

# **RBX341 Round Baler Silage Pack**

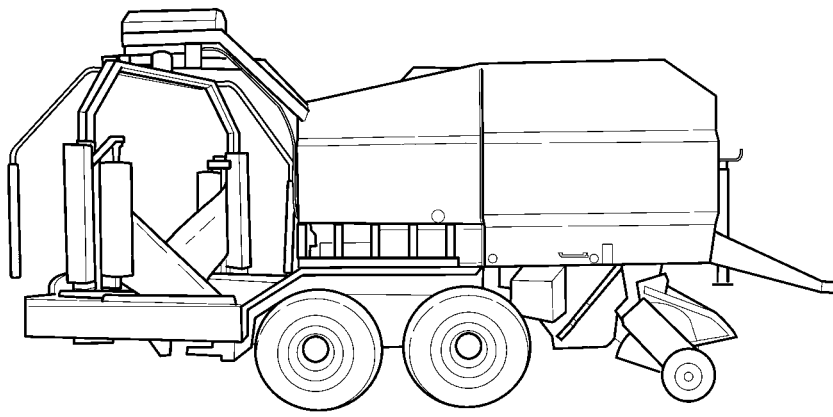
## **Repair Manual**

6-71150EN





## REPAIR MANUAL



### RBX341 Silage Pack

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## INTRODUCTION

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## INTRODUCTION

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## Foreword ( - A.10.A.40)

RBX341 Silage Pack

### How to use this manual

The information in this manual has been structured using the Integrated Coding Environment (ICE). Ice is the new way in which technical information is created, stored and retrieved in the new Technical Information Database.

ICE coding classifies each repair operation three ways

1. Location: the function or component on the machine to which the information is related e.g. Hydraulic pump
2. Information type: the type of information describing the repair operation e.g. Remove
3. Product: The machine that the repair operation is created for e.g. Big Balers

### Section contents

Your manual is first divided in sections. Sections are classified according to the main functions of the product. Each Section has a Contents page listed in numerical order and Index page listed in Alphabetical order.

#### Big Baler Section Contents

- DISTRIBUTION SYSTEMS (**A**) that interact with most of the functions of the product. it contains the central parts of the hydraulic, electrical, electronic, pneumatic and lubrication systems.
- POWER PRODUCTION (**B**) all of the functions related to the production of power to operate the vehicle PTO drive line and related parts.
- POWER TRAIN (**C**) all of the functions related to the transfer of power to operate the vehicle through a gearbox.
- TRAVELLING (**D**) this encompasses all parts related to the parts when the vehicle moves across ground, wheels, axles and brakes.
- BODY AND STRUCTURE (**E**) and protective shields
- CROP PROCESSING (**K**) encompasses all parts related to crop handling from pick up to bale ejecting.

### Chapter contents

The Section is then divided in Chapters. Chapters are classified according to the specific function of the systems and components. Each Chapter has a contents page listed in numerical order and index page listed in alphabetical order.

An example of a Chapter and Contents, is the component e.g. LUBRICATION SYSTEM Greasing, where the system is sub divided and described through

1. TECHNICAL DATA, information describing specifications or characteristics of any function or system of the machine.
2. FUNCTIONAL DATA, information describing design and functional behavior of any function or system (How it works)
3. SERVICE, information describing the maintenance and repair of the machine.
4. DIAGNOSTIC, information related to systems, troubleshooting and errors.

An example of the ICE Coding reference could look like:

#### Pump - Overhaul (A.60.B.20 - F.10.A.40)

- A = SECTION
- 60 = CHAPTER
- B.20 = COMPONENT
- F = SERVICE
- 10 = BASIC
- A.40 = OVERHAUL

## **Page reference**

Printed references found at the base of each page then equate to

- Publication number
- Revision date of the publication
- Publication date
- Chapter reference
- Page reference

## Foreword ( - A.10.A.40)

RBX341 Silage Pack

**IMPORTANT:** *This manual explains the overhaul of the wrapper components only from Serial number: 4668> . Refer to the following Round Baler Repair Manual for overhaul of the baler components.*

RBX341 Round Baler 6-71140.

