



TANCO AUTOWRAP
1300 S & SM
OPERATORS HANDBOOK

WD66-1300 S-M1205

Tanco Autowrap Ltd.
Royal Oak Road
Bagenalstown
Co. Carlow
Ireland

Tel.: +353 (0)5997 21336
Fax: +353 (0)5997 21560
E-Mail: info@tanco.ie
Internet: www.tanco.ie



GUARANTEE

Subject to hereunder provided, the sellers undertake to correct either by repair or at their election by replacement any defect of material or workmanship which occurs in any of its goods within twelve months after delivery of such goods to first user, with the exception of contractors or commercial users when warranty period is six months. In respect of Autowraps the warranty period is for 12 months or 8000 bales, whichever occurs first. In respect of Aerways, tine breakage will be assessed on an individual basis in every case.

The term goods when used in this document means the article or articles described in invoices as sold by the sellers but does not include equipment or proprietary parts or accessories not manufactured by the sellers. The sellers, however, undertake to pass on so far as they legally can to the first user the benefit of any warranty given to the sellers by the suppliers of such equipment, parts or accessories.

This understanding shall not apply to:-

- (a) Any goods that have been sold by the first user.
- (b) Any goods which have been injured by unfair wear and tear, neglect or improper use.
- (c) Any goods the identification marks of which have been altered or removed.
- (d) Any goods that have not received the basic normal maintenance such as tightening of bolts, nuts, tines, hose connections and fittings and normal lubrication with the recommended lubricant.
- (e) The use of any product on tractors exceeding the recommended horsepower.
- (f) Any goods that have been altered or repaired other than on instruction or with the written approval of the seller or to which any part not manufactured or having written approval by the sellers have been fixed.
- (g) Any second-hand goods or parts thereof.

Any allegedly defective part or parts returned to the seller must be sent carriage paid. No claim for repair or replacement will be entertained unless upon discovery of the alleged defect written notification is sent to the Sellers giving, at the same time, the name of the Buyer from whom the goods were purchased and the date of purchase, together with the full details of the alleged defect and the circumstances involved, also the serial number of the machine etc.

The sellers shall be under no liability to their Buyers and first or subsequent users of their goods or to any other person or persons for loss or damage howsoever arising in respect of either personal injuries or for arising out of, or in any other way connected with or arising from the manufacturer's sale, handling, repair, maintenance, replacement or use of its goods or the failure or malfunction of any of its goods.

Representation and/or warranties made by any persons (including Buyers and employees and other representatives of the Seller) which are inconsistent or conflicting with these conditions are not binding upon the sellers unless given in writing and signed by a director of sales.

CLAIMS

If you wish to make a claim under the guarantee:

- 1: Immediately, stop using the machine.
- 2: Consult with your Tanco dealer (supplier). He/She can download a warranty claim form on-line. This should be filled out and e-mailed to distributor and forwarded to relevant contact person in Tanco. Please ensure all relevant information is included on this form
- 3: Consult with your Tanco dealer (supplier) and have him forward your claim and the damaged item to Tanco.

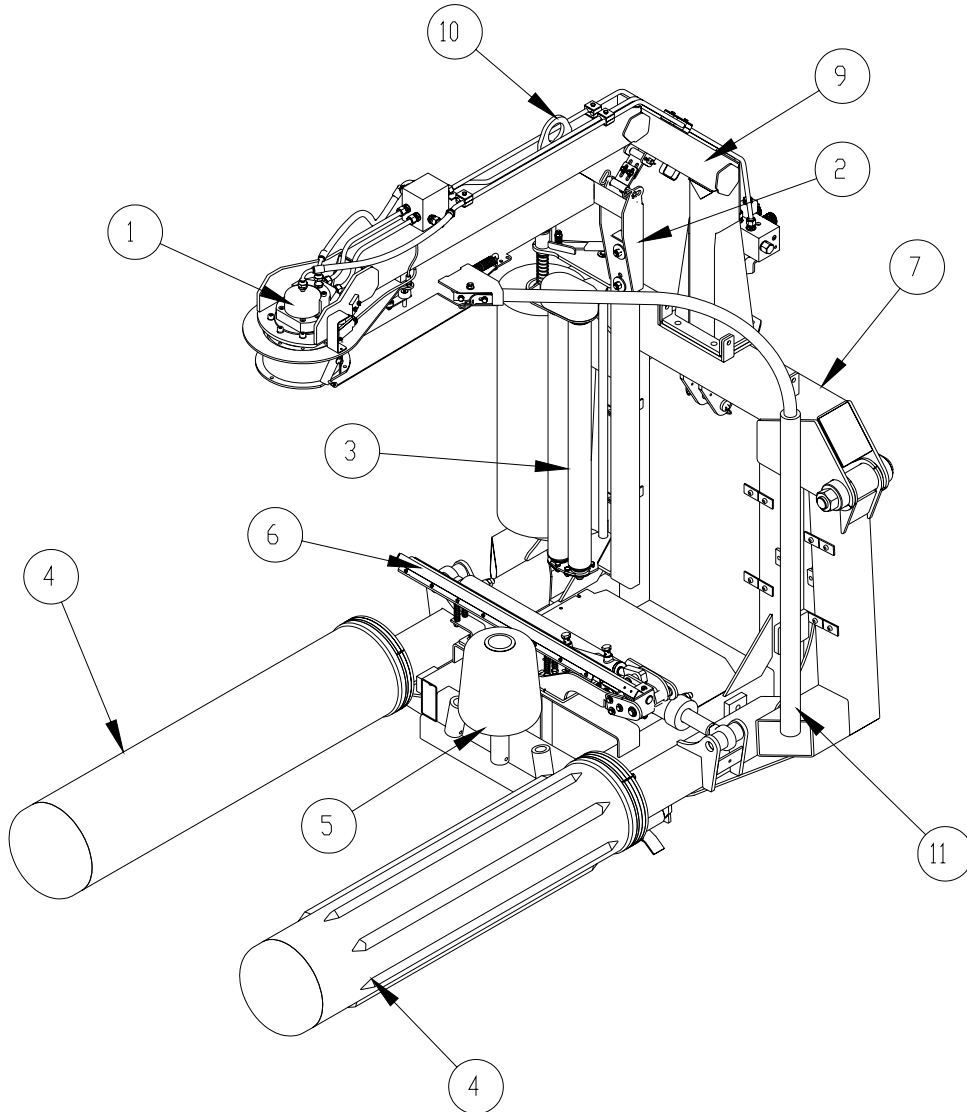


USER'S MANUAL

TANCO AUTOWRAP 1300 S

CHAP.	CONTENTS	PAGE
1.0	INTRODUCTION	5
2.0	SAFETY PRECAUTIONS	6
3.0	GENERAL INFORMATION ON BALEWRAPPING	9
4.0	SETTING UP / MOUNTING OF THE MACHINE	11
5.0	EMERGENCY STOP* (Instant stop)	14
6.0	MOUNTING OF PLASTIC FILM	14
7.0	CONTROLLER MANUAL	16
8.0	SPEED SETTING OF THE WRAPPING ARM	23
9.0	ADJUSTING THE OVERLAP	23
10.0	OPERATING INSTRUCTIONS	24
11.0	PERIODIC MAINTENANCE	26
12.0	ELECTRIC CIRCUIT	27
13.0	DESCRIPTION OF HYDRAULICS	29
14.0	CHECK POINTS BEFORE TROUBLE SHOOTING	31
15.0	PROCEDURE OF TROUBLE SHOOTING	32
16.0	TROUBLE SHOOTING	33
17.0	HYDRAULIC CHART	34
18.0	DECLARATION OF CONFORMITY	35

TANCO AUTOWRAP 1300 Bale wrapping machine



- | | | | |
|----|--------------------|----|-----------------|
| 1. | Wrapping arm motor | 7 | Main frame |
| 2. | Wrapping arm | 8 | Speed control |
| 3. | Film Dispenser | 9 | Tower |
| 4. | Rollers | 10 | Lifting Eye |
| 5. | Bale stop roller | 11 | Emergency stop* |
| 6. | Cut and Start | | |



1.0 INTRODUCTION.

Tanco Autowrap Ltd congratulates you with the choice of TANCO AUTOWRAP bale wrapping machine. We are certain you will be satisfied with the machine, and that you will have the pleasure of your investment for many years.

The TANCO AUTOWRAP bale wrapping machine has more features than any other bale wrapping machine available. TANCO AUTOWRAP can pick up the bale, wrap and stack them without the operator leaving the tractor cab. This system is protected by patent laws.

TANCO AUTOWRAP 1300 is hydraulically driven by the tractors hydraulic system, and is controlled from the tractor cab. The machine can either be mounted to three point linkage, front mounted with quick-couplers to the tractors front loader or on a wheel loader. Then it's possible to stack the bales upon each other.

TANCO AUTOWRAP 1300 is designed to wrap bales of grass, hay or straw, with nominal diameter of 1.1-1.5 m, and weights up to (1200kg). The machine was developed and has been improved since it's beginning in 1986, and is now a very reliable and safe machine with high security built in.

This manual is meant to explain how TANCO AUTOWRAP is prepared, mounted, used and how it works, and shall together with the spare part's list be a reference for maintenance and troubleshooting. So take good care of the books, they are a part of the machine.

Read carefully through this manual, and specially chapter 2.0, safety instructions, before starting the machine, and follow the instructions thoroughly. If problems should occur, check with chapter 16.0, and try to find out what is wrong. Ask your dealer for advice before you make the problem worse than it is.

* **EMERGENCY STOP.** Tanco Autowrap 1300 is equipped with a so-called emergency stop on the wrapping arm. This device stops all functions momentarily, but is per definition not an emergency stop, because it does not shut down the inputs. But it has the same function, so we have decided to call it an emergency stop in this manual.

Technical Specifications	AUTOWRAP 1300 S
Height in working position, min. / max.	2420 mm
Width, min. / max.	1300mm
Length, min. / max.	2450 mm
Weight	590 kg
Wrapping arm speed, recommended	22 revolutions' per minute
Wrapping arm speed, max.	27 revolutions' per minute
Bale size, max.	1500 mm Diameter
Bale weight, max.	1200 kg
Capacity	Approx. 25 bales per hour
Pre-stretcher	750 mm
Hydraulic connection	1 no. Single Acting Service, + free return 1 no. Double Acting Service
Oil pressure / amount, min.	180 bar / 15 liters per minute
Oil amount, max.	40 liters per minute
Counter pressure, max.	10 bar
Electric connection	12 V DC

Tanco Autowrap Ltd can change the construction and/or technical specifications without warning and without rights to changes on already delivered products.

© Copyright. All rights reserved. Any copying and reproduction of this manual is not permitted without permission from Tanco Autowrap Ltd. With precaution of printing failure.

