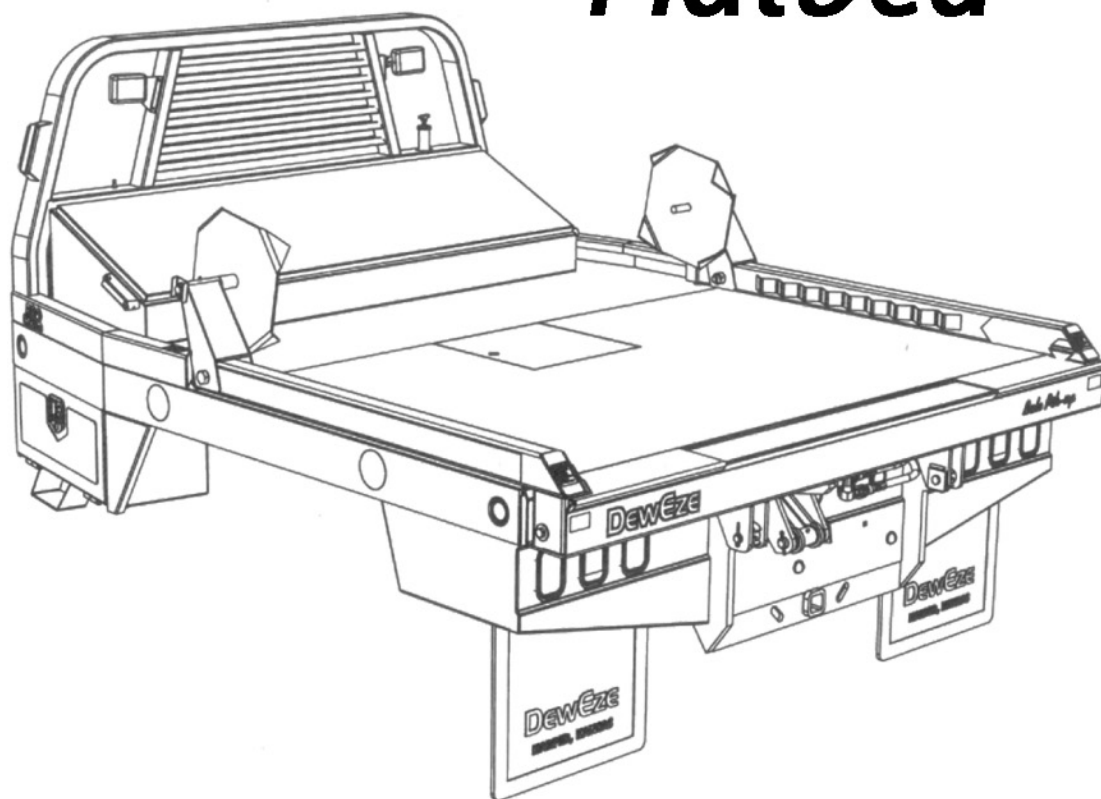


400 & 500 Series Flatbed



Operation & Service Manual

Thank you for purchasing a DewEze Flatbed.

As with all DewEze products, the 400 and 500 Series Flatbeds have been thoroughly tested and strongly built to provide a product that can be relied on. The Flatbed is equipped with live hydraulics which allows it to be used for a wide range of lifting and hauling tasks. This manual is written as an aid to operating and maintaining the DewEze Flatbed.

A Flatbed can present hazards to an operator who follows unsafe procedures in either the operation or maintenance of the unit. Therefore, **SAFETY WARNINGS** are present at certain locations in the text. Harper Industries is not responsible for accidents or injuries that result from the misuse or lack of maintenance of the Flatbed.

SYMBOL:  **SAFETY WARNING!**

MEANING: The **SAFETY WARNING** symbol found throughout this manual is used to call attention to instructions involving personal safety and the safety of others. Failure to understand and obey these warnings can result in serious injury or death.

Harper Industries, Inc. is continually striving to improve the design and performance of its products. We reserve the right to make changes in specifications and design without thereby incurring any obligation relative to previously manufactured products.

For any questions please contact your local dealer or the DewEze factory directly.



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STATEMENT OF WARRANTY

Harper Industries warrants to each purchaser of a new DewEze Flatbed from an authorized dealer or representative, that such equipment will be free of manufacturer's defects which appear while in normal service for a period of **TWO YEARS** commencing with delivery to the original user. The Flatbed hydraulic system is warranted for a period of one year.

The obligation of DewEze under this warranty is expressly limited, at our option, to replacement or repair at a service facility designated by DewEze or at the manufacturing plant in Harper, Kansas. Parts will be replaced after inspection discloses it to have been defective. This warranty does not apply to defects caused by damage or unreasonable use (including failure to provide reasonable and necessary maintenance) while in the possession of the consumer.

DewEze shall not be liable for consequential damages of any kind, including but not limited to consequential labor costs or transportation charges in connection with replacement or repair or defective parts.

DewEze makes no warranty with respect to trade accessories. They are subject to the warranties of their respective manufacturers.

ANY IMPLIED OR STATUTORY WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. DewEze makes no other express warranty, nor is anyone authorized to make any of behalf of DewEze.

For further information please contact your nearest DewEze dealer.

RECORD

DATE OF PURCHASE _____

DEALER'S NAME _____

DEALER'S PHONE _____

SERIAL NUMBER _____

Specifications

MODEL IDENTIFICATION

MODEL	470	470W	475	477	478	480	482	485	487	578	582	587
WIDTH	7'	7' 8"	7'	7'	7' 8"	7' 8"	7' 8"	7' 8"	7' 8"	8'	8'	8'
LENGTH	7'	7'	8' 6"	9' 4"	8' 6"	9' 2"	9' 4"	10' 6"	11' 6"	8' 6"	9' 4"	11' 6"
WEIGHT	1830	1860	1880	2000	1960	2020	2040	2220	2260	2060	2180	2400

*Add 100 lbs. for extendible arm option.

FLATBED SPECIFICATIONS

HYDRAULIC SYSTEM	Powered by engine driven pump or self-contained battery-powered electric/hydraulic unit
SYSTEM PRESSURE	2450 psi
OIL RESERVOIR CAPACITY	10 Gallons
OIL FILTER	DewEze 720043, WIX 51551 (10 micron)
CYLINDER, LIFT	4.50" x 16.64"
CYLINDER, SQUEEZE	2.00" x 34.00" (400 Series) 2.00" x 39.25" (500 Series & all XRM)
CYLINDER, EXTENDIBLE*	2.00" x 20.0" (left side)
CYLINDER, EXTENDIBLE*	2.50" x 20.0" (right side)

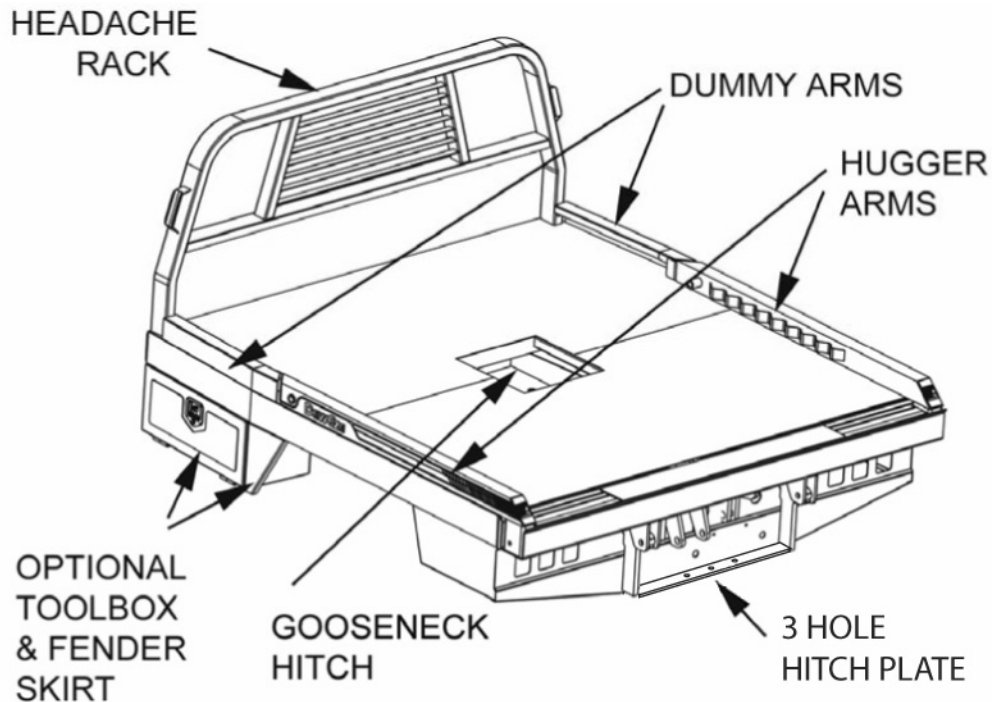
*Cylinders used for extendible arm are optional.

BOLT TORQUE SPECIFICATIONS (UNLESS SPECIFIED ELSEWHERE)

BOLT DIAMETER	BOLT TORQUE (ft-lb)
5/16"	19
3/8"	33
5/8"	160
1"	630

Note:
Specifications are for No. 5 bolts with no lubricant.

Feature Identification



Dummy Arms – serve as side rails, along with the hugger arms, for the flatbed.

Hugger Arms – squeeze together to grip the bale and lift it onto the flatbed. When the arms are stored they serve as side rails for the flatbed.

Headache Rack – protects the rear pickup window. The hydraulic fluid tank and the valve are also located in the bottom, left side of the headache rack.

Gooseneck Hitch – is located under a door in the middle of the bed.

Hitch Plate – has three holes for towing.

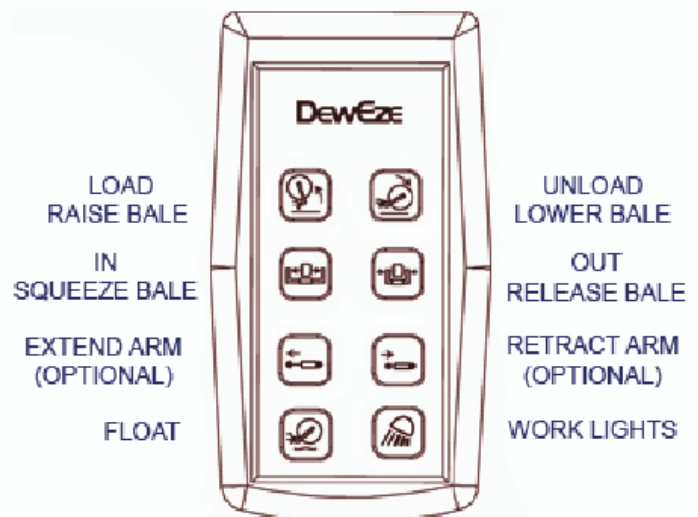


SAFETY WARNING!

Do not exceed chassis manufacturer's recommended towing capacity.

Optional Toolbox & Fender Skirt – mount under the bed on both sides. The Electric / Hydraulic power unit mounts inside of the toolbox on the left side.

Remote Hand Control – operates the functions of the flatbed. Uses two AAA batteries.



Safety Guidelines

Equipment Safety

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. Many accidents can be avoided by observing the precautions in this section. To avoid personal injury, study the precautions listed in this manual and follow them.

- Do not attempt to operate this equipment under the influence of drugs or alcohol.
- Review the safety instructions with all users annually.
- This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operation.
- Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.

If you have any questions not answered in this manual or require additional copies, please contact your dealer or DewEze Manufacturing.

General Flatbed Safety



SAFETY WARNING!

Do not stand under the hugger arms when operating the bale pickup unit, even when arms are empty.

- Replace any CAUTION, WARNING, DANGER or instructional decal that is not readable or is missing.
- Make sure all safety pins are in place and flatbed mounting bolts are secure to the truck frame.
- Make sure hinges, joints, and sliding parts are well greased, especially during off season to prevent rusting and binding.
- Check with truck dealer for any load limits, additional suspension or tire requirements. The flatbed's carrying capability may exceed the truck's GVRW, especially on a $\frac{3}{4}$ ton truck.

Hydraulic Safety



SAFETY WARNING!

Hydraulic system operates under high pressure and escaping fluid can penetrate the skin.

- Do not operate hydraulic system with hood open.
- Do not activate electric clutch unless truck engine is at idle. Switching the clutch on at road speeds can seriously damage your hydraulic system.

Operating Instructions

Beginning Operation

- Turn pump switch to the “on” position while engine is idling. The red light will indicate that pump is on.

IMPORTANT: In cold weather, allow the engine to idle for 5-10 minutes with pump on before operating arms. This will allow the oil to warm up and flow more freely. Neglecting to do this may cause hydraulic pump failure.

Loading

- Back truck against bale with arms wide apart and tilted slightly upward.
- Close arms firmly against the bale.
- Lift bale onto truck.
- Release bale and repeat operation for second bale.

IMPORTANT: When hauling one bale, make sure it is resting on the bed. When hauling two bales make sure the second bale is as far forward as it will go (Fig. 1). Carrying a bale behind the bed, as shown in Fig. 2, places excessive stress on the cylinder, linkage and pins.

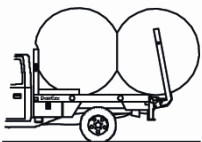


Fig. 1

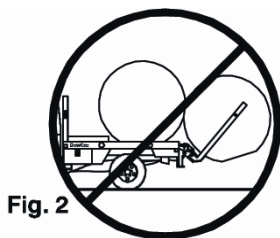


Fig. 2

CAUTION: Do not exceed GVWR of truck when loading.

Unloading

- To unload, do the reverse of the loading operation.

NOTE: Spinners may be necessary to grip the front bale for unloading.

Unrolling

NOTE: Risers and spinners must be installed to unroll a bale.

- Position arms over bale so that spinners are at the center of the bale.
- Close arms and pick up bale.
- To unroll, lower bale to ground.
- Turn pump switch “off” and push “float” switch on hand control.
- Begin to slowly drive forward. Bale will gradually unroll.
- When finished, lightly touch “float” again to disengage function.

Storing the Arms

- Close arms partially and lay on flatbed.
- Open arms until they are flush with side of the bed. They now function with dummy arms as side rails.

