

VALTRA

6000, 6100, 6200
6250, 6300, 6350
6400, 6550, 6600
6650, 6800, 6850
6900, 8000, 8100
8200, 8400, 8050
8150, 8450, 8550
8750, 8950
6600E–8750E

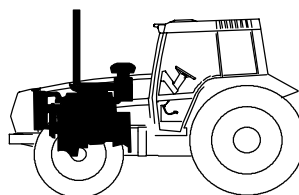
Service Manual Tractors

Groups 10–100

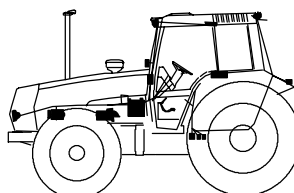
Valtra Inc.
44200 Suolahti, Finland



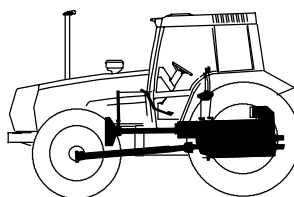
10 General



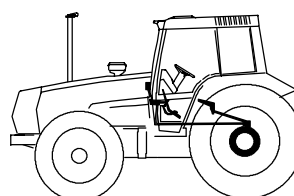
20 Engine



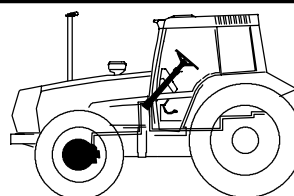
30 Electrical system



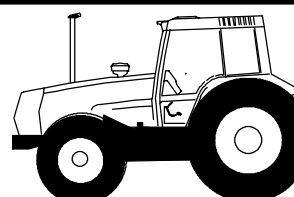
40 Power transmission



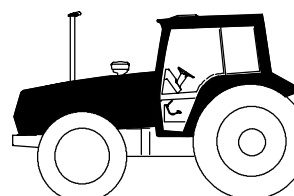
50 Brake system



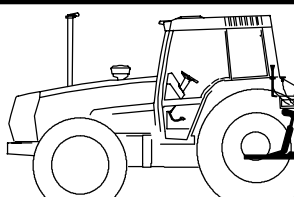
60 Steering system and Front axle



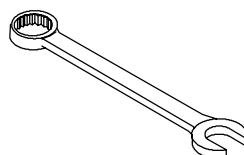
70 Frame and Wheels



80 Cab and Shields



90 Hydraulics



100 Tools

11. Layout		Model	Code	Page
	8. 11. 1990	6000–8750	110	1

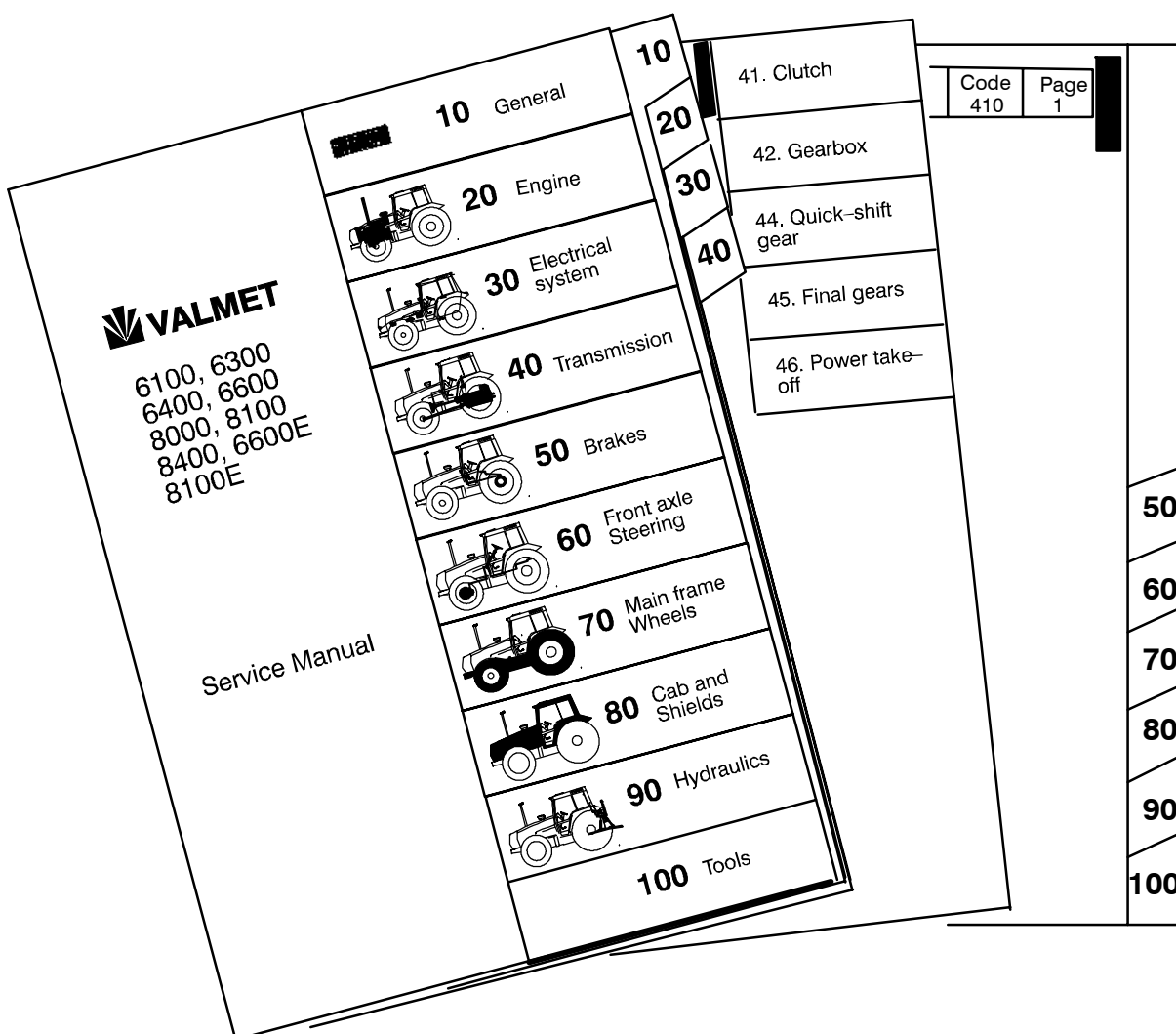
Layout of Service Manual

1. Division into groups

The manual is divided into groups (10– 100) which are based on the make – up of the tractor. The groups are listed on the first index leaf.

Example. 10. General
20. Engine, fuel and cooling systems
30. Electrical system
40. Power transmission
a.s.o.

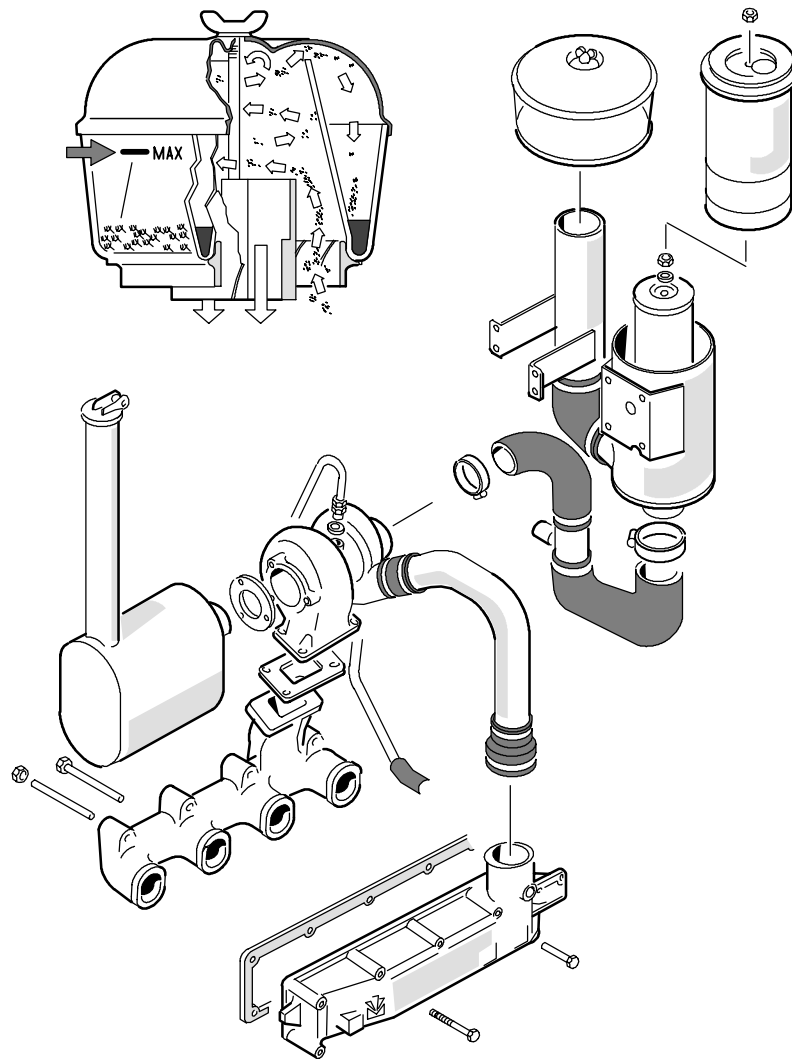
The number designation for each group is given in the top left box of the respective pages (and the first figure in the code designation)