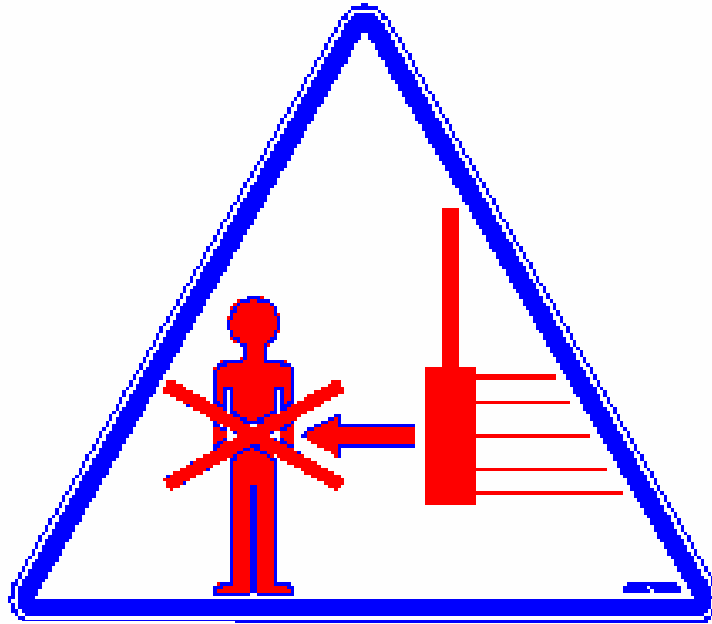


Fig.: 2-1

2.0 SAFETY PRECAUTIONS.

Tanco Autowrap Ltd does not take responsibility for damages that may occur to machine, persons or other equipment, because of the machine NOT being used as described in this manual, or because of the safety precautions NOT being followed.

2.1 SAFETY EQUIPMENT.

Before using the machine, make sure that all guards and covers are securely fitted. The machine must not be operated if a function does not work as described later in this manual. (See chapter 2.5).

2.2 BECOME FAMILIAR WITH THE OPERATIONS OF THE MACHINE.

If you are unsure how to operate the machine properly, either use of or maintenance to your Tanco autowrap, please contact your Tanco autowrap dealer.

2.3 ADJUSTMENTS / MAINTENANCE.

Turn off the tractor and discharge the oil pressure before performing any adjustment or maintenance on the machine. Remember that a well maintained machine is a safe machine.

2.4 IMPORTANT!

ALWAYS MAKE SURE THAT NOBODY IS IN THE HAZARD AREA OF THE WRAPPING ARM WHEN THE MACHINE IS IN USE.

THE MACHINE MUST NEVER BE OPERATED BY PERSONS WHO DO NOT KNOW ENOUGH ABOUT HOW TO SAFELY OPERATE THE MACHINE, OR BY PERSONS UNDER 16 YEARS OF AGE.

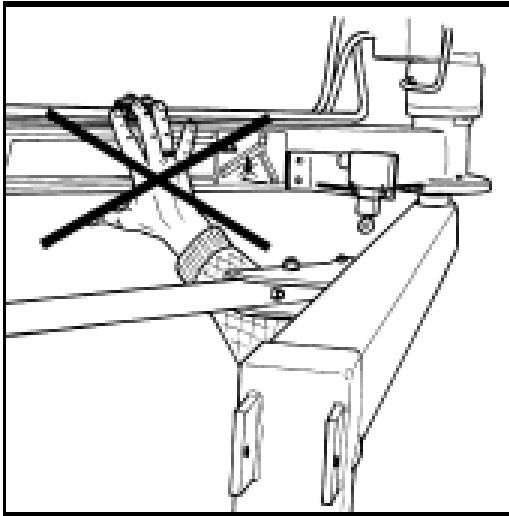


Fig. 2-2

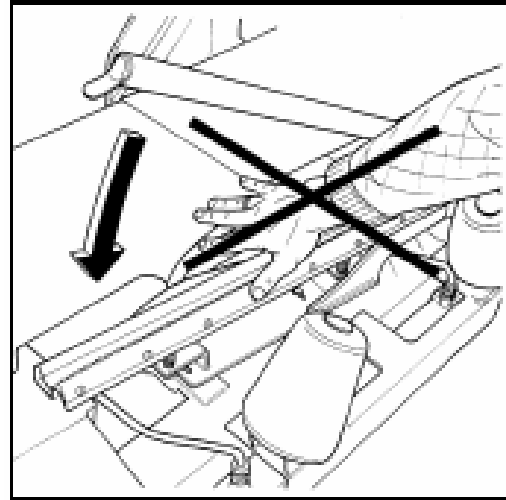


Fig.2-3

2.5 DANGEROUS AREAS.

Tanco Autowrap Ltd has given the safety to the operator the highest priority, but it is still impossible to secure oneself of every danger area on the machine. Therefore we will now go through some of the dangers that can occur when using the Tanco autowrap bale wrapper.

1. IMPACT OF THE WRAPPING ARM.

During the wrapping process the arm rotates with a speed of 20-27 revolutions per minute around the bale. On the arm is mounted a Film dispenser unit with a plastic roll. The speed on this can give a person serious injuries if one enters the working area of the wrapping arm. To reduce this danger we have mounted an emergency stop* device on the wrapping arm, this stops all movement instantly when someone comes in the way of it. **It is very important that this protection always works and that it should not under any circumstances be disconnected.**

(See more about the emergency stop* in chapter 5.0).

2. SQUEEZE-DANGER BETWEEN THE MAIN FRAME AND THE WRAPPING ARM.

As earlier explained, we have a wrapping arm with a Dispenser and a plastic roll. During every revolution the wrapping arm passes the main frame. Here there may occur a squeeze danger if a person stands too close to the main frame when the wrapping arm passes. The distance between the main frame and the wrapping arm is not large enough to give place for a person. Between the pre-stretcher and the bottom frame there can also be a squeeze danger.

3. SQUEEZE-DANGER BETWEEN THE STATIONARY AND WRAPPING ARM.

During the main wrapping process the wrapping arm moves around a stationary arm. Every time the wrapping arm passes the stationary arm, there is a squeeze danger that can be dangerous for the fingers. The distance between the stationary and the wrapping arm is between 25-40 mm. (See fig. 2-2).

4. SQUEEZE DANGER BETWEEN THE ROLLERS AND THE MAIN FRAME.

During the wrapping process the bale rotates on two rollers. When the rollers are in motion there is a danger of being squeezed.

5. SQUEEZE DANGER BETWEEN ROLLER ARMS AND MAIN FRAME, INWARDS.

When loading a new bale, the roller arms move towards the main frame, Beware of the danger. **Keep clear of this area.**



6. **SQUEEZE DANGER BETWEEN ROLLER ARMS AND MAIN FRAME, OUTWARDS.**
When loading or unloading a new bale, the roller arms move outwards. Beware of the danger. **Keep clear of this area.**

7. **SQUEEZE DANGER CAUSED BY CUT AND START UNIT.**
At the end of the wrapping process the plastic is cut and held tight until the start of the next wrapping process. When the cutter arm moves down to lock the plastic, there can occur a squeeze danger between the cutter arm and the cutter holder. The cutter blade that cuts the plastic is very sharp, so keep hands away from the cutter. (See fig. 2-3).

2.6 **LOCKING THE WRAPPING ARM.**

When the machine is not in use, make sure the locking stay for the wrapping arm is secured, and that the locking bolt is fitted. If the locking stay is not secured, the wrapping arm and/or the machine could be damaged during transport.

2.7 **THREE POINT MOUNTING.**

When the machine is mounted on the three point linkage, make sure that the lifting arms are tightened up so there is no sideways movement. **Ensure rear window is closed or that it cannot be hit by the Tower when the 3 point linkage is raised.**

2.8 **FRONT MOUNTING.**

If the machine is mounted on a front loader there must be a counterweight fitted to the three point linkage. It must be large enough to give the tractor good stability.



Connecting heavy working implements often has an overall negative effect on the tractor's driving and braking capacity.

2.9 **TRANSPORTING.**

When transporting on a public road there are certain safety measures that must be taken:

1. Make sure that the locking bolt on the wrapping arm is mounted. (Chapter 2.6).
2. Move the main rollers fully inwards.
3. Always transport the machine in the lowest possible position.
4. Make sure that the machine does not cover the tractors lights. If necessary, mount extra lights.
5. Make sure that at least 20% of the tractor's total weight is on the steering wheels.
6. If the machine is front-mounted, it's necessary to balance the weight with a counterweight mounted to the three-point linkage.



3.0 GENERAL INFORMATION ON BALE WRAPPING.

3.1 THE PRINCIPLE.

The advantages of round bale silage are many, and include fewer feed units, a flexible harvesting system, large capacity and the possibility of selling feed units.

In principle, the same fermentation processes occur whether the fodder is placed in a silo or pressed into bales and packed in plastic, i.e. lactic acid fermentation in anaerobic conditions. The oxygen in the bale must be exhausted before fermentation begins.

The grass should be dried to approximately 30-40% solid content. The solid content can be determined by twisting the grass by hand. If drops of liquid are forced out of the grass, the solid content is less than 25%. Low solid content, (wet grass), can lead to increased butyric acid fermentation if preservatives are not added to the grass. If the solid content is too high, (over 50%), normal fermentation will not take place and there will be enough oxygen in the bale to produce mould fungus.

3.2 THE BALER.

It is vital that the baler produces compact, well-formed bales, as misshapen bales can be difficult to wrap. Wrapping will also often take longer, thereby increasing the amount of plastic used.

3.3 DIFFICULT BALES.

When a misshapen bale is wrapped, it will have a tendency to move outwards or inwards on the roller. If the bale begins to move outwards, the machine must be lifted slightly at the rear edge to get the bale to rest against the support roller on the main frame. It can therefore be useful to use a hydraulic top link to make this adjustment easier. (See chapter 4.2).

If the support roller almost disappears into the bale the machine should be pressed down slightly at the rear edge in order to remove the bale from the machine. The plastic can be damaged when friction against the roller increases. Best results are achieved when the bale rolls easily against the support roller all the time.

If the bale to be wrapped is conical you must ensure that the sharp end is pointed at the tractor. It will then be easier to get the bale to lie correctly during packing. It is easy for such a bale to "turn" forward in the direction in which it is pointing, and therefore lie against the support rollers. If the bale is lying on a slope it must be picked up from the lower side. A hydraulic top link will again be advantageous.

3.4 TYPES OF PLASTIC.

A good type of plastic with good adhesive properties, and which is recommended for bale wrapping, must be used. The thickness of the plastic foil should be at least 25 μ . (25/1,000 mm). In order that the plastic tightens sufficiently around the bale, it is stretched before being wrapped, so it is somewhat thinner when it is put on the bale. With short-term storage, (up to eight weeks), it is recommended that bales have a minimum of four layers of plastic at the thinnest points, with at least 52-53% overlap.

For long-term storage, or when the grass is wet when it is wrapped, the bale should have 90-100 μ plastic, (6 layers), and the same amount of overlap. If thinner plastic is used, more layers should be applied. If it is very hot the plastic will be stretched further, and more layers should be applied. It is better to have slightly too much than too little plastic on the bale.