Turn System Off

- Turn the pump off and release pressure in the system by stroking the function switches when it is not in use.

CAUTION: Operating the truck at road speeds, or above 2,000 RPM, with the pump engaged, may cause hydraulic pump failure.

Maintenance

Check Daily or Before Use

- Check hydraulic oil level. Keep level between “add” and “full” on dipstick.
- Check belt tension and idler pulleys on engine clutch pump system.
- Examine hydraulic hoses for cracks or leaks.

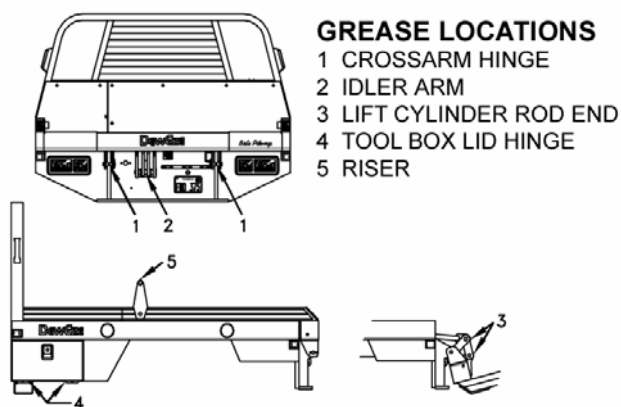


SAFETY WARNING!

Do not check for hydraulic leaks with your hands while the system is operating. Use a piece of wood or cardboard. Hydraulic fluid escaping under pressure can penetrate the skin and may cause death if not treated immediately.

Grease

- Grease the locations indicated in the illustration below once per week.



Hydraulic Pressure

- Hydraulic system pressure should be 2450 psi.
- To check pressure, hook a test gauge to the quick-couplers.

Hydraulic Oil

- Change hydraulic oil when it is milky in appearance, or annually.
- Change hydraulic oil filter after the first 40 hours of use and then every 250 hours, or annually thereafter.

In Cold Weather (below 10° F)

- Fill with hydraulic oil specifically rated for cold weather.
- Do not attach other hydraulic equipment to the bed. The oil will intermix and the cold weather viscosity will be lost.

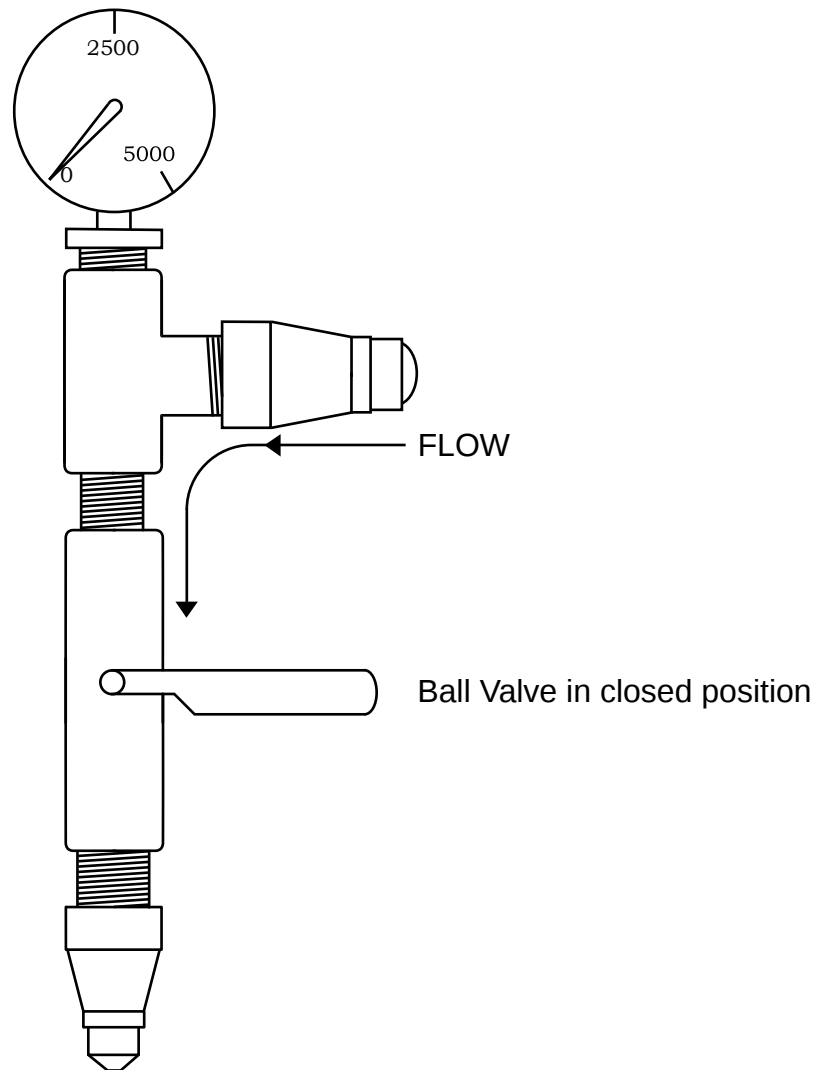
Other Maintenance Notes

- If the quick-couplers leak, the o-rings inside may need to be replaced.
- High heat, 190° or greater, can be damaging to the hydraulic system. Feel various parts of the system to make sure there are no “hot spots” which may indicate a problem.
- For easy hookup of the couplers, shut switch “off” and activate control valve switches with the ignition “on”. This will release the pressure in the lines.
- In the off season, run the bed at least twice a month to prevent valve condensation.

Troubleshooting

Problem	Symptom	Possible Solutions
Hydraulic Pump	No Oil Flow	- CHECK OIL LEVEL IN RESERVOIR. If oil level is low, check for leaks in system. - CHECK BELT TENSION. Tighten if needed. Replace belt if necessary. - CHECK FOR SHEARED KEY ON PUMP SHAFT. Replace key. - CLUTCH NOT FUNCTIONING. See clutch section. - INTERNAL PUMP DAMAGE. Have pump repaired or replaced. - CHECK PRESSURE LINE AT PUMP TO SEE IF OIL IS MOVING. - CHECK TO SEE IF SUCTION HOSE COLLAPSES IN SUCTION
Hydraulic Pump	No Oil Pressure	- VALVE NOT FUNCTIONING. Check for disconnected wires at solenoid. - CHECK FOR POSSIBLE LEAKS IN SYSTEM. Repair blown hoses. - CHECK FOR MALFUNCTIONING SWITCH. Replace broken switches. - PRESSURE RELIEF IS BROKEN ALLOWING OIL TO BYPASS SYSTEM. Replace pressure relief. - PRESSURE SEAL ON PUMP IS BROKEN OR WORN. Replace. - BELTS OR CLUTCH MAY BE SLIPPING. Tighten belts. - PRESSURE RELIEF MAY BE SET TOO LOW. CAUTION: PRESSURE EXCEEDING 2,600 PSI CAN DAMAGE THE PUMP.
Clutch	Does Not Engage	- CHECK FOR BLOWN FUSE. Replace. CAUTION: FUSE SHOULD NOT EXCEED 30 AMPS - CHECK WIRE TO CLUTCH. Insure there are no breaks or shorts. - CHECK FOR BAD SWITCHES IN SYSTEM. Replace. - CHECK FOR BAD MAGNETIC COIL. Use jumper from positive battery terminal to check coil. Replace coil if necessary.
Belt(s)	Jumps Off Pulley	- BELTS TOO LOOSE. Tighten belts. - CHECK FOR EXCESSIVE BELT WEAR. Replace worn belts. - CHECK FOR LOOSE PUMP BRACKET. Tighten loose bolts. Replace broken bolts. - CHECK ALIGNMENT OF CLUTCH AND CRANKSHAFT PULLEYS. Re-align pulleys. - CHECK CRANKSHAFT PULLEY FOR LOOSE OR BROKEN BOLTS. Tighten loose bolts. Replace broken bolts. - CHECK ALIGNMENT OF IDLER PULLEY AND THE CONDITION OF IDLER PULLEY BEARINGS. Re-align idler pulley. Replace worn or broken bearings. - MAKE SURE THAT BELTS ARE NOT CRACKED OR WORN.

HYDRAULIC SYSTEM PRESSURE TEST



Stroke the IN-OUT switch so the flow is as shown, Gradually close the ball valve and the needle will go to where the pressure relief is set. Adjust the pressure relief on the valve until the gauge reads 2500 PSI when the ball valve is closed .

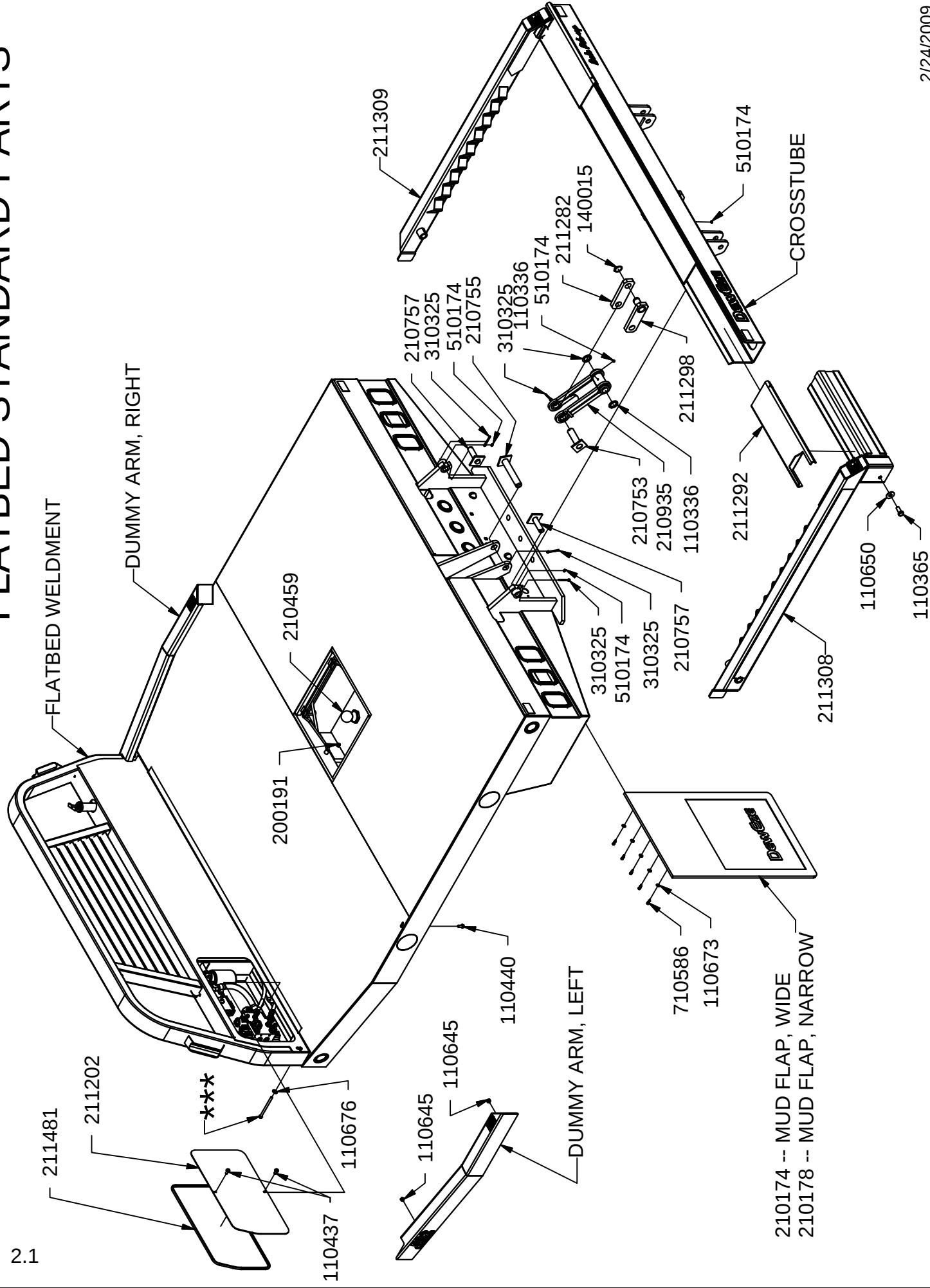


***400 & 500
Series Flatbed***

PARTS

FLATBED STANDARD PARTS

2.1



FLATBED STANDARD PARTS

STANDARD	FLATBED WELDMNT	CROSSTUBE	DUMMY ARM	
			LEFT	RIGHT
470	211230	211311	211313	211312
470W	211470	211310	211313	211312
475	211232	211311	211315	211314
478	211233	211310	211319	211318
477	211231	211311	211489	211487
480	211234	211310	211321	211320
482	211235	211310	211323	211322
485	211236	211310	211325	211324
487	211237	211310	211327	211326
578	215013	215026	215028	215027
582	215014	215026	215030	215029
587	215016	215026	215034	215033

Parts List		
PART #	QUANTITY	DESCRIPTION
110336	2	WASHER, 1-1/4 FLAT MACHINE 10GA
110365	2	BOLT, 5/8-18 X 1.5 GR 5
110437	2	BOLT, 3/8-16 X 0.75, WIZ FLANGE
110440	2	BOLT, 3/8-16 X 1, WIZ FLANGE
110645	2	NUT, 3/8-16 WIZ FLANGE
110650	2	WASHER, 5/8" FLAT STANDARD
110673	10	WASHER, 1/4" FLAT STANDARD
110676	2	WASHER, 3/8" FLAT STANDARD
200191	2	BUSHING, .5 X .375 X .500 W/FLNG
210459	1	HITCH BALL AND NUT
210753	1	PIN ASSY, LIFT CYLINDER ROD END
210755	1	PIN ASSY, IDLER ARM
210757	2	PIN ASSY, CROSSARM PIVOT
210935	1	IDLER ARM, MACHINE DWG.
211202	1	VALVE COVER
211292	2	SHIELD, CROSSTUBE
211297	---	PUSH ARM KIT
211298	1	PUSH ARM WELDMNT
140015	1	SNAP RING
211282	1	PUSH ARM
211481	1	EDGE TRIM
310325	4	COTTER PIN, 1/4 X 2
510174	4	GREASE ZERK, 1/4-28 ST
710586	10	SCREW, 1/4 X 1 TEK SELF-TAP

