



# **REPAIR MANUAL**

# **NEW HOLLAND TS90 TS100 TS110**

## **Section 3 - Electrical System Supplement**



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**SECTION 3 - ELECTRICAL SYSTEM**

<b>SYMBOL</b>	<b>DRAWING LOCATION</b>	<b>DESCRIPTION</b>
S27	950	Low Range Switch
S28	970	1-4 Range Switch(16x16) / Hi-med Sw. (24x24)
S29	990	5-8 Range Switch
S30	2530	Raise Work Switch
S31	2610	Fender Switch Left
S32	2650	Fender Switch Right
S33	4600	Indicator Switch
S34	4460	Hazard Switch
S36	5860	Front Upper Lamp Switch
S37	5650	Front Lower Lamp Switch
S38	5380	Rear Lamp Switch
S39	6460	Front Wiper And Washer Switch
S40	6700	Rear Wiper And Washer Switch
S41	7400	Air Con High Low Pressure Switch
S42	7400	Air Con Low Pressure Cut Out Switch
S43	7530	Air Con Temp. Exchange Control Switch
S44	7270	Blower Speed Switch
S45	4150	Interior Light Door Switch
S46	4200	Interior Light Door Switch
S47	3870	40 Amp. Terminal And External 40 Amp. 4 Pin Power Switch
S48	3670	Beacon Switch
S49	3780	Remote Valve Switch
S50	760	Transmission Oil Pressure Switch
S51	950	1st / 2nd Switch
S52	990	3rd / 4th Switch
S53	250	Thermo Switch For Wax Motor
S57	610	Forward/Reverse Shuttle Lever

**(X) POWER SOCKETS**

Xi	3850	40 Amp. Screw Terminal
X2	4120	Accessory Socket
X3	3960	Implement Status Socket
X4	4970	Trailer Socket
X5	3890	Four Pin 40 Amp. Socket
X6	3670	Roof Beacon Socket LH
X7	3710	Roof Beacon Socket RH

**(Y) SOLENOID VALVES**

Y1	210	Fuel Shut Off Solenoid
Y2	280	Electric Fuel Pump
Y3	2880	Fwd Solenoid
Y4	2970	Differential Lock Solenoid
Y5	3500	PTO Solenoid
Y6	1370	Creeper Solenoid
Y7	1220	PWM Valve 1
Y8	1250	PWM Valve 2
Y9	1280	PWM Valve 3
Y10	1310	PWM Valve 4
Y11	1940	Raise Solenoid EDC Valve

TS SERIES Electroshift Transmission, (16x16 with Power Shuttle) W/Cab,

TS SERIES

TRANSMISSION SYSTEM  
Line 1200-1590

- |            |                                            |            |                   |
|------------|--------------------------------------------|------------|-------------------|
| <b>B18</b> | Clutch pedal potentiometer                 | <b>Y9</b>  | PWM Valve 3       |
| <b>B19</b> | Forward/reverse synchroniser potentiometer | <b>Y10</b> | PWM Valve 4       |
| <b>Y6</b>  | Creep solenoid                             | <b>Y18</b> | PWM Valve Forward |
| <b>Y7</b>  | PWM Valve 1                                | <b>Y19</b> | PWM Valve Reverse |
| <b>Y8</b>  | PWM Valve 2                                |            |                   |

WIRE COLOUR CODES

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Electroshift Transmission, (16x16 with Power Shuttle) W/Cab,**

**POWER TAKE OFF  
Line 3200-3590**

- F21** 5A, PTO fuse
- H1** PTO engaged lamp
- KV+V1** PTO Relay
- S18** PTO switch
- S19** Seat switch
- S20** 540/1000 PTO speed switch
- Y5** PTO Solenoid

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

TS SERIES

Electroshift Transmission, (16x16 with Power Shuttle) W/Cab,

WORKLAMPS  
Line 5200-5590

- F6 15A Rear fender worklamps fuse
- F7 20A Front and rear roof worklamps fuse
- H27 Left hand upper rear worklamp
- H28 Right hand upper rear worklamp
- H29 Left hand lower rear worklamp
- H30 Right hand lower rear worklamp
- KC Rear worklamp relay
- KE Lower rear worklamp relay
- S38 Rear worklamp switch

WIRE COLOUR CODES

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Electroshift Transmission, (16x16 with Power Shuttle) W/Cab,**