## General specification ( - A.92.A.10)

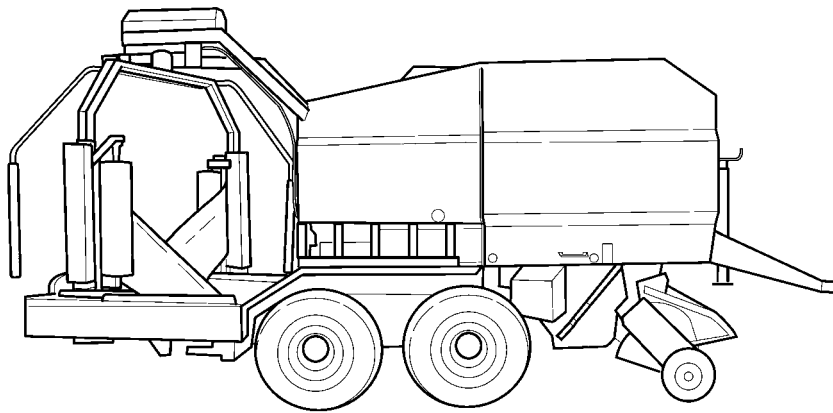
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BALER WRAPPER	SPECIFICATIONS
<b>TECHNICAL DATA</b>	
Total length	<b>6.28 m 20.6 ft</b>
Total width (standard tyres)	<b>2.79 m 9.2 ft</b>
Total width (optional tyres)	<b>2.99 m 9.8 ft</b>
Total height	<b>2.83 m 9.3 ft</b>
Wheel spacing (standard)	<b>2.35 m 7.7 ft</b>
Wheel spacing (optional tyres)	<b>2.45 m 8 ft</b>
<b>WEIGHT</b>	
Total weight (less bale, net and film). Standard tyres, hydraulic brakes.	<b>4580 kg 10,076 lb</b>
<b>TRACTOR REQUIREMENTS</b>	
Minimum power	<b>67 kW 90 Hp</b>
Maximum power	<b>82 kW 110 Hp</b>
Maximum road speed	<b>40 km/h 25 mph</b>
<b>Hydraulic oil flow requirements (closed centre)</b>	
Oil flow from tractor required	Closed centre with continuous feed
Oil flow: minimum	<b>20 L/min 5 US gal</b>
Oil flow: maximum	<b>30 L/min 8 US gal</b>
Pressure: minimum	<b>150 bar 2175 psi</b>
Pressure: maximum	<b>210 bar 3045 psi</b>
<b>Hydraulic oil flow requirements (open centre)</b>	
Oil flow from tractor if open centre	Flow not to exceed <b>50 L/min 13 US gal</b> or fit an Optional divert valve with continuous feed
<b>HITCH</b>	
Type	Adjustable, High/Low
Low	<b>450-550 mm 17-21 in</b>
High	<b>750-1000 mm 29.5-39.5 in</b>



# REPAIR MANUAL

## DISTRIBUTION SYSTEMS



**RBX341 Silage Pack**

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## **DISTRIBUTION SYSTEMS - A**

### **SECONDARY HYDRAULIC POWER SYSTEM - 12.A**

**RBX341 Silage Pack**

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## SECONDARY HYDRAULIC POWER SYSTEM - General specification (A.12.A - D.40.A.10)

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### SPECIFICATIONS

Tractor requirements	
Minimum kw/hp	67/90
Recommended kw/hp	82/110
Hydraulic oil flow requirements (closed centre)	
Oil flow from tractor required	Closed centre with continuous feed
Oil flow: minimum	<b>20 L/min 4.4 US gal</b>
Oil flow: maximum	<b>30 L/min 6.6 US gal</b>
Pressure: minimum	<b>150 bar 2175 psi</b>
Pressure: maximum	<b>210 bar 3045 psi</b>
Valve (closed centre)	1 single acting valve with free return
Hydraulic oil flow requirements (open centre)	
Oil flow from tractor if open centre must not exceed <b>50 L/min 13 US gpm</b> or heat damage may result	Optional divert valve with continuous feed
Oil filter - Disposable	10 micron
Tractor oil flow indicator mounted on the right hand side at the front of the wrapper	Colour indicator shows when flow is correct
Electro magnetic valves (valve block, mounted at the right hand side to the rear of the wrapper)	Manual override possibility, refer to the Operators manual for more information

## Relief valve - Service limits (A.12.A.16 - D.20.A.20)

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**NOTE:** If a valve is suspect and requires testing it is recommended that this is carried out by an approved hydraulics specialist using suitable test equipment. The valves should be tested to ensure the original ratings are still met. Any reading outside of the rating will require a new valve being fitted.

