NEW HOLLAND
BW28
BW38
Bale Wagons

SERVICE
MANUAL



87693295

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BW28, BW38
REPAIR MANUAL
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The following pages are the collation of the contents pages from each section and chapter of the BW28, BW38 Repair manual. Complete Repair part # 87693295.

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the BW28, BW38 Bale Wagons.

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DISTRIBUTION SYSTEMS - A

BOOK 1 - 87693296

Primary Hydraulic Power System - 10

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GENERAL DESIGN

Integral Power Steering

TAS power steering gears are the latest design in the TRW Commercial Steering Division family of integral hydraulic power steering gears. Integral hydraulic power steering means that the gear contains a manual steering mechanism, a hydraulic control valve, and a hydraulic power cylinder, all in a single, compact package.

Rotary Control Valve

The rotary control valve combines simplicity of construction with desirable performance characteristics. The speed at which the driver can turn the steering wheel with power assist is dependent upon the pump flow (measured in gallons per minute or liters per minute) directed to a cylinder cavity. The control valve controls flow through the steering gear.

The pressure (measured in pounds per square inch, or bar) required for the gear to steer the vehicle is created by the power steering pump to overcome resistance at the steered wheels. The control valve senses these requirements and directs fluid to the appropriate cylinder cavity in the steering gear (and in the auxiliary cylinder if it is a dual steering system) at the proper flow rate and pressure.

Pressure Means Work, Flow Means Speed

The higher pressure a steering gear can withstand, the more work it can perform. The maximum operating pressure for all TAS gears is 2.175 psi (150 bar), maximum flow rate for all TAS gears is 8 gal/min (30.3 l/min).

The TAS series gears can steer a vehicle within its front-end weight rating through a turn at low speed and engine idle. As the driver turns the steering wheel faster or slower, more or less fluid will be required by the gear. TAS series vehicle front-end weight ratings are as follows: The recommended minimum flow at 1-1/2 steering wheel turns per second is as follows:

Gear	Front Axle Rating
TAS40	9,000 lb (4,100 kg)

The recommended minimum flow at 1-1/2 steering wheel turns per second is as follows;

Gear	Minimum Flow Rate
TAS40	2.2 gal/min (8.3 L/min)

If the steering gear valve is controlling an auxiliary cylinder, increased minimum flow is required (generally at least 75%) based on the size of the auxiliary cylinder and the vehicle's steering geometry.

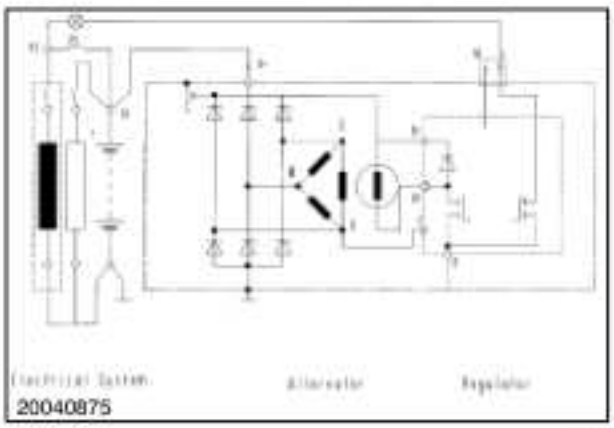
Maximum internal leakage for all TAS gears is 1 gal/min.

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TACHOMETER (E-14)

The tachometer uses AC voltage input from the "W" terminal on the alternator to calculate engine speed. A schematic of the alternator circuitry is shown.

Refer to Section A, Chapter 30 – "Charging System" for alternator operation.



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TACHOMETER/HOURMETER (E-14) DOES NOT WORK CORRECTLY.

STEP	PRETEST INSTRUCTIONS	TEST	RESULT	PROBABLE CAUSE AND CORRECTION
1	Key ON. Unplug connector X080 from rear of tachometer.	Check for voltage between pins 4 (power) and 2 (ground) of connector X080 at the rear of the tachometer.	No or low voltage. Battery voltage.	Check for proper calibration. If power is found at connector X080, problem is within the gauge. Replace. Check for open or broken circuit. Go next to step.
2	Key OFF.	Check for continuity between Pin 2 of connector X080 and a splice H.	No continuity. Continuity.	Open or poor connection in CD-446 BK. Repair. Go to next step.
3	Disconnect X153 from under the dash panel. Key OFF.	Check continuity of CD-493-BK between connector X153 pin 23 to splice H.	No continuity. Continuity.	Open circuit or poor connection in CD-493-BK. Repair. Go to next step.
4	Disconnect X153 from under the dash panel. Key OFF.	Check continuity of RC-493-BK between connector X153 pin 23 and ground point "H".	No continuity. Continuity.	Open circuit or poor connection in RC-493-BK. Check ground point "H" for proper connection. Repair. Go to next step.
5	Reconnect X153. Key OFF.	Check continuity of CD-182-YE between connector X153 pin 13 and pin 3 of tachometer.	No continuity. Continuity.	Open or poor connection in CD-182 YE. Repair. Go to next step.
6	Key OFF.	Check for continuity between connector X153 pin 13 and connector X010 pin 51.	No continuity. Continuity.	Open or poor connection in RC-182-YE. Repair. Go to next step.
7	Key OFF.	Check for continuity between connector X010 pin 51 and terminal W of the alternator.	No continuity. Continuity.	Open or poor connection in MH-182-YE connector X071. Repair. Tachometer defective. Replace.

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DIAGNOSTIC CHARTS

AIR CONDITIONING SYSTEM PERFORMANCE TEST DIAGNOSTIC CHART

A/C SYSTEM PERFORMANCE TEST AND DIAGNOSIS CHART

CONDITION	POSSIBLE CAUSE	REMEDY
Gauge Readings: Low Pressure - Low High Pressure - Low		
Evaporator air not cold	Low refrigerant charge	Perform leak tests and repair Evacuate system Charge system, retest system
Evaporator air warm	Extremely low refrigerant charge	Same as above
Evaporator air cool but not sufficiently cold Expansion valve inlet tube surface shows considerable condensation or frost	Expansion valve not permitting sufficient flow Stuck valve	Check expansion valve as follows: Set a maximum cooling Spray refrigerant on valve head or sensing bulb Low pressure gauge should then show vacuum reading Retest If expansion valve is defective as determined in Step 1, or if the valve inlet tube shows heavy condensation or frost, proceed as follows: Discharge system Replace expansion valve Evacuate system Charge system Retest

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