From experience, light plastic produces slightly lower temperatures within the bale, and tends to improve feed quality.



3.5 STORAGE LOCATION.

Care should be taken in finding a suitable location for the storage of bales. The storage location should preferably be prepared before the bales are laid out. An elevation close to well-drained roads is recommended. If the wrapped bales are simply placed on stubble there is a danger of the plastic being pierced. A tarpaulin or a thin layer of sand should therefore be laid where the bales are to be stored over the winter.

Bales should be stored in the shade as far as possible. This reduces the danger of air leakage in the bales. A bale which is stored in sunlight and which therefore undergoes greater swings in temperature "pumps in" a great deal of air in comparison to a bale stored in the shade. According to "Teknik for Lantbruket" [Technology for Agriculture] in Sweden, a bale stored in the shade has only 40% of the air leakage of a bale which is stored in sunlight.

3.6 STACKING / PROTECTION.

If bales are hard and well formed, they can be stacked vertically, but loose and misshapen bales with low solid content should not be stacked higher than one layer, as this could easily cause deformity and the danger of runoff will be increased.

Bales can also be stored on their sides. The layer of plastic is thicker here, providing greater protection against piercing.

Bales should be covered with a tarpaulin or a fine-mesh net to protect against birds and small rodents. If the plastic is pierced, it must be sealed with weatherproof, hard-wearing tape, preferably under the outermost layer of plastic. Ensure that the hole is adequately sealed.

3.7 The best wrapping results are obtained by...

...harvesting the grass early.

...drying it out to 30-40% solid content. If there is a danger of rain, bale and wrap the grass anyway.

...taking care not to mix any earth in with the grass.

...using a baler that produces even, firm bales.

Bales 1.2 m in width and with a diameter of 1.2-1.5 m are the preferred sizes.

...wrapping the bales soon after baling, never later than two hours afterwards.

...using a good plastic type and six layers of plastic. This removes the need to use preservatives.

...storing bales in the shade to reduce the danger of air leakage.

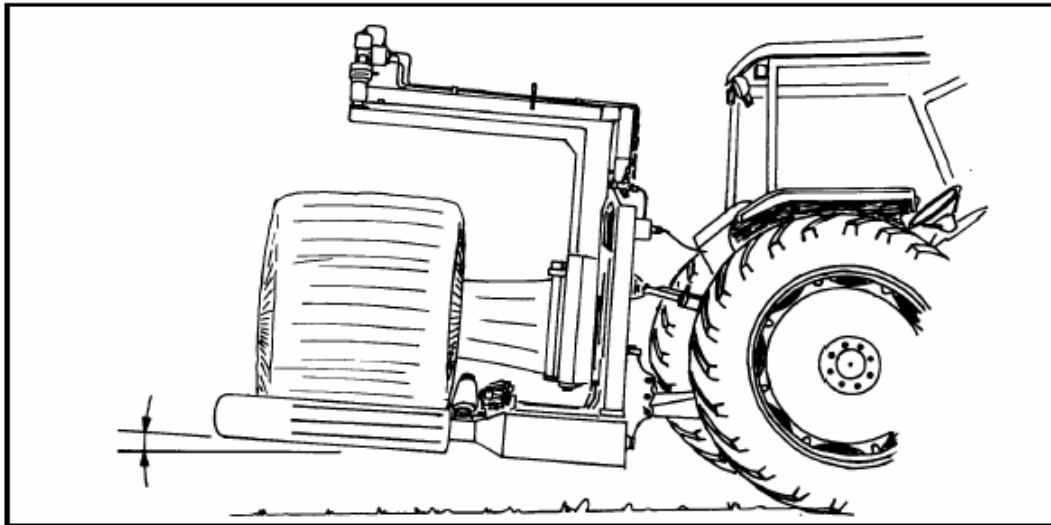


Fig. 4-1

4.0 SETTING UP / MOUNTING OF THE MACHINE.



Be careful! There is a danger of being crushed when working implements are fitted and connected. Carry out the fitting procedures slowly and carefully, and use separate and approved lifting equipment to make the work easier. See section 2 on safety regulations and pay attention to the various safety decals displayed on different parts of the bale wrapper.

4.1 THREE POINT LINKAGE.

TANCO AUTOWRAP 1300 is intended for rear mounting to the three point linkage, category 2. When attached to three point linkage, make sure the machine is level across the tractor. Tighten up and lock the lifting arms so there is no sideways movement.

4.2 TOP LINK.

Adjust the top link of the tractor so that the machine is level with the ground. It is recommended to use a hydraulic top link, as this makes it easy to adjust the angle of the machine. During the wrapping process it is recommended to tilt the machine towards the tractor, as this will prevent the bale from falling off the rollers. (See fig. 4-1).

4.3 FRONT MOUNTING.

As extra equipment the machine can be equipped with quick-couplers for front loader or wheel loader.

(See spare parts list chapter 2-4 for what types of quick couplers there are).

You also need longer hydraulic hoses. (See spare parts list chapter 4-2 for more details).

When front-mounted there must be a large enough counterweight fitted to the three point linkage, this is to secure the tractors stability.

4.4 CONTROL BOX 1300 S

	
<p>1300 EH Controller</p>	<p>1300 S controller – Wrap counter also operates Cut and Tie.</p>

4.5 ELECTRIC CONNECTION.

The electrical supply cable for the 1300S machine is terminated in a “Cobo” power plug, this should be used where a compatible socket is available on the tractor. There is a 5 Amp inside the Cobo plug.

If such a socket is not available it is recommended to connect **directly from the tractors' 12 volt battery.**

The electric wires from the battery must have an area measurement of min. 2,5 mm² and have a 5amp fuse overload protection.

Connection to other contacts on the tractor can cause risk of malfunction, and is not recommended.

**BROWN LEADER GOES TO BATTERY PLUS POLE
BLUE LEADER GOES TO BATTERY MINUS POLE**

4.6 CONTROL UNIT 1300 S.

The control unit should be attached to a suitable place in the tractor cab.

THE CONTROL UNIT IS NOT SHOCK-PROOF. MAKE SURE THAT IT IS FASTENED TO A SOFT PAD THAT SECURES A NON-VIBRATING FOUNDATION.



4.7 HYDRAULIC CONNECTION. (See Fig. 13-1)

The **1300S** machine uses two of the tractors remote valves to operate. One valve operates the wrap arm rotation and cutter, the second valve operates the rollers in (loading) and rollers out (unloading) function.

There are 4 no. hydraulic connections between the 1300S machine and the tractor. They are divided into two pairs, one pair connected to one side of the entry block (marked 'P' and 'T' on the side of the block) and the second pair connected to the opposite side of the block (marked 'R+' and 'R-').

The hose from P can be connected to either a single or double acting service on the tractor, this is the hydraulic supply for wrap arm rotation and cutter.

The hose from T (fitted with a female Q/R coupling) must be connected to a free return to tank. This is the return from the wrap arm rotation and cutter. The Cutter will not operate correctly if this is not a free return.

Hoses from R+ and R- should be connected to a double acting service on the tractor. This is the hydraulic supply for rollers in and rollers out.

The **1300 SM** is equipped with a two bank, cable operated valve. This requires just two connections, a Feed and return. If possible arrange for a free return for the Return line as this eliminates the risk of **Hydraulic lock**. This occurs if you try to send oil in the opposite direction against the non-return valve. This results in pressurized oil between the non-return valve and the quick coupling and prevents connection of the quick coupling. The only way to discharge the pressure is to open the quick coupling using two 27 mm spanners.

The hydraulic hoses between machine and tractor are equipped with 3 no. 1/2" ISO male quick-couplers and 1 no. female coupler. Discharge the oil pressure before you connect the oil hoses. Use the tractors' hydraulic lever.

To make sure that the bale wrapper works properly, the tractors' oil pressure has to be at least 180 bar. The oil flow should be 25 - 40 liters per minute.

4.9 CHECK LIST.

Before using the machine it is recommended to follow this check list:

1. Make it a habit to discharge the oil-pressure before connection or disconnection of the hydraulic hoses. (By operating the hydraulic control lever inside the tractor). (Use the tractors hydraulic control lever).
2. Tie up loose hoses so that no squeeze damages occur.
3. Remove the locking bolt that holds the wrapping arm to the frame during transport.
4. Start the tractor and try out the functions, pull and hold the tractors single acting hydraulic lever (note you must press the 'Reset' button on the controller for the wrap arm to operate), the Cutter should automatically open and close on the second turn and also on the last set turn the wrap arm will go into slow speed and the cutter will open, when you hear the controller bleep release the hydraulic lever, the arm rotation will stop and the cutter will close.
Check the operation of the roller arms out and in on the second service.
8. Check all connections, hoses and couplings. If there is any oil-leakage, it should be rectified immediately.

If any problems should occur, it is most likely that the failure is in the quick-couplers on the tractors pressure and return-connections.

Make sure that both the male and the female-couplers open properly for the oil flow. Check

Your TANCO AUTOWRAP bale wrapper has been tested in practical operation in approx. 2 hours at the factory.

5.0 EMERGENCY STOP*.

- 5.1 The machine is equipped with a safety guard on the wrapping arm, and its operation must be tested before work itself is started.
- 5.2 The emergency stop* is to prevent the wrapping arm from damaging people and objects, when the machine is started and during the wrapping process.
- 5.3 It consists of a releaser hoop that activates a small electric switch, which gives a signal to the control box to start the emergency stop.
- 5.4 When testing this function, start the wrapping arm. Hold out an arm or any obstacle. The wrapping arm shall now stop before it hits the arm. Great care must be taken when testing this function.
- 5.5 To restart the machine the obstacle must be removed and the arm must be returned to its original position. The 'Reset' switch on the control box must be pressed to allow wrapping to start again.
- 5.6 **IMPORTANT: GIVEN THE VELOCITY AND MOMENTUM OF THE ARM IT IS IMPOSSIBLE TO STOP THE WRAP ARM IMMEDIATELY. THE EMERGENCY STOP ARM IS PROVIDED TO HELP REDUCE THE RISK OF SERIOUS INJURY AND GREAT CARE MUST BE TAKEN WHEN OPERATING THIS MACHINE.**