2. Division into components or sub-groups

Each group is further divided into components or sub-groups. The number and the name of each component is given in the top left box on each page (and comprise the two first figures in the code designation).

Example. 41. Clutch
42. Gearbox
44. Quick-shift gear
45. Final drives etc.



Induction and exhaust system

The filter system for the engine inlet air comprises a cyclone type precleaner, and a paper filter which acts as the main filter. The incoming air is made to rotate in the cyclone precleaner. This causes most of the impurities to settle out and collect in the cyclone precleaner dust collector. The paper filter comprises two replaceable filter elements. The paper is corrugated and surrounded by a metal support.

The impurities in the air collect at the larger filter element which can be cleaned when necessary. The inner safety filter prevents impurities from entering the engine should the main filter element break, or be fitted incorrectly.

An electric service indicator is located in the filter body. This sender lights a control lamp on the instrument panel when the air filter is blocked. The inlet system also includes the hoses between the air cleaner and the turbocharger and the turbocharger and the induction manifold.

The exhaust manifold is attached to the cylinder head with high tensile bolts without a separate gasket. Retightening of the manifold bolts is unnecessary.

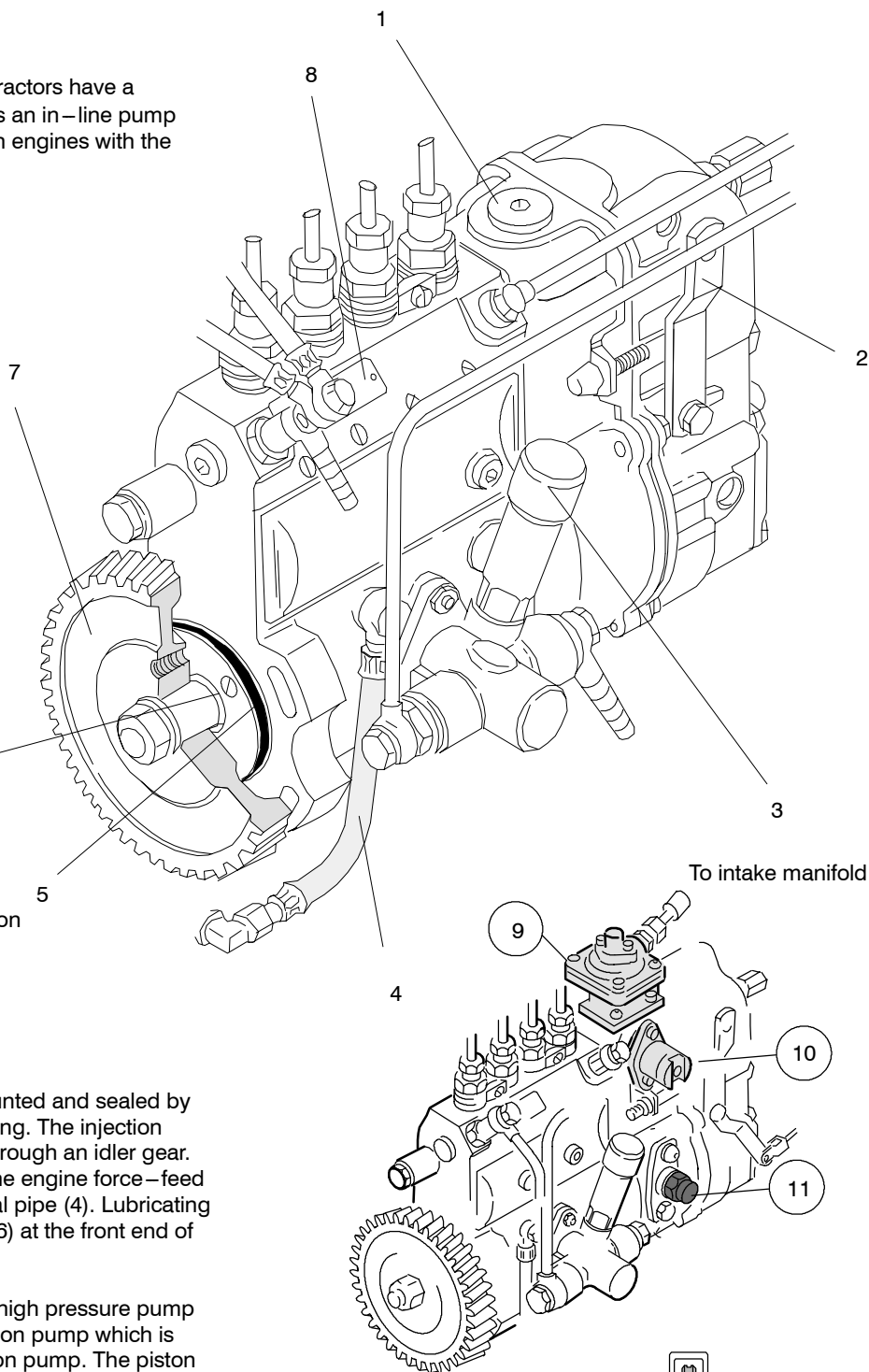
The turbocharger is small and thus it reacts sensitively at low engine revs. The turbocharger gets lubricating oil and cooling from the engine lubricating and cooling system.

Fuel injection pump

Valmet 6000–8400, 8750 and 8950 tractors have a Bosch–make injection pump which is an in–line pump and its basic construction is similar on engines with the different number of cylinders.

Fuel injection pump

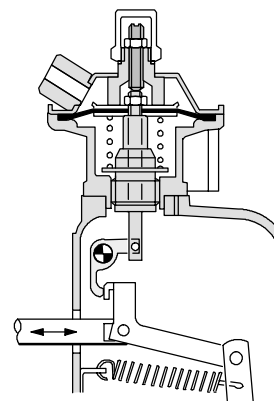
1. Oil filling plug
2. Governor control lever
3. Hand pump on fuel feed pump
4. Lubricating oil into injection pump
5. O–ring
6. Return of lubricating oil to engine
7. Drive gear
8. Type plate
9. Boost control (6800, 8750, 8950)
10. Forced–feed solenoid for starting (6800, 8750, 8950)
11. Indicator plug for adjusting injection timing (6800, 8750, 8950 + all latest tractors, which have a new governor)



The fuel injection pump is flange mounted and sealed by one o–ring (5) in the timing gear casing. The injection pump is driven from the crankshaft through an idler gear. The injection pump is connected to the engine force–feed lubrication system through an external pipe (4). Lubricating oil returns to the engine via the hole (6) at the front end of the injection pump.

The fuel feed pressure which fills the high pressure pump elements with fuel is created by a piston pump which is attached to the side of the fuel injection pump. The piston pump is driven from an eccentric on the camshaft of the injection pump. The fuel feed pump supplies more fuel than the injection pump needs. The excess fuel flows through the overflow valve back to the fuel tank. The fuel cools the injection pump and also takes any air bubbles with it back to the tank.