**IMPORTANT:** These cartridge valves are loctite sealed and can not be disassembled, however SV4, 5, 6, and 7, can be operated outside the valve block to see the spool move. If in any doubt replace any suspect valve with a new

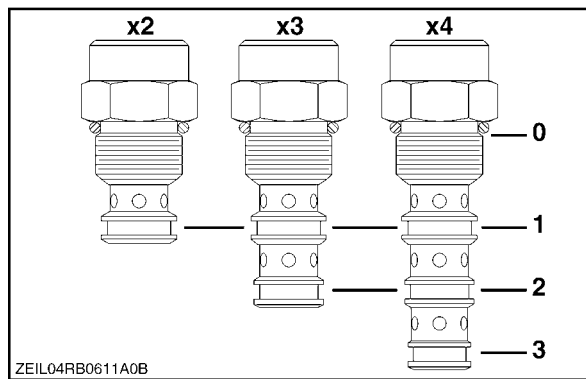
The following table shows the rating of each valve which must be maintained to ensure correct operation of the wrapper.

Valve	Maximum operating pressure and flow	Original ratings
CV1 - Return oil check valve	240 bar 3500 psi 34.1 L/min 9 US gal	Internal leakage: 0.10 cc/min (2 drops/min)
DC1 - Knife pressure	240 bar 3500 psi 34.1 L/min 9 US gal	Check spring bias: 1.7 bar (25 PSI), optional 9.3 bar (135 PSI)
EC1 - Pressure compensator	240 bar 3500 psi 34.1 L/min 9 US gal	Maximum regulated flow: 34.1 l/min (9 gals/min) with 10.3 bar (150 PSI) Compensator spring: 26 l/min (7.0 gals/min) with 5.5 bar (80 PSI) compensator spring.
FC1 - System pressure balance valve	240 bar 3500 psi	Check and restrictor valve only
FR1 - System pressure divert valve	240 bar 3500 psi 34.1 L/min 9 US gal	Flow settings: 0.4 l/min (0.1gal/min) min, 7.5 l/min (2.0 gals/min)
PC1 - Proportional control valve	240 bar 3500 psi	Internal leakage: 0.25cc/min (5 drops/min) max
PV1 - Proportional control valve	207 bar 3000 psi	Internal leakage: 197cc/min (12cu.in./min) fully closed at operating pressure
RV1 - Table pressure	221 bar 3200 psi	Internal leakage: 0.25cc/min (5 drops/min) max to 85% of normal setting
SV1 - Tailgate pressure	207 bar 3000 psi	Internal leakage: 0.25cc/min (5 drops/min)
SV2 - Satellite motor disconnect	207 bar 3000 psi	Internal leakage: 0.25cc/min (5 drops/min)
SV3 - System pressure dump valve	207 bar 3000 psi	Internal leakage: 0.25cc/min (5 drops/min)
SV4 - Knife cylinders	240 bar 3500 psi 34.1 L/min 9 US gal	Internal leakage:164cc/min (10cu.in/min)
SV5 - Wrapping table dropping	207 bar 3000 psi 11.1 L/min 3 US gal	Internal leakage:164cc/min (10cu.in/min)
SV6 - Knife cylinders	207 bar 3000 psi 11.1 L/min 3 US gal	Internal leakage:164cc/min (10cu.in/min)
SV7 - Wrapping table dropping	207 bar 3000 psi 11.1 L/min 3 US gal	Internal leakage:164cc/min (10cu.in/min)

### VALVES AND SEALS

The valves in the hydraulic block have specific functions as previously described. Depending what valve is fitted determines the seal, o ring back up, and size required to maintain their efficiency.NOTE: The valves shown opposite is for seal reference only and the body shape above the top O ring will vary depending upon application on the machine. In order of left to right they are identified as x2 way, x3 way, or x4 way valves.