6.0 MOUNTING OF PLASTIC FILM.

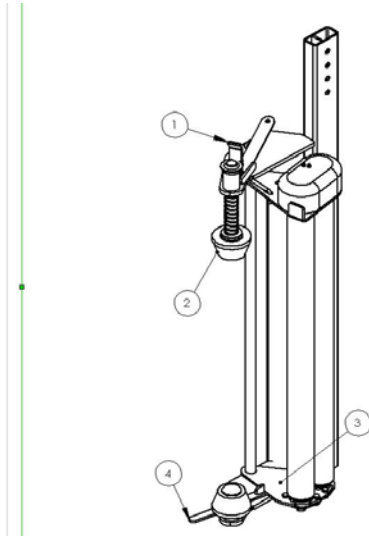


Fig.: 10-1

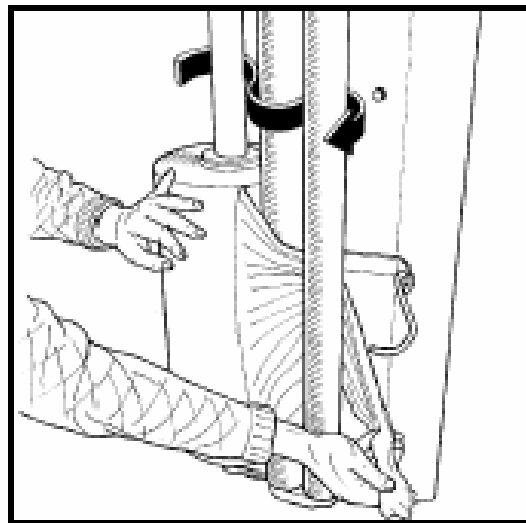


Fig.: 10-2

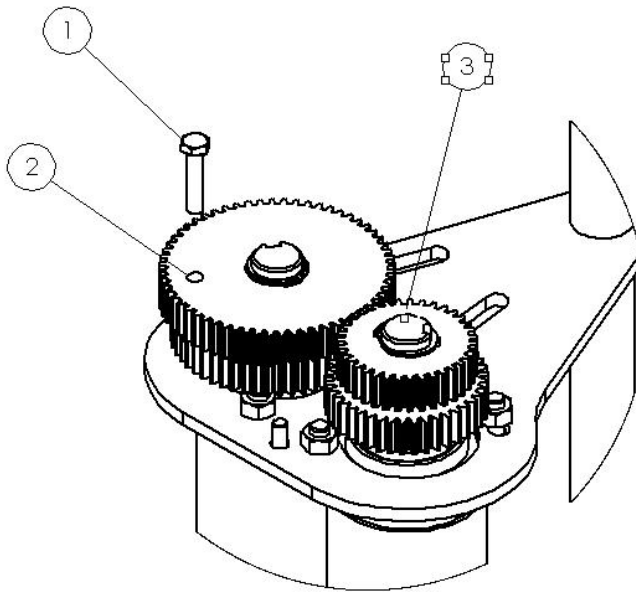
- When loading a plastic roll, first ensure the top cone (2) is pushed up to latched position, then push back the Stretch rollers (3) until held in position by locking catch (4).
- Place the Roll on the Bottom Cone and release the top latch (1). Beware of Fingers!
- Pull the film between the rollers on the pre-stretcher in the direction of the arrow. (See fig. 5-2). (See also the sticker on the dispenser).
- Release the locking catch and allow the rollers to lie against the roll of film. Pull the film from the roll and tie it to the bale.

- 6.1** The standard film dispenser is designed for 750mm film. If using 500 mm film an adaptor is required which must be ordered separately. See parts book and contact your dealer.
- 6.2** Height adjustment of pre-stretcher / plastic film.
The plastic film should hit at the middle of the bale wrapped, and therefore it can be necessary to adjust the height of the pre-stretcher.

6.3 Tanco Dual Stretch Dispenser

Some Tanco Autowrap machines can optionally be fitted with a patented dual stretch gear system.

This system enables a quick change of stretch levels on the Film Dispenser.



If the bolt (1) is fitted in position 2, the top set of gears provide the stretch (70%).

By removing the bolt from position 2 and fitting it in position 3, the bottom set of gears become the stretch gears giving 32% (for prestretched film) or optionally 55% (for use in hotter climates or with square bales).

Tanco Dispenser Gear Combinations

Inner Gear	Outer Gear	% Stretch
60 Tooth	35 Tooth	70%
58 Tooth	37 Tooth	55%



7.0 S Controller Manual

7.1 Introduction

What can it do ?

7.2 The control switches

7.3 Using the instrument

7.3.1 Channel 1 - Current/Target Wraps display

7.3.1.1 Manually reset Current Wraps to zero

7.3.1.2 Programme Target Wraps

7.3.1.3 Programme Early Warning Alarm

7.3.2 Channel 2 - Store Totals

7.3.2.1 Display a Store Total

7.3.2.2 Select a Store Total

7.3.2.3 Reset a Store Total

7.3.3 Channel 3 - Part total

7.3.3.1 Display Part Total

7.3.3.2 Reset Part Total

7.3.4 Channel 4 - Grand Total

7.3.4.1 Display Grand Total

7.3.5 Channel 5 - Bale Wrapping Rate

7.3.5.1 Display Bale Wrapping Rate

7.3.5.2 Reset the Timing Period

7.3.6 Channel 6 - Bale Wrapping Speed

7.3.6.1 Display Bale Wrapping Speed

7.3.6.2 Programme the Overspeed Alarm

7.3.7 Total Reset

7.3.8 Programming Level 2



3.1. Introduction

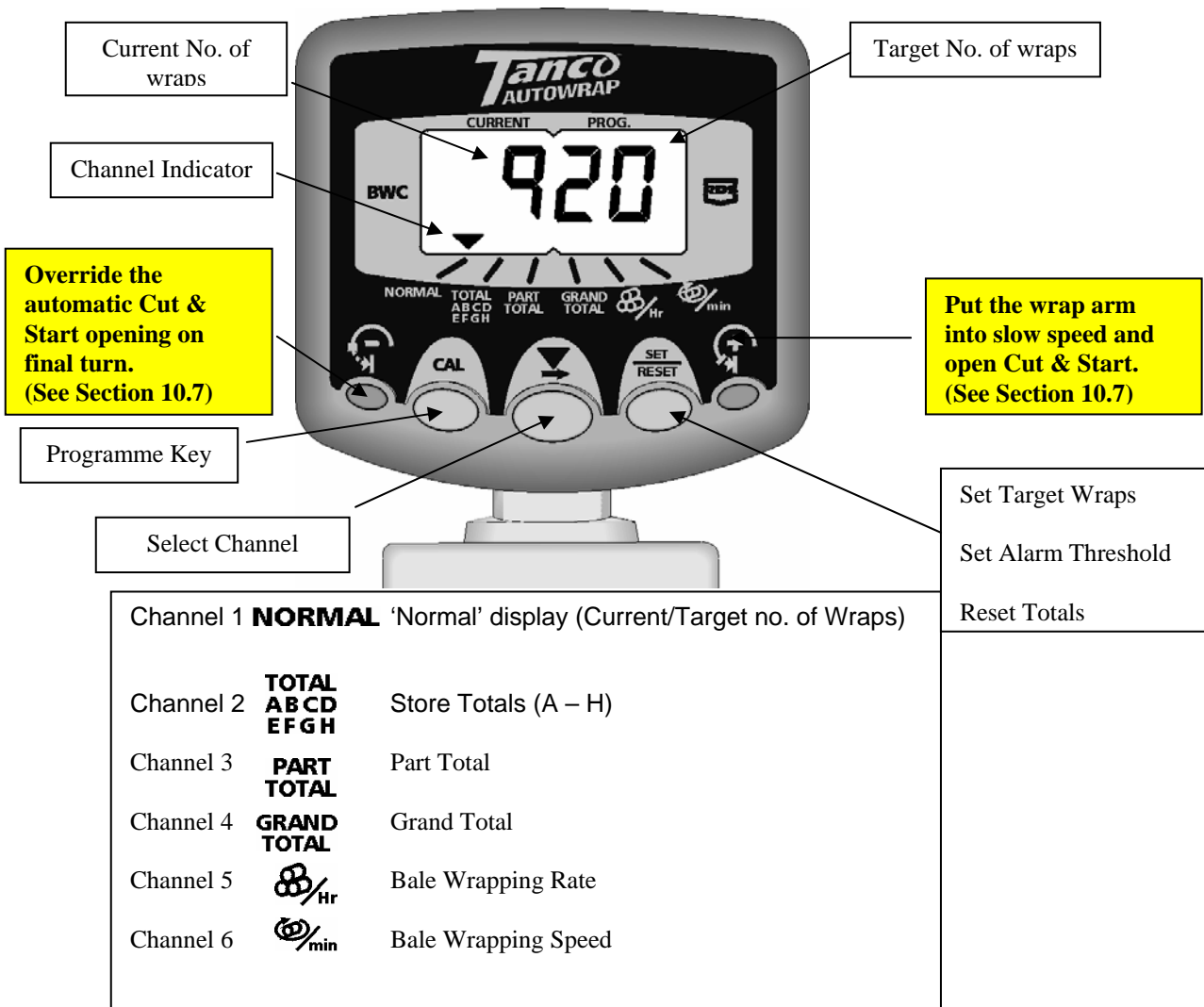
The instrument has 6 channel functions with an illuminated 4 digit LCD display, 5 switches to control all functions and an internal alarm. An external alarm is optional. The instrument is normally powered on via the vehicle ignition circuit and recalls the function displayed when the instrument was last used.

What can it do ?

- Continuously displays the current number of wraps around the bale alongside the desired (Target) number of wraps preset by the operator.
- Sounds an alarm at a preset number of wraps before the target number is reached.
- Automatically senses when the bale wrap sequence ends and records it to each of these memory registers:
 - (i) Grand Total
 - (ii) Part Total
 - (iii) One of eight selectable Store Totals
- Displays the number of bales wrapped per hour, within any desired time period.
- Displays bale wrapping speed in rpm, and sounds an alarm when a preset speed is exceeded.
- Film break alarm and automatic stop.
- Adjustable turntable stop position.

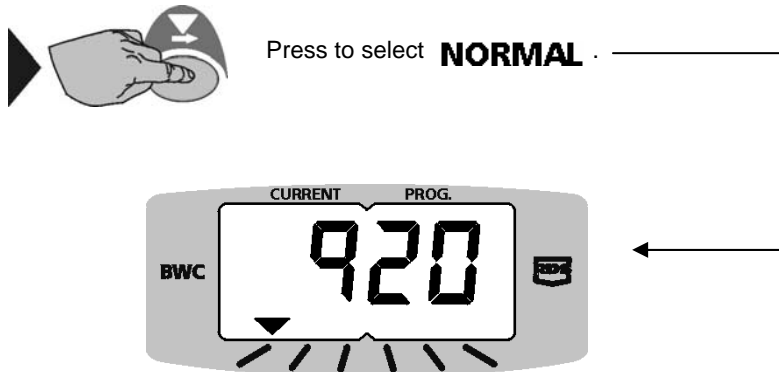
7.2. The Control Switches

There are five switches on the front panel used individually or in combination to programme, set/reset or select a function.



