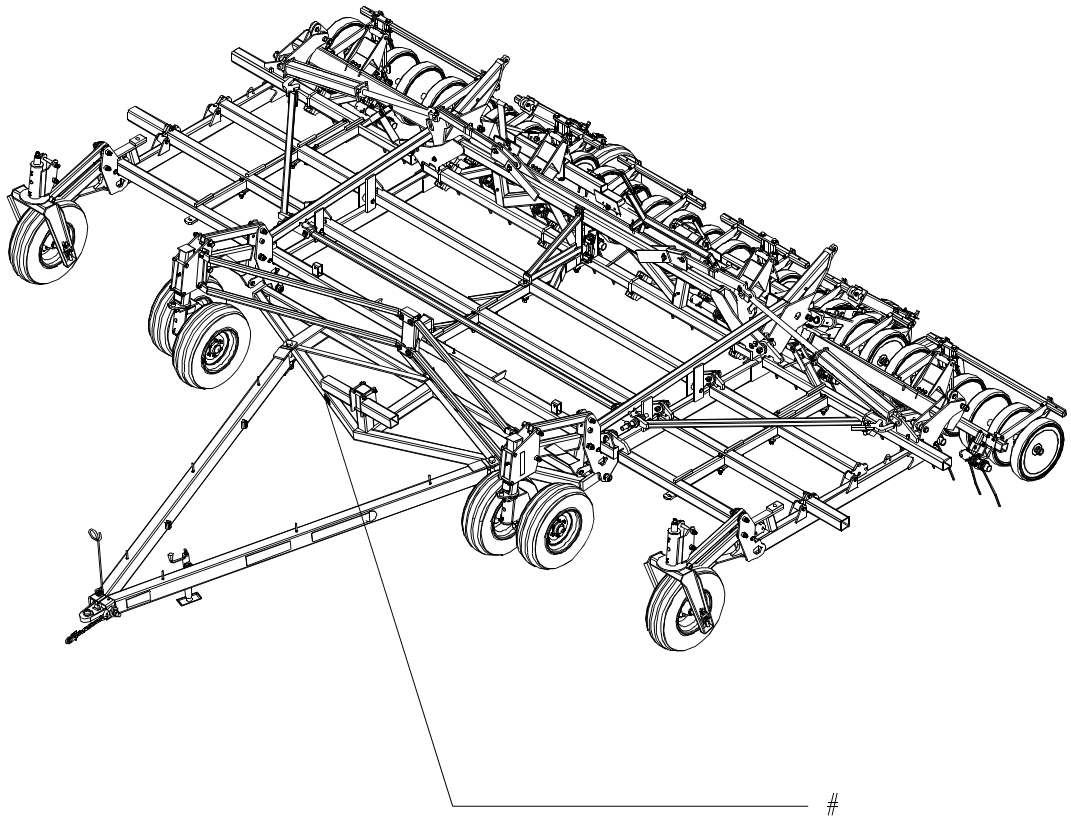
5000HD Air Drill

Repair Manual

87545763 7/06
Replaces 87354053

REPAIR PARTS IDENTIFICATION

This implement has a Product Identification Number (PIN) plate. The plate looks like the sample at right. For easy reference, locate the PIN plate at the location shown on the figure below. Record the number on this sheet. When requiring repair parts, take this number into your dealer.



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GENERAL INFORMATION

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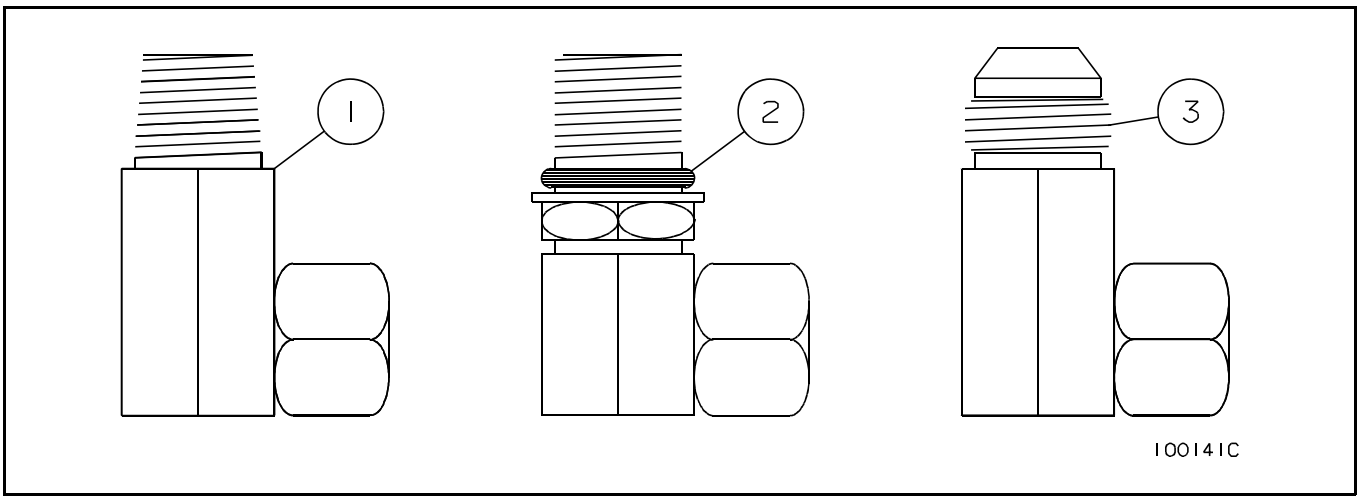
GENERAL SERVICE INFORMATION

NOTE: Read instructions carefully before you begin.

1. Be sure to read and follow all instructions to ensure proper assembly, operation, and service of the implement.
2. Service may require the use of a forklift or other suitable lifting device.
3. Implement must be serviced on a flat surface.
4. Left and right direction are determined from the rear of the implement facing the forward direction of travel.
5. Use a suitable sealant on hydraulic connections; sealant paste is recommended. Be careful to prevent sealant from entering the hydraulic system.
6. Apply a thread sealant to all female-to-male pipe thread connections.
7. Do not allow tape to enter the hydraulic system.
8. Do not use a thread sealant on ORB or swivel fitting connections.