DISTRIBUTION SYSTEMS - SECONDARY HYDRAULIC POWER SYSTEM

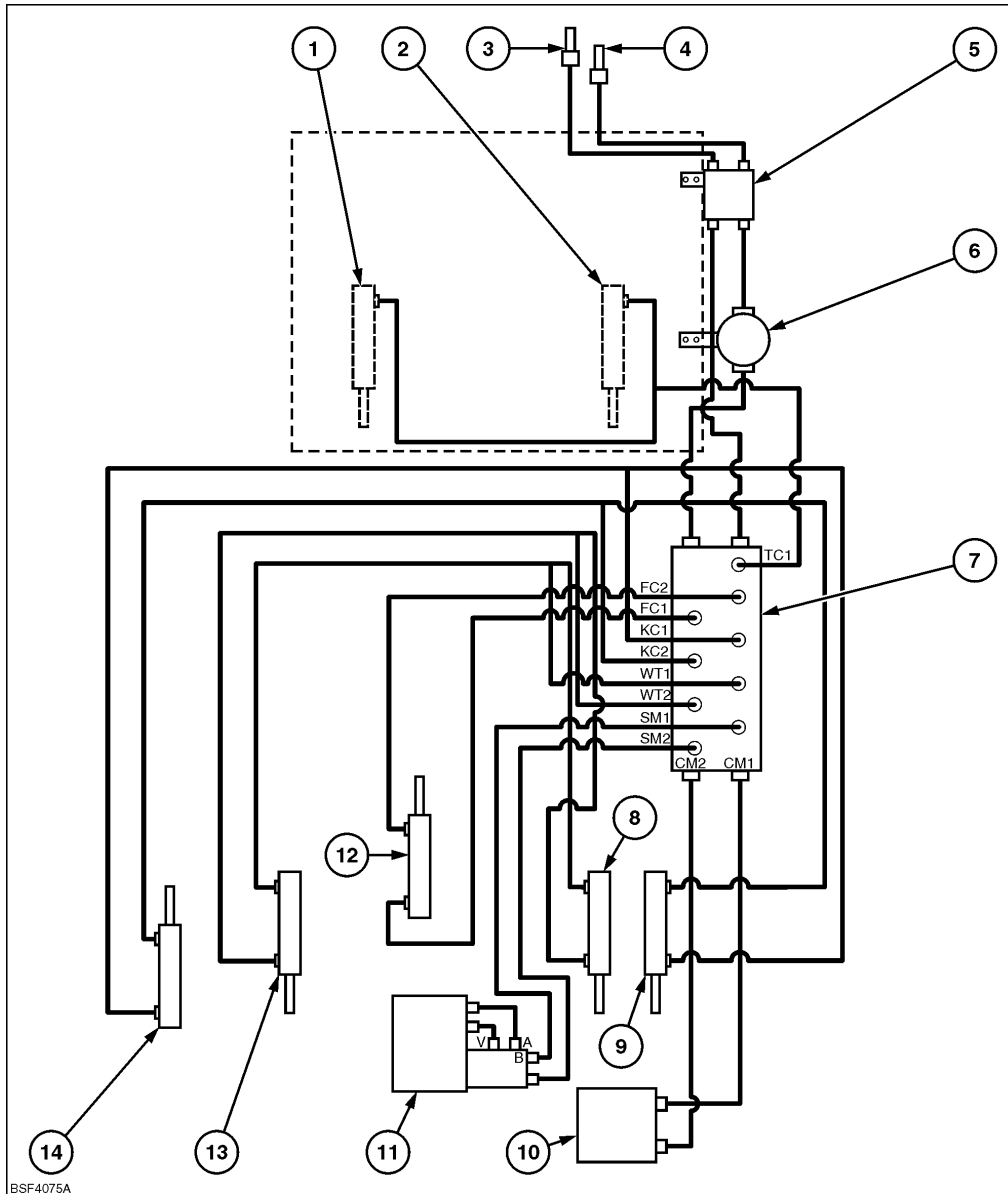


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Valve	Top O ring	Seal 1	Seal 2	Seal 3
CV1 - 2 way	-910	-014	-	-
DC1 - 4 way	-908	-014	-013	-012
EC1 - 4 way	-910	-016	-015	-014
FC1 - 2 way	-908	-012	-	-
FR1 - 2 way	-908	-012	-	-
PC1 - 3 way	-910	-015	-014	-
PV1 - 3 way	-910	-015	-014	-
RV1 - 2 way	-908	-012	-	-
SV1 - 2 way	-908	-012	-	-
SV2 - 2 way	-908	-012	-	-
SV3 - 2 way	-908	-012	-	-
SV4 - 4 way	-908	-014	-013	-012
SV5 - 4 way	-908	-014	-013	-012
SV6 - 4 way	-908	-014	-013	-012
SV7 - 4 way	-908	-014	-013	-012

## SECONDARY HYDRAULIC POWER SYSTEM - Dynamic description (A.12.A - C.30.A.10)

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BSF4075A 1