*** 400 SERIES

2ea 110533 -- BOLT, 3/8-16 X 5.0

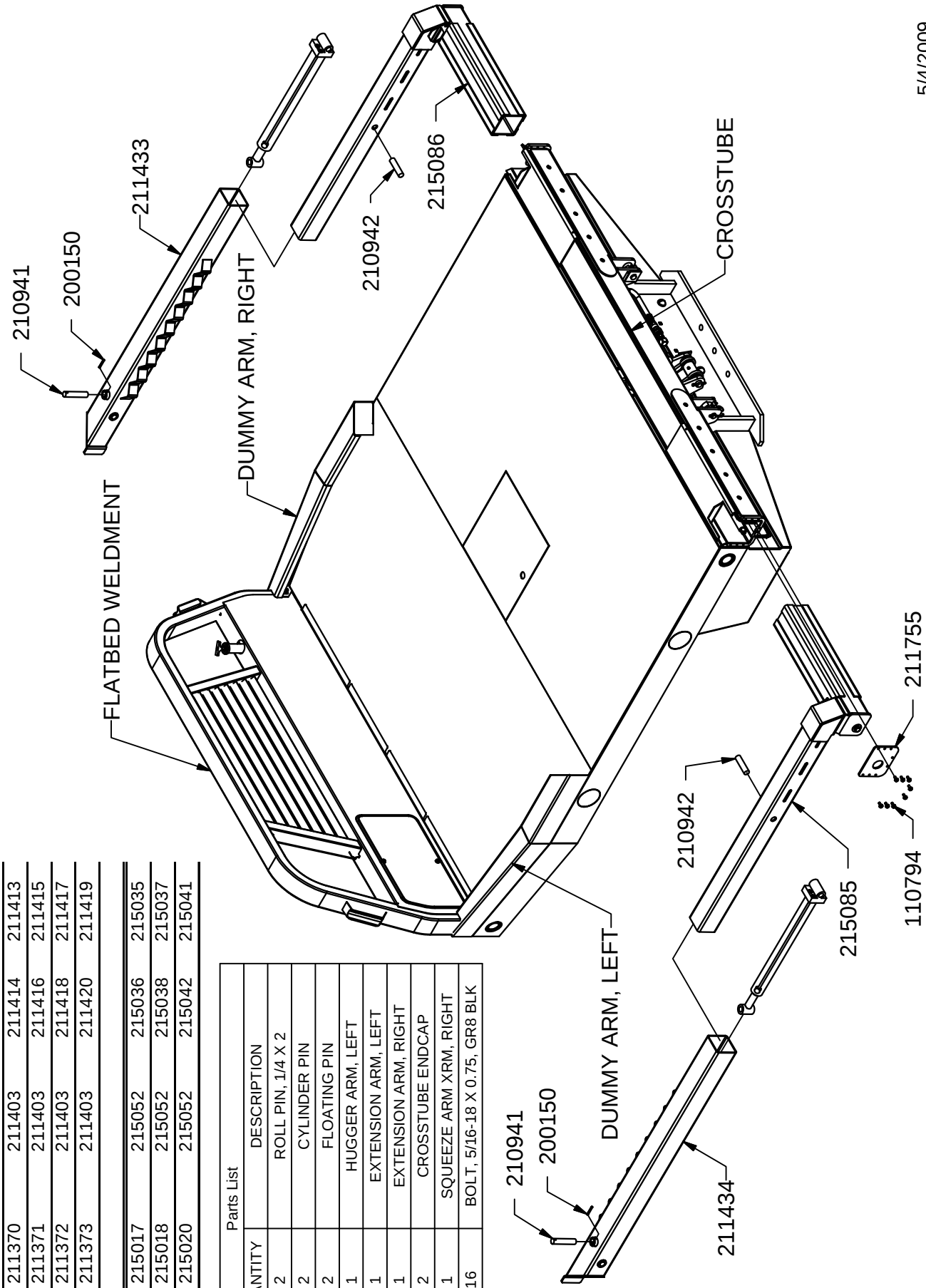
500 SERIES

2ea 110542 -- BOLT, 3/8-16 X 5.5

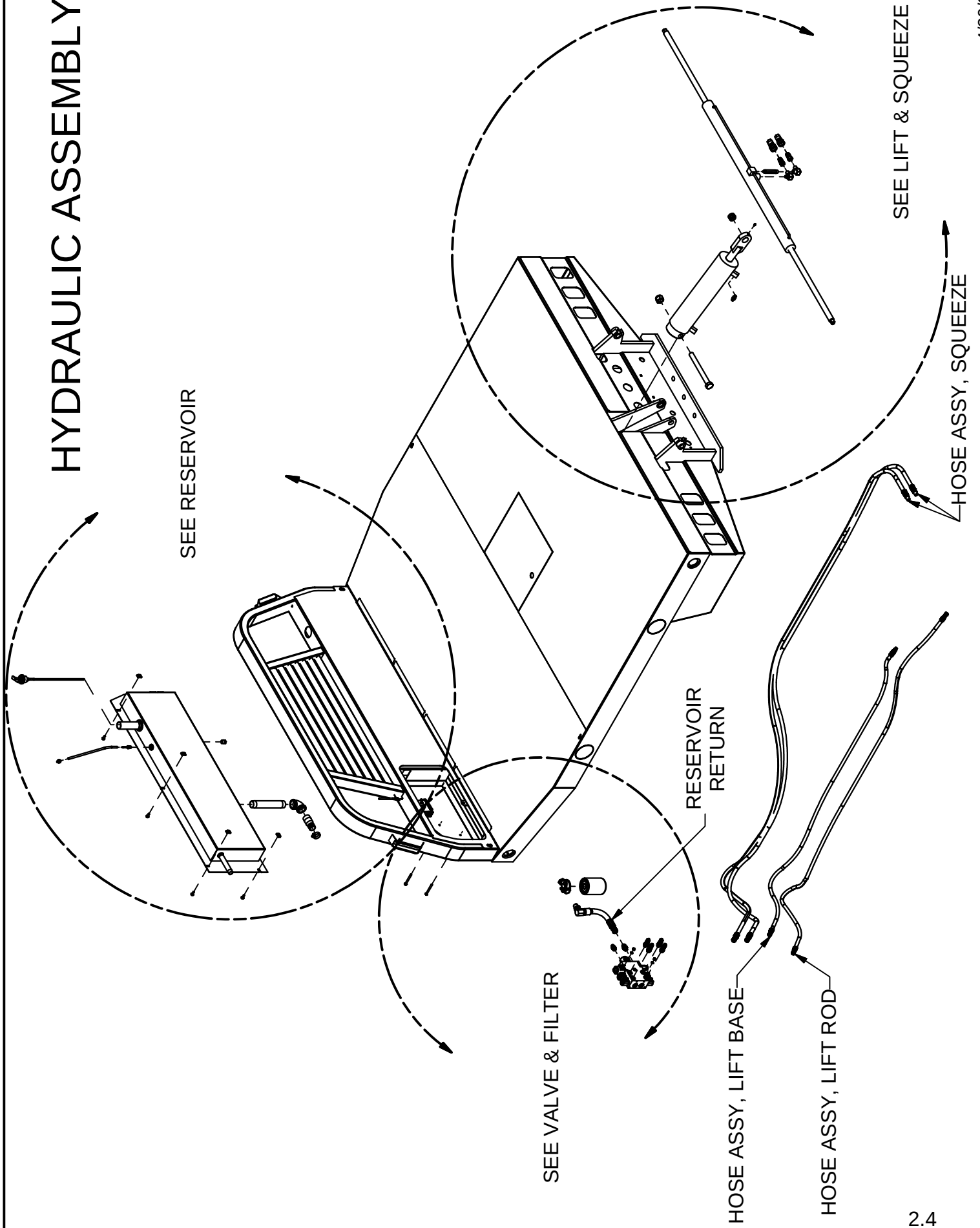
FLATBED XRM PARTS

XRM	FLATBED		DUMMY ARM	
	WELDMENT	CROSSTUBE	LEFT	RIGHT
470	211366	211402	211406	211405
475	211367	211402	211408	211407
478	211369	211403	211412	211411
477	211368	211402	211410	211409
480	211370	211403	211414	211413
482	211371	211403	211416	211415
485	211372	211403	211418	211417
487	211373	211403	211420	211419
578	215017	215052	215036	215035
582	215018	215052	215038	215037
587	215020	215052	215042	215041

Parts List	
PART #	DESCRIPTION
200150	ROLL PIN, 1/4 X 2
210941	CYLINDER PIN
210942	FLOATING PIN
211355	HUGGER ARM, LEFT
211434	EXTENSION ARM, LEFT
211433	EXTENSION ARM, RIGHT
211755	CROSSTUBE ENDCAP
215086	SQUEEZE ARM XRM, RIGHT
110794	BOLT, 5/16-18 X 0.75, GR8 BLK

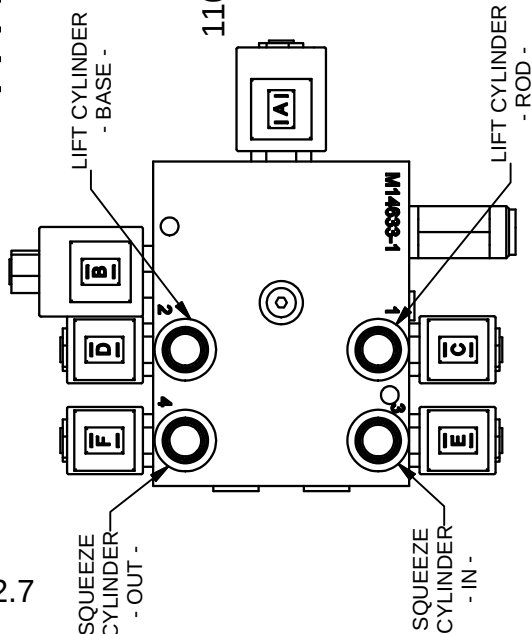


HYDRAULIC ASSEMBLY

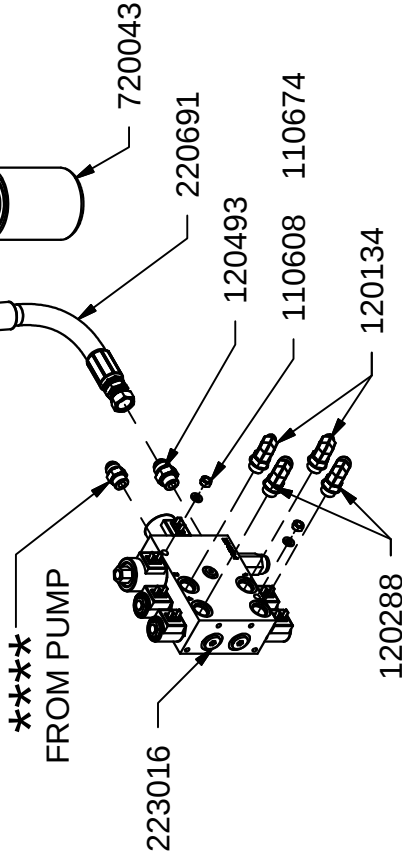
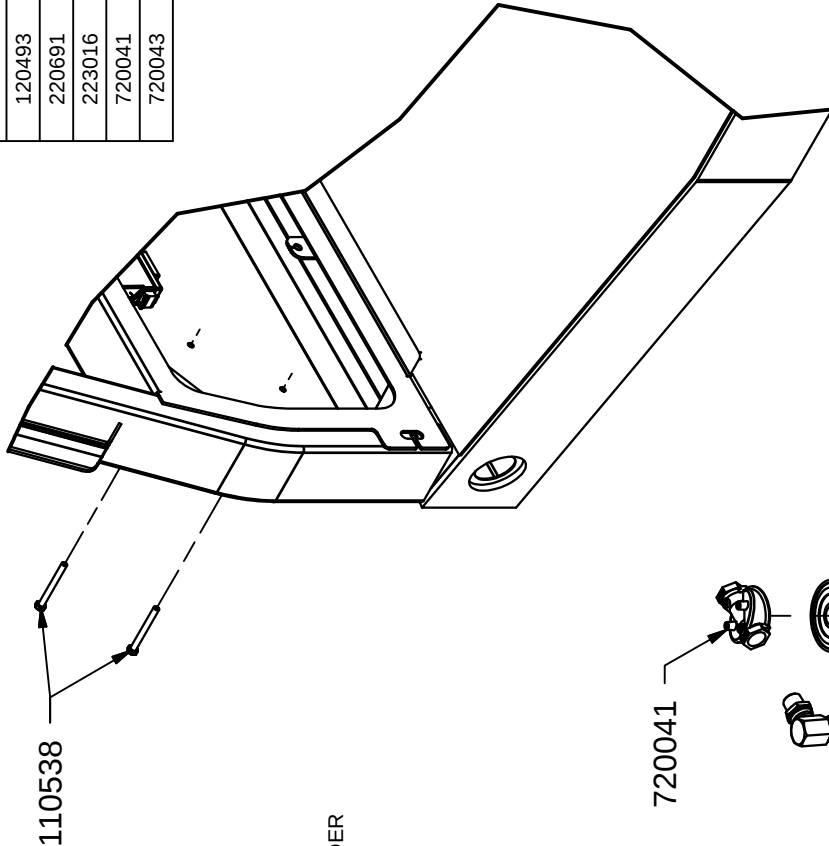


HYDRAULIC ASSEMBLY VALVE & FILTER RETURN HOSE CHANGED 2009

2.7



System pressure is set at factory. Any adjustment should be made by and authorized dealer. To adjust system pressure, remove cap (5/16 hex), then adjust screw inside (1/4 hex) to 2500 PSI. (Screw in for more pressure, out for less.)