NOTE: If you are assembling or servicing the implement inside of a building, ensure the door opening is large enough to allow the implement to be removed after assembly. Check the Specifications Tables in this section for the overall height and width in transport position.



Hydraulic Fitting Identification

NOTE: Pipe thread fittings (1), O-ring boss fittings (2) and JIC fittings (3) may be the types of hydraulic fittings used.

IMPORTANT INFORMATION

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel. Strictly comply with all instructions given. Use only the specialized tools required.

Anyone who carries out the above operations without complying with the procedures shall be responsible for the subsequent damages.

The manufacturer and all the organizations of its distribution chain, including (without limitation) national, regional, or local dealers, reject any responsibility for damages due to the anomalous behavior of parts and/or components not approved by the manufacturer itself. This includes those parts and/or components used for the servicing or repair of the product manufactured or marketed by the manufacturer.

In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages due to an anomalous behavior of parts and/or components not approved by the manufacturer.

The information in this manual is up to date at the date of the publication. It is the policy of the manufacturer to aim for continuous improvement. Some information could not be updated due to modifications of a technical or commercial type, as well as to suit the laws and regulations of different countries.

In case of disagreement, refer to your Sales and Service Networks.

SERVICE TOOLS

There are several service tools/update kits available through the parts department, for ease of servicing the air drill.

87446440	PIN GUIDES - (3) GUIDES FOR INSTALLING 1" AND 1.25" PINS
DS-200K	KIT, PRESS WHEEL PULLER - PULLING TOOL
DR-112K	KIT, TRANSPORT LOCK, SINGLE CASTER
DR-114K	KIT, TRANSPORT LOCK, DUAL CASTER
TP-950K	KIT, TRIP ASSEMBLY COMPRESSOR
87449833	WRENCH, ADJUSTING PACKER SET, CONTAINS DR-902 AND DR-903
DR-902	WRENCH, ADJUSTING PACKER LEFT
DR-903	WRENCH, ADJUSTING PACKER RIGHT

SAFETY

SAFETY - ALERT SYMBOL

This symbol is used to denote possible danger and care should be taken to prevent bodily injury. This symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

THIS SYMBOL APPEARS WITH TEXT READING "DANGER!", "CAUTION!", OR "WARNING!" THESE WORDS INDICATE THREE LEVELS OF POSSIBLE HAZARDS; THEY ARE DESCRIBED BELOW.

DANGER!

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

WARNING!

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

CAUTION!

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. The color associated with Caution is YELLOW.

GENERAL SAFETY PRACTICES

REVIEW this manual and operator's manual before servicing equipment.

NEVER allow anyone unfamiliar, untrained, or complacent to operate the air drill.

ALWAYS USE the jack supplied when unhooking the air drill.

ALWAYS ensure weight of towing vehicle is heavier than implement.

NEVER transport the air drill at speeds higher than 25 km/hr (16 mph).

NEVER transport the air drill and air cart with product in tank.

MAINTAIN YOUR AIR DRILL in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect machine life.

BE SURE the air drill is securely fastened to a large farm tractor or an air cart that is attached to a large farm tractor before operating hydraulics.

USE EXTREME CARE when making adjustments.

KEEP CHILDREN AWAY from all farm equipment.

SERVICING SAFETY PRECAUTIONS

BLOCK the wheels to prevent movement when servicing.

BE SURE the press wheels are blocked and wing lock pins are in place before servicing or adjusting opener assemblies or working on the air drill.

CAUTION!

The tractor engine should be stopped and the wheels blocked to prevent any movement during servicing.

Always be sure that the depth control safety lock is in place when servicing the air drill.

Always be sure the wings are in field position before servicing the air drill.

Escaping hydraulic fluid is a serious hazard. Escaping hydraulic fluid that is under pressure can penetrate the skin, causing serious injury. Relieve pressure before disconnecting the hydraulic lines.

Check/tighten all connections before applying pressure.

Never use your hand to search for leaks. Use a piece of cardboard or paper. If any fluid is injected into the skin, seek immediate medical attention. Gangrene may result if the wound is not treated within a few hours. Check your hydraulic fluid containers for warnings concerning the hydraulic fluids you use.

DO NOT walk within the radius of raised air drill wings.

SAFETY DURING OPERATION

DO NOT ALLOW ANYONE ON THE AIR DRILL while operating the air drill hydraulics.

NEVER disconnect the tractor from the drill while the wings are not completely raised or completely lowered. The drill should only be disconnected when it is fully in transport or field position.

KEEP CHILDREN AWAY from the air drill during operation.

NEVER STAND within the radius of the raised wings. Hydraulic or mechanical failure may result in rapid or uncontrolled falling of the wings.

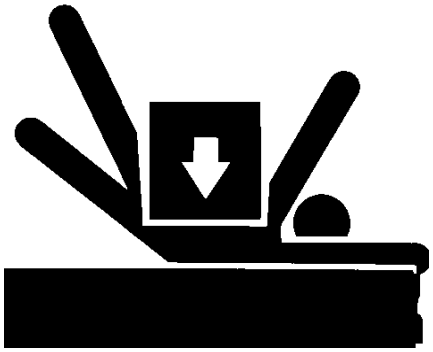
RAISE AND LOWER the wings only on level ground with the depth control fully raised.

097002S

PARK ON LEVEL GROUND and block adequately before servicing.

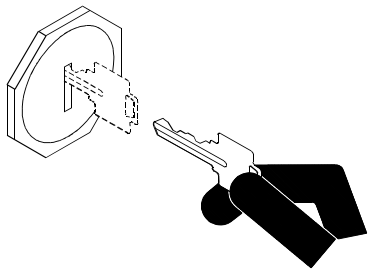
AVOID moving machines.

DO NOT sit or ride on moving implements. Death or injury may result.



098001M1

DISENGAGE POWER AND SHUT DOWN the tractor engine (remove the key from the tractor ignition), be certain that all moving parts have stopped, and all pressure in the system is relieved BEFORE cleaning, adjusting or lubricating the air drill.



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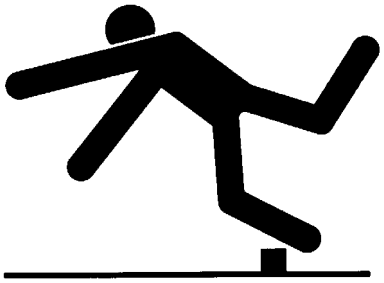
READ the operator's manual thoroughly.