1. Tail gate cylinder - left hand
2. Tail gate cylinder - right hand
3. Oil return line to tractor
4. Pressure line in
5. Diverter valve
6. Oil filter
7. Hydraulic valve block and ports
8. Table cylinder right hand
9. Knife cylinder right hand
10. Table chain motor
11. Satellite motor
12. Bale lift fork
13. Table cylinder left hand
14. Knife cylinder left hand

The following diagram shows the hydraulic circuit for the wrapper.



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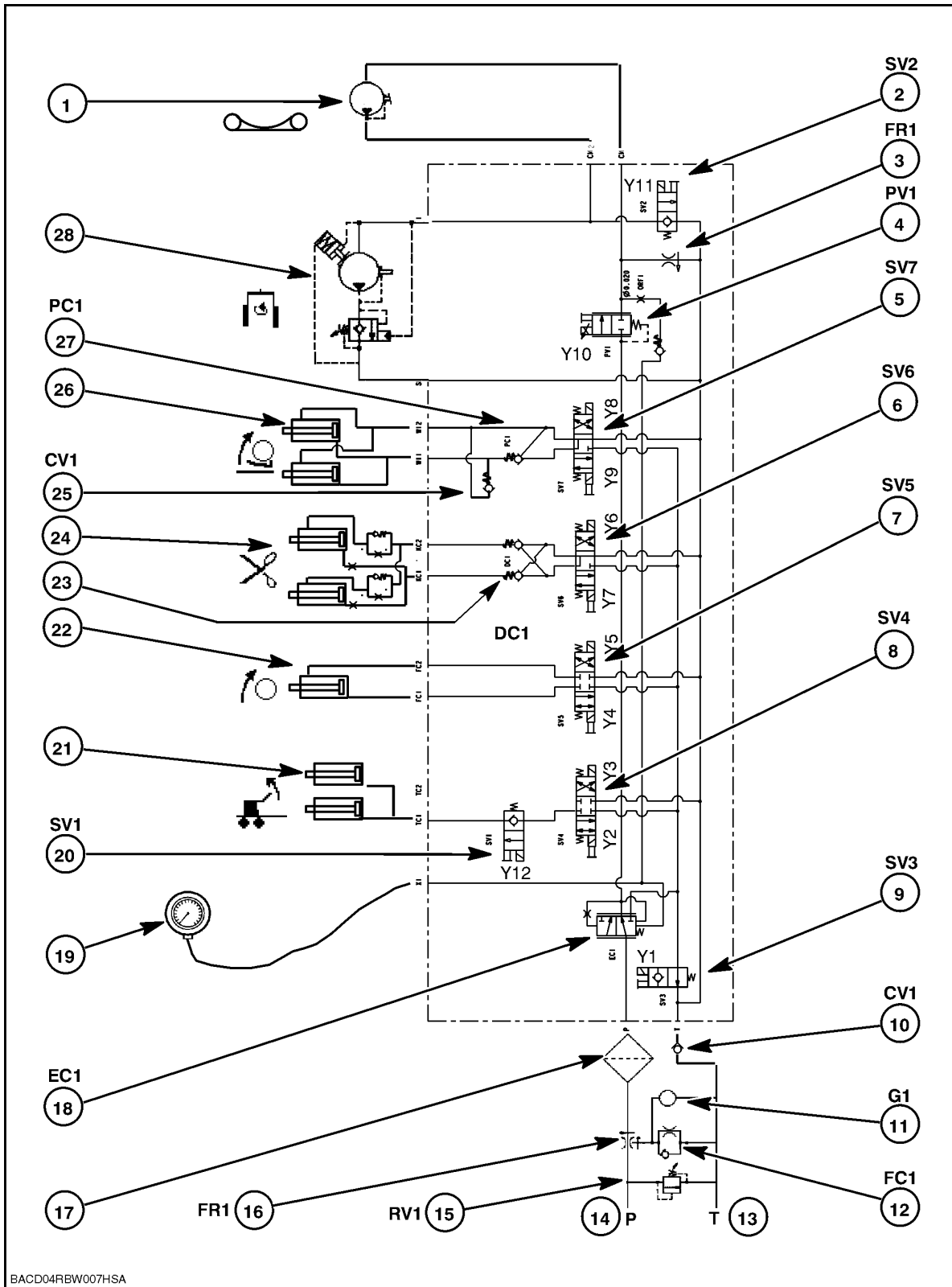
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## DISTRIBUTION SYSTEMS - SECONDARY HYDRAULIC POWER SYSTEM