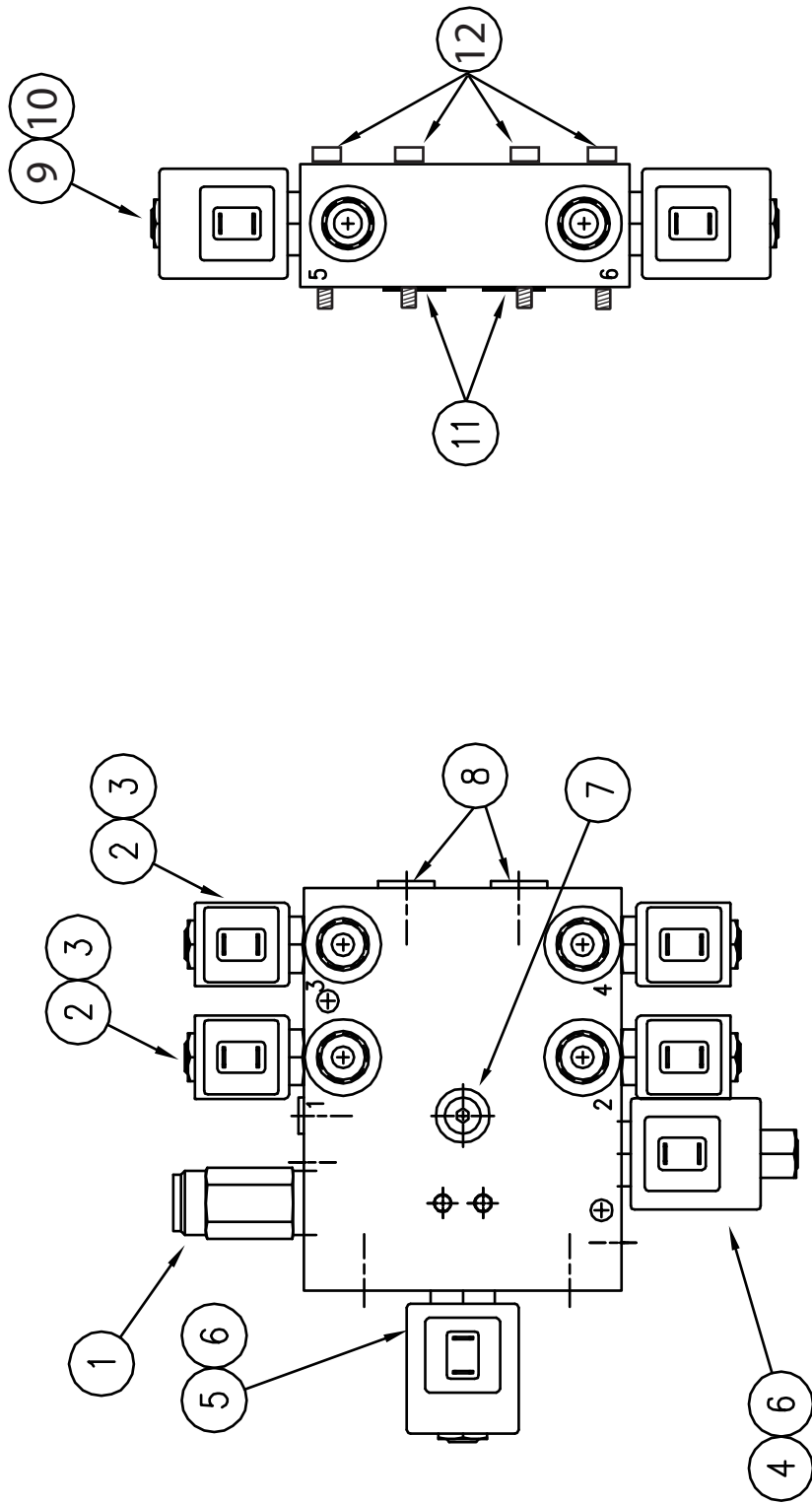


5, 7 & 9 GALLON SYSTEM
120277 -- ADAPTER 8MJ-8MB
12 & 17 GALLON SYSTEM
120174 -- ADAPTER, 8MB-12FPX

Parts List

PART #	QTY	DESCRIPTION
110538	2	BOLT, 5/16-18 X 3.0
110608	2	NUT, 5/16-18
110674	2	WASHER, 5/16" LOCK
120134	2	ADAPTER, 6MJ-8MB90
120288	2	ADAPTER, 8MJ-8MB90
120493	1	ADAPTER, 10MJ-8MB
220691	1	RESERVOIR RETURN
223016	1	VALVE, FLATBED MONOBLOCK
720041	1	FILTER HEAD
720043	1	FILTER, 10 MICRON

GEN 2 VALVE - SERVICE PARTS



ITEM NO	DESCRIPTION	PART NO.	QUAN
1	VALVE, PRESSURE RELIEF	222004	1
2	CARTRIDGE, #8 VALVE, W/O COIL	720015	4
3	COIL, #8 VALVE, 12 VOLT	820143	4
4	SPOOL, #10 VALVE	820232	1
5	VALVE, DIRECTIONAL, 4-WAY	222002	1
6	COIL, #10 VALVE, 12 VOLT	820229	2
7	O-RING, ADAPTER #4 7/16-20	120062	2
8	O-RING, ADAPTER #8 3/4-16	720164	2
	VALVE, MONOBLOCK, COMPLETE	223016	1

VALVE FOR ADDITIONAL THIRD BANK

ITEM NO	DESCRIPTION	PART NO.	QUAN
9	VALVE, POPPET FOR 223017	222003	2
10	COIL, #10 VALVE, 12 VOLT	820229	2
11	O-RING, -219, 90 DURO	120376	2
12	BOLT, 5/16-18 X 2 SHCS	110168	4
	VALVE, 3RD BANK ADD ON (223016)	223017	1

HYDRAULIC ASSEMBLY RESERVOIR

IMPORTANT:

The hydraulic reservoir has an O-ring fitting in the bottom where the suction line is connected. Be sure to use the correct adapter (120015) before attaching the 6" nipple.

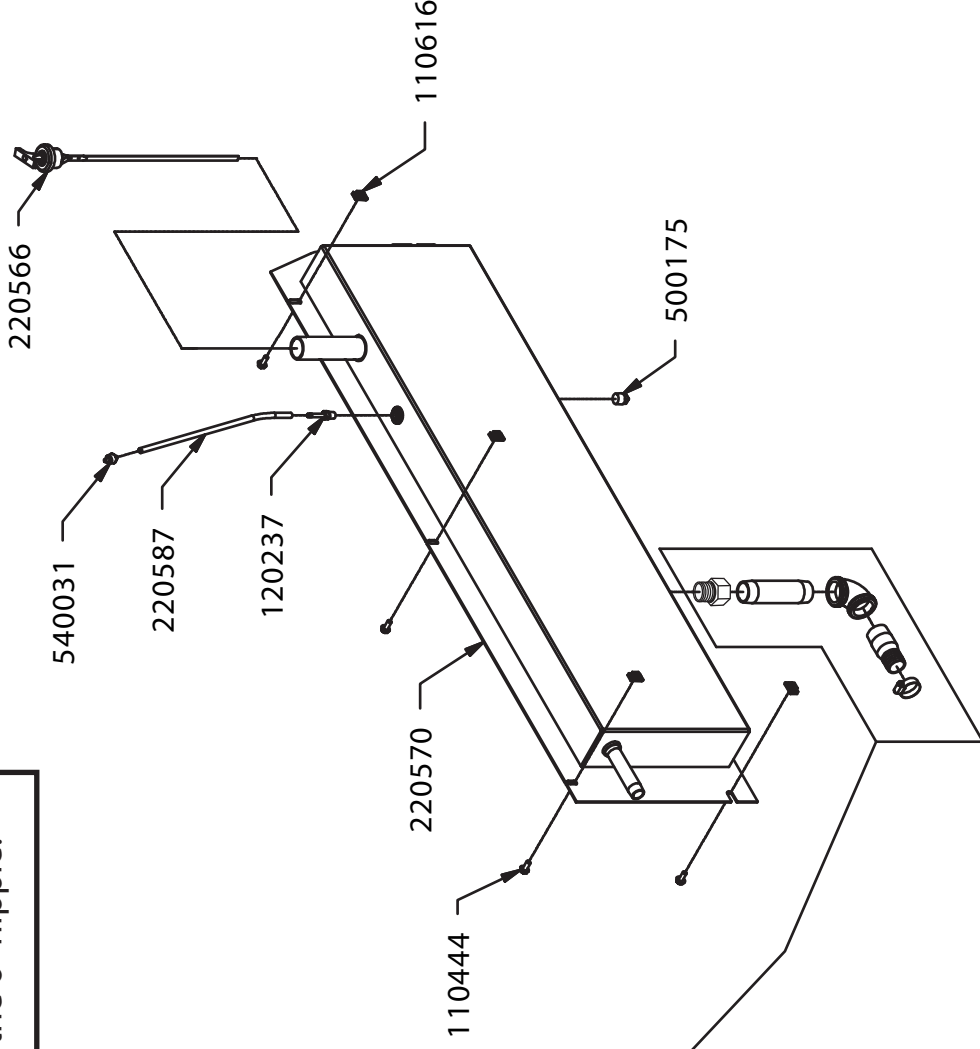
5, 7 & 9 GALLON SYSTEM		
PART #	QTY	DESCRIPTION
120015	1	ADAPTER, 20MB-20FP
200083	1	FITTING, NIPPLE, 1-1/4 X 6
220107	1	FITTING, REDUCER, 1-1/4 - 1.0 ELL
720075	1	HOSE BARB, 1
720107	1	HOSE CLAMP, #20
12 & 17 GALLON SYSTEM		
PART #	QTY	DESCRIPTION
120015	1	ADAPTER, 20MB-20FP
200083	1	FITTING, NIPPLE, 1-1/4 X 6
720158	1	FITTING, ELL 1-1/4
220217	1	HOSE BARB, 1-1/4
511002	1	HOSE CLAMP, #24
2003 DODGE DUALY, 5, 7 & 9		
PART #	QTY	DESCRIPTION
120015	1	ADAPTER, 20MB-20FP
720070	1	FITTING, REDUCER, 1-1/4 - 1.0
720075	1	HOSE BARB, 1
720107	1	HOSE CLAMP, #20
2003 DODGE DUALY, 12 & 17		
PART #	QTY	DESCRIPTION
120015	1	ADAPTER, 20MB-20FP
220217	1	HOSE BARB, 1-1/4
511002	1	HOSE CLAMP, #24

RUNNING CHANGE

The above fittings were phased out of usage at the beginning of the 2010 model year.
See following page for new fittings.

Parts List

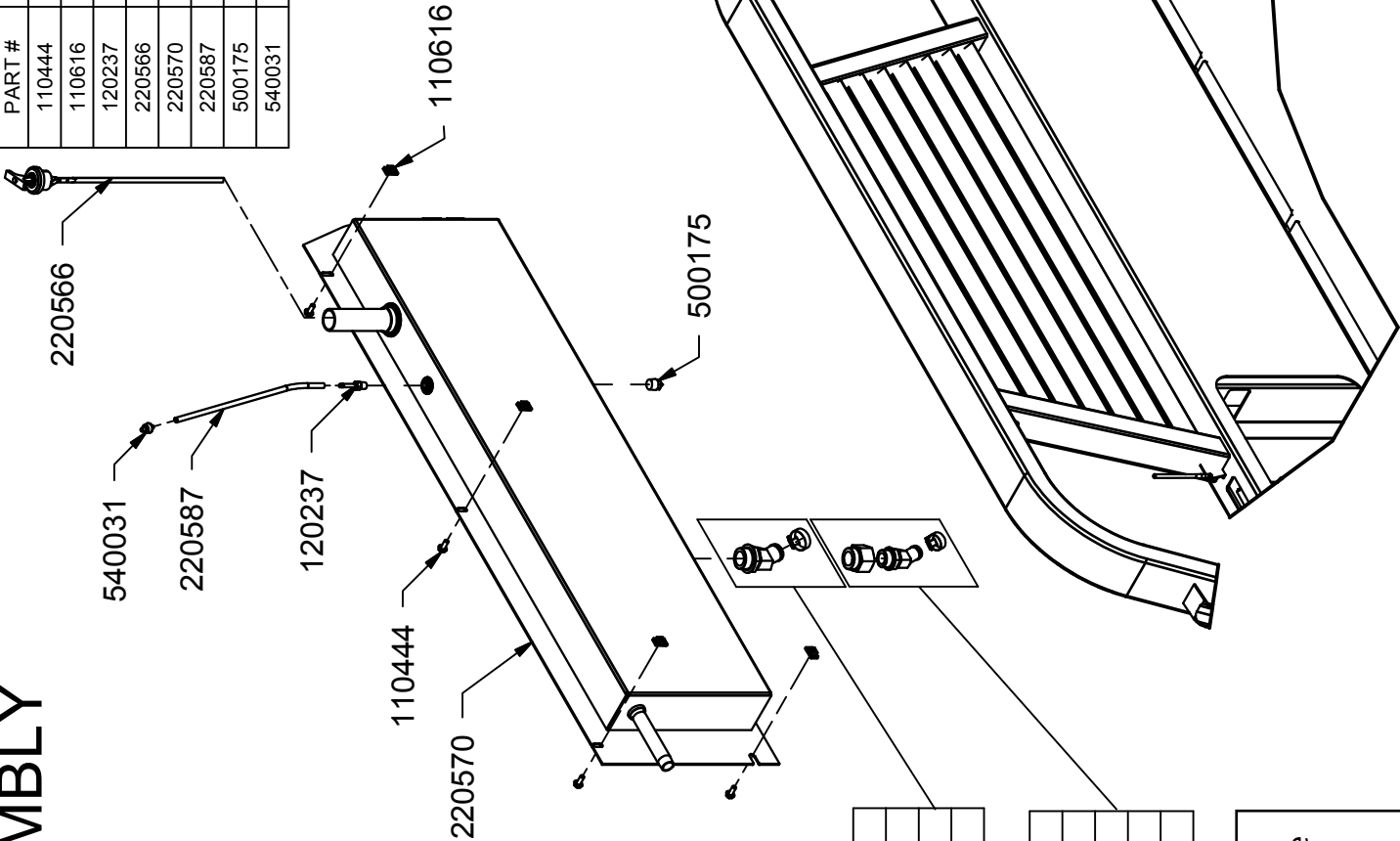
PART #	QUANTITY	DESCRIPTION
110444	4	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110616	4	NUT, 5/16", J-TYPE, CAGE, .5C
120237	1	ADAPTER, 4BH-4MP
220566	1	DIP STICK
220570	1	RESERVOIR WELDMENT
220587	1	VENT HOSE
500175	1	FITTING, PLUG 1/2" PIPE
540031	1	FUEL FILTER



HYDRAULIC ASSEMBLY RESERVOIR

2.9.2

Parts List		
PART #	QTY	DESCRIPTION
110444	4	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110616	4	NUT, 5/16", J-TYPE, CAGE, .5C
120237	1	ADAPTER, 4BH-4MP
220566	1	DIP STICK
220570	1	RESERVOIR WELDMENT
220587	1	VENT HOSE
500175	1	FITTING, PLUG 1/2" PIPE
540031	1	FUEL FILTER



12 & 17 GALLON SYSTEM		
PART #	QTY	DESCRIPTION
120189	1	ADAPTER, 20MB-20BH 45°
511002	1	HOSE CLAMP, #24

5, 7 & 9 GALLON SYSTEM		
PART #	QTY	DESCRIPTION
120188	1	ADAPTER, 16MB-16BH 45°
120511	1	ADAPTER, 20MB-16FOR
720107	1	HOSE CLAMP, #20

RUNNING CHANGE

The above fittings were phased into usage at the beginning of the 2010 model year. See previous page for old fittings.