Note! 6800, 8750 (SigmaPower) and 8950 (SigmaPower) tractors have a boost control (9), which is connected via a hose to the engine intake manifold. The boost control adjusts injected fuel amount to the cylinders according to the supercharging pressure in the engine intake manifold. In addition, these tractors have a forced–feed solenoid for starting (10) on the fuel injection pump, see page **223/9**. Adjusting injection timing on 6800, 8750 and 8950, see page **223/8**.



Boost control

31. Tractor electrical system	1994	Model	Code	Page
	15. 4. 1995	6000 – 8400	310	16

Wiring diagram from tractor serial number 662343 up to no 668102.

(E – models, see section 35). Diagram no 318 716 30B.
See diagrams on pages 310/18–20. This diagram incl. also Autocontrol II system.

Sym-bol	Component	Code no	Sym-bol	Component	Code no
			F27	10 A Brake lights, differential lock	62
			F28	10 A Telephone	99
			F29	10 A Cigarette lighter, power socket	91
			F30	10 A Rear fog lights	102
			G 1	Battery	1
			G 2	Alternator	4
(A 2)	Radio	2	H 1	Pilot light, direction indicator III	34
A 3	Electric centre		H 2	Pilot light, direction indicator II	34
(A 4)	Speedometer + clock	93	H 3	Pilot light, direction indicator I	34
(A 5)	Air suspension seat	94	H 4	Warning light, air filter	7
(A 6)	Agrodata	95	H 5	Warning light, engine oil pressure	8
(A 7)	Electric air filter	96	H 6	Warning light, stop, engine temp.	15
(A 9)	Ind. lights, Delta Powershift	71	H 7	Warning light, gearbox oil press.	9
(A 10)	Control unit, Delta Power shift	70	(H 8)	Pilot light, oil filter, gearbox	10
(A 11)	Telephone	99	H 9	Pilot light, 4WD	65
B 1	Sensor, engine temperature	16	H10	Pilot light PTO	67
B 2	Sensor, fuel gauge	17	H11	Pilot light, parking brake	12
(B 8)	Sensor, wheel speed	93	H12	Pilot light, Thermostart	6
E 1	Headlights, right	26	H14	Pilot light, main beams	27
E 2	Headlights, left	25	H15	Warning light, low fuel level	14
E 3	Front direction indicator, right	31	H16	Warning light, charging	6
E 4	Front direction indicator, left	28	H18	Warning light, gearb. oil temp.	13
E 5	Rear light, right	33	H20	Pilot light, diff. lock	62
E 6	Rear light, left	32	H22	Reserve	
E 7	Cabin light	46	H23	Horn	50
E 9	Rear working light, right outer	42	(H24)	Rotating roof light	47
E10	Rear working right, right inner	42			
E11	Rear working light, left outer	41	K 1	Relay, front working lights	43
E12	Rear working light, left inner	41	K 2	Relay, rear working lights	41
E13	Front working light, right	44	K 3	Rear fog lights	35
E14	Front working light, left	44	K 4	Starter switch relay	7
E15	Instrument lights	17	K 5	Starter switch relay	9
E16	Roof console lights	21	K 6	Relay, fan III	56
(E17)	Seat heater	94	K 7	Relay, four wheel braking	65
(E18)	Footstep light	45	K 9	Relay, interval wiper	53
(E19)	Rear fog light	35	K10	Direction indicator relay	34
(E20)	Parking light, right, Norway	29	K11	Relay, brake lights, diff. lock	63
(E21)	Parking light, left, Norway	30	K12	Relay, differential lock	61
(E22)	Register plate light	32	K13	Relay, differential lock	63
(E23)	Upper head light, right	24	K14	Starter motor relay	4
(E24)	Upper head light, left	23	K15	Relay, 4WD	65
(E25)	Parking light, upper, right	22	K16	Relay, PTO emergency stop	68
(E26)	Parking light, upper, left	22			
F 1	15 A Hazard blinkers, reserve	31	M 1	Starter motor	3
F 2	5 A Radio, clock	2	M 2	Fan	55
F 3	10 A High beam, indicator light	25	M 3	Windscreen wiper	53
F 4	10 A Low beam	25	M 4	Windscreen washer	51
F 5	5 A Parking lights, left	28	(M 5)	Rear window wiper	49
F 6	5 A Parking lights, right	30	(M 6)	Rear window washer	48
F 7	10 A Front working lights	44	(M 7)	Floor fan	57
F 8	20 A Light switch	28	(M 8)	Water pump	97
f 9	15 A Trailer socket, rear fog light	35			
F10	15 A Starter switch, thermostart	4	P 1	Engine coolant thermometer	16
F11	5 A Autocontrol (+Bat), buzzer	83	P 2	Fuel gauge	17
F12	10 A Rot. warning light, cabin and footstep light	47	P 3	Revolution counter	18
F13	10 A Reserve	100	P 4	Hour recorder/work. height	19
F14	15 A Water pump	97			
F15	20 A Fan III – speed	56	Q 1	Starter switch	4
F16	10 A Rear working lights, inner	42	(Q 2)	Main switch	3
F17	10 A Direction indicators, agrodata	32			
F18	5 A Instruments, warning lights, Autocontrol	17	R 1	Thermostart	5
F19	10 A Combination switch, wiper return	51	(R 4)	Cigarette lighter	91
F20	10 A Rear w. wiper/washer	48			
F21	15 A Fan I, II, air conditioner., floor fan	55	S 1	Switch, head lights	28
F22	10 A 4WD, PTO, Delta Power Shift	65	S 2	Switch, rear working lights	41
F23	10 A Rear working lights, outer	41	S 3	Switch, fan	55
F24	10 A Speedometer	93			
F25	10 A Air suspension seat/seat heating reverse drive control lock	94			
F26	10 A Electric air filter	96			