KEEP service area clean to prevent injury to service technicians and others.



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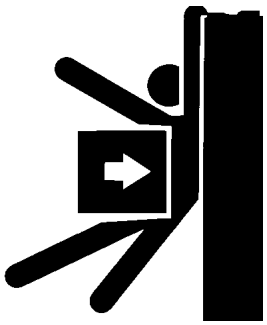
DO NOT enter tight areas. Be aware of pinch zones prior to commencing work.

BE CERTAIN machine is tagged 'out of order' or work area is supervised.



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BE CERTAIN all moving parts have stopped before servicing.

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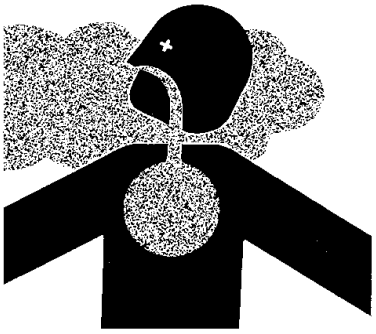
AVOID toxic vapors. Breathe clean air.



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DO NOT permit smoking.

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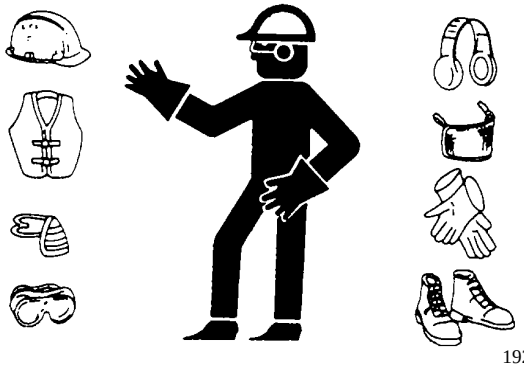
WEAR protective clothing.



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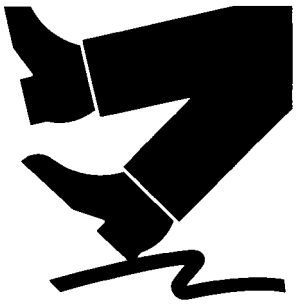
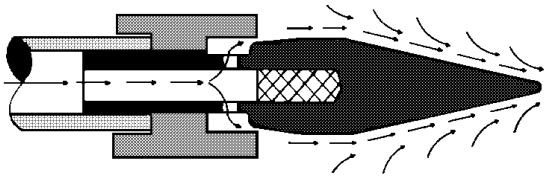
AIR AND AIR HOSES

COMPRESSOR HOSES may move unexpectedly when suddenly disconnected.



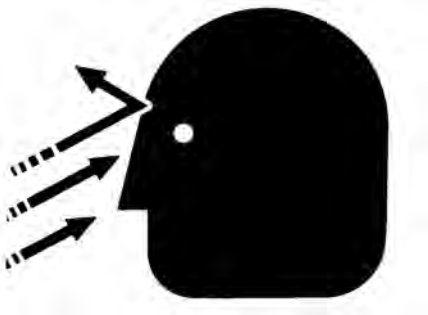
098005M1

USE PROPER air nozzles. Do not use compressed air to clean clothes or direct it toward any part of yourself.



098006M1

AVOID getting chemicals into eyes. Use eye protection.



098007M1

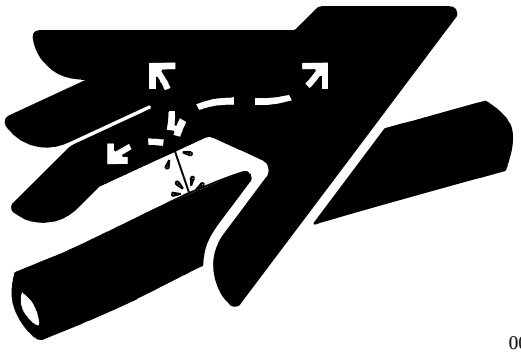
HYDRAULICS AND HYDRAULIC LEAKS

AVOID high pressure fluids.

ESCAPING HYDRAULIC FLUID IS A SERIOUS HAZARD. Escaping hydraulic fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting the hydraulic lines. Check/tighten all connections BEFORE applying pressure.

BEWARE excessive hydraulic pressure. Explosive structural failure can result.

BEWARE air locks in cylinders. Large cylinder displacements can occur without hydraulic oil flow.



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SHIELDS

REPAIR damaged shields.

KEEP all shields in place.

BE EXTRA CAUTIOUS when repairing or servicing without protective shields.

098008M1

ELECTRICAL

REMOVE the ground wire to avoid arcing contacts.

DISCONNECT wiring harnesses when welding.

098009M1

TIRES

USE A CAGE IF POSSIBLE when setting tires on rims.

AVOID excessive air pressure.

DO NOT OVER-INFLATE TIRES. NEVER lean over a tire while inflating it.

0960041S

SAFETY DURING TRANSPORT

CHECK with local authorities regarding transport on public roads. Obey all applicable laws and regulations.

ONLY TOW at a safe speed [25 km/hr (16 mph)]. Use caution when turning corners or meeting traffic.

BE SURE transport lighting is plugged in and that the red taillight(s), amber flashers, and amber signal lights are all working properly.

ALWAYS be certain that no one is behind or near the air drill before moving it.

BE SURE all safety transport locks are in place before transporting the air drill.

BE SURE the reflector decals are clearly visible from all sides of the air drill and the 'Slow Moving Vehicle' sign is at the rear of the air drill in clear view of overtaking traffic.

BE SURE the tractor weight is equal to or greater than the total weight of the air cart and air drill.

BE SURE all the wheel bolts are torqued to proper specifications before transporting the air drill.

WATCH for power poles and overhead power lines.

ALWAYS lock the tractor drawbar when transporting the air drill.

ALWAYS park the air drill on level ground and block the wheels before unhooking from the towing vehicle.

NEVER subject the air drill to steep side grades while in transport position.

ALWAYS use the hitch jack supplied with the air drill when unhooking from the tractor.

NEVER brake or decelerate during cornering.

ALWAYS enter corners slowly. SLOW the machine to turning speed before entering a corner. DO NOT decelerate while executing the turn.