HOSE CHART (after change)

RETURN HOSE - RUNNING CHANGE IN 2009*

400 & 500 SERIES WITH GENERATION 2 VALVES

FLATBED SERIES	SQUEEZE HOSES		LIFT HOSES		RESERVOIR RETURN 3/4 SUCTION	HYDRAULIC HOSE KIT #
	8M3K - 8MP / 8FJX IN (BLUE)	OUT (ORANGE)	6M3K - 6MB / 6FJX BASE (BROWN)	6M3K - 6FJX / 6FJX ROD (GREEN)		
470	220610 (129in)	220610 (129in)	220611 (65in)	220646 (84in)	220691 (12.25in)	223024
470W	220610 (129in)	220610 (129in)	220611 (65in)	220646 (84in)	220691 (12.25in)	223024
475	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220691 (12.25in)	223018
478	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220691 (12.25in)	223018
477	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220691 (12.25in)	223019
480	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220691 (12.25in)	223019
482	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220691 (12.25in)	223019
485	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220691 (12.25in)	223020
487	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220691 (12.25in)	223020
578	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220691 (12.25in)	223018
582	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220691 (12.25in)	223019
587	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220691 (12.25in)	223020

*The reservoir return hose changed from 220422 to 220691 during model year 2009.

HOSE CHART (before change)

RETURN HOSE - RUNNING CHANGE IN 2009*

400 & 500 SERIES WITH GENERATION 2 VALVES

FLATBED SERIES	SQUEEZE HOSES		LIFT HOSES		RESERVOIR RETURN		HYDRAULIC HOSE KIT #
	8M3K - 8MP / 8FJX IN (BLUE)	OUT (ORANGE)	6M3K - 6MB / 6FJX BASE (BROWN)	6M3K - 6FJX / 6FJX ROD (GREEN)	3/4 SUCTION		
470	220610 (129in)	220610 (129in)	220611 (65in)	220646 (84in)	220422 (26.75in)		223024
470W	220610 (129in)	220610 (129in)	220611 (65in)	220646 (84in)	220422 (26.75in)		223024
475	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220422 (26.75in)		223018
478	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220422 (26.75in)		223018
477	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220422 (26.75in)		223019
480	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220422 (26.75in)		223019
482	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220422 (26.75in)		223019
485	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220422 (26.75in)		223020
487	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220422 (26.75in)		223020
578	220613 (152in)	220613 (152in)	220614 (88in)	220642 (107in)	220422 (26.75in)		223018
582	220616 (164in)	220616 (164in)	220617 (100in)	220643 (119in)	220422 (26.75in)		223019
587	220622 (182in)	220622 (182in)	220623 (118in)	220644 (137in)	220422 (26.75in)		223020

*The reservoir return hose changed from 220422 to 220691 during model year 2009.

400 SERIES WITH LARGE AND SMALL FPS VALVES

FLATBED SERIES	SQUEEZE HOSES		LIFT HOSES		RESERVOIR RETURN	
	8M3K - 8MP / 8FJX IN (BLUE)	OUT (ORANGE)	6M3K - 6MB / 6FJX BASE (BROWN)	ROD (GREEN)	8M3K - 8MP / 8FJX	HYDRAULIC HOSE KIT #
470	220610 (129in)	220610 (129in)	220611 (65in)	220612 (84in)	220422 (26.75in)	223002
470W	220610 (129in)	220610 (129in)	220611 (65in)	220612 (84in)	220422 (26.75in)	223002
475	220613 (152in)	220613 (152in)	220614 (88in)	220615 (107in)	220422 (26.75in)	223003
478	220613 (152in)	220613 (152in)	220614 (88in)	220615 (107in)	220422 (26.75in)	223003
477	220616 (164in)	220616 (164in)	220617 (100in)	220618 (119in)	220422 (26.75in)	223004
480	220616 (164in)	220616 (164in)	220617 (100in)	220618 (119in)	220422 (26.75in)	223004
482	220616 (164in)	220616 (164in)	220617 (100in)	220618 (119in)	220422 (26.75in)	223004
485	220619 (176in)	220619 (176in)	220620 (112in)	220621 (131in)	220422 (26.75in)	223005
487	220622 (182in)	220622 (182in)	220623 (118in)	220624 (137in)	220422 (26.75in)	223006

LEFT BLANK INTENTIONALLY

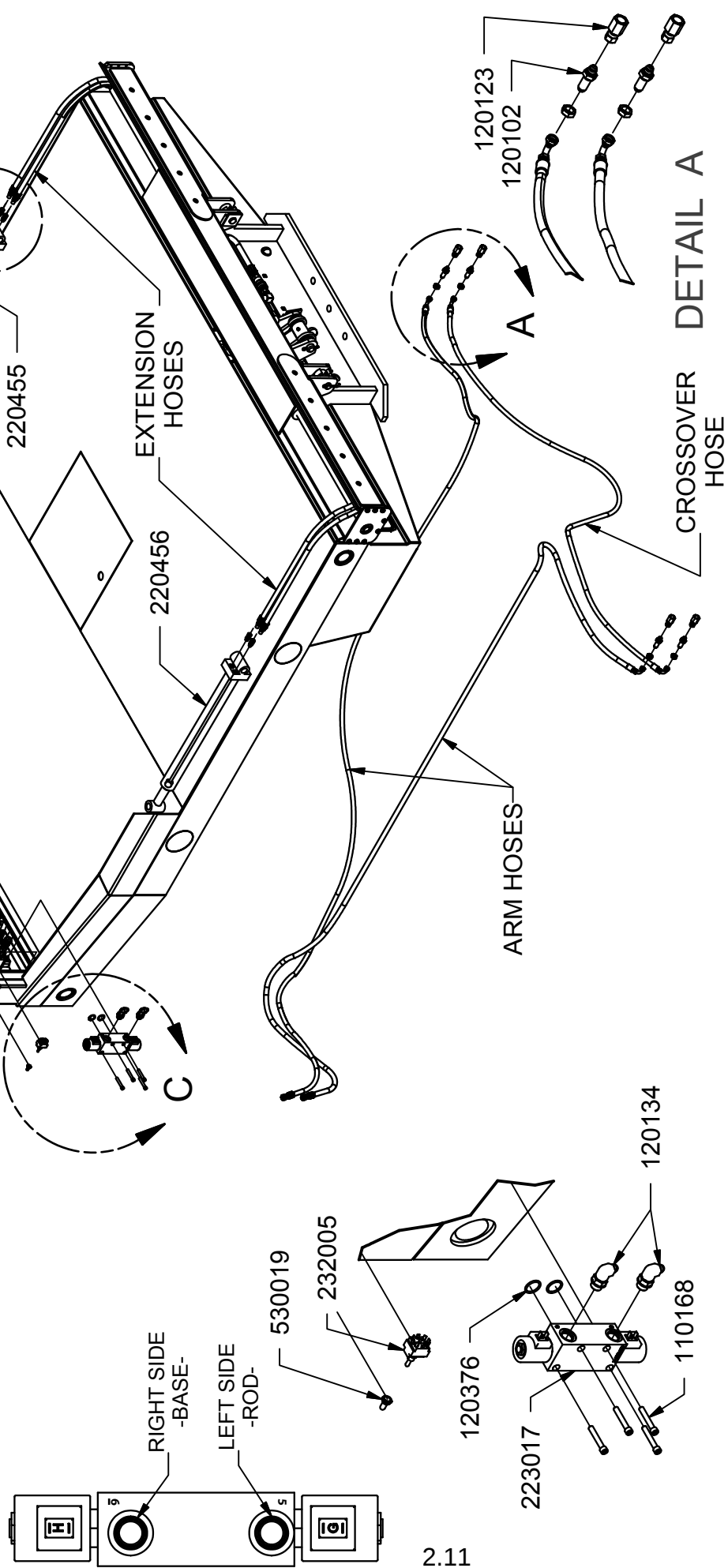
XRM HYDRAULICS

Parts List

PART #	QUANTITY	DESCRIPTION
110168	4	BOLT, 5/16-18 X 2.0 SHCS
120102	4	ADAPTER, BULKHEAD, 6MJ-6MJ, W/LOCKNUT
120123	4	ADAPTER, 6FP-6FJX
120186	4	ADAPTER, 4MB-4FPX
120240	2	ADAPTER, 6MJ-8MB90
120376	2	O-RING, -119, 90 DURO
220455	1	EXTENDABLE ARM CYLINDER, 2.5
220456	1	EXTENDABLE ARM CYLINDER, 2.0
223017	1	VALVE, 3rd BANK ADD ON
232005	1	TOGGLE SWITCH - 3 POS MOMENTARY
530019	1	SWITCH BOOT

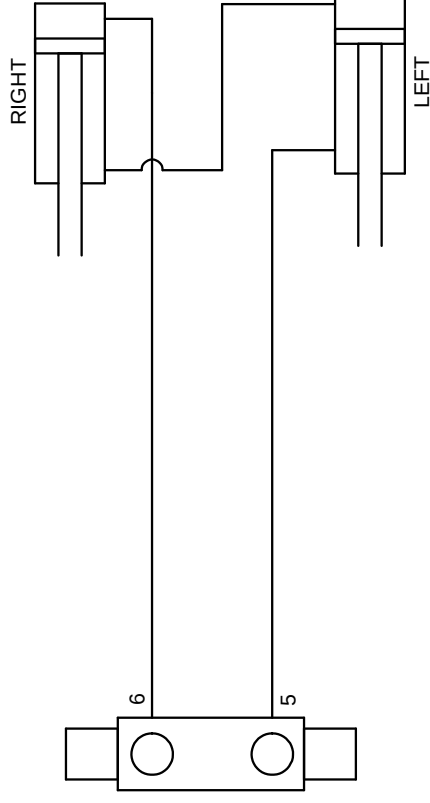
SEAL KITS

2.5 CYLINDER	220532
2.0 CYLINDER	220533



DETAIL C

XRM HYDRAULICS



FLATBED XRM SERIES	ARM HOSES		EXTENSION HOSES		CROSSOVER HOSE	HYDRAULIC HOSE KIT #
	6M3K - 6FJX90M / 6FJX RIGHT (BLACK)	LEFT (WHITE)	6M3K - 6-4MP / 6MPX BOTTOM (WHITE)	TOP	6M3K - 6FJX90M	
470 XRM	220625 (165in)	220625 (165in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223011
475 XRM	220626 (188in)	220626 (188in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223010
478 XRM	220626 (188in)	220626 (188in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223010
477 XRM	220627 (200in)	220627 (200in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223009
480 XRM	220627 (200in)	220627 (200in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223009
482 XRM	220627 (200in)	220627 (200in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223009
485 XRM	220628 (212in)	220628 (212in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223008
487 XRM	220629 (218in)	220629 (218in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220601 (79.62in)	223007
578	220626 (188in)	220626 (188in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220645 (94.0in)	223021
582	220627 (200in)	220627 (200in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220645 (94.0in)	223022
587	220629 (218in)	220629 (218in)	2ea 220605 (54.31in)	2ea 220605 (54.31in)	220645 (94.0in)	223023

2.13

SQUEEZE CYLINDER

SEAL KITS

Exploded perspective view of a second generation valve assembly. The assembly includes a main valve body (110602) with a handle (110352) and a spring (110352). A second generation valve (220001) is shown with a handle (220452) and a spring (220084). A squeeze cylinder (510174) is shown with a handle (120145) and a spring (120146). The assembly is shown in an exploded perspective view, indicating the relative positions of the components.