31. Tractor electrical system		Model	Code	Page
	1. 9. 2002	6250–8950	310	91

Sym- bol	Component	Code no	Sym- bol	Component	Code no
			ACB/ACD Autocontrol power lift:		
(X18)	2 pin, rear window washer	48	A1E	Autocontrol electronic unit	82B, 82D
X19	37 pin, engine		A2E	Autocontrol, switch panel	85B, 85D
X20	9 pin, front direction indicator				
(X22)	2 pin, rot. roof light	47	B1E	Position sensor	81B, 81D
X23	3 pin, Delta Power Shift, extra switches		B2E	Draft sensor, r.h	81B, 81D
X24	9 pin, upwards		B3E	Draft sensor, l.h	81B, 81D
X26	26 pin, instrument left, white		(B4E)	Position sensor, implement (ACD)	81D
X27	26 pin, instrument right, blue				
X28	9 pin, sensors power shuttle		E1E	Lightning switch panel	85B, 85D
(X29)	2 pin, STOP–alarm (max. 2 W)		E2E	Lightning, position potentiometer	86B, 86D
X30	9 pin, switches gear levers				
X31	2 pin, socket, PTO–emerg. stop	75	R1E	Potentiometer, pos .control	85B, 85D
(X32)	1 pin, electric stop	5			
(X33)	3 pin, fog light, rear		S1E	Switch, rear operation, r.h., lifting	81B, 83D
X35	9 pin, SIGMA supply		S2E	Switch, rear operation, r.h., lowering	81B, 83D
X39	9 pin, direction lever		S3E	Switch, rear operation, l.h., lifting	81B, 82D
(X41)	2 pin, front PTO		S4E	Switch, rear drive, l.h., lowering	81B, 82D
(X42)	4 pin, front PTO, supply		S5E	Switch, cabin, lifting/lowering	83B, 83D
X43	8 pin, RS–232 bus	151	S7E	Switch, lowering speed	85B, 85D
(X45)	9 pin, Fieldmaster, extra equipment		S8E	Switch, top limit	85B, 85D
(X46)	7 pin, Fieldmaster, current socket	155	S9E	Switch, mixing	85B, 85D
(X47)	2 pin, GPS–supply, Fieldmaster		S10E	Switch, lifting/lowering	85B, 86D
(X48)	3 pin, radar, Fieldmaster		S11E	Switch, forced lowering	85B, 85D
X49	2 pin, seat	94	S12E	Switch, Drive Balance Control/Slip	85B, 85D
(X50)	3 pin current socket	96			
(X55)	1 pin, Fieldmaster	95	X1E	Connector housing, 9 pin, speed sensors (ACD)	
X64	2–speed., front PTO speed signal	102	X2E	Connector housing, 15 pin., supply & rear push buttons (+ implement position sensor)	
Y1	Solenoid valve, differential lock	64	Y1E	Solenoid valve, lowering	83B, 84D
Y2	Solenoid valve, PTO	133	Y2E	Solenoid valve, lifting	83B, 84D
Y3	Solenoid valve, 4WD	71			
Y4	Solenoid valve, Delta Power Shift	133	CareTel, information collecting system		
(Y5)	Magnetic clutch, compressor, air conditioner	54	(A1L)	CareTel, data logger	118
Y6	Solenoid valve, Delta Power Shift	134	(B1L)	Pressure sensor, CareTel, 18 Bar	117
(Y7)	Solenoid valve, rear steering prevention	94	(B2L)	Pressure sensor, CareTel, 190 Bar	116
Y8	Solenoid, engine running	4	(B3L)	Sensor, gearbox temperature	117
(Y9)	Magnetic clutch, front–PTO	77	(B4L)	Temperature sensor, engine	118
Y11	Solenoid, forward	131	(H1L)	Indicator light, CareTel	120
Y12	Solenoid, reverse	132	(X1L)	Connector housing, 9 pins, CareTel, RS–232	117–120
(Y13)	Solenoid valve, Sigma	113	(X2L)	Connector housing, 3 pins, CareTel, CAN	117–120
(Y16)	Solenoid, cold cranking	3	(X3L)	Connector housing, 9 pins, CareTel, extra equipment	117–120
Y17	Solenoid valve, Delta Power Shift	134	(X4L)	Connector housing, 3 pins, CareTel, supply+NBUS	117–120
Y18	Solenoid, parking brake	67			
AC5 –Control system, HiTech			Wire colours		
A1A	Control unit, AC5	122–152	RU	= brown	
S1A	Switch, PTO rear start, left	74	PU	= red	
S2A	Switch, PTO rear start, right	74	KE	= yellow	
X1A	Connector housing, 9 pin, engine sensors	140–141	SI	= blue	
TwinTrac reverse drive controls			MU	= black	
(B1W)	Angle sensor, clutch pedal	171	VI	= green	
(S1W)	Switch, DPS–extra	173	VA	= white	
(S2W)	Limit switch, clutch pedal	162	HA	= grey	
(S3W)	Limit switch, seat direction	163	LI	= lilac	
(S4W)	Switch, DPS–preselection, rear	165			
(S5W)	Reed relay, direction front (F), rear	166			
(S6W)	Reed relay, direction reverse (R), rear	167			
(S7W)	Reed–relay, parking brake, rear	168			
(S9W)	Switch, brake pedal, rear right	169			
(X1W)	Connector housing 12–pin, TwinTrac		Explanations of the abbreviation		
(X2W)	Connector housing 1–pin., supply (P1W)		F/R	= forward/reverse power shuttle	
(X3W)	Connector housing 9–pin., direction lever, rear		PTO	= power take off	
P1W	Rear display, AC5	128	AC	= Autocontrol linkage	
			AC5	= Autocontrol 5 control system	
			DPS	= Delta Power Shift	

32. ACD electro–hydraulic power lift	15. 8. 1996	Model	Code	Page
	1. 6. 1999	8450–8750	321	4

2. Medium serious faults

Fault code number	Fault	Control unit connector pin	Description
22	Position sensor	6	Signal from sensor faulty – Poor contact or position sensor disconnected – Possible short circuit or earthing – Position sensor faulty adjusted
23	Position control potentiometer	22	Signal from potentiometer faulty. Poor contacts or wire loose.
24	Transport height selector	3	Signal from selector faulty. Poor contacts or wire loose.

3. Minor faults

Fault code numbers	Fault	Control unit connector pin	Description
31	RH side draft sensor	26	Signal from sensor faulty: – Poor contact or wire disconnected – Possible short circuit or earthing – Sensor overloaded
32	LH side draft sensor	7	Signal from sensor faulty: – Poor contact or wire disconnected – Possible short circuit or earthing – Sensor overloaded
33	Battery	24	Voltage too low (lower than 11,5 V).
34	Lowering speed selector	23	Signal from selector faulty. Poor contacts or wire disconnected.
35	Slip control selector	5	Signal from selector faulty. Poor contacts or wire disconnected.
36	Position control/draft control selector	4	Signal from selector faulty. Poor contacts or wire disconnected.
37	Control valve		Power lift does not lift, although current in lifting solenoid (pin 37). Dirt in control valve. No oil pressure. Control valve damaged, valve spools does not move.
38			

Other faults

Fault code numbers	Fault	Control unit connector pin	Description
41	Radar signal	10	Radar signal low, transmission sensor signal OK (can be verify only in draft control mode). Poor contacts or radar damaged.
42	Signal from transmission sensor	11	Transmission sensor signal low, radar signal in order (can be verify only in draft control mode). Poor contacts in sensor wire or sensor faulty.

Note! Fault codes 41 and 42: the diagnostic light does not show the fault code, if both the transmission sensor signal and radar signal are low, since this is a normal situation when the tractor is stationary.

34. Autocontrol—III	8. 11. 1990	Model	Code	Page
	15. 6. 1992	6600E, 8100E	341	1

Trouble shooting and repairs

(Computer—aided trouble shooting, see **Code 342**)

1. Checking and fitting sensors

A. Fitting speed sensors

- Clean the sensor threads on the tractor.
- Seek with a dial gauge the shortest distance between the sensor and the impulse disc through the sensor hole (not necessary for engine speed sensor. Pull the 4WD output shaft outwards before measurement).
- Apply Loctite 572 onto the threads and screw the sensor by hand until the sensor touches the impulse disc or gear (do not screw too hard because the impulse disc can be springy).
- Then unscrew the sensors as follows:

Engine speed sensor 1/3 of a turn
 Gear axle sensor 1/4 of a turn
 GPTO speed sensor 1/3 of a turn
 Ggearbox speed sensor 1/10 of a turn
 Gfront axle sensor 1/10 of a turn

- Lock the sensor with a locking nut and connect wires.
- Calibrate and check the speed sensors (see **instr. B**). Check the engine rotation speed sensor (see **instr. C**) and check the PTO speed sensor (see **instr. D**)

N.B. The sensors should be checked with an oscilloscope if necessary. The resistance of every speed sensors (not a radar) is **1,0–1,10 kΩ**

- When the sensor functions, fit a plastic tube onto the sensor leads. Connect cable shoes to the sensors and protect shoes with grease. Put the plastic tube onto the sensor and warm it up until it is pressed tightly round the sensor. See figure M on page 340/4.

B. Calibrating the speed sensors

1. Drive the tractor onto the hard ground (free driving distance about 50 m)
2. Select gear **M2**, disengage diff. lock and 4WD (in M—position). Select HARE—range for the quick shift gear and adjust the engine revs to **1800 RPM** with a hand throttle lever.
3. Press the distance—key two times and the display shows text **CAL DIST**.
4. Drive the tractor straight ahead with the hand throttle lever.
5. Press **SET** —key (display shows text **DRIVE**). Continue driving until the display is switched off and then started again (=successful calibration).
6. If the display shows text **NO CALIB** (=signal from the radar too weak), carry out a new test—driving. If the calibration fails again, check the radar and its wiring.
7. If the display shows:
 - **ERROR GB**=gearbox speed sensor damaged
 - **ERROR FA** = front axle speed sensor damaged
 - **ERROR RW** = rear wheel speed sensor damaged
 In this case, check the sensor in question and also its mounting and wiring.

8. After successful calibration, change display to the **calibrating mode for the hidden functions** (see page 340/6) and continue driving straight ahead.

9. Press once the SPEED—key, and the display shows the **radar speed**.

10. Press then twice the SPEED—key and the display will show the **gearbox speed** which should be the same as the radar speed ($\pm 0,1$ km/h).

11. Press once again the SPEED —key and the display will show the **rear axle speed** which should be the same as the previous speeds ($\pm 0,1$ km/h).

12. Press once again the SPEED—key and the **front axle speed** can be seen. It must be the same as the previous speeds ($\pm 0,1$ km/h).

13. Press the menu scanning key four times = radar speed.

Note! The calibrating mode can be left by switching off the current.