7.3.0 Using the Instrument

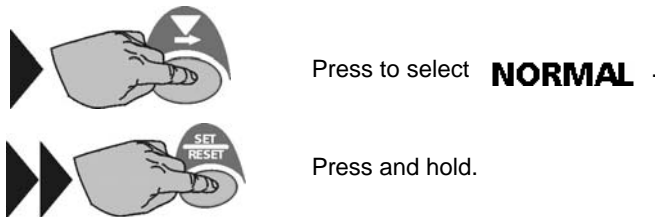
7.3.1 Channel 1 - Current/Target Wraps Display__



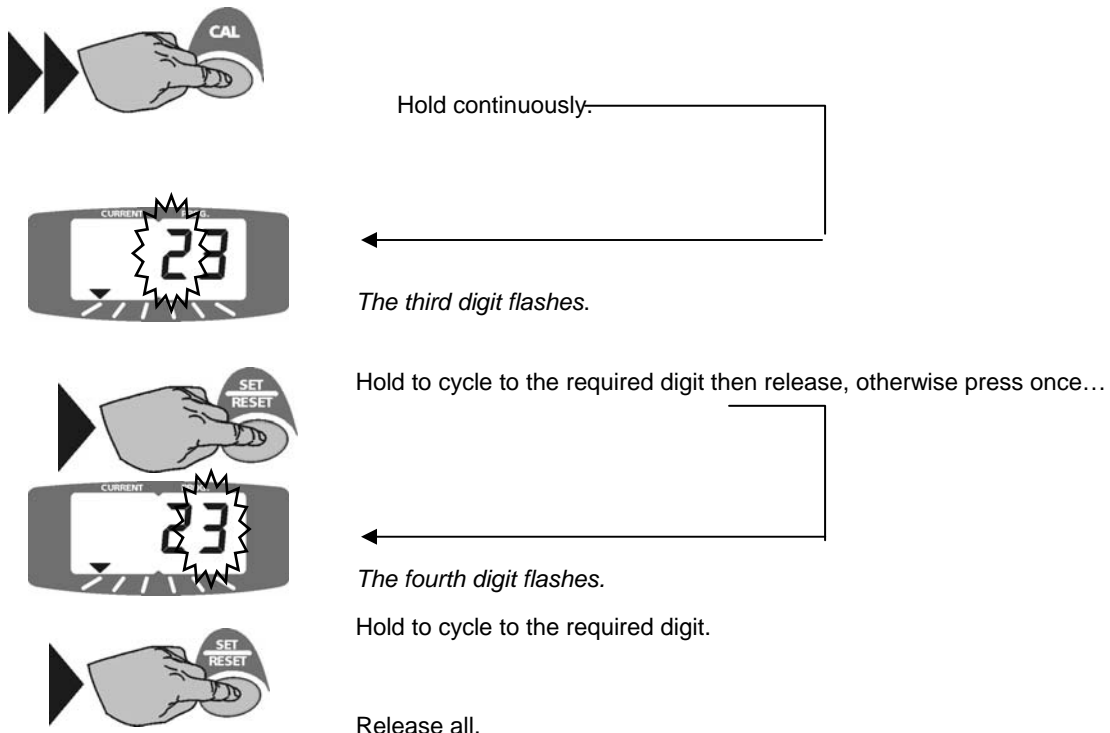
The left-hand section shows the current number of wraps and the right hand section shows the target number. When the current number = Target number, the alarm will sound for 2 seconds and the display will flash. (If set, the early warning alarm sounds beforehand).

Automatic reset of current number to zero normally occurs 5 seconds after the Target number is reached. If additional wraps are added after the Target number is reached, the current number will continue to advance.

7.3.1.1 Manually reset No. of Wraps to Zero



7.3.1.2 Programme the Target Wraps



7.3.1.3 Program Early Warning Alarm

An early warning alarm can be programmed to sound from 1 to 9 wraps before the target number is reached. Depending on the setting, the alarm will sound long beeps for up to 8 wraps, short beeps for the final wrap, and then a continuous beep for three seconds.

For example, if the bale requires 22 wraps and you want an alarm at 20 wraps, then set the number to 2. To effectively disable the alarm, set the number to 0.

Press to select **@/min**

Hold continuously.

The fourth digit flashes.

Hold to cycle to the required digit.
Release all.

7.3.2 Channel 2 - Store Totals

When bale wrap is complete, one of eight pre-selected memory store totals **A, b, C, d, E, F, G, or H**, is automatically advanced by 1. Store totals can be reset individually.

Press to select **TOTAL
ABCD
EFGH**

The fourth digit displays the current store designation for 2 seconds.

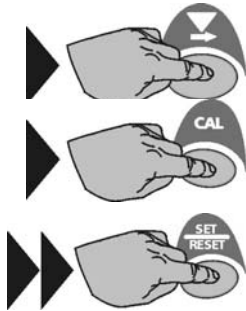
The current total for that store then displays for five seconds, then defaults to channel 1.

Press to select **TOTAL
ABCD
EFGH**

Select the desired store total (A – H).

This is now the default store, and subsequent bale counts are stored there until another store is selected.

TOTAL
AB CD
EF GH



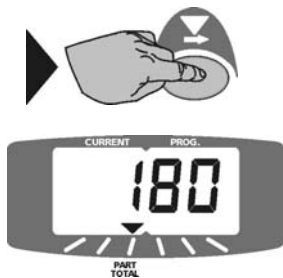
Press to select .

Select the desired store total (A – H).

Press and hold.

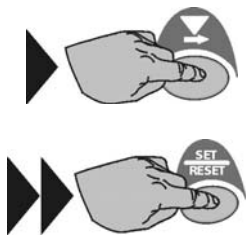
7.3.3 Channel 3 – Part Total__

When the bale wrap is complete, the part total is automatically advanced by 1. The part total can be reset at any time



Press to select **PART TOTAL** .

← **TOTAL**
AB CD
EF GH
Part total display _____ seconds then defaults to channel 1.



Press to select **PART TOTAL** .

Press and hold for 5 seconds.

7.3.4 Channel 4 - Grand Total__

When the bale wrap is complete, the grand total is automatically advanced by 1. The grand total cannot be reset.



Press to select **GRAND TOTAL** .

← *Grand total displays for 5 seconds then defaults to channel 1.*

7.3.5 Channel 5 - Bale Wrapping Rate _____

Displays number of bales wrapped per hour. The time period over which the rate is averaged may be re-started at any time.



Press to select .



Press to select .



Press and hold for 5 seconds.

7.3.6 Channel 6 - Bale Wrapping Speed _____

Displays instantaneous r.p.m. of the bale wrapper at 3 second intervals in the range 10-99 r.p.m. An overspeed alarm will sound if the r.p.m. exceeds a pre-programmable limit. The display will default to this channel and flash for the duration of the overspeeding, subsequently reverting to the 'current/target wraps' display.



Press to select .



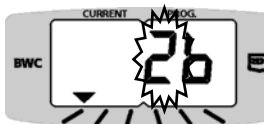
7.3.6.2 Program the Overspeed Alarm



Switch power on while pressed.



Release.



The third digit flashes.



Hold to cycle to the desired digit, then release, otherwise press once...



The fourth digit flashes.

Hold to cycle to the required digit.



7.3.7 Total Reset

If for some reason the data in the instrument is corrupted or the display shows 'PrOg' then the instrument must be totally reset.

- . Switch power off.
- . Press and hold all 3 control switches.
- . Switch power on.
- . Release all switches.

All instrument settings should be returned to the factory-set values. If the display shows 'PrOg' again, the instrument may be faulty and must be returned to the manufacturer for inspection and repair.

7.3.8 Programming Level 2

The 1300 S features Automatic Cut and start operation through the control unit. The 1300 SM also has an **autostop** feature which holds the joystick in position and automatically releases it at the end of the wrap sequence. The settings of these features are programmable in Level 2.

To enter, cut power and power on while holding CAL button. Release after power on. Press and release CAL to advance chevron to next position

To escape from this calibration level, switch power off and on again.

Channel	Function	Default	Range
1	Over speed Alarm*	35	0-99
2	W – Delay after pulse 2 before X	0.5	0-9.9
3	X – C&S Open duration	0.5	0-9.9
4	Y – Delay after Target – 1 before C&S Open	1.0	0-9.9
5	Z – Duration of C&S Open after Target pulse	2.0	0-9.9
6	V – Autostop release delay	0.7	0.0-9.9

[*In normal operation - If the rotation speed in RPM exceeds this number during operation, the alarm will sound for the duration of this condition.

Chevron will default to channel 6 and display will flash in this condition. 0.491 Secs Mark and Space. Chevron will revert to channel 1 when speed drops below overspeed limit].

8.0 SPEED-SETTING OF THE WRAPPING ARM.

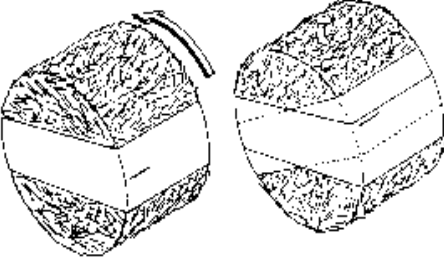
- 8.1** Start the tractor and let it run at approx. 1000 revolutions per minute. Lift the machine clear of the ground. The oil flow to the machine is adjusted by two wheels which are situated on the front the machines valve block. (See Fig. 13-1)
- 8.2** The Wheel (See Fig. 13-1) to the right is used to adjust speed of the wrapping arm.
- 8.3** Adjust the wrapping arm speed to approx. 22 revolutions per minute. (Just below three seconds per revolution.) The adjustment is carried out by turning the wheel on the control valve. Turning **clockwise INCREASES** the speed and turning **counterclockwise REDUCES** the speed. It is recommended not to wrap with speeds higher than 22 revolutions per minute, because then the plastic film will "catch" more air, and this air do may not be able to evacuate from the bale. The result is bad fodder.

NOTE: Max. allowed wrapping arm speed is 27 revolutions per minute.

REMEMBER!

Increased speed of tractor engine does not increase the wrapping speed, it only increases the oil flow into the system and by that also the temperature in the hydraulic system.

9.0 ADJUSTING THE OVERLAP.

	<p>9.1 Speed setting of the Wrap arm Load a bale on to the machine. To be able to adjust correct overlap, you have to leave the tractor cab while wrapping. Check that the wrapping arm has a speed of approx. 22 revolutions per minute. If not, adjust this by turning the control valve for wrapping arm speed. (See chapter 9.3). When the wrapping arm speed is OK, you can set the overlap.</p>
---	--

9.2 OVERLAPPING.

CORRECT OVERLAPPING IS VITALLY IMPORTANT TO GOOD QUALITY SILAGE!
It is the responsibility of the operator to ensure that overlapping and number of wraps are set correctly.

Use a marker to mark a line on the middle of the film wrapped on the bale. Adjust the control wheel (See Fig. 13-1) for roller speed, so that the marker line is just covered. Approx. 52-53% is the ideal overlap. (See fig. 9-2).

This adjustment can be kept as long as you wrap bales with approx. same diameter. When changing bale size, control the overlap. Check overlapping when wrapping misshapen bales or bales with ragged ends.

10.0 OPERATING INSTRUCTIONS.

We shall now go through a complete wrapping process, from loading to storage place, and explain the practical use of Tanco autowrap 1300.