Parts List		
PART #	QUANTITY	DESCRIPTION
230011	2	LIGHT, LICENSE PLATE
230131	2	LIGHT, BACK-UP
230132	2	LIGHT, SIGNAL-TURN-TAIL
230133	4	LIGHT, CLEARANCE (AMBER)
230134	5	LIGHT, CLEARANCE (RED)
230135	9	GROMMET, 2"
230136	6	GROMMET, 3 X 5

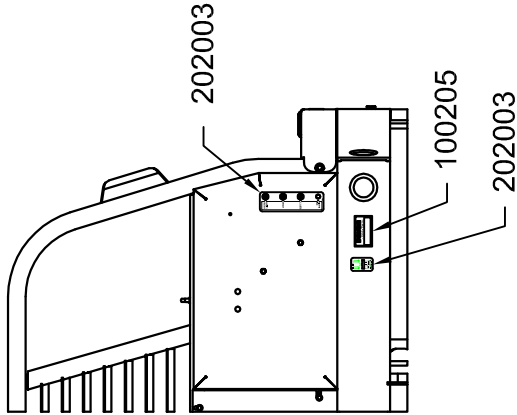


ALL FLATBEDS

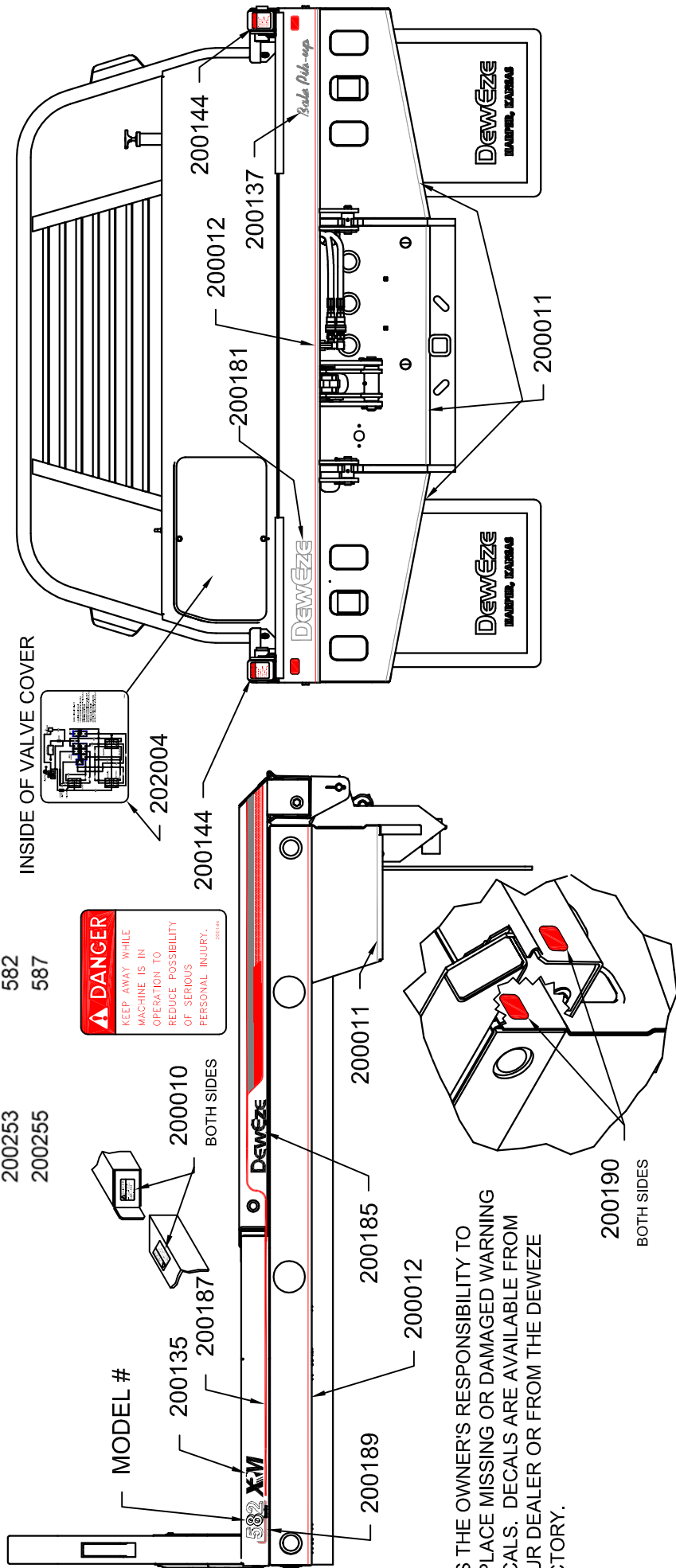
9/23/03

DECALS

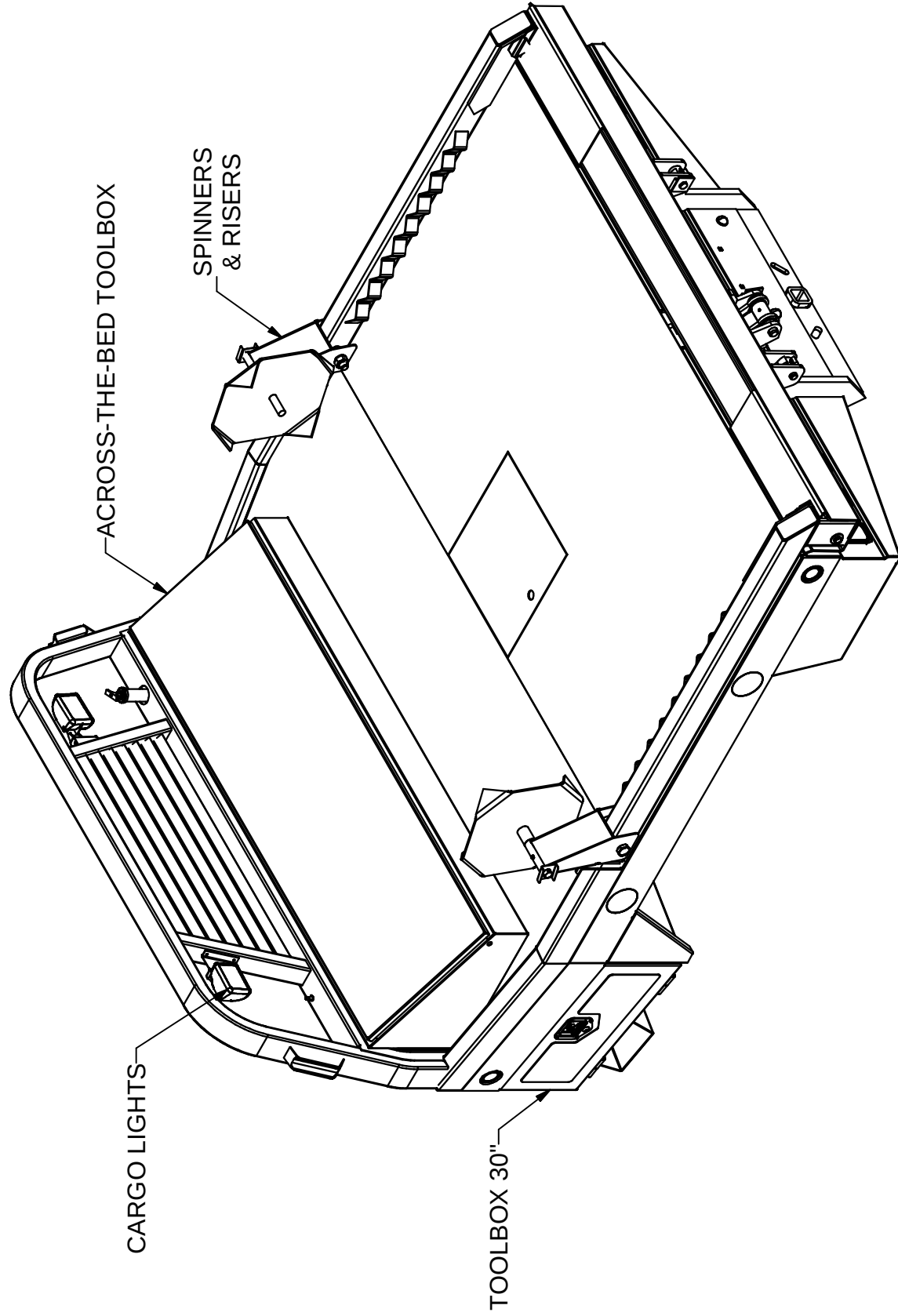
2.15



PART #	DESCRIPTION	PART #	QTY	DESCRIPTION
100205	SERIAL NUMBER PLATE	200010	4	DANGER DECAL, HORIZONTAL
	DECAL KITS	200011	--	SILVER PINSTRIPE
200211	400 SERIES	200012	--	RED/SILVER PINSTRIPE
200140	400 SERIES XRM	200135	2	XRM DECAL
205001	500 SERIES	200137	1	BALE PK-UP, SILVER SCRIPT
205002	500 SERIES XRM	200144	2	DANGER DECAL, VERTICAL
	MODEL NUMBER SETS	200181	1	DEWEZE, SILVER
200193	470	200185	1	HUGGER ARM DECAL, LT-RT
200195	475	200187	--	STRIPING
200197	477	200189	1	STRIPING, MODEL #
200199	478	200190	4	REFLECTIVE DECAL
200201	480	202003	1	DECAL, SWITCH IDENTIFICATION
200203	482	202004	1	DECAL, RF SCHEMATIC
200205	485	300002	1	FEWA DECAL
200207	487			
200252	578			
200253	582			
200255	587			



FLATBED ACCESSORIES



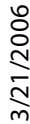
2.17

TOOLBOX ASSEMBLY, PART # 215074		
PART #	QTY	DESCRIPTION
110174	4	NUT, 1/4-20 LOCK 2-WAY
110300	3	COTTER PIN, 3/32 X 0.75
112011	3	PUSH NUT, WASHER CAP STYLE
200184	1	SEAL, LATCH
202010	1	SEAL, TOOLBOX LID (TRIM-LOK X-2897)
211119	1	TOOL BOX MAT
212003	2	GASKET, TOOLBOX MOUNT
212007	1	LATCH W/STUDS
215072	1	TOOLBOX DOOR AND HINGE W/LD MT
215073	1	TOOLBOX AND HINGE W/LD MT

TO IMPROVE TOOLBOX PERFORMANCE:

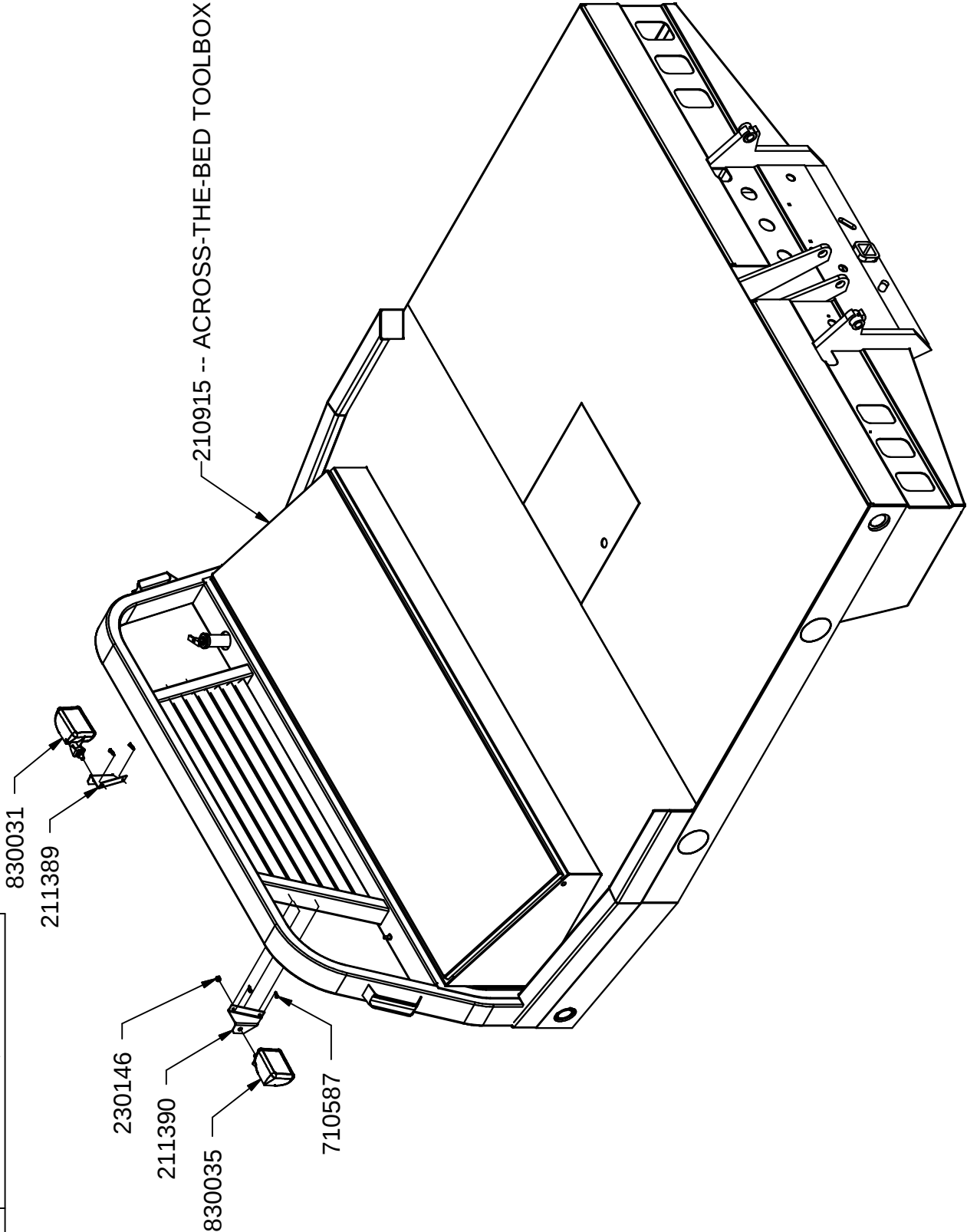
USE SILICON CAULK TO SEAL ALL BOLTS AND HOLES ON TOP AND SIDES OF TOOLBOX

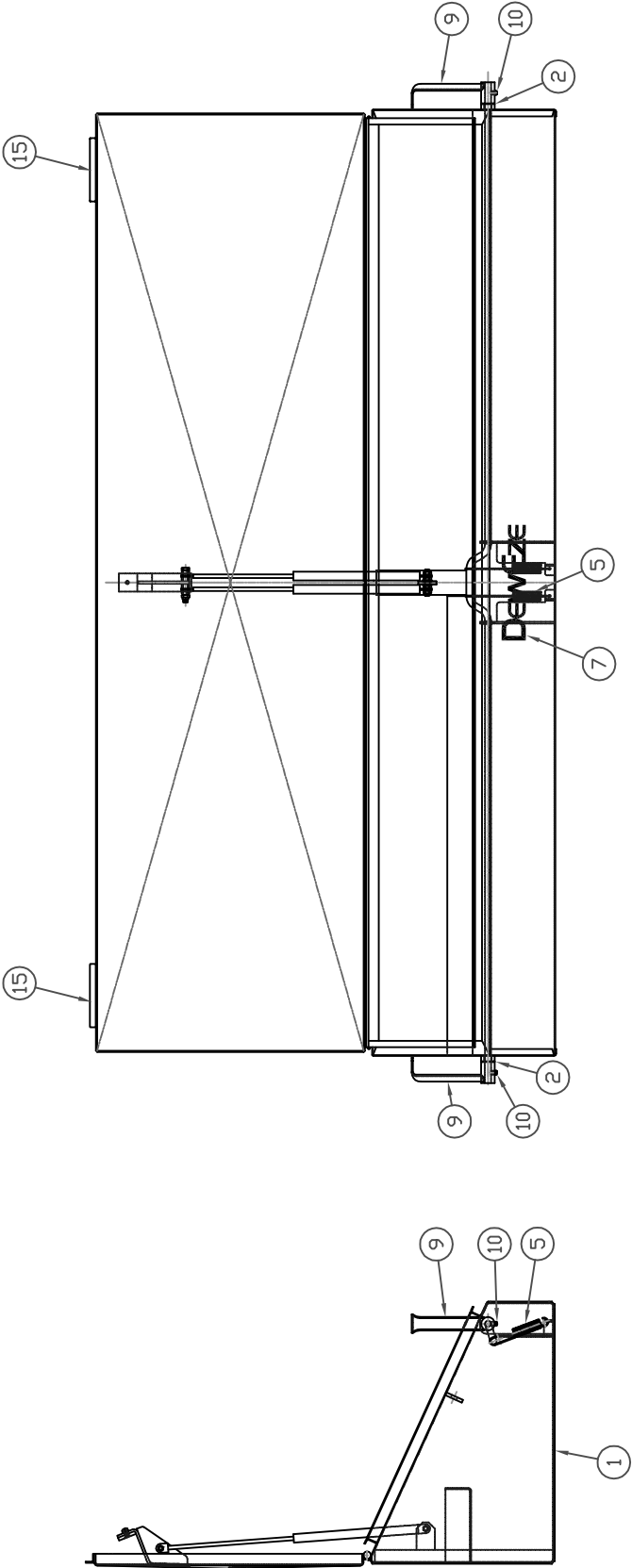
LEAVE HOLES IN BOTTOM UNSEALED AND PLACE MAT WITH RIDGES DOWN TO ALLOW MOISTURE FROM CONDENSATION TO ESCAPE