SAFETY DECALS

KEEP SAFETY DECALS CLEAN. Wipe clean when necessary.

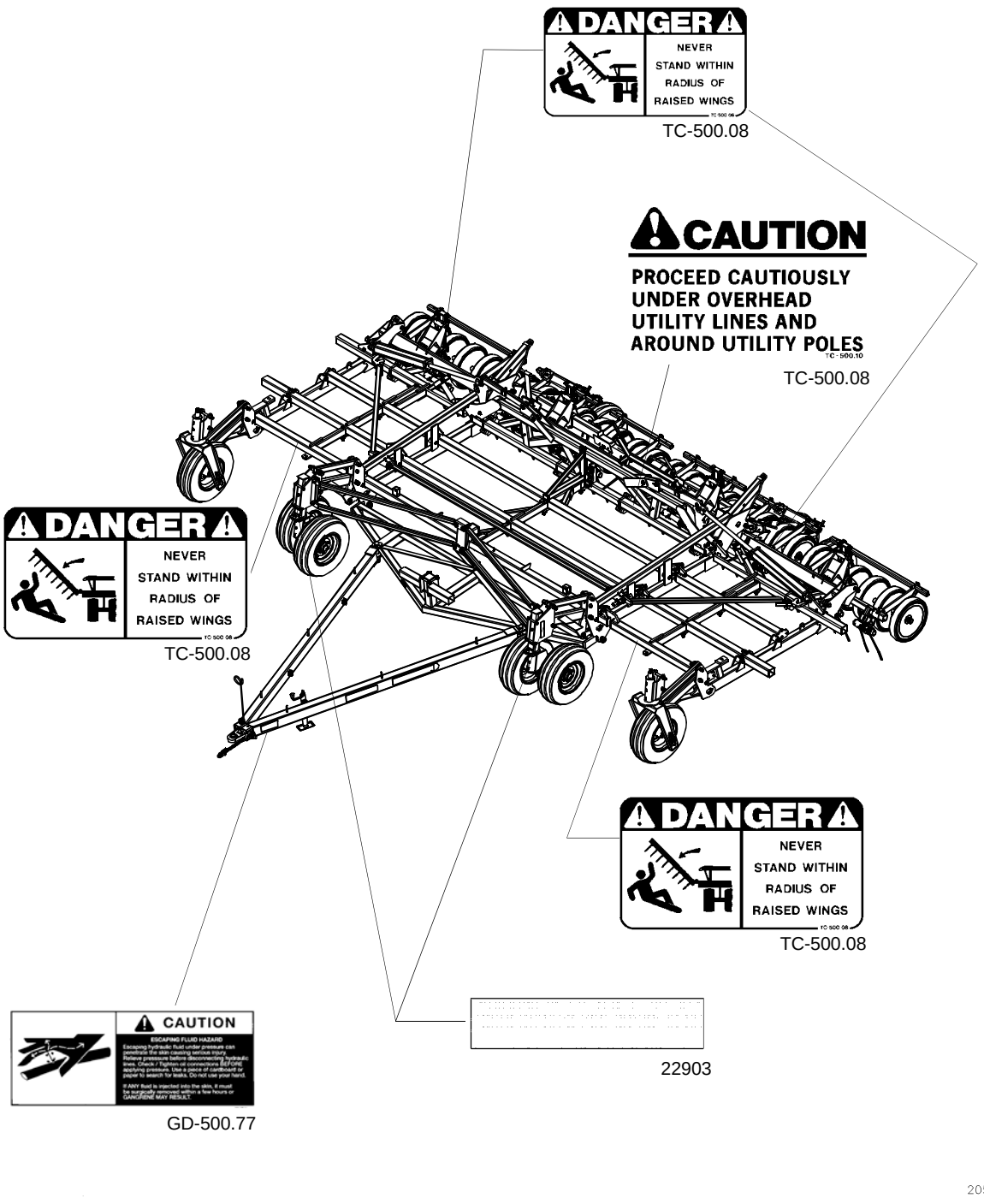
CHECK that the safety decals are not obstructed by the openers. If the decals are covered up, replace in a location that is clear to view.

REPLACE missing or unreadable decals. New decals are available from your dealer.

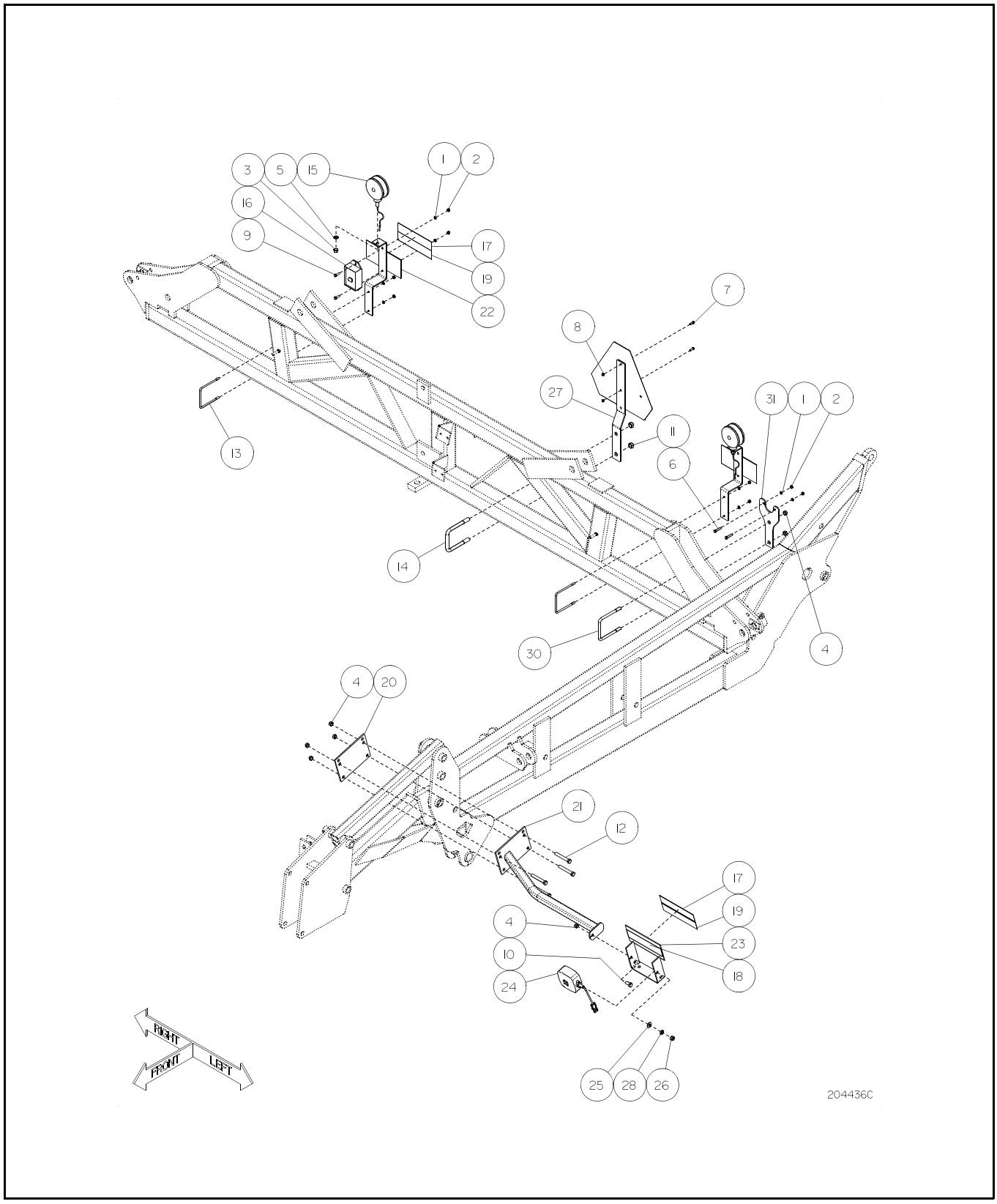
To replace decals:

1. Remove the old decal. Clean the area where the new decal will be affixed.
2. Remove the decal backing. Carefully affix the decal to the air drill.
3. Work the air bubbles out from under the decal. Use a clean piece of paper or the decal backing itself.

DECAL LOCATIONS



TRANSPORT LIGHTING ASSEMBLY



Transport Lighting Assembly

REF	DESCRIPTION	REF	DESCRIPTION
1	WASHER LOCK .313 YZD	17	DECAL RETROREFLECTIVE RED 2.0 X 9.0
2	NUT .313 UNC GR2 YZD	18	DECAL RETROREFLECTIVE AMBER 2.0 X 9.0
3	NUT .5 UNC GR2 YZD	19	SEALANT SONOLASTIC 150 BLACK
4	LOCKNUT .5 UNC GR B YZD 1-WAY, ALL METAL	20	BACKING PLATE UNIVERSAL
5	WASHER LOCK .5 YZD	21	BRACKET AMBER LIGHT MOUNT
6	SMV SIGN STEEL BACK 4 HOLES (ASAE S276.5) UNIVERSAL MOUNTI	22	RED LIGHT/DECAL MNT BRACKET
7	BOLT .25 X .75 UNC GR5 YZD	23	AMBER LIGHT/DECAL MNT BRACKET
8	LOCKNUT .25 UNC GR B YZD 1-WAY, ALL METAL	24	LIGHT AMBER WARNING ASSEMBLED
9	BOLT .313 X 1 UNC GR5 YZD	25	WASHER,.531 X 1.062 X .095
10	BOLT .5 X 1 UNC GR5 YZD	26	NUT .5 UNF GR5 YZD
11	LOCKNUT .625 UNC GR B YZD 1-WAY, ALL METAL	27	S.M.V. SIGN BRACKET
12	BOLT .5 X 3.5 UNC GR5 YZD	28	WASHER LOCK .5 YZD
13	BOLT US .313 4.125W 4.75D UNC GR2 YZD .75" THREAD	29	BOLT .313 X 1.5 UNC GR5 YZD
14	BOLT US .625 4.063W 5.375D UNC GR5 YZD 1.5" THREAD	30	BOLT US .5 4.125W 5.25D UNC GR5 YZD 1.25" THREAD
15	LIGHT ASSEMBLY TAIL/SIGNAL RED AGTQA	31	BRACKET PLUG RECEPTICLE
16	MODULE,IMPLEMENT LGHTNG CNTRL		

Transport Lighting and SMV Sign

UNITS OF MEASURE

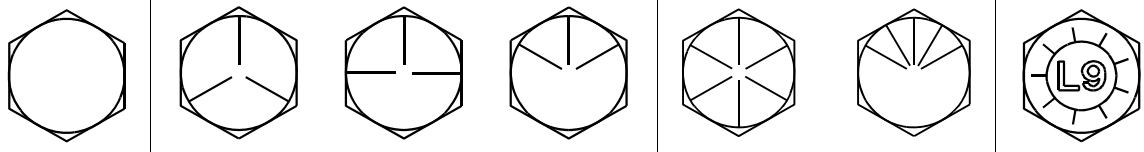
ABBREVIATIONS

Acres	ac	Kilometers per hour	km/hr
Atmospheres	atm	Kilopascal	kPa
Bushel	bu	Kilowatt	kW
Centimeters	cm	Liters per hectare	L/ha
Cubic Meters	m^3	Liters per minute	L/min
Cubic Feet	ft^3	Liters	L
Degrees Fahrenheit	F˚	Meters	m or M
Degrees Celsius	C˚	Miles per hour	mph
Feet	ft	Milliliters	mL
Fluid ounces	oz	Millimeters	mm
Gallons per minute	gal/m	Newton Meters	N·m
Gallons per acre	gal/ac	Ounces	oz
Gallons	gal	Pound force inches	lbf·in
Hectares	ha	Pound force feet	lbf·ft
Horsepower	hp	Pounds per square inch	PSI
Inch	in	Pounds	lbs
Kilograms per hectare	kg/ha	Pounds per acre	lbs/ac
Kilograms	kg	Ton (short)	t
Kilometer	km	Tonne	t