**AIR CONDITIONING AND CAB HEATING**

Line 7200-7590

- |            |                                     |            |                                   |
|------------|-------------------------------------|------------|-----------------------------------|
| <b>B14</b> | Temperature control potentiometer   | <b>R3</b>  | Blower speed resistor             |
| <b>E1</b>  | Air conditioning compressor clutch  | <b>R5</b>  | Speed resistor                    |
| <b>F16</b> | 25A, Air Con and heater blower fuse | <b>S41</b> | Air con, high/low pressure switch |
| <b>M6</b>  | Heater blower motor                 | <b>S42</b> | Low pressure cut out switch       |
|            |                                     | <b>S43</b> | Temperature control switch        |
|            |                                     | <b>S44</b> | Blower speed switch               |

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

TS SERIES

Electroshift Transmission, (16x16 with Power Shuttle) Less Cab,

TRANSMISSION SYSTEM

Line 1150-1410

- B18 Clutch pedal potentiometer
- B19 Forward/reverse synchroniser potentiometer
- Y6 Creeper solenoid
- Y7 PWM Valve 1
- Y8 PWM Valve 2
- Y9 PWM Valve 3
- Y10 PWM Valve 4
- Y18 PWM Valve Forward
- Y19 PWM Valve Reverse

WIRE COLOUR CODES

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Electroshift Transmission, (16x16 with Power Shuttle) Less Cab,**

**POWER TAKE OFF  
Line 3200-3590**

- |              |                  |            |                           |
|--------------|------------------|------------|---------------------------|
| <b>F21</b>   | 5A, PTO fuse     | <b>S18</b> | PTO switch                |
| <b>H1</b>    | PTO engaged lamp | <b>S19</b> | Seat switch               |
| <b>KV+V1</b> | PTO Relay        | <b>S20</b> | 540/1000 PTO speed switch |
|              |                  | <b>Y5</b>  | PTO Solenoid              |

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		



TS SERIES

Electroshift Transmission, (16x16 with Power Shuttle) Less Cab,

AIR CONDITIONING AND CAB HEATING

Line 6460-6860

WIRE COLOUR CODES										
	B	N	LN	S	R	Red	LG	Light Green	K	Pink
	Black	Brown	Light Brown	Slate	O	Orange	U	Blue	W	White
					Y	Yellow	TQ	Turquoise		
					G	Green	P	Purple		

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TS SERIES

Dual Command Transmission, (24x24) W/Cab,

TRANSMISSION SYSTEM  
Line 1200-1590

**B18** Clutch pedal potentiometer

**Y14** Dump solenoid

**Y15** Lo PWM valve

**Y16** Hi PWM valve

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Dual Command Transmission, (24x24) W/Cab,**

**POWER TAKE OFF  
Line 3200-3590**

- F21** 5A, PTO fuse
- H1** PTO engaged lamp
- KV+V1** PTO Relay
- S18** PTO switch
- S19** Seat switch
- S20** 540/1000 PTO speed switch
- Y5** PTO Solenoid

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

TS SERIES

Dual Command Transmission, (24x24) W/Cab,

WORKLAMPS  
Line 5200-5590

- F6 15A Rear fender worklamps fuse
- F7 20A Front and rear roof worklamps fuse
- H27 Left hand upper rear worklamp
- H28 Right hand upper rear worklamp
- H29 Left hand lower rear worklamp
- H30 Right hand lower rear worklamp
- KC Rear worklamp relay
- KE Lower rear worklamp relay
- S38 Rear worklamp switch

WIRE COLOUR CODES

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Dual Command Transmission, (24x24) W/Cab,**

**AIR CONDITIONING AND CAB HEATING**

Line 7200-7590

- |            |                                     |            |                                   |
|------------|-------------------------------------|------------|-----------------------------------|
| <b>B14</b> | Temperature control potentiometer   | <b>R3</b>  | Blower speed resistor             |
| <b>E1</b>  | Air conditioning compressor clutch  | <b>R5</b>  | Speed resistor                    |
| <b>F16</b> | 25A, Air Con and heater blower fuse | <b>S41</b> | Air con, high/low pressure switch |
| <b>M6</b>  | Heater blower motor                 | <b>S42</b> | Low pressure cut out switch       |
|            |                                     | <b>S43</b> | Temperature control switch        |
|            |                                     | <b>S44</b> | Blower speed switch               |