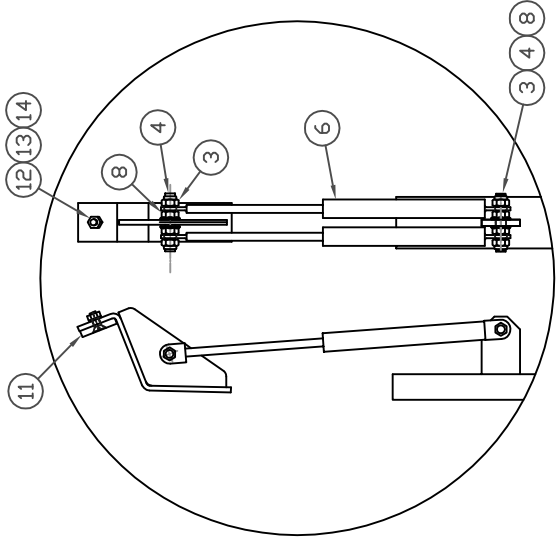
CARGO LIGHT ASSY, PART#211391	
PART #	DESCRIPTION
211389	LIGHT BRACKET, RIGHT
211390	LIGHT BRACKET, LEFT
230146	GROMMET, 3/16 ID X 9/16 OD
710587	SCREW, 3/16 X .75 TEK SELF-TAP
830031	LIGHT, RIGHT
830035	LIGHT, LEFT

FLATBED ACCESSORIES CARGO LIGHTS & ACROSS THE BED TOOLBOX





210915



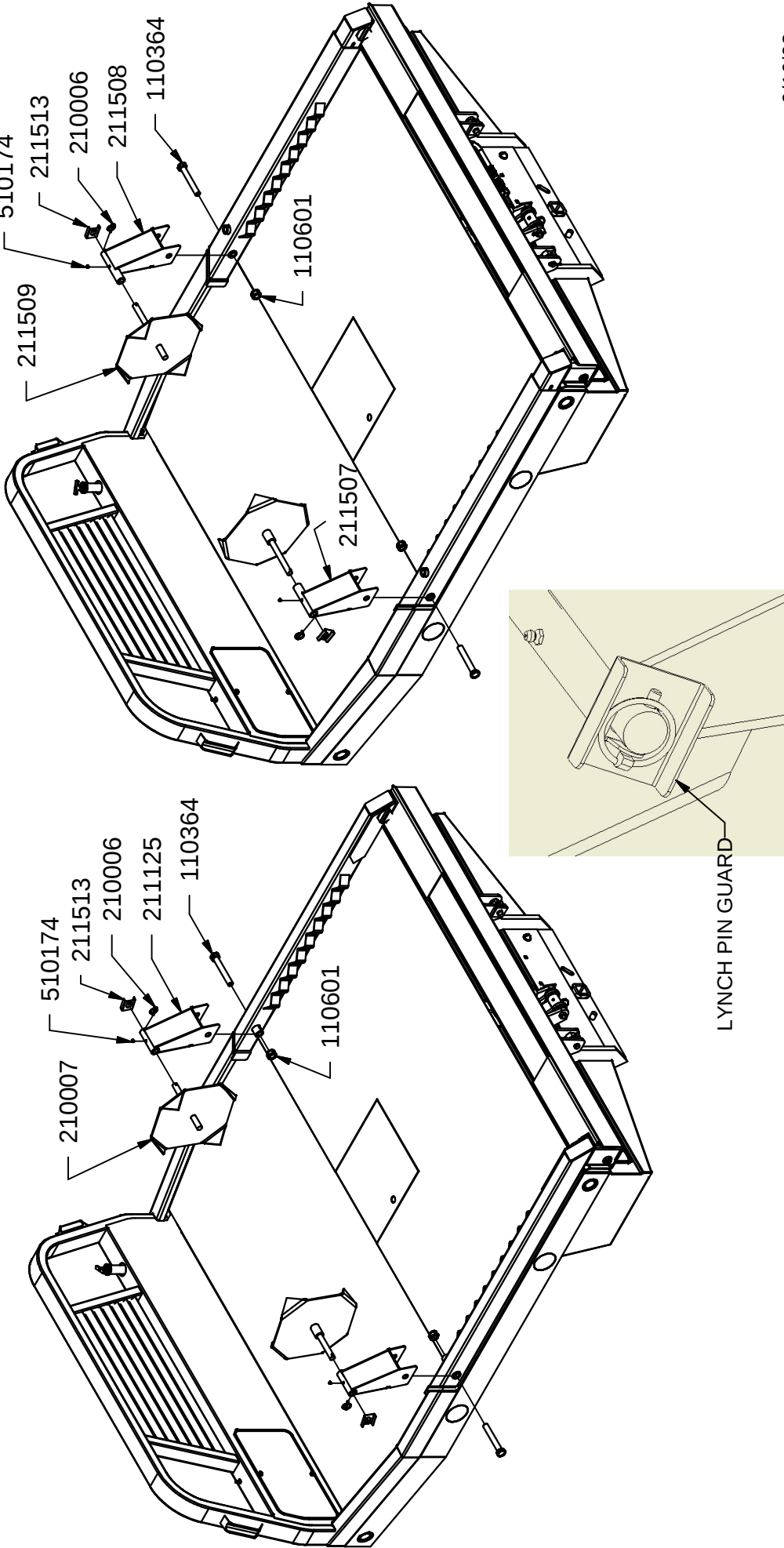
DETAIL SCALE 2:1

ITEM	QTY	NUMBER	DESCRIPTION
1	1	210914	TOOL BOX WA
2	2	211132	FLANGE BEARING/OUTER
3	4	110618	NUT .375-16 LOCK NUT
4	2	210908	ALL THREAD
5	2	211134	SPRING
6	2	500078	GAS SHOCK
7	1	400010	DEWEZE DECAL - WHITE
8	4	110645	NUT .375-16 W/2 NUT
9	2	211143	HANDLE WELD ASSY
10	2	110239	5/16-18 X 5/16 SET SCREW
11	1	211138	WEAR PAD/PLASTIC
12	1	110238	1/4-20 X .75 FLAT C/SUNK SCREW
13	1	110667	1/4 LOCK WASHER
14	1	110609	1/4-20 NUT

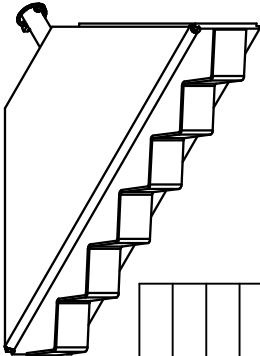
FLATBED ACCESSORIES SPINNERS & RISERS

SPINNER ASSY (210008) & RISER ASSY (211145)		
PART #	QUANTITY	DESCRIPTION
110364	2	BOLT, 1-8 X 7.0
110601	2	NUT, 1-8
210006	2	Pin, Lynch 1/4 x 1 1/2
210007	2	SPINNER WELDMENT
211125	2	RISER WELDMENT
211513	2	LYNCH PIN GUARD
510174	2	GREASE ZERK, 1/4-28 ST

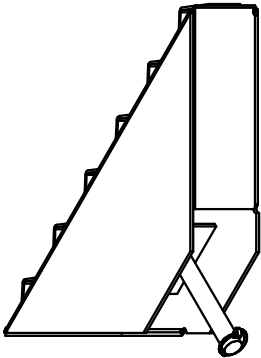
XRM SPINNER ASSY & RISER ASSY		
PART #	QUANTITY	DESCRIPTION
110364	2	BOLT, 1-8 X 7.0
110601	2	NUT, 1-8
210006	2	Pin, Lynch 1/4 x 1 1/2
211507	1	RISER WELDMENT, LEFT
211508	1	RISER WELDMENT, RIGHT
211509	2	SPINNER WELDMENT
211513	2	LYNCH PIN GUARD
510174	2	GREASE ZERK, 1/4-28 ST



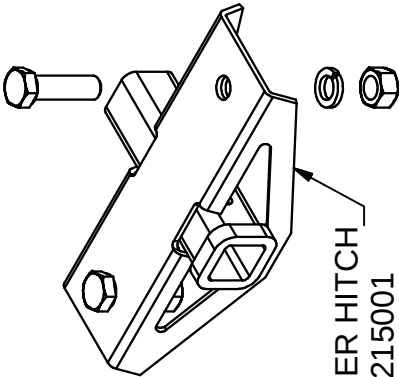
OTHER ACCESSORIES



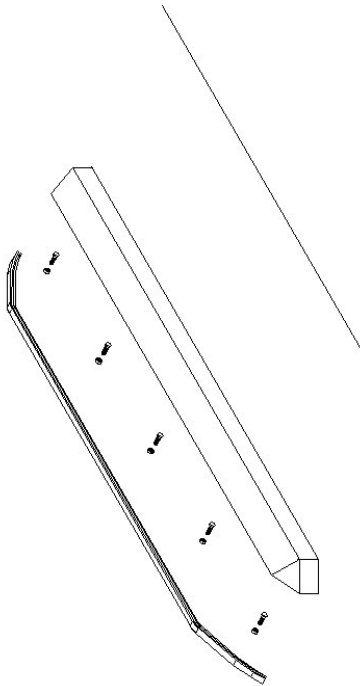
ADAPTER ASSY 210933			
PART #	QTY	DESCRIPTION	
210933	1	4' BALE ADAPTER	
210006	2	Pin, Lynch 1/4 x 1 1/2	



LIFT BAR
P/N 210426

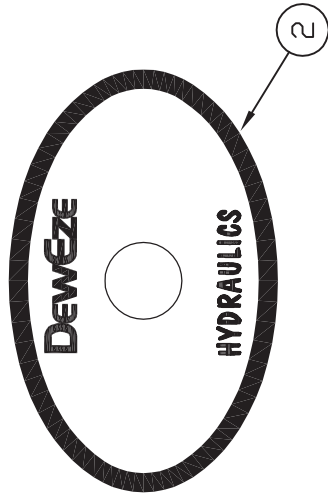


RECEIVER HITCH
P/N 215001

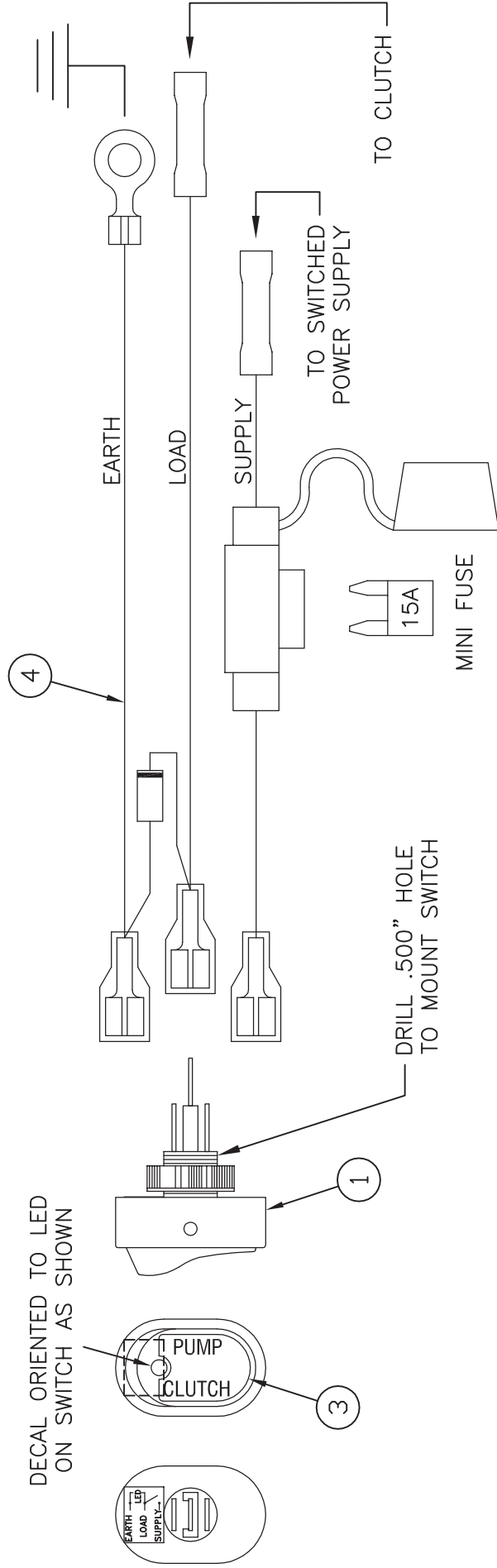


211480 FENDER KIT
211439 FENDER WELDMENT
211481 EDGE TRIM

ITEM	QUAN	PART #	NAME
1	1	132044	SWITCH, SPST ROCKER LED
2	1	702002	DECAL, DEWEZE HYDRAULICS
3	1	702061	DECAL, PUMP CLUTCH
4	1	732002	HARNESS, CLUTCH CONTROL