10.1 Fitting roll of film.

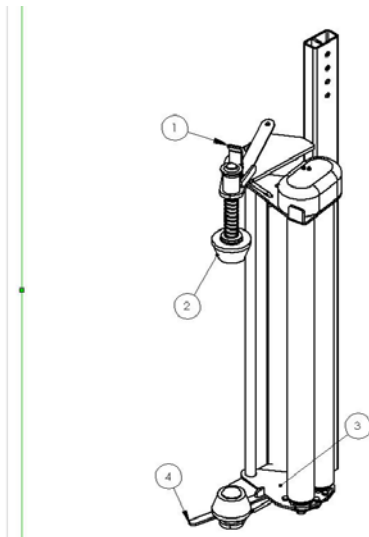


Fig.: 10-1

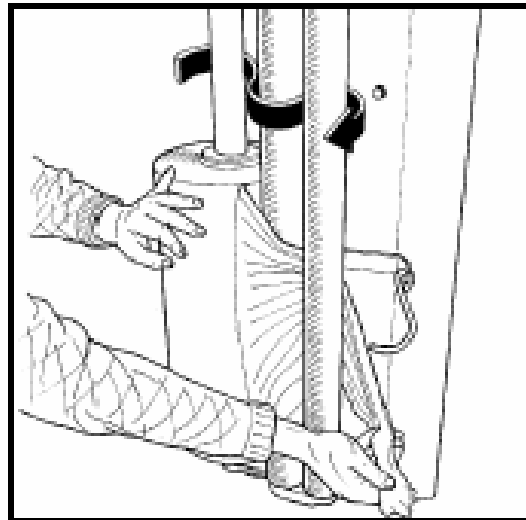


Fig.: 10-2

- When loading a plastic roll, first ensure the top cone (2) is pushed up to latched position, then push back the Stretch rollers (3) until held in position by locking catch (4).
- Place the Roll on the Bottom Cone and release the top latch (1).
- Pull the film between the rollers on the pre-stretcher in the direction of the arrow. (See fig. 5-2). (See also the sticker on the dispenser).
- Release the locking catch and allow the rollers to lie against the roll of film. Pull the film from the roll and tie it to the bale.

10.2 LOADING.

Pick a bale to wrap. Increase the opening between the rollers as much as possible using the Double Acting hydraulic lever in the tractor. Lower the machine almost to the ground. **Do not lower the machine all the way down to the ground.** Drive in under the bale. Close the rollers until they begin to lift the bale. Lift the machine and the bale approx. 10-15 cm, above the ground. Close the rollers completely. **The rollers must not under any circumstances hit the ground while closing.** The reason why the rollers shall not hit the ground is that this will increase the wearing on the gears and the bearings of the rollers and they may also pick up dirt that will contaminate the silage.

10.3 HEIGHT ADJUSTMENT OF TOWER / PRE-STRETCHER.

The pre-stretcher has to be adjusted so that the plastic film is always hitting the middle of the bale.



10.4 **START.**

The plastic film end has to be locked in the Cutter/Film holder or tied to the bale before starting the wrapping.

Operate the tractors single acting hydraulic lever to start the arm turning. Remember the **Reset** button on the control unit must be pressed when the control unit is switched on first to allow the wrap arm to turn. The cutter will automatically open and close on the second turn of the arm, this releases its hold on the plastic.

The arm will automatically go into slow speed and the cutter will open on the last turn of the arm (as set on the control unit ,See section 3.1 and 10.6). The wrap arm should be stopped by putting the tractors hydraulic lever back to centre when the arm passes the cutter. The cutter will automatically close.

10.5 **OVERLAP.**

Ensure that the overlap is correct. If not, see chapter 9.

10.6 **HOW MANY LAYERS OF PLASTIC FILM?**

When the bale is completely covered with film, read the counter that displays the number of revolutions done by the wrapping arm. This number has to be multiplied by 2 or 3, depending on how many layers of film you want to have.

* **4 layers - multiply by 2.**

* **6 layers - multiply by 3.**

As long as you wrap bales with the same diameter, you can stop at the same number every time.

See section 3.1 for setting the control unit to required number of turns.

10.7 **STOP.**

See section 10.4 above.

The control unit allows you to deviate from its semi automatic settings as follows:

If you wish to put on some extra layers of plastic on a bale hold down the - button (on extreme left of control unit See page 17) on the last revolution of the wrap arm, by doing this the arm will not go into slow and open the cutter.

If you wish to put on less layers of plastic or have gone past the set number as described above, you should press the + button (on the extreme right of the control unit) , this will put the arm into slow speed and open the cutter, then stop the arm as it goes by the cutter.

Press the Reset button twice to reset the wrap count to zero.

10.8 **STORAGE PLACE.**

At the storage place the bales should be placed systematically. Start at the right-hand side, and stack to the left. The machine is lowered, but not all the way down to the ground. **The rollers must not hit the ground.** Push the tractor hydraulic lever controlling "rollers out" and the bale will rest on the ground. Drive the tractor carefully away from the bale. Try to avoid touching the bale with the rollers. The plastic film will now tear off by the perforation at the cutter. Place the next bale to the left of the first one so that the loose film end on the last bale will be locked. Then you do not have to leave the tractor cab to fasten the loose film end. To be sure we recommend that you check that the film ends are securely fastened, and eventually fasten them a little bit better when you have stacked the bales.

If the machine is front mounted, the bales can be staked upon each other. (See more in chapter 3.0).



11.0 PERIODIC MAINTENANCE.

11.1 BEARINGS.

All ball-bearings are packed with grease, and do not need any more maintenance.

11.2 PRE-STRETCHER.

If the machine is in daily use, the Gears under the plastic cover on the dispenser should be greased when needed.

11.3 CUTTER / FILM HOLDER.

The cutter / film holder is pre-adjusted from the factory and does not need further adjustments. When replacing spare parts, it is necessary to adjust it. The springs for the U-shaped slot shall be adjusted so that they are almost completely squeezed together when the cutter-arm is all down.

11.4 CLEANING.

The machine should be cleaned and oiled regularly and at the end of the wrapping season.

NOTE !

When using high pressure washing apparatus, care must be taken with the electrical installation.

Also make sure that water is not sprayed directly into the bearings, etc..

Keep the control box protected from rain and water. If necessary use compressed air to dry electrical components.

11.5 HYDRAULIC CYLINDERS.

Make sure that all hydraulic cylinders are closed when storing the machine.

11.6 QUICK COUPLERS.

Ensure that the quick couplers are kept clean and apply the dust caps after use.

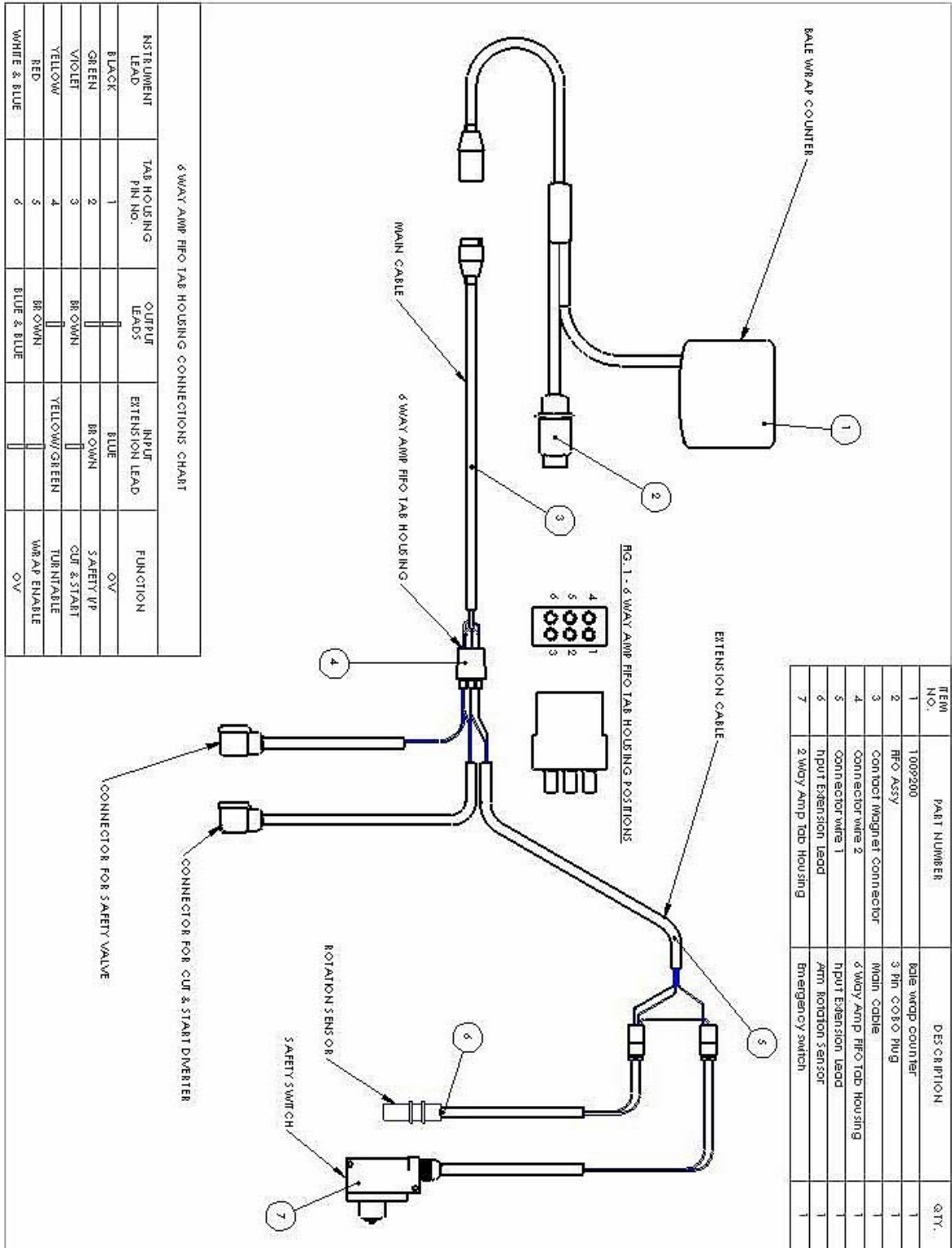
11.7 STORAGE.

The machine should be parked on a dry place during the closed season.