CONVERSION CHART

ac	x	0.405	=	Hectares (ha)
atm	x	101.325	=	kPa
Bar	x	100.00	=	kPa
Bar	x	14.50	=	PSI
bu	x	35.239	=	L
cm	x	0.39	=	in
C°	(1.8 C°)+32		=	F°
ft	x	0.31	=	m
ft^3	x	0.03	=	m^3
F°	(F°-32)	x(0.556)	=	C°
ha	x	2.471	=	ac
hp	x	1.746	=	kW
Imperial ounces	x	0.96	=	U.S. oz
Imperial oz	x	28.413	=	mL
Imperial oz	x	0.006	=	Imperial gal
Imperial gal /ac	x	11.234	=	L/ha
Imperial gal/min	x	4.546	=	L/min
Imperial gal	x	160.000	=	Imperial oz
Imperial gal	x	1.201	=	U.S. gal
Imperial gal	x	4.546	=	L
Imperial gal /ac	x	1.201	=	U.S. gal/ac
in	x	25.400	=	mm
in	x	2.540	=	cm
kg	x	2.210	=	lb
kg/ha	x	0.892	=	lbs/ac
km/hr	x	0.621	=	mph
km	x	0.621	=	Mile
kPa	x	0.145	=	PSI
kPa	x	0.010	=	atm
kPa	x	0.010	=	Bar
kW	x	1.358	=	hp
L	x	0.028	=	bu
L/ha	x	0.107	=	U.S. gal/ac
L/ha	x	0.089	=	Imperial gal /ac
L	x	0.264	=	U.S. gal
L/min	x	0.220	=	Imperial gal/min
L	x	0.220	=	Imperial gal
L/min	x	0.26	=	U.S. gal/min
lb	x	0.454	=	kg
lbf •ft	x	1.356	=	N •m
lbf •in	x	0.113	=	N •m
lbs/ac	x	1.121	=	kg/ha
m	x	3.281	=	ft
m^3	x	35.34	=	ft^3
Mile	x	1.609	=	km
mL	x	0.035	=	Imperial oz
mL	x	0.034	=	U.S. oz
mm	x	0.039	=	in
mph	x	1.609	=	km/hr
N •m	x	8.851	=	lbf •in
N •m	x	0.738	=	lbf •ft
PSI	x	0.069	=	Bar
PSI	x	6.895	=	kPa
short t	x	0.907	=	t
t	x	1.10	=	short t
U.S. gal/min	x	3.785	=	L/min
U.S. oz	x	1.04	=	Imperial oz
U.S. gal/ac	x	0.833	=	Imperial gal /ac
U.S. oz	x	0.008	=	U.S. gal
U.S. gal/ac	x	9.356	=	L/ha
U.S. gal	x	128.000	=	U.S. oz
U.S. oz	x	29.57	=	mL
U.S. gal	x	0.83	=	Imperial gal
U.S. gal	x	3.79	=	L

BOLT TORQUE INFORMATION

	GRADE						
	1 OR 2	**5**	**5.1**	**5.2**	**8**	**8.2**	**L9 (ALLOY)**
SAE MARKINGS FOR BOLTS AND CAP SCREWS							
	2		**5**		**8**		**L9 (ALLOY)**
SAE MARKINGS FOR HEX NUTS							

Bolt and Nut Grade Information

1. Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

2. Make sure the fastener threads are clean and that thread engagement is started. This will prevent them from failing when being tightened.

3. Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque; applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

4. The L9 (Alloy) fasteners torque values are for a bolt, nut, and two washers.

NOTE: When using L9 (Alloy) fasteners, do not use the values in this table for tapped holes.

	GRADE 2*				GRADE 5, 5.1, OR 5.2				GRADE 8 OR 8.2				L9 (ALLOY)			
	Dry **		Lubricated**		Dry **		Lubricated**		Dry **		Lubricated**		Head		Nut	
SIZE	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft
1/4 UNF	7.5	5.5	5.7	4.2	10.8	8	8.5	6.3	16.3	12	12.2	9	13.6	10	14.9	11
1/4 UNC	8.5	6.3	6.4	4.7	13.6	10	9.8	7.2	19	14	13.6	10	16.3	12	17.6	13
5/16 UNF	15	11	11	8	23	17	18	13	33	24	24	18	26	19	28	21
5/16 UNC	16	12	12	9	26	19	19	14	37	27	27	20	27	20	31	23
3/8 UNF	27	20	20	15	41	30	31	23	61	45	47	35	41	30	45	33
3/8 UNC	31	23	23	17	47	35	34	25	68	50	47	35	47	35	52	38
7/16 UNF	43	32	33	24	68	50	47	35	95	70	68	50	75	55	81	60
7/16 UNC	49	36	37	27	75	55	54	40	108	80	81	60	81	60	88	65
1/2 UNF	68	50	47	35	102	75	75	55	149	110	108	80	115	85	129	95
1/2 UNC	75	55	54	40	115	85	88	65	163	120	122	90	129	95	142	105
9/16 UNF	95	70	75	55	149	110	108	80	203	150	149	110	163	120	190	140
9/16 UNC	108	80	81	60	163	120	122	90	231	170	176	130	183	135	203	150
5/8 UNF	136	100	102	75	203	150	149	110	285	210	217	160	231	170	251	185
5/8 UNC	149	110	115	85	231	170	176	130	325	240	244	180	258	190	278	205
3/4 UNF	237	175	176	130	353	260	271	200	515	380	380	280	359	265	393	290
3/4 UNC	271	200	190	140	407	300	298	220	570	420	420	310	447	330	481	355
7/8 UNF	231	170	170	125	583	430	434	320	814	600	610	450	644	475	685	505
7/8 UNC	244	180	190	140	637	470	475	350	909	670	678	500	705	520	793	585
1 UNF	339	250	258	190	868	640	651	480	1234	910	922	680	746	550	1051	775
1 UNC	380	280	285	210	976	720	732	540	1383	1020	1031	760	949	700	1220	900
1-1/8 UNF	475	350	366	270	1071	790	800	590	1749	1290	1315	970	1390	1025	1559	1150
1-1/8 UNC	542	400	407	300	1207	890	909	670	1953	1440	1464	1080	1559	1150	1797	1325
1-1/4 UNF	678	500	515	380	1519	1120	1139	840	2468	1820	1844	1360	1898	1400	2170	1600
1-1/4 UNC	746	550	570	420	1681	1240	1261	930	2726	2010	2048	1510	2170	1600	2373	1750
1-1/2 UNF	1180	870	881	650	2644	1950	1980	1460	4285	3160	3214	2370	3932	2900	4407	3250
1-1/2 UNC	1329	980	990	730	2983	2200	2224	1640	4827	3560	3621	2670	4475	3300	4949	3650