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Itemised below are the components and description of components that will be found in the hydraulics that will be found through the following diagrams.

1. Wrapping table chain motor
2. Satellite disconnect valve SV2 with manual override facility: Knob pushed in and twisted clockwise **180 °** = normal operation Knob twisted anti-clockwise and released = manual override
3. System pressure balance valve FR1
4. Proportional control valve PV1 with leak path to prevent overpressure to motors across PV1, with manual override facility: Knob twisted fully anti-clockwise = normal operation Knob twisted fully clockwise = manual operation.  
IMPORTANT: When operating PV1 manually the speed of the table and satellite will increase as the spool is twisted clockwise and will slow down and stop as the spool is twisted anti-clockwise to its stop
5. Wrapping table tilt valve SV7 (with spool push or pull manual override facility)
6. Knife cylinder extend retract valve SV6 (with spool push / pull manual override facility)
7. Transfer fork valve SV5 (with spool push / pull manual override facility)
8. Tailgate cylinder valve SV4 (with spool push / pull manual override facility)
9. System pressure vent/dump valve SV3 (with spool push manual override facility)
10. Check valve CV1
11. Oil flow indicator G1 (indicator just fills sight glass when oil flow is correct)
12. System pressure balance valve FC1
13. Return oil line to tank (requires zero back pressure)
14. Pressure oil line in from tractor which requires **20-30 L/min 5.2-7.9 US gpm** (set using the flow indicator on the flow divider item **(11)**)
15. Main pressure relief valve RV1
16. Fixed flow divider pressure balance valve FR1
17. Oil filter 10 micron
18. Pilot operated pressure compensator valve EC1
19. Pressure test port X1 (M12x1.5)
20. Prevents tailgate leakage SV1 with manual override facility: Knob pushed in and twisted clockwise **180 °** = normal operation Knob twisted anti-clockwise and released = manual override
21. Tailgate cylinders
22. Transfer bale fork cylinder
23. Knives oil pressure on, non return valve DC1
24. Knife cylinders
25. Check valve CV2
26. Table tilt cylinders
27. Table cylinder lock valve PC1



BACD04RBW007HSA 2

Satellite 100cc motor with hydraulic brake  
 The following schematics show the process of events during the wrapping functions and are in order of wrapper operation. Also shown are the oil flows only of the wrapper process as observed on the machine. The operation of the solenoids which control the hydraulic flows is controlled by the WCM through a CAN Network and this is not considered through these descriptions. **TABLE BACK OIL FLOW:** Oil flows from the tractor into the valve block to EC1 (18). This is a pilot operated pressure compensator valve and is designed to ensure priority flow is to the conveyor table and satellite motors upon demand. When the conveyor and satellite motors are not requiring oil, the spool in EC1 moves across and the oil flow is diverted through a parallel gallery to SV7 (5).  
 For the table back position solenoid Y9 of SV7 (5) is energised and extends the wrapping table cylinder for table back.

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