11.8 OIL FILTER.

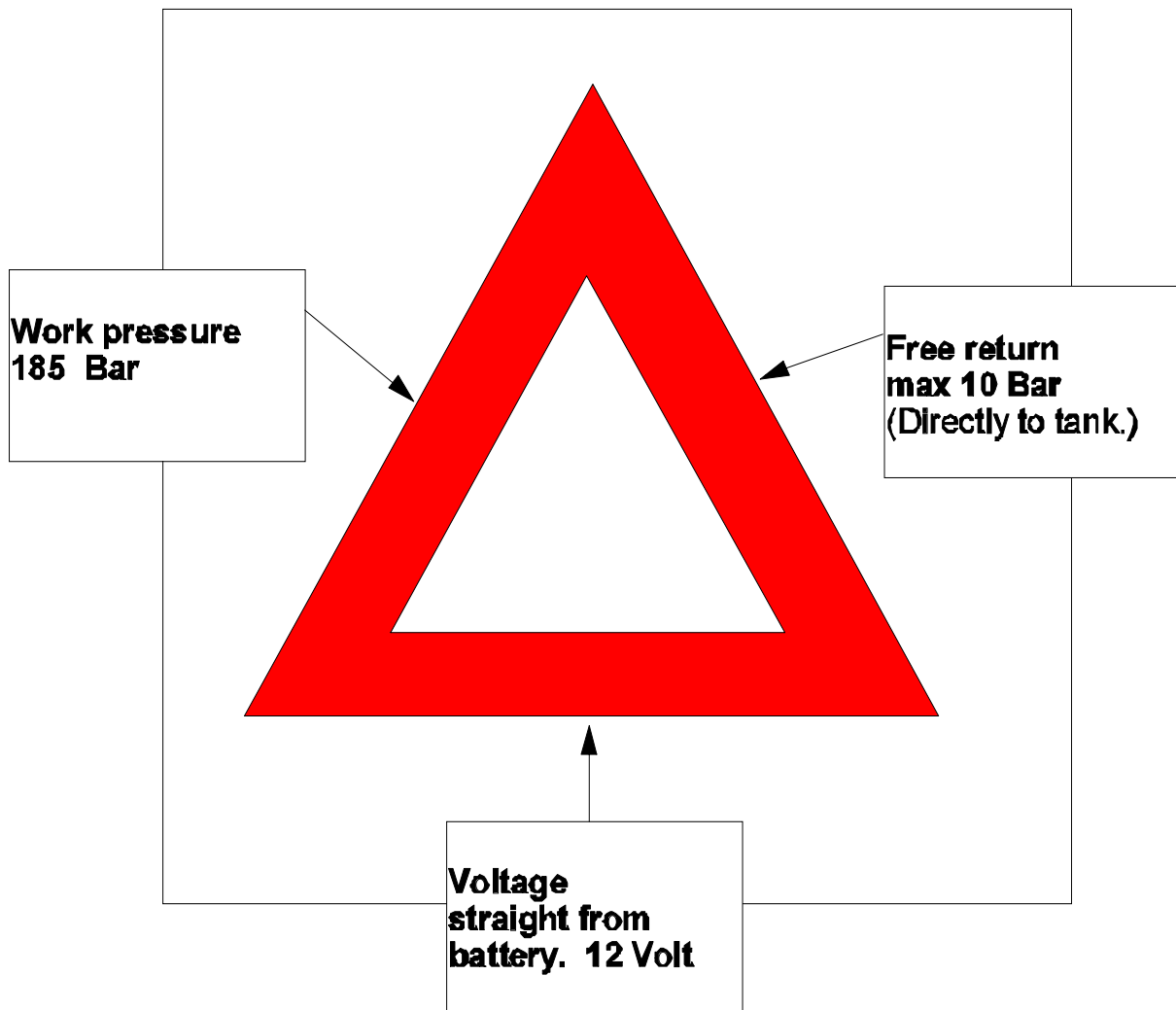
There is no oil filter on the 1300S machine, it is therefore very important that the tractors oil filters are changed as per manufacturers instructions to ensure that contamination does not enter the wrappers hydraulic system.

12.0 ELECTRIC CIRCUIT DIAGRAM 1300S

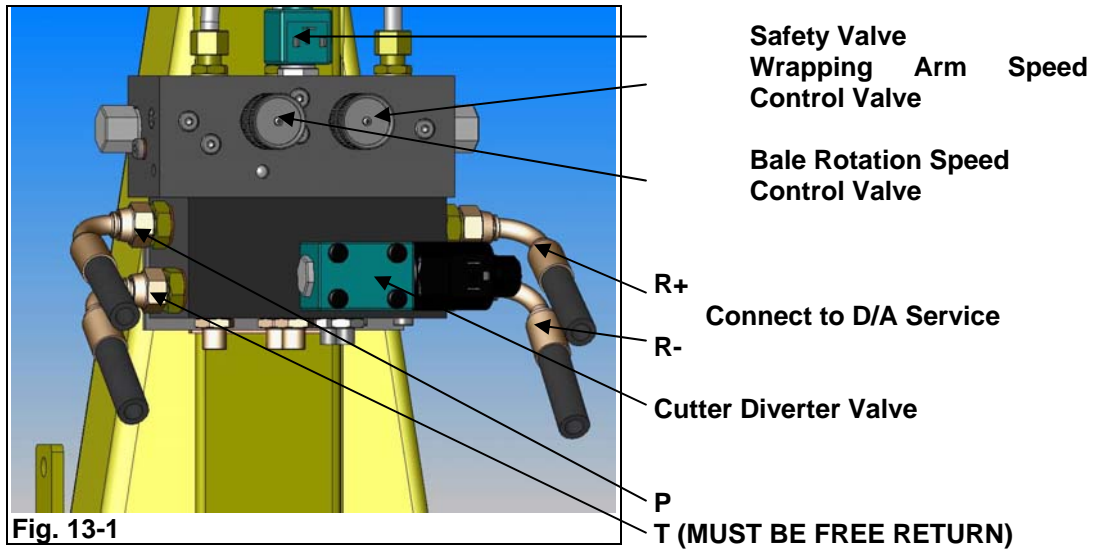


There are 3 basics which must **ALWAYS** be followed if the machine is to function correctly

NOTE !



13.0 DESCRIPTION OF HYDRAULICS.



13.1 "OPEN / CLOSED CENTER" HYDRAULIC.

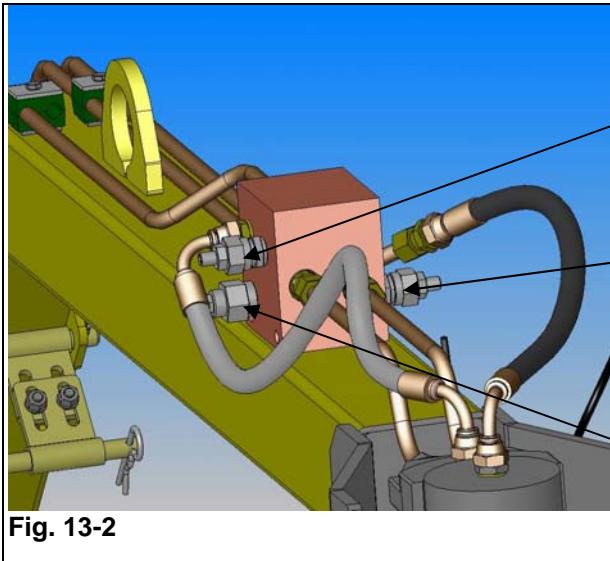
The 1300 S machine uses the tractors own remote valves to operate the functions on the machine so no alteration is required to the machine to operate with 'open or closed ' hydraulic systems.
For the 1300 SM a special plug must be fitted to the valve to operate efficiently. See parts list.

13.2 THE CUTTER.

The film cutter is opened by hydraulic pressure from the tractor and is closed with oil pressure from a hydraulic accumulator.

To open the cutter the oil supply that normally turns the wrapping arm is diverted by an electric diverter valve through a restrictor and opens a line to the cutter. This puts the arm into slow speed and generates sufficient pressure to override the accumulator and so the cutter opens. The accumulator closes the cutter when the tractor spool valve is put back into the neutral position. This is why the return hose from this service must be connected to a free return to tank, it must be possible for oil to return even the tractor valve is in the neutral position.

- 13.3** The hydraulic system depends on the pressure relief valve of the tractor for over pressure protection. The machine should therefore not be connected to a tractor with a relief valve setting exceeding 200 Bar.



S4 (VMP) Limits wraparm torque.

S3 (VMT) Ensures gradual stop of wraparm.

S1 (VBS) Ensures smooth running of wraparm in hilly conditions.

Fig. 13-2

13.4 WRAPPING ARM VALVE BLOCK.

The wrapping arm valve block is attached to the wrapping arm motor, and includes 4 valves.

When the wrapping arm starts, the oil pressure also goes to the brake so it is released. But we want a little delay here to prevent a too hard stop when the brake goes on. This is obtained by the mounting of a nozzle inside the fitting to the brake.

a) Non return valve.

It shall prevent the oil going back to the control valve for wrapping arm speed. It is placed inside the block, and can only be reached by removing the whole block from the motor.

b) Safety valve on the plus side. (S3, fig.13-2).

This valve shall provide a gradual stop of the wrapping arm and prevent accumulation of pressure on the motor's outlet side when the arm stops. The valve lets the oil flow from the outlet side of the motor to the input side.

c) Safety valve on the minus side. (S4, fig.13-2).

This valve limits the max. torque of the wrapping arm. The valve lets the additional oil over to the motors' outlet side. It is adjusted so that the pull force on the far end of the arm is approx. 35 KP.

d) Holding valve. (S 1, fig. 13-2)

This valve regulates the oil flow on the outlet side to be able to hold a constant input pressure to the wrapping arm motor. This makes the motor go smooth, and the brake is not activated even if the wrapping arm rotates easy "downwards". (If the machine is in an oblique position while wrapping).

IMPORTANT: All these valves have been carefully set in the factory. Incorrect adjustment of these may cause damage to the machine. Always ensure that trained personnel only adjust the settings of these valves.



14.0 CHECK POINTS BEFORE TROUBLE SHOOTING.

In this chapter we have some general check points that have to be examined first if something is wrong with the machine. In chapter 17.0 we have a more detailed trouble shooting.

There are three basic assumptions that have to be fulfilled if the machine shall function properly:

1. The oil pressure from tractor should be 180 bar.
2. The return flow of oil (See 14.2 below)
3. Enough electric power to all functions.
4. Remember that the RESET button on the control unit must be pressed when the control unit is switched on to allow the wrap arm to move (the control unit monitor should show an arrow on the left side)

14.1 OIL PRESSURE.

In order to check that the oil pressure into the machine is high enough, a gauge may be applied to the oil pressure hose, for example on the quick coupler.

If the pressure is less than 180 bar, there will be less power for the functions. The first place you trace this is at the ROLLERS OUT / IN.

OIL AMOUNT.

The oil amount that the tractor delivers must be **minimum 15 liters/minute**, but it is recommended that it is 25 liters/minute. (Max. allowed oil amount is 40 liters/minute).

REMEMBER! Large oil amount = Valves get hot. (Small oil tank = insufficient cooling).

14.2 RETURN PRESSURE.

The 1300S machine **must have a "free return"** directly to tank on the arm rotation service.

The return pressure on the second service should be **less than 10 Bar**.

14.3 ELECTRIC POWER.

It is important to check that all functions receive enough electric power.

If not, some, or all functions may fail .