Bolt Torque Information

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

** *"Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.*

* *Grade 2 applies for hex caps (not hex bolts) up to 6" (152 mm) long. Grade 1 applies for hex cap screws over 6" (152 mm) long, and for all other types of bolts and screws of any length.*

MACHINE SPECIFICATIONS

AIR DRILL DIMENSIONS

Metric Dimensions (Meters)

	7.2" SPACING		10" SPACING		12" SPACING	
BASE MACHINE	# OF SHANKS	WIDTH OF CUT	# OF SHANKS	WIDTH OF CUT	# OF SHANKS	WIDTH OF CUT
8.2	45	8.2	34	8.6	28	8.5
10.1	55	10.1	40	10.2	34	10.4
11.9	65	11.9	48	12.2	40	12.2
13.7	75	13.7	56	14.2	46	14.0
15.5	85	15.5	62	25.7	52	15.9
17.4	95	17.4	70	17.8	58	17.7

BASE MACHINE	TRANSPORT WIDTH (1)	TRANSPORT HEIGHT (2)	AIR DRILL LENGTH
8.2	5.8	3.6	8.3
10.1	5.8	4.5	8.3
11.9	5.7	5.4	8.3
13.7	5.8	4.4	9.7
15.5	5.8	5.3	9.7
17.4	5.8	5.3	9.7

Imperial Dimensions (Feet)

	7.2" SPACING		10" SPACING		12" SPACING	
BASE MACHINE	# OF SHANKS	WIDTH OF CUT	# OF SHANKS	WIDTH OF CUT	# OF SHANKS	WIDTH OF CUT
27	45	27	34	28.3	28	28.0
33	55	33	40	33.3	34	34.0
39	65	39	48	40.0	40	40.0
45	75	45	56	46.7	46	46.0
51	85	51	62	51.7	52	52.0
57	95	57	70	58.3	58	58.0

BASE MACHINE	TRANSPORT WIDTH (1)	TRANSPORT HEIGHT (2)	AIR DRILL LENGTH
27	19'	11' 8"	27' 3"
33	19'	14' 8"	27' 3"
39	18' 10"	17' 9"	27' 3"
45	19'	14' 6"	31' 11"
51	19'	17' 6.5"	31' 11"
57	19'	17' 6.5"	31' 11"

MACHINE COMPOSITION

	CENTER SECTION	INNER WING	OUTER WING
8.2 m (27')	4.6 m (15')	-	1.8 m (6')
10.1 m (33')	4.6 m (15')	-	2.7 m (9')
11.9 m (39')	4.6 m (15')	-	3.7 m (12')
13.7 m (45')	4.6 m (15')	2.7 m (9')	1.8 m (6')
15.5 m (51')	4.6 m (15')	3.7 m (12')	1.8 m (6')
17.4 m (57')	4.6 m (15')	3.7 m (12')	2.7 m (9')

IMPLEMENT WEIGHT

Implement Weight in Kilograms and Pounds 7.2" Spacing

WIDTH (feet)	SHANKS	HOE/TRIP SHANK		350 POUND TRIPS		550 POUND TRIPS	
3 1/2" STEEL PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	45	7,030	15,498	8,724	19,233	8,826	19,458
33	55	8,004	17,645	9,909	21,845	10,033	22,120
39	65	8,987	19,812	11,260	24,823	11,407	25,148
45	75	11,200	24,691	13,953	30,760	14,123	31,135
51	85	11,973	26,395	15,011	33,093	15,204	33,518
57	95	12,957	28,566	16,220	35,760	16,436	36,235
3" RUBBER PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	45	7,135	15,731	8,865	19,543	8,967	19,768
33	55	8,115	17,891	10,058	22,174	10,183	22,449
39	65	9,132	20,132	11,463	25,271	11,610	25,596
45	75	11,373	25,073	14,187	31,278	14,358	31,653
51	85	12,238	26,981	15,277	33,679	15,469	34,104
57	95	13,254	29,221	16,518	36,415	16,733	36,890

NOTE: Weights listed do not include ground engaging tools or harrows.

Implement Weight in Kilograms and Pounds 10" Spacing

WIDTH (feet)	SHANKS	HOE/TRIP SHANK		350 POUND TRIPS		550 POUND TRIPS	
3 1/2" STEEL PRESS WHEELS							
		kg	**lbs**	**kg**	**lbs**	**kg**	**lbs**
27	34	7,212	15,900	8,107	17,873	8,184	18,043
33	40	8,142	17,950	9,036	19,920	9,126	20,120
39	48	9,097	20,055	10,298	22,704	10,407	22,944
45	56	11,406	25,146	12,882	28,400	13,009	28,680
51	62	12,193	26,881	13,706	30,216	13,846	30,526
57	70	13,164	29,022	14,790	32,606	14,949	32,956
4 1/2" STEEL PRESS WHEELS							
		kg	**lbs**	**kg**	**lbs**	**kg**	**lbs**
27	34	7,387	16,286	8,241	18,168	8,318	18,338
33	40	8,353	18,416	9,201	20,284	9,291	20,484
39	48	9,354	20,623	10,491	23,128	10,600	23,368
45	56	11,700	25,795	13,106	28,893	13,233	29,173
51	62	12,533	27,631	13,957	30,769	14,097	31,079
57	70	13,538	29,846	15,072	33,228	15,231	33,578
3" RUBBER PRESS WHEELS							
		kg	**lbs**	**kg**	**lbs**	**kg**	**lbs**
27	34	7,337	16,175	8,223	18,128	8,300	18,298
33	40	8,294	18,285	9,177	20,231	9,267	20,431
39	48	9,276	20,450	10,464	23,070	10,573	23,310
45	56	11,613	25,601	13,073	28,822	13,200	29,102
51	62	12,426	27,395	13,922	30,692	14,062	31,002
57	70	13,425	29,596	15,031	33,138	15,190	33,488
4" RUBBER PRESS WHEELS							
		kg	**lbs**	**kg**	**lbs**	**kg**	**lbs**
27	34	7,463	16,454	8,340	18,386	8,417	18,556
33	40	8,447	18,624	9,319	20,544	9,409	20,744
39	48	9,477	20,894	10,632	23,439	10,741	23,679
45	56	11,839	26,100	13,269	29,254	13,396	29,534
51	62	12,693	27,983	14,140	31,173	14,280	31,483
57	70	13,714	30,235	15,274	33,674	15,433	34,024
5 1/2" RUBBER PRESS WHEELS							
		kg	**lbs**	**kg**	**lbs**	**kg**	**lbs**
27	34	7,627	16,816	8,482	18,700	8,559	18,870
33	40	8,645	19,060	9,494	20,931	9,585	21,131
39	48	9,698	21,381	10,836	23,890	10,945	24,130
45	56	12,096	26,666	13,503	29,770	13,630	30,050
51	62	12,980	28,617	14,406	31,760	14,547	32,070
57	70	14,038	30,947	15,574	34,334	15,732	34,684