C. Sensor for engine revs

The engine RPM sensor can be checked by pressing the RPM—key until the display shows the engine revs. The display reading must be about the same as the rev counter reading (± 50 RPM) in the instrument panel.

Checking can be carried out more accurately by adjusting the engine revs in the display to 1874 r/min at which time the PTO shaft rotating speed must be 540 r/min which can be seen in the display by pressing the RPM—key.

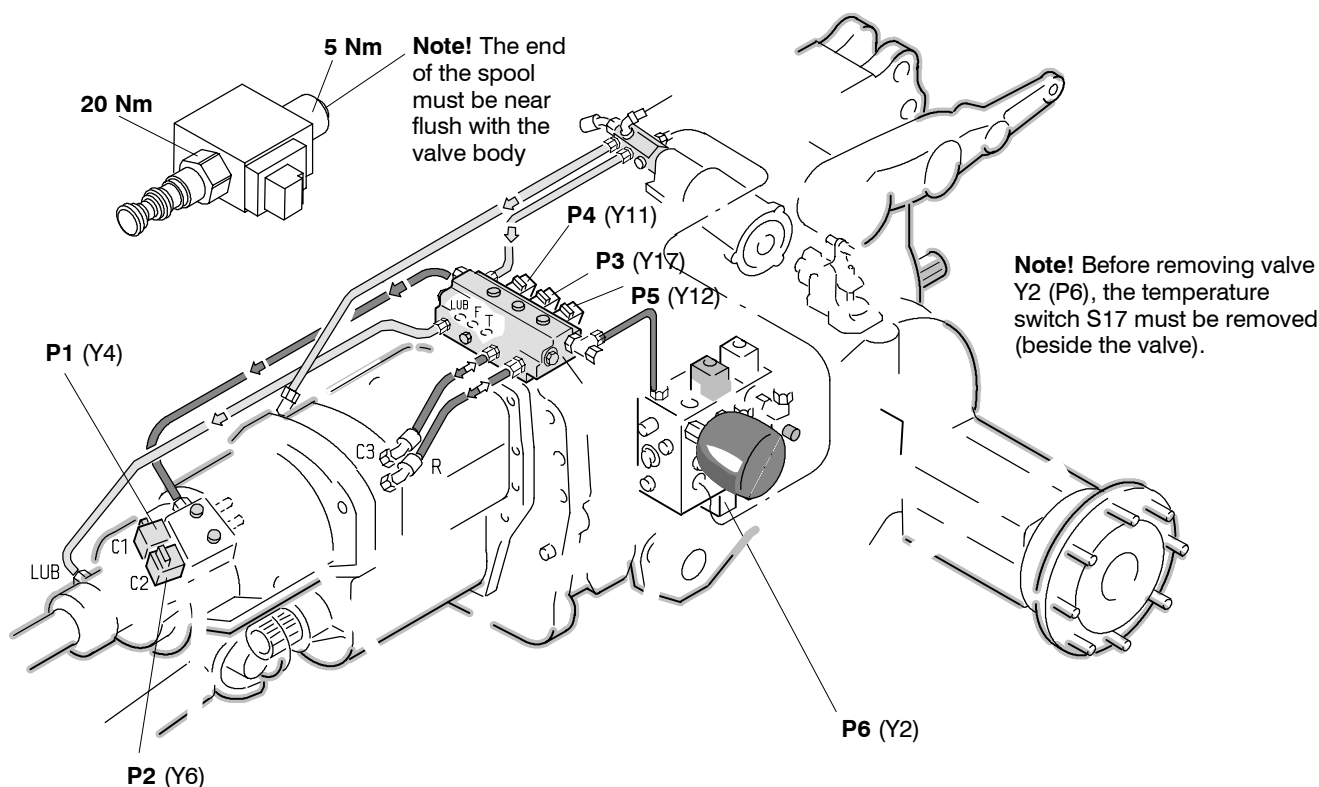
If the display does not show the engine RPM, check the sensor and its wiring. The resistance of the sensor must be between **1,0–1,10 kΩ** (pins A1C/31, 12). If the sensor is OK, the possible fault can be a faulty ECS or the display unit is defective. Also the impulse disc can be damaged.

D. PTO speed sensor

Engage the 540 r/min PTO. Press the RPM—key until the display shows the PTO shaft speed. Adjust the engine revs so that the rev counter indicator in the instrument panel is at the 540 mark. Now the AC—III display should also show 540 RPM (± 50 RPM). In the same way, check the 1000 r/min PTO.

More accurately the display reading for the PTO speed can be checked by measuring the PTO shaft speed with a separate tachometer. Then compare the tachometer reading with the reading in the the AC—III display.

If the display does not show the PTO RPM, check the sensor and its wiring. The resistance of the sensor must be between **1,0–1,10 kΩ** (pins A1C/28, 11). If the sensor is OK, the possible fault can be a faulty ECS or the display unit is defective. Also the impulse disc can be damaged. **N.B.** Check that the emergency plug is fitted in the rear socket.



C. Proportional valves, AC 5 and 5.2

Note! The unit self-diagnostics show a fault code, if one of the proportional valves is faulty, see table on page 370/6 (AC 5) or page 371/5 (AC 5.2) (PTO proportional valve is not diagnosed in AC 5). After this the valve can be tested in the test mode. FII, see table d on page 370/13.

1. All six proportional valves are similar:

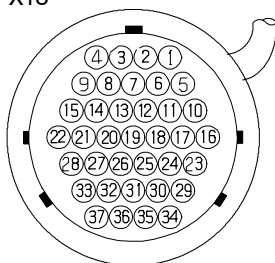
- **P1**=DPS foremost clutch C1 prop. valve Y4
- **P2**=DPS middle clutch C2 prop. valve Y6
- **P3**=DPS rearmost clutch C3 prop. valve Y17
- **P4**=forward drive (F) proportional valve Y11
- **P5**=reverse drive (R) proportional valve Y12
- **P6**=PTO proportional valve (not diagnosed in AC 5) Y2

2. When the proportional valve is energised, it is magnetic and clutch in question is pressurised.

- **P1** is energised, when DPS speeds I or II are selected
- **P2** is energised, when DPS speeds I or III are selected
- **P3** is energised, when DPS speeds II or III are selected
- **P4** is energised when forward drive is engaged

PINS (X13)	SOLENOID	RESISTANCE (+10...+30 °C)
2<>5	Y2 (PTO)	7–9 ohms
4<>5	Y4 (C1)	
7<>5	Y6 (C2)	
11<>5	Y17 (C3)	
12<>5	Y11 (F)	
13<>5	Y12 (R)	

X13



- **P5** is energised when reverse drive is engaged
- **P6** is energised when the PTO is engaged.

3. The resistance of the proportional valves is measured from connector X13 pins. Correct value is **7–9 ohms** (+10 °C...+30 °C).

4. If the resistance is incorrect, the valve solenoid is changed. After this the valve indexes must be set, see instr. on page 370/24D.

5. If the resistance is correct, but in the circuit there are malfunctions, check the valve wires and connectors. If these are OK, perform the calibration of the initial pressure. Also the diodes must be checked in AC 5 according to table below (in AC 5.2 the diodes are placed in the control unit A1).

Note! One possible and common fault is impurities in the valves. This can cause faults which are very difficult to find. If you doubt this fault, change the proportional valve or try to clean it.

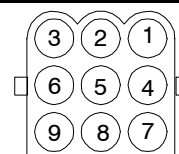
6. If the valve and its wires seem to be OK, but malfunctions exist, the fault can lie in the control unit.

Note! During repair check (before engine start) that the valve spool end is nearly flush with the valve body.

Diode test with multimeter, AC 5 only.

