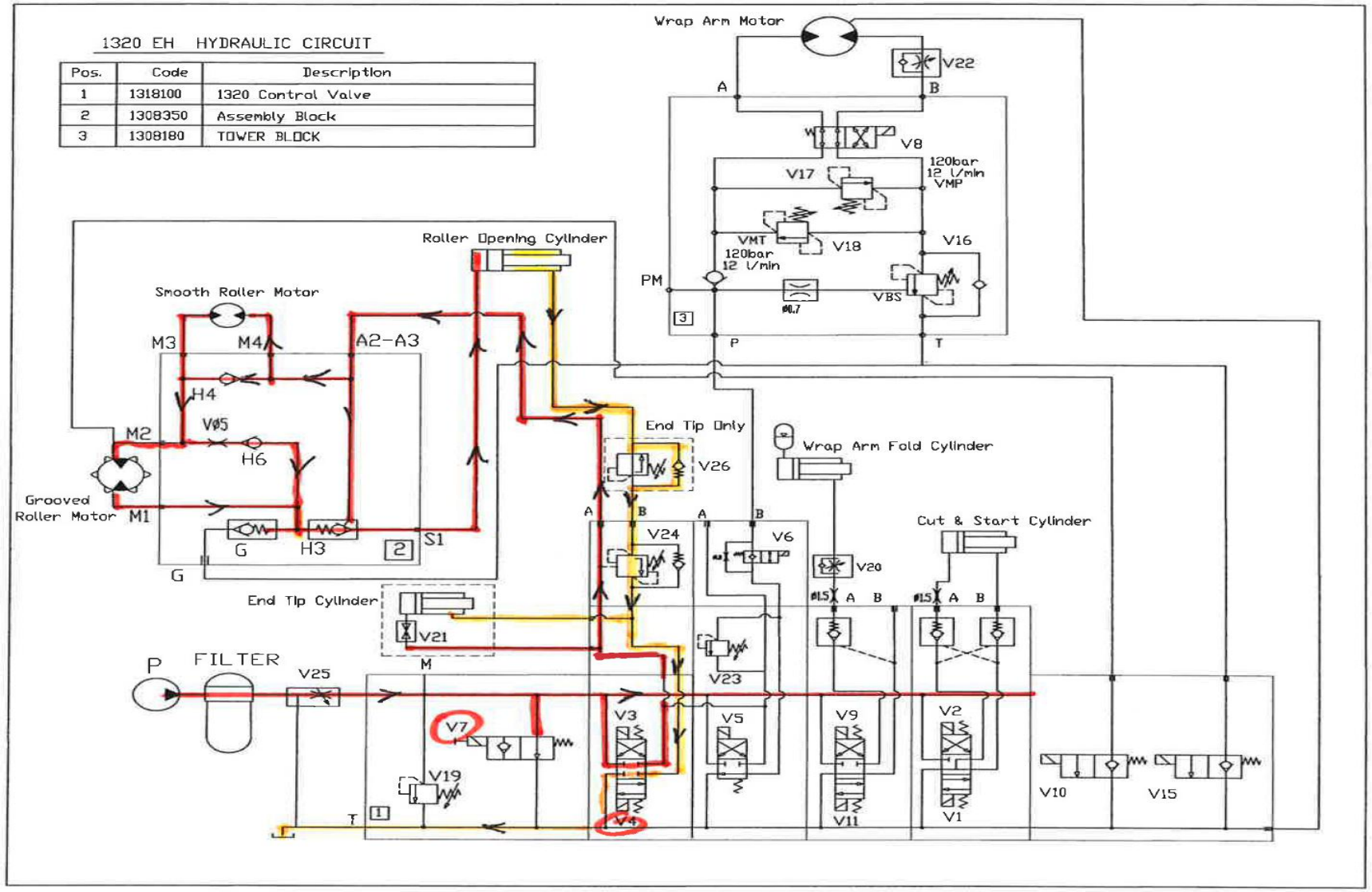
AutoWrap Hydraulic Circuit

Loading Circuit



AutoWrap Hydraulic Circuit

Unloading Circuit



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