Implement Weight in Kilograms and Pounds 12" Spacing

WIDTH (feet)	SHANKS	HOE/TRIP SHANK		350 POUND TRIPS		550 POUND TRIPS	
3 1/2" STEEL PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	28	6,208	13,687	7,618	16,795	7,682	16,935
33	34	6,984	15,397	8,514	18,770	8,591	18,940
39	40	7,822	17,245	9,661	21,298	9,751	21,498
45	46	9,872	21,764	12,110	26,698	12,214	26,928
51	52	10,539	23,234	12,921	28,485	13,039	28,745
57	58	11,337	24,993	13,856	30,547	13,987	30,837
4 1/2" STEEL PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	28	6,305	13,900	7,722	17,023	7,785	17,163
33	34	7,103	15,659	8,633	19,032	8,710	19,202
39	40	7,961	17,551	9,815	21,638	9,906	21,838
45	46	10,033	22,118	12,271	27,052	12,375	27,282
51	52	10,719	23,632	13,111	28,905	13,229	29,165
57	58	11,539	25,440	14,059	30,994	14,190	31,284
3" RUBBER PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	28	6,293	13,874	7,693	16,960	7,756	17,100
33	34	7,088	15,626	8,618	18,999	8,695	19,169
39	40	7,945	17,515	9,783	21,568	9,874	21,768
45	46	10,013	22,075	12,251	27,009	12,355	27,239
51	52	10,699	23,587	13,077	28,829	13,195	29,089
57	58	11,516	25,388	14,035	30,942	14,167	31,232
4" RUBBER PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	28	6,378	14,061	7,778	17,147	7,841	17,287
33	34	7,192	15,855	8,722	19,228	8,799	19,398
39	40	8,068	17,786	9,906	21,839	9,997	22,039
45	46	10,155	22,388	12,393	27,322	12,497	27,552
51	52	10,859	23,941	13,237	29,183	13,355	29,443
57	58	11,695	25,784	14,215	31,338	14,346	31,628
5 1/2" RUBBER PRESS WHEELS							
		kg	lbs	kg	lbs	kg	lbs
27	28	6,935	15,288	7,881	17,374	7,944	17,514
33	34	7,318	16,134	8,848	19,507	8,925	19,677
39	40	8,215	18,111	10,053	22,164	10,144	22,364
45	46	10,326	22,765	12,564	27,699	12,668	27,929
51	52	11,052	24,365	13,430	29,607	13,547	29,867
57	58	11,911	26,260	14,431	31,814	14,562	32,104

OTHER SPECIFICATIONS

Spacing Configurations **4-Row** **3-Row**	 18.3, 25.4, or 30.5 cm (7.2, 10, or 12 inch) spacings 25.4 or 30.5 cm (10 or 12 inch) spacings
Frame/Ground Clearance	71.1 to 81.3 cm (28 to 32 inches) depending on openers
Cultivator-Style Trips	160 kg (350 lb) with 2.2 X 5.1 cm (7/8 X 2") shank, 4.4 cm (1 3/4") centers fit 47 degree sweeps 160 kg (350 lb) with 2.2 X 5.1 cm (7/8 X 2") shank, 5.7 cm (2 1/4") centers fit 50 degree sweeps 250 kg (550 lb) with 2.5 X 5.1 cm (1 X 2") shank, 4.8 cm (1 7/8") centers fit 47 degree sweeps 250 kg (550 lb) with 2.5 X 5.1 cm (1 X 2") shank, 5.7 cm (2 1/4") centers fit 50 degree sweeps
Adjustable Floating Hoe-Style Shank/Opener	1.9 X 5.1 cm (3/4 X 2") edge-on shank at bottom special openers required four pressure settings, ranging from 27.2 to 104.3 kg (60 to 230 lb) 5.7 cm (2 1/4") hole centers
Press Wheels	Steel 8.9 X 55.9 cm (3 1/2 X 22") 11.4 X 55.9 cm (4 1/2 X 22") Rubber 7.6 X 55.9 cm (3 X 22") 10.2 X 55.9 cm (4 X 22") 14 X 55.9 cm (5 1/2 X 22")
Options	shim kits to lower shanks behind tractor wheels. single or dual endmarkers press wheel mud scrapers tow hitch for NH_3 cart bolt-on caps for steel press wheels 2-bar harrow for 3-row configuration 1-bar harrow for 4-row configuration dual offset caster for the center section of 8.2 and 10.1 m (27 and 33 ft) models dual offset caster for the wing section (all models)

PAINT TOUCH-UP PROCEDURE

1. Sand the area to be painted, using 220 grit sandpaper (or finer).

NOTE: Try to avoid going down to bare metal any more than necessary.

2. Feather back any areas that were scuffed to 'blend in' area as much as possible.

3. Blow off sanding dust with compressed air; if no compressed air is available, wipe off dust completely with a tack cloth or other soft cloth. **Avoid use of water** if bare metal is exposed.

4. Mask off area that is to be painted with masking tape. Place cardboard, plastic sheeting, or another barrier in such a way as to catch overspray.

5. Shake paint can well, or prepare paint according to package directions if it is a kit. Follow MSDS sheet instructions for required personal protective equipment.

6. Paint area using light coats, allowing to dry to 'tack dry' between each coat. Two or three coats should be sufficient. Allow to dry.