SOLENOID	DIODE HOUSING (V1, V4)	PINS (V1, V4)
Y2	V1	2<>5
Y4	V1	9<>8
Y6	V1	7<>8
Y17	V4	9<>8
Y11	V4	7<>8
Y12	V4	3<>6

V1, V4



FIELDMASTER, fitting instruction		Model	No	Page
	12.08.1998	6000–8750	39.18	10(10)

Drill		
Sensor	Wire color	Plug pin
RPM sensor on drill shaft (2 wires)	blue	1
	brown	5
RPM sensor on drill shaft (3 wires)	blue	6
	brown	5
	black	1
RPM sensor on switch	blue	2
	brown	5
Drill boot sensor	sininen	6
	ruskea	5
	musta	4
Implement sensor	sininen	7
	ruskea	5

Baler		
Sensor	Wire color	Plug pin
Piece counter	blue	1
	brown	5
RPM sensor 3 or weight module	blue	6
	brown	5
	black	2
RPM sensor 2	blue	6
	brown	5
	black	4
RPM sensor 1	blue	6
	brown	5
	black	7

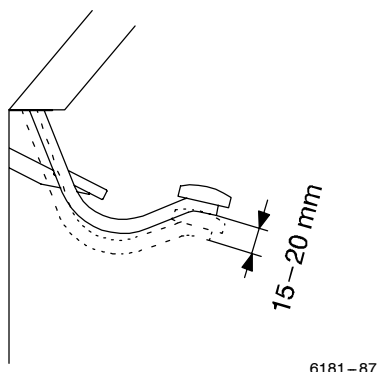
Slurry spreader		
Sensor	Wire color	Plug pin
RPM sensor 1	blue	6
	brown	5
	black	1
Flow meter	+ 12 V	6
	0 V	5
	Signal	2
Wheel sensor	blue	4
	brown	5
Implement sensor	blue	7
	brown	5

41. Clutch	1. 1. 1994	Model	Code	Page
	1. 1. 1995	6000–8750	411	10

4. Adjusting and repair instruction for clutch release mechanism of cable type, 659478–

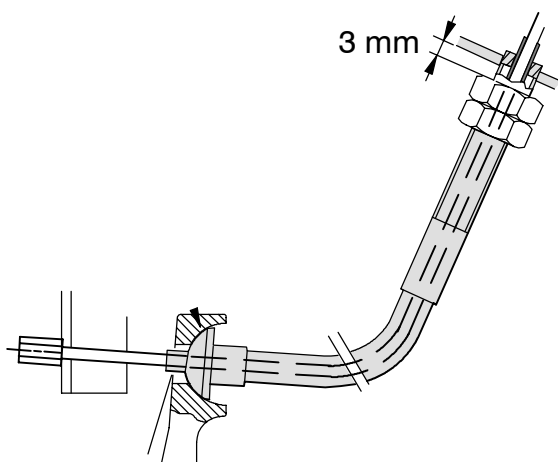
Note! This new mechanism is fitted on all 6000–8400 tractors with effect from tractor ser. no. 659478.

A. Adjusting clutch pedal free travel.



2. The free travel at the pedal should be **10–15 mm**. The free travel is difficult to verify by depressing the pedal.

3. If the free travel is not correct, adjust it with an adjusting sleeve at the cable lead–in point in the cab front wall.



4. When the pedal is in the upper position, the distance between the cab wall and the adjusting sleeve should be **3 mm**, which corresponds to the correct free movement.

Note! The distance is adjusted by turning the sleeve and by moving the cable until the free travel between the sleeve and the cab front wall is correct. If the pedal does not return to the upper position, it may be necessary to adjust the clutch servo, see page 410/5.

B. Clutch repairs

The tractor frame is split and assembled according to instructions 411 1A and D. The clutch assembly is the same as earlier.

The release bearing cannot be removed as described in instr. C on page 411/3. The easiest way to remove the bearing is to place a suitable drift against the bearing support tube and by pulling out the bearing with an extractor.

C. Changing release cable

The cable can be changed without splitting the tractor. There is an access hole on the tractor frame through which the clutch end of the cable can be disconnected from the upper end of the release lever. After changing the cable, the clutch pedal free travel should be adjusted.

Note! The clutch cable has been strengthened with effect from tractor ser. no. 665081. The new cable is exchangeable with the earlier cable after renewing the adjusting nut. On Hi-Trol models the cable upper end fork should also be changed. The Spare Part Centre dispatches only the new cables. All earlier type cables should be returned to the tractor factory.

Check the function of the cable via the access hole.

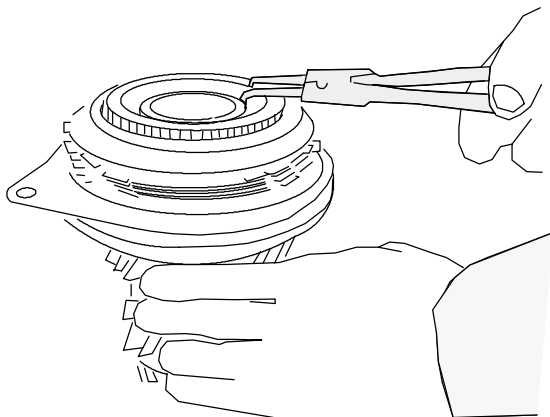
If the cable does not function correctly, split the tractor at the clutch and check the position and alignment of the clutch lever and the cable support. The support groove must be in line with the clutch lever, clutch shaft centre and clutch lever attachment centre line.

If necessary, remove the support and reweld it into place. Check the function of the clutch lever lower end ball joint. Assure that the cup springs are fitted correctly. Nut tightening: first fully home and up-screw it 3/4 or 1/4 turn (depending on the tractor ser no). Reassemble the tractor.

Check again the function of the cable. Test–drive the tractor and check the adjustment of the cable and readjust, if necessary.

46. Power take – off	1. 1. 1995	Model 6000 – 8750	Code 462	Page 3
	1. 4. 1997			

C. Reconditioning PTO clutch



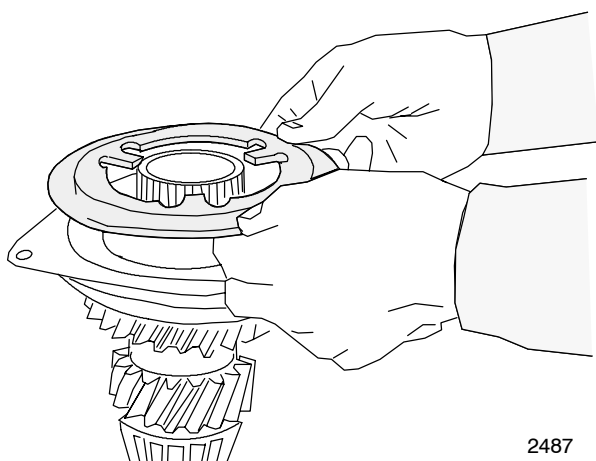
2486

1. Remove the oil deflector plate from the PTO clutch hub and remove the circlip under the plate and the clutch cup springs release.

2. Remove the clutch discs. Check the condition of the friction and steel discs and the PTO brake plate. Replace damaged parts.

Note! The friction discs and steel discs must be renewed as a complete set. The friction disc must be changed if the grooves on it have disappeared.

3. Remove the piston, if necessary, with compressed air or knock the shaft end against the table. Change the piston seals. Push in the piston

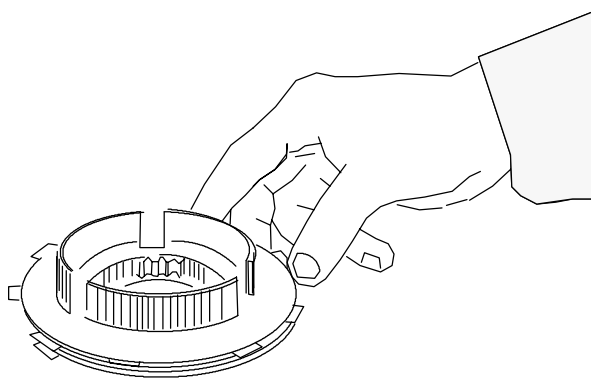


2487

4. Assemble the clutch by fitting the brake plate on the piston. Then place on the brake plate a plate which has internal lugs.

5. Place the cup springs (5 pcs) on the internal lugs. The first spring concave side against the lugs and then other springs in pairs the concave sides against each other.

Note! The cup spring convexity is 3 mm.