Is the battery voltage high enough?

If the voltage falls below 9 volts the valves will not be able to open.

Are the cables correctly connected to the battery?

Follow directions in chapter 4.4

Is the connection between battery cable and control unit OK?

Clean off the poles and check the plug .

Is the connection between the control unit and machine OK?

Change contacts if any doubt about the condition.

Is the fuse in the 'Cobo ' plug (or on the battery cable if that is being used) OK?

Is the switch on the back of the control unit switched on?

PLEASE CONTACT YOUR DEALER IF YOU ARE IN DOUBT ABOUT ANYTHING.

(Remember always to give your dealer the serial number and production year of your machine when contacting dealer and when ordering spare parts).

15.0 PROCEDURE OF TROUBLE SHOOTING.

15.1 SOLENOID VALVES.

When checking if the Solenoid valves are receiving electric power, you do this in the following way:

1. Unscrew the nut that holds the solenoid.
2. The solenoid is easy to move without electric power.
3. Push the current function on the control unit (See * below). If the solenoid gets power, it will be difficult to move, it "sticks". This is the best and easiest way to check if the solenoid valve is receiving electric power. Another way is to hold a screwdriver up to the magnet. If it "sticks", the solenoid is receiving electric power.

* There are two solenoid valve on the 1300S machine.

The safety valve (See Fig 13-1) is located on top of the adjuster block on the front of the machine. It must be energized for the wrap arm to turn. When the reset button is pressed on the control unit an arrow appears on the left hand side of the monitor screen, the safety valve should now be energized, if the reset button is pressed again the safety valve is deenergised. If the safety arm is tripped the reset button must be pressed to restart the wrap arm.

The cutter diverter valve (See Fig 13-1) located on the inlet block on the front of the machine. This puts the wrap arm into slow speed and opens the cutter, it is automatically energized during the wrapping by the control unit. It can be manually energized by pressing the + button on the far right of the control unit.

If the electric supply is in order and this function fails, the reason can be dirt that tightens or prevents the sliding shaft (spool) from moving .

Try to maneuver the function manually, by pressing the point of a screwdriver into the end of the valve housing.

The power supply to the valve can also be measured with a voltmeter, but then the contact must be connected to the solenoid, so it is using power.

To have reliable functions, the voltage should not be lower than 11,5 volts, even if the solenoid valve usually works with a little lower voltage.



Take care so that the machines moving parts, do not cause damage to persons or objects.

16.0 TROUBLE SHOOTING.

16.1 THE MACHINE DOES NOT FUNCTION.

- a) Even if the gauge shows enough pressure and there is no reaction in the machine. The reason could be that one, (or both), of the quick-couplers does not open for the oil.

Change quick couplers.

Hydraulic lock. This occurs if you try to send oil in the opposite direction against the non-return valve. This results in pressurized oil between the non-return valve and the quick coupling and prevents connection of the quick coupling. The only way to discharge the pressure is to open the quick coupling using two 27 mm spanners.

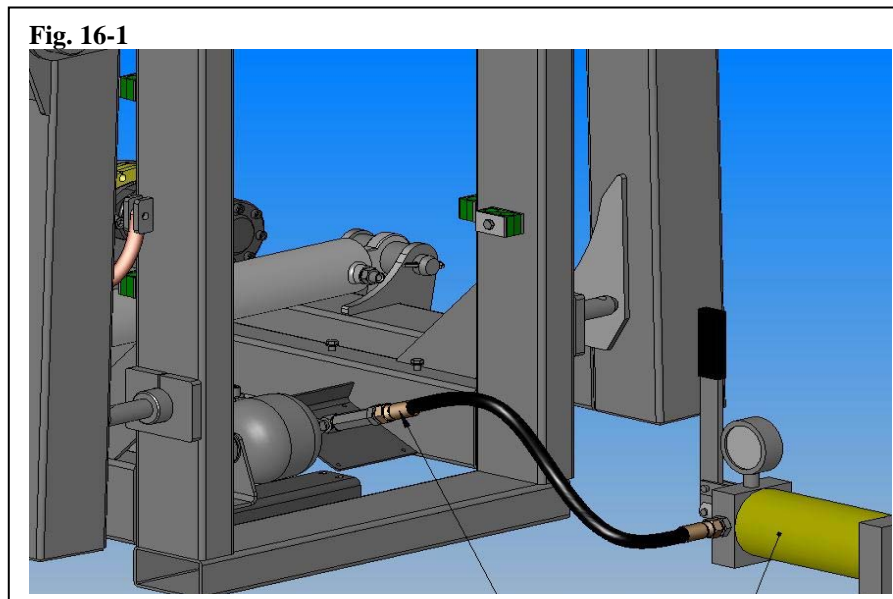
- b) The counter pressure could be too high.
(See chapter 14).

(Disturbances of this type are most likely in the first days that the machine is in use).

16.3 THE CUTTER WILL NOT CLOSE

The cutter is closed with a hydraulic accumulator, the oil return through the free return connection to the tractor.

- a) Check the return coupling to ensure that it is not causing a restriction.
- b) Check that the cutter diverter valve is returning to its neutral position
- c) Check the oil pressure in the accumulator, it should be set to 60 Bar. See Fig 16.1 for setting procedure.



6.4 THE WRAPPING ARM WILL NOT ROTATE.

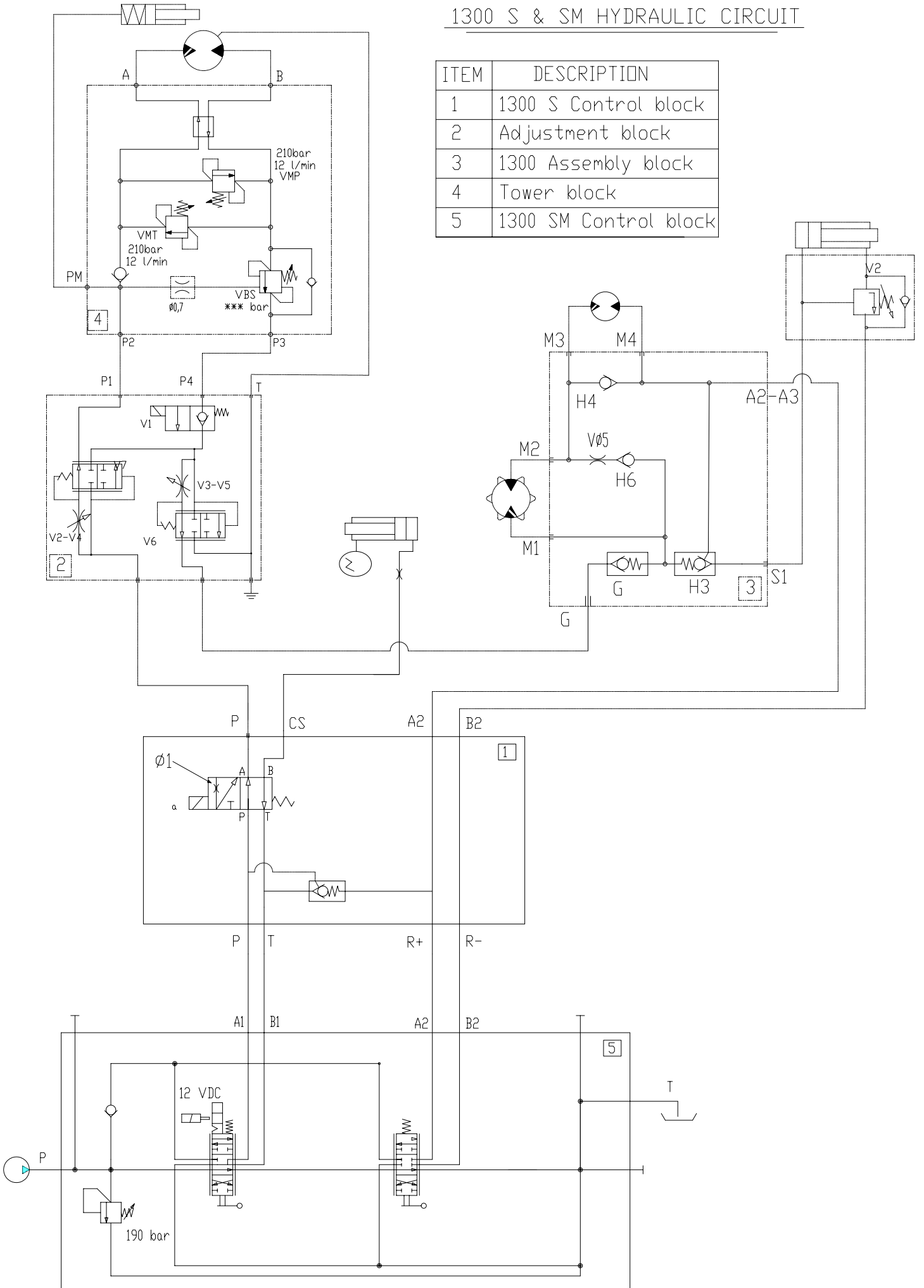
- a) The bolt that secures the wrapping arm during transport has to be removed so that the wrapping arm can move freely.
- b) Remember that the Reset button on the controller must be pressed to start (See section 10.4)
- c) The safety valve (Fig 13-1) must be energized for the arm to rotate, if there is no power check the safety switch on the tower, Reset must be pressed after safety arm is tripped.
- d) Check the valves in the tower block, See section 13-4
- e) Check if the hydraulic motor is working
Ask your dealer for advice BEFORE you make the problems bigger and repairing more difficult
- f) Check the speed control valve on the adjuster block. Fig 13-1.

16.5 THE ROLLER WILL NOT ADJUST.

- a) Check Hydraulic connections to tractor, See section 4-7.
- b) Adjust V1 for rollers in and V2 for rollers out, they overcentre valves located in the assembly block that hold roller arm ram in a fixed position. Take note of original setting when making adjustments so they can be put back if problem is not solved.

1300 S & SM HYDRAULIC CIRCUIT

ITEM	DESCRIPTION
1	1300 S Control block
2	Adjustment block
3	1300 Assembly block
4	Tower block
5	1300 SM Control block





18.0 Declaration of conformity

EC DECLARATION OF CONFORMITY

ACCORDING To DIRECTIVES 89/392/336 /EEC AS AMENDED

Manufacturer:

**TANCO ENGINEERING Co LTD
BAGENALSTOWN
CO CARLOW
IRELAND**

CERTIFIES THAT THE FOLLOWING PRODUCT:

TANCO AUTOWRAP 1300

SERIAL NO:

To which this declaration relates, corresponds to the essential requirements of the Directive 89/392/336/EEC as amended.

To conform to these essential health and safety requirements, the provisions of the following harmonized standards were particularly considered:

EN 292-1,2, EN 294, EN 1152, prEN 703, prEN 811, prENI553, prEN 982.

DATE: 09.06.2004

SIGNATURE:

Andrew Deasy

Andrew Deasy

TECHNICAL MANAGER