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

TS SERIES

Synchro Command Transmission, (12x12) W/Cab,

TRANSMISSION SYSTEM  
Line 1200-1590

WIRE COLOUR CODES										
	B	N	LN	S	R	Red	LG	Light Green	K	Pink
	Black	Brown	Light Brown	Slate	O	Orange	U	Blue	W	White
					Y	Yellow	TQ	Turquoise		
					G	Green	P	Purple		

**TS SERIES**

**Synchro Command Transmission, (12x12) W/Cab,**

**POWER TAKE OFF  
Line 3200-3590**

- |              |                  |            |                           |
|--------------|------------------|------------|---------------------------|
| <b>F21</b>   | 5A, PTO fuse     | <b>S18</b> | PTO switch                |
| <b>H1</b>    | PTO engaged lamp | <b>S19</b> | Seat switch               |
| <b>KV+V1</b> | PTO Relay        | <b>S20</b> | 540/1000 PTO speed switch |
|              |                  | <b>Y5</b>  | PTO Solenoid              |

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

TS SERIES

Synchro Command Transmission, (12x12) W/Cab,

WORKLAMPS  
Line 5200-5590

- F6 15A Rear fender worklamps fuse
- F7 20A Front and rear roof worklamps fuse
- H27 Left hand upper rear worklamp
- H28 Right hand upper rear worklamp
- H29 Left hand lower rear worklamp
- H30 Right hand lower rear worklamp
- KC Rear worklamp relay
- KE Lower rear worklamp relay
- S38 Rear worklamp switch

WIRE COLOUR CODES

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

**TS SERIES**

**Synchro Command Transmission, (12x12) W/Cab,**

**AIR CONDITIONING AND CAB HEATING**

Line 7200-7590

- |            |                                     |            |                                   |
|------------|-------------------------------------|------------|-----------------------------------|
| <b>B14</b> | Temperature control potentiometer   | <b>R3</b>  | Blower speed resistor             |
| <b>E1</b>  | Air conditioning compressor clutch  | <b>R5</b>  | Speed resistor                    |
| <b>F16</b> | 25A, Air Con and heater blower fuse | <b>S41</b> | Air con, high/low pressure switch |
| <b>M6</b>  | Heater blower motor                 | <b>S42</b> | Low pressure cut out switch       |
|            |                                     | <b>S43</b> | Temperature control switch        |
|            |                                     | <b>S44</b> | Blower speed switch               |

**WIRE COLOUR CODES**

B	Black	R	Red	LG	Light Green	K	Pink
N	Brown	O	Orange	U	Blue	W	White
LN	Light Brown	Y	Yellow	TQ	Turquoise		
S	Slate	G	Green	P	Purple		

### SECTION 3 - ELECTRICAL SYSTEM

7331	Y/S/B	SOLENOID 3 18x9 RETURN
7340	W/R/B	SOLENOID F1 18x9 TRANSMISSION
7341	Y/W/B	SOLENOID F1 18x9 RETURN
7350	W/S/B	SOLENOID F2 18x9 TRANSMISSION
7351	S/W/B	SOLENOID F2 18x9 RETURN
7355	S/Y/B	SOLENOID R 18x9 TRANSMISSION
7356	U/S/B	SOLENOID R 18x9 RETURN
7360	W/Y/B	SOLENOID A 18x9 TRANSMISSION
7361	P/LG/B	SOLENOID A 18x9 RETURN
7370	Y/G/B	SOLENOID B 18x9 TRANSMISSION
7371	P/N/B	SOLENOID B 18x9 RETURN
7380	Y/K/B	SOLENOID C 18x9 TRANSMISSION
7381	P/O/B	SOLENOID C 18x9 RETURN
7390	Y/LG/B	SOLENOID PMW (F1) 18x9 TRANSMISSION
7391	P/R/B	SOLENIOD PWM (F1) 18x9 RETURN
7392	O/G/B	SOLENOID PWM (F2) 18x9 TRANSMISSION
7393	O/N/B	SOLENOID PWM (F2) 18x9 RETURN
7395	P/S/B	SOLENOID CREEP 18x9 TRANSMISSION
7396	P/W/B	SOLENOID CREEP 18x9 RETURN
7400	Y/N/B	TRANS RPM SPEED SENSOR TO TCM INPUT
7401	P/B/G	TRANS RPM SPEED SENSOR
7410	Y/O/B	TRANS RPM SPEED SENSOR TO TCM OUTPUT
7420	Y/P/B	TCM TO CLUTCH POSITION SWITCH
7430	Y/R/B	CLUTCH POSITION SIGNAL
7431	TQ/W/B	CLUTCH 'A' SUPPY
7440	Y/U/B	TCM TO TRACTOR EIC-AXLE OUTPUT
7450	W/LN/B	TRANS CREEPER INTERLOCK SUPPLY
7460	W/O/B	TRANS CREEPER CLUTCH ENGAGED
7470	S/LN/B	TRANS CREEPER CLUTCH DISENGAGED
7480	G/K/S	TRANS AUTO FUNCTION 1
7485	K/P/S	TRANS AUTO FUNCTION LAMP 1
7490	G/LG/S	TRANS AUTO FUNCTION 2
7495	K/R/S	TRANS AUTO FUNCTION LAMP 2
7500	B/G	TRANS OIL TEMP. SENSOR
7520	G/N/S	TRANS SENSOR SUPPLY 8v
7525	G/B/S	TRANS SENSOR SUPPLY 5v
7560	G/LN/S	TRANS WARNING LAMP
7570	B	SIGNAL GROUND
7580	U/K/B	CREEPER SOLENOID MONITOR
7590	O/W/B	TRANS CREEPER GEAR STATUS LAMP
7600	N/W/B	TRANS FEATHERING SOLENOID
7620	N/Y/B	TRANS FEATHERING SOL. MONITOR