2488

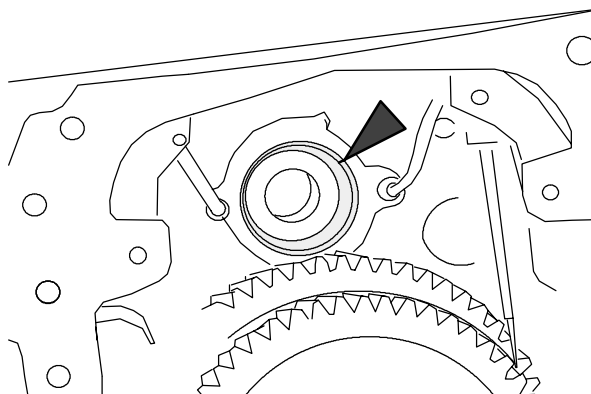
6. Place the friction and steel discs by turns onto the hub (first friction disc). Number of discs, see page **460/2**.

Important! From ser. no. 660477 the disc linings were changed from ceramic to organic type. At the same time number of the discs were changed as follows: 6100 – 6400 6 pcs and 6600 – 8400 8 pcs. It is recommended that in repair works organic discs are used. The organic linings are thicker and if you fit these onto the earlier tractors, the hub 32267900 should be machined to 3,9 mm (see page 460/9) or a new hub 32267910 should be used. Number of the discs is the same as earlier. On the latest 6000 – 8750 tractors, there are 8 friction discs and 7 steel discs in the PTO clutch.

7. Fit then the hub/disc pack onto the plate which has internal lugs (and on the cup springs) so that the grooves on the hub engages with the lugs on the plate.

8. Fit the circlip into the hub and force the circlip into its groove by striking with sleeve ET 894 090. Fit the oil deflector plate onto the hub.

Note! Place the clutch shaft on a table and assure that the clutch drum grooves are enough deep. The discs (steel disc) must not be against the groove bottoms when the shaft is in the working position.

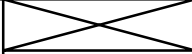


2489

9. Check the clutch shaft rear taper roller bearing and its race in its location on the housing. Change the parts if necessary.

10. Check also condition of the piston ring type seals at the rear end of the clutch shaft.

11. Check and change, if necessary, the taper roller bearings at the front end of the shaft. Fit all bearings fully home.

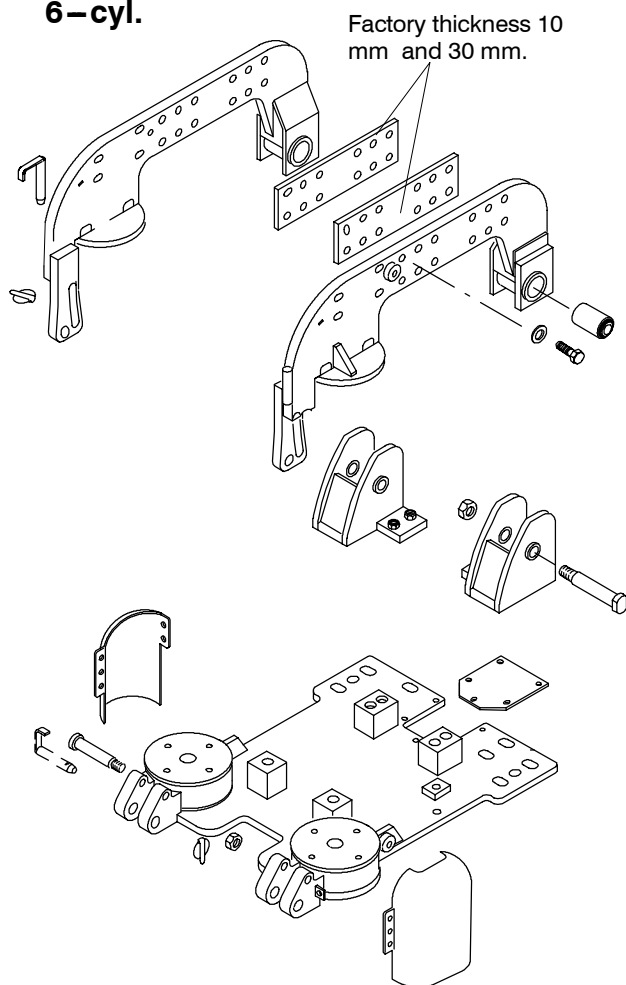
AIR PRESSURE BRAKES FOR TRAILER, fitting instruction			Model	No	Page
			16.06.2000	6000–8950Hi	59.3 19(24)

Duo–Matic:

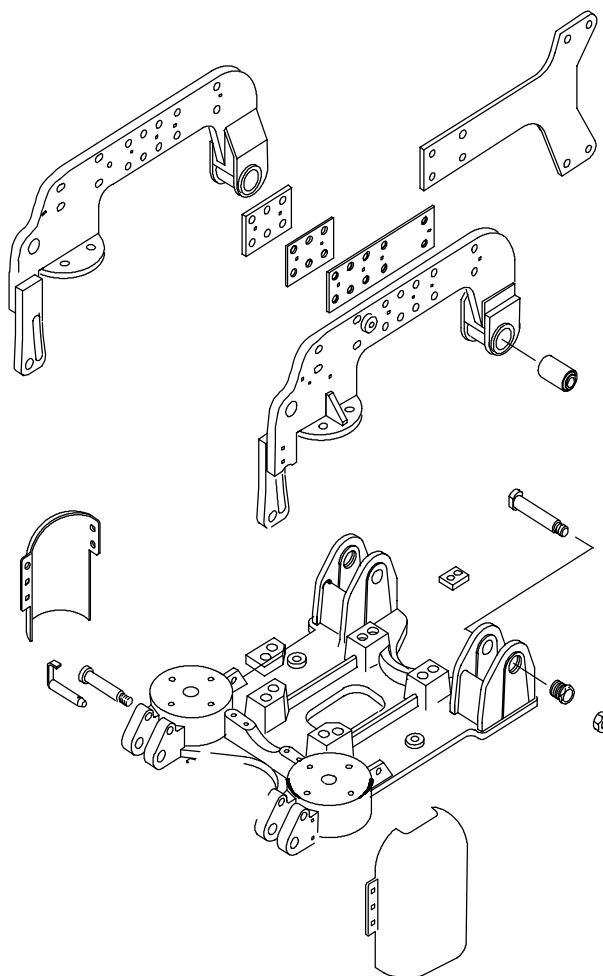
1	33019000	Paineilmajarrut	Tryckluftsbröms	Air press. brake	L.druckbremse	Frein à air comprimé	
1	1	33018700	.Liitin	Nippel	Union	Verbindung	Raccord
2	1	32930300	.Liitin	Nippel	Union	Verbindung	Raccord
							Ei takahall.laitt. Not with rev. drive controls
3	4	32930010	.Pikaliitin	Snabbkoppling	Quick coupler	Schnellkuppl.	Raccord rapide
4	3	HA6322	.Ruuvi	Skruv	Screw	Schraube	Vis
5	6	32930200	.Liitin	Nippel	Union	Verbindung	Raccord
	6	32930210	.Liitin	Nippel	Union	Verbindung	Raccord
6	16	JD0408	.Aluslevy	Bricka	Washer	Scheibe	Rondelle
7	13	JB8904	.Mutteri	Mutter	Nut	Mutter	Ecrou
8	1	32931010	.Kannatin	Hållare	Support	Halter	Support
9	1	32930900	.Kannatin	Hållare	Support	Halter	Support
10	2	32935500	.Letku	Slang	Hose	Schlauch	Tuyau flexible
	2	33718200	.Suojaputki	Skyddsrör	Shield pipe	Schutzrohr	T. de protection
							L=940
11	1	JJ4037	.Tappi	Tapp	Pin	Stift	Cheville
12	1	JE3051	.Sokka	Sprint	Pin	Splint	Goupille
13	1	JJ4036	.Tappi	Tapp	Pin	Stift	Cheville
14	2	HA9230	.Ruuvi	Skruv	Screw	Schraube	Vis
15	1	32936700	.Kannatin	Hållare	Support	Halter	Support
16	2	32673300	.Kiinnityslaatta	Fästplåt	Mounting plate	Bef.platte	Plaque de support
17	1	32936800	.Vipu	Spak	Lever	Hebel	Levier
18	2	JB1108	.Mutteri	Mutter	Nut	Mutter	Ecrou
19	2	YT2088	.Nivel	Led	Joint	Gelenk	Joint
20	1	32936500	.Tanko	Stång	Rod	Stange	Barre
21	1	32936000	.Teline	Konsol	Bracket	Gestell	Support
22	3	HA9235	.Ruuvi	Skruv	Screw	Schraube	Vis
23	3	JD0410	.Aluslevy	Bricka	Washer	Scheibe	Rondelle
24	3	JB8905	.Mutteri	Mutter	Nut	Mutter	Ecrou
25	2	32929800	.Pikaliitin	Snabbkoppling	Quick coupler	Schnellkuppl.	Raccord rapide
26	1	32930610	.Liitin	Nippel	Union	Verbindung	Raccord
27	1	32913500	.Ohjausventtiili	Styrventil	Steering valve	Steuerventil	Valve de direction
28	4	HA8330	.Ruuvi	Skruv	Screw	Schraube	Vis
29	1	32943900	.Liitin	Nippel	Union	Verbindung	Raccord
30	1	32936400	.Putki	Rör	Pipe	Rohr	Tuyau
31	1	31070500	.Letku	Slang	Hose	Schlauch	Tuyau flexible
32	1	30458200	.Liitin	Nippel	Union	Verbindung	Raccord
33	3	32930110	.Pikaliitin	Snabbkoppling	Quick coupler	Schnellkuppl.	Raccord rapide
34	1	32926600	.Teline	Konsol	Bracket	Gestell	Support
35	1	33018800	.Levy	Platta	Plate	Platte	Plaque
36	1	32913700	.Säiliö	Behållare	Container	Behälter	Réservoir
37	1	32913600	.Tulppa	Plugg	Plug	Stopfen	Bouchon
38	2	32927600	.Sanka	Bygel	Bow	Bügel	Support
39	1	32935000	.Putki	Rör	Pipe	Rohr	Tuyau
40	1	32929700	.Pikaliitin	Snabbkoppling	Quick coupler	Schnellkuppl.	Raccord rapide
41	1	32935700	.Putki	Rör	Pipe	Rohr	Tuyau
42	1	32944100	.Rengas	Ring	Ring	Ring	Anneau
43	1	32944000	.Holkki	Hylsa	Sleeve	Hülse	Manchon
44	1	32934800	.Painemittari	Tryck mätare	Press. instr.	Dr.instrument	Manomètre
	1	HS2638	.Lamppu	Lampa	Bulb	Lampe	Lampe
46	2	HA8331	.Ruuvi	Skruv	Screw	Schraube	Vis
47	1	32910500	.Pumppu	Pump	Pump	Pumpe	Pompe
48	1	32936900	.Liitin	Nippel	Union	Verbindung	Raccord
49	1	34276200	.Putki	Rör	Pipe	Rohr	Tuyau
50	1	34276400	.Liitin	Nippel	Union	Verbindung	Raccord
51	2	KH3612	.Tiiviste	Tätning	Gasket	Dichtung	Joint
							Incl. Container

C. Frame parts

6–cyl.



4–cyl.

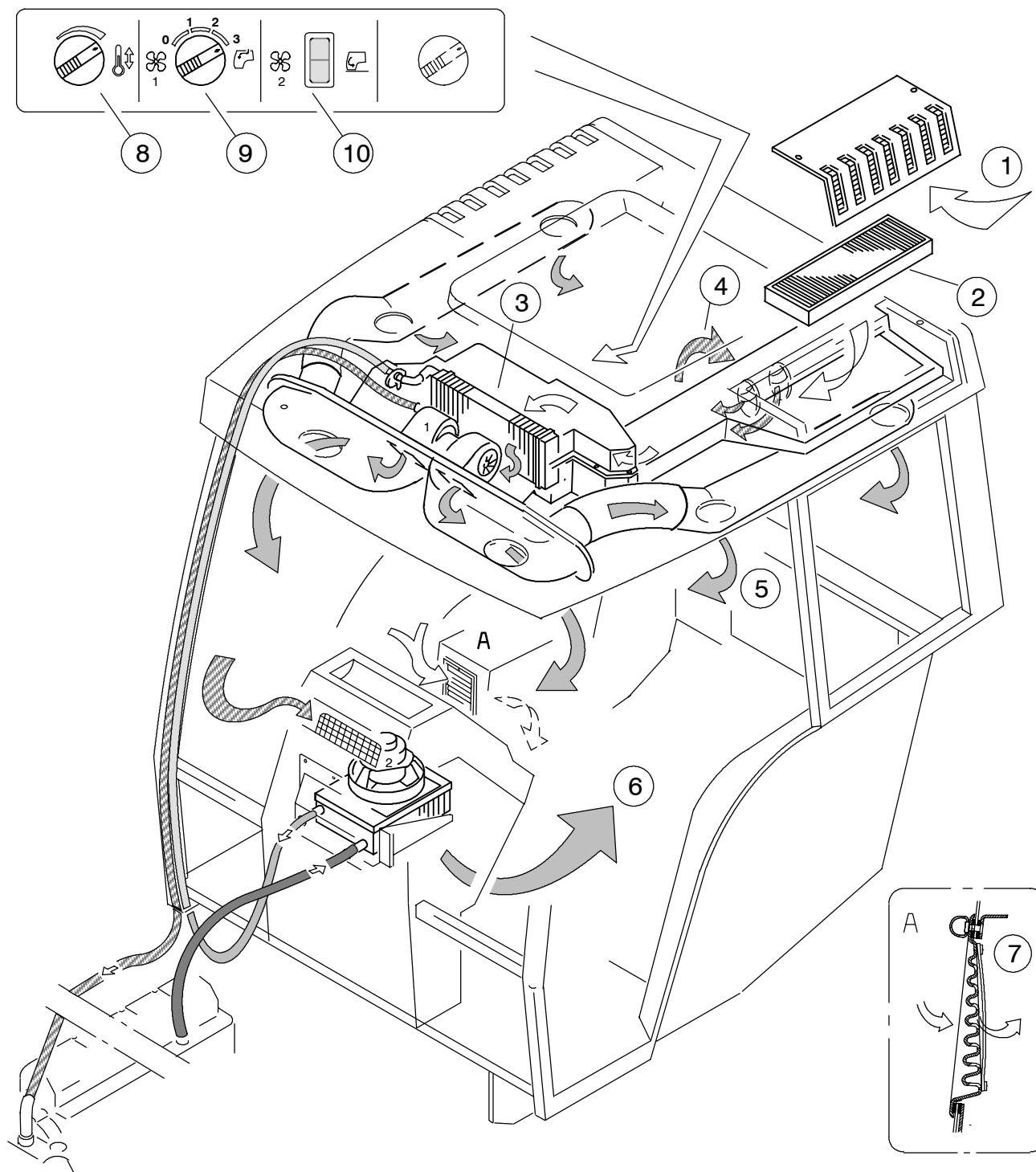


The upper frame parts have been fastened onto the sides of the engine oil sump. Between the upper frames and the oil sump there are spacer plates. Thickness of the plates depends on the front mounted implements (the factory thickness of the plates are 10 and 30 mm).

Both upper frame parts are fastened with eight bolts (**M20x75 8.8, 380 Nm**). In connection with the 6–cylinder engines the joint brackets of the frame parts are fastened with bolts and if the frame parts must be changed, possible dimension deviations can be compensated by adjusting the joint brackets. In connection with 4–cyl. engines the joint bracket have been casted on the lower frame. The pins have rubber bushings.

Note! On the side of the rubber bellows there are protective coverings. In addition, at the propeller shaft front joint there is a removable shield.

Cabin heater



1. Air intake
2. Air filter (clean at intervals of 200 running hours)
3. Heater radiator
4. Re-circulation of air (can be closed when needed)
5. Warm air into the cab (nozzles can be turned 360°)
6. Warm air for the lower part of the cab
7. Overpressure valve
8. Heating and ventilation control
9. Roof heater fan (3-speeds)
10. Floor heater fan

Note! The heater unit components on the roof are accessible after removing the upper roof plate. Detach the roof plate as follows:

- open the roof hatch and unscrew the screws on the edge of the hatch
- unscrew the screws on the rear and front edge of the roof (6 pcs)
- unscrew the front gutter plate screws
- remove the upper roof plate

Note! When fitting the roof plate, do not tighten the screws too hard because the roof plate material (glass fibre) could be damaged.