**SECTION 3- ELECTRICAL SYSTEMS**

**TYRE RADIUS INDEX FOR ROAD SPEED CALCULATION**

Tyre Size Designation	Radius Index	Tyre Size Designation	Radius Index	Tyre Size Designation	Radius Index
8.3 - 24	470	18.4 - 28 IND	685	360 / 70 R24	540
- 32	570	- 30	720	R28	590
- 36	620	- 30 IND	715	380 / 70 R20	510
- 38	645	- 34	770	R24	560
- 44	720	- 38	820	R28	610
9.5 - 20	445	- 42	870	400 / 70 R20	520
- 24	495	19.5L - 24 IND	610	R24	560
- 28	545	20.8 - 34	805	420 / 70 R24	590
- 36	645	- 38	855	R28	640
- 38	670	- 42	905	R30	665
- 44	745	21L - 24 IND	635	460 / 70 R24	590
- 48	795	- 30	720	480 / 70 R24	620
11.2 - 20	465	23.1 - 26	760	R26	645
- 24	515	- 26 IND	750	R28	670
- 28	565	- 30	810	R30	695
- 36	665	- 34	860	R34	745
- 38	690	24.5 - 32	855	R38	795
12.4 - 20	490	28L - 26	720	500 / 70 R34	745
- 24	540	30.5L R32	860	520 / 70 R26	650
- 28	590	1050 / 50 R32	855	R30	720
- 32	640	800 / 60 R32	820	R34	770
- 36	690	440 / 65 R24	560	R38	820
- 38	720	R28	610	540 / 70 R34	770
- 46	820	480 / 65 R24	590	580 / 70 R26	670
13.6 - 24	560	R28	640	R38	855
- 26	585	540 / 65 R24	620	R42	905
- 28	610	R26	645	600 / 70 R30	745
- 36	715	R28	670	620 / 70 R26	720
- 38	740	R30	695	R38	855
14.9 - 24	590	R34	745	R42	905
- 24 IND	580	R38	795	650 / 70 R26	745
- 26	615	600 / 65 R28	695	R30	795
- 28	640	R32	745	680 / 70 R32	820
- 28 IND	630	R34	770	R34	855
- 30	665	R38	820	710 / 70 R38	905
- 38	765	650 / 65 R38	855	340 / 75 R20	480
15.5 - 38	745	R42	905	380 / 75 R20	500
16.9 - 24	620	750 / 65 R26	770	620 / 75 R26	760
- 24 IND	610	800 / 65 R32	870	R30	810
- 26	645	260 / 70 R16	360	R34	860
- 28	670	R18	390	650 / 75 R32	835
- 28 IND	660	R20	415	R34	855
- 30	695	280 / 70 R16	375	680 / 75 R32	870
- 34	745	R18	400	710 / 75 R34	905
- 34 IND	730	300 / 70 R16	375	210 / 80 R16	345
- 38	795	R18	405	250 / 80 R16	385
- 42	845	R20	445	R18	410
17.5L - 24 IND	580	320 / 70 R20	465	260 / 80 R20	445
18.4 - 24 IND	635	R24	515	320 / 80 R18 IND	475
- 26	670	R28	565		
- 26 IND	665	360 / 70 R20	490		

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