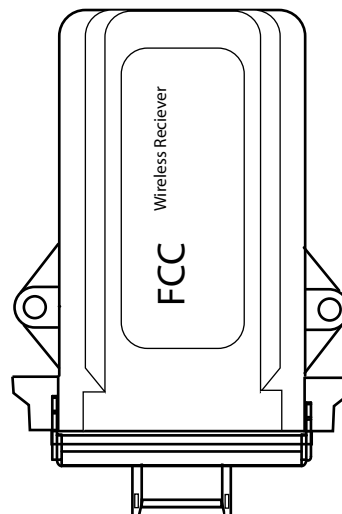
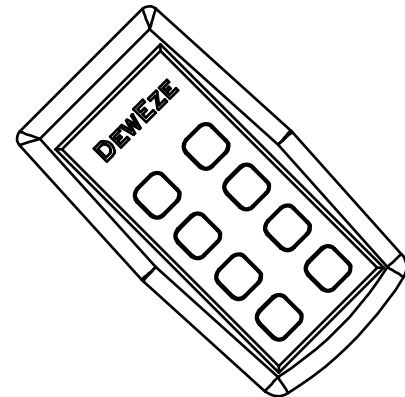
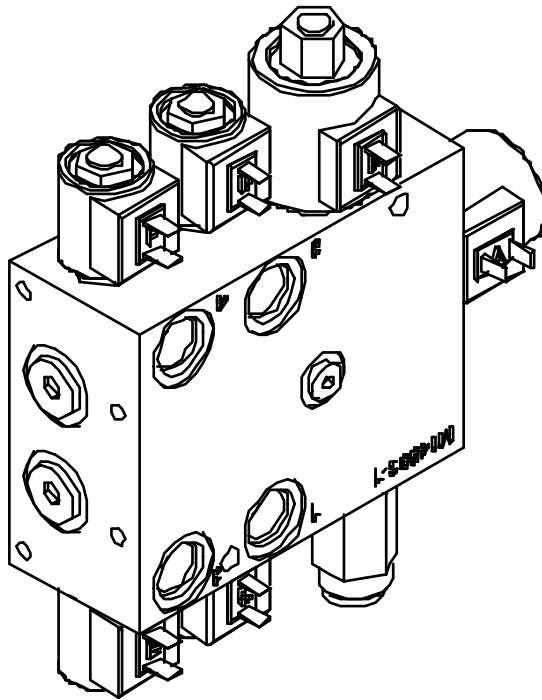
DECAL ORIENTED TO LED
ON SWITCH AS SHOWN



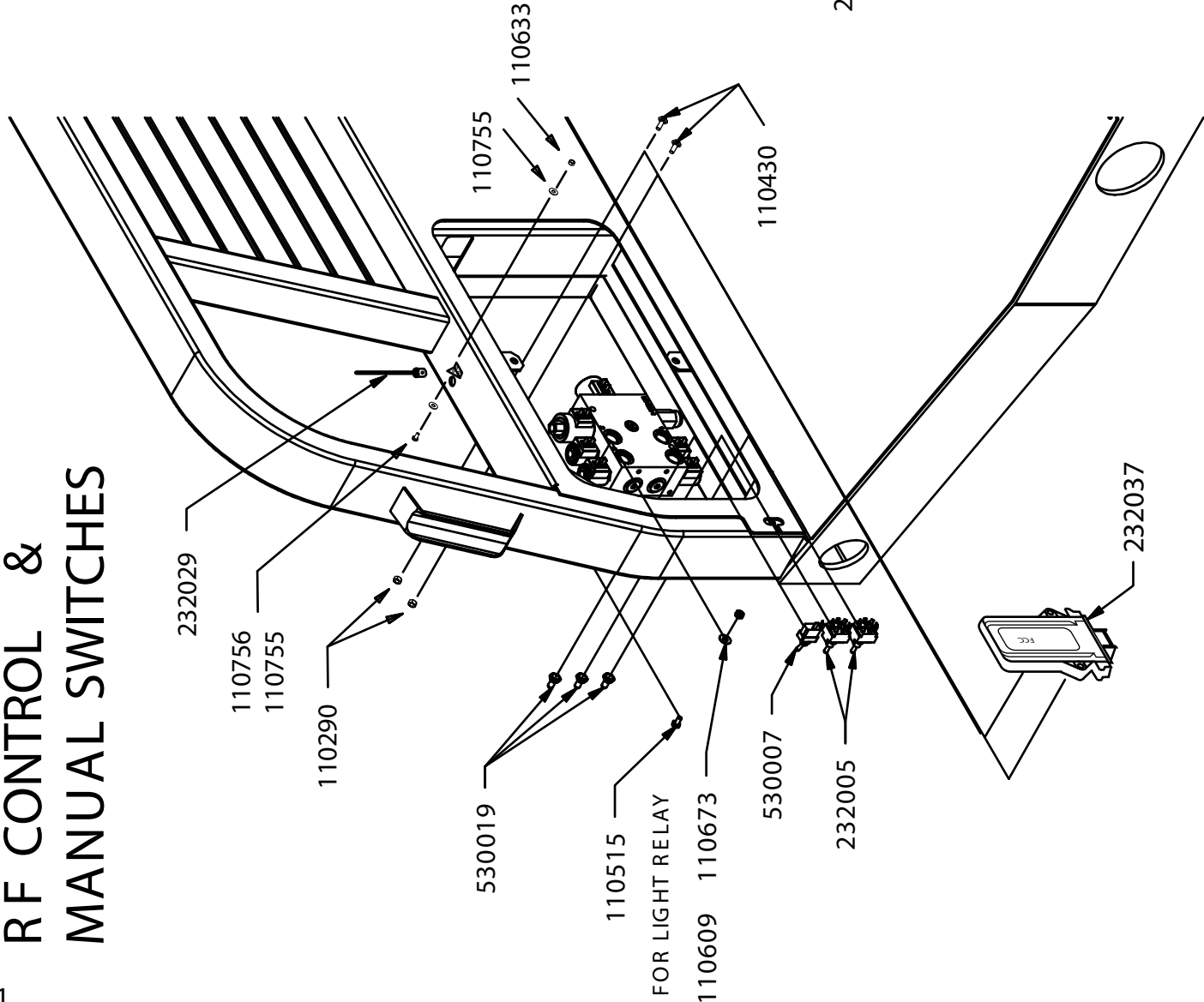


500 SERIES ANNEX A

NEW GENERATION VALVES WITH RF CONTROL

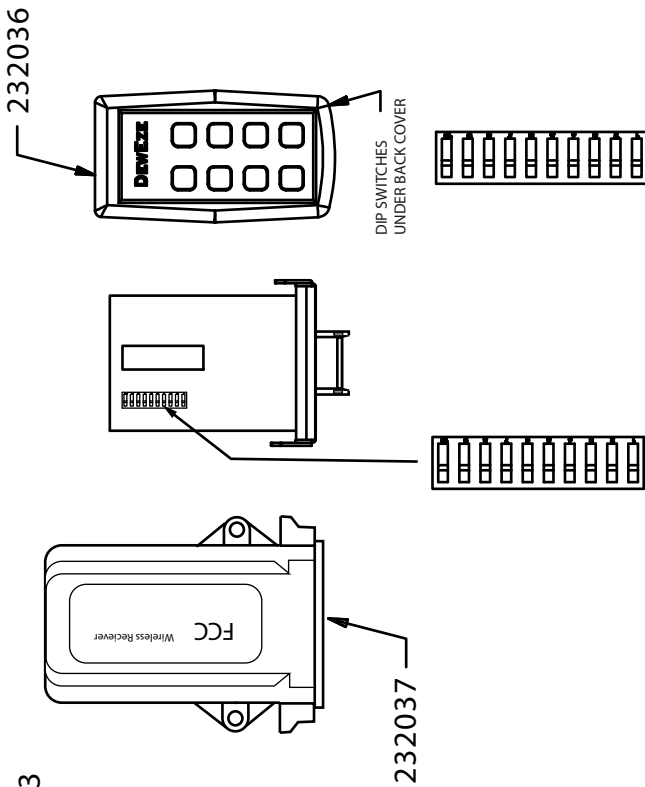


RF CONTROL & MANUAL SWITCHES



Parts List

PART #	QUANTITY	DESCRIPTION
110515	1	BOLT, 1/4-20 X .50
110609	1	NUT, 1/4-20
110673	1	WASHER, 1/4" FLAT STANDARD
110290	2	NUT, 1/4-20 WIZ FLANGE
110430	2	BOLT, 1/4-20 X 1.25
232005	2	TOGGLE SWITCH - 3 POS MOMENTARY
232036	1	TRANSMITTER, RF, VER 2, DIGITEC
232037	1	RECEIVER, RF, VER 2, DIGITEC
530007	1	TOGGLE SWITCH - 2 POS MAINTAINED
530019	3	SWITCH BOOT
232029	1	ANTENNA, 5", JOINTED
110756	1	SCREW, 6-32 X .5 PAN HEAD PHLP
110755	3	WASHER, #6 SHOULDER, NYLON
110633	1	NUT, 6-32



DIP SWITCHES IN RECEIVER AND TRANSMITTER MUST BE SET THE SAME

VERSION II RF RECEIVER

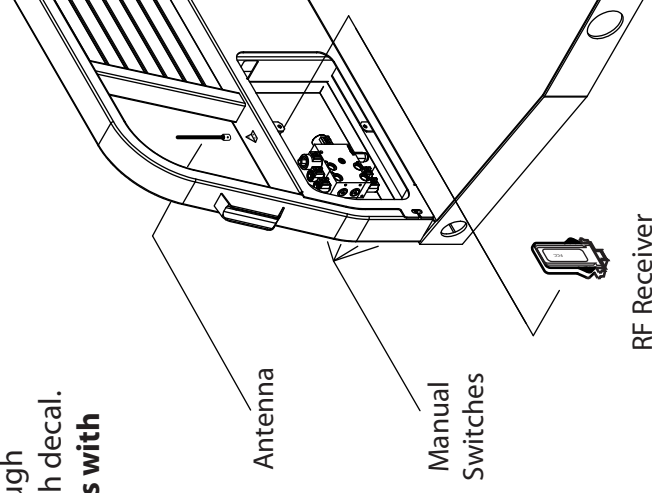
Installation Instructions:

1. Bolt left side of RF Receiver through existing hole in headache rack .
Drill hole for right side, if necessary, and attach with bolt.
2. Mount triangular bracket with self-tapping screws (if welded bracket is not present). Use rubber grommets and 1/2" screw to attach antenna.
3. Run light green wire from receiver through hole in headache rack and attach to antenna. Drill hole, if necessary.

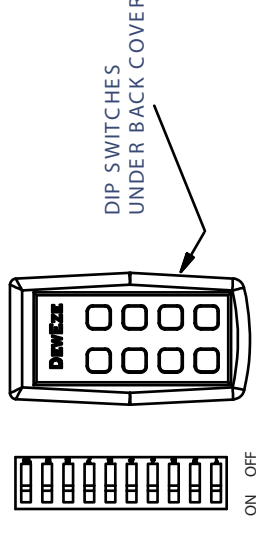
NOTE: Metal objects such as cake feeders or fuel tanks may interfere with radio waves from transmitter. The antenna may be moved to the top of the headache rack, or a second antenna may be installed in a different location to increase reception.

4. Mount manual switches through holes in headache rack. Attach decal.
Cover all switches and relays with plasticized undercoating.

NOTE: The manual switches must be protected with rubber boots. The boots must be installed with the correct stem length on the lever so the they are not stretched when the switch is used. This is done by adjusting the jam nut on the lever stem.

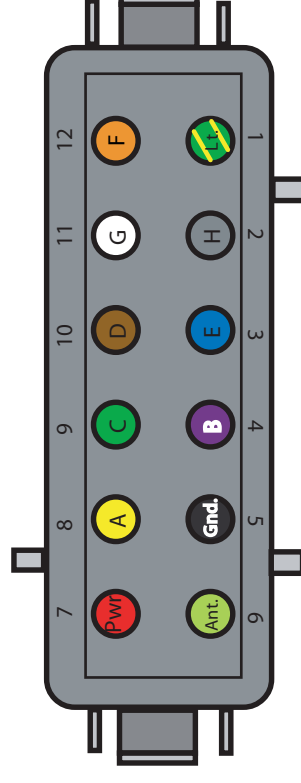


5. Set dip switches in transmitter to match dip switches in receiver. Use serial no. stickers to record ON/OFF positions and attach to both receiver and transmitter for future reference.



6. If the Deutsch Connector needs to be assembled, insert colored wires into the numbered positions as described below.

(Rear Side of Male Plug - Deutsch Connector)



7. Connect the colored wires to the valve as indicated below. See the following wiring diagrams for 2 and 3 bank wiring.

- | | |
|--------------|---|
| 1. GN/YLW | Connect to LT GREEN/YELLOW WIRE from LIGHT RELAY |
| 2. GRAY | Connect to VALVE H (3rd bank option only) |
| 3. BLUE | Connect to VALVE E |
| 4. PURPLE | Hook to PURPLE SWITCH WIRE and Connect to VALVE B |
| 5. BLACK | Connect to GROUND |
| 6. LT. GREEN | Connect to ANTENNA** |
| 7. RED | Connect to POWER |
| 8. YELLOW | Connect to VALVE A |
| 9. GREEN | Connect to VALVE C |
| 10. BROWN | Hook to BROWN SWITCH WIRE and Connect to VALVE D |
| 11. WHITE | Connect to VALVE G (3rd bank option only) |
| 12. ORANGE | Connect to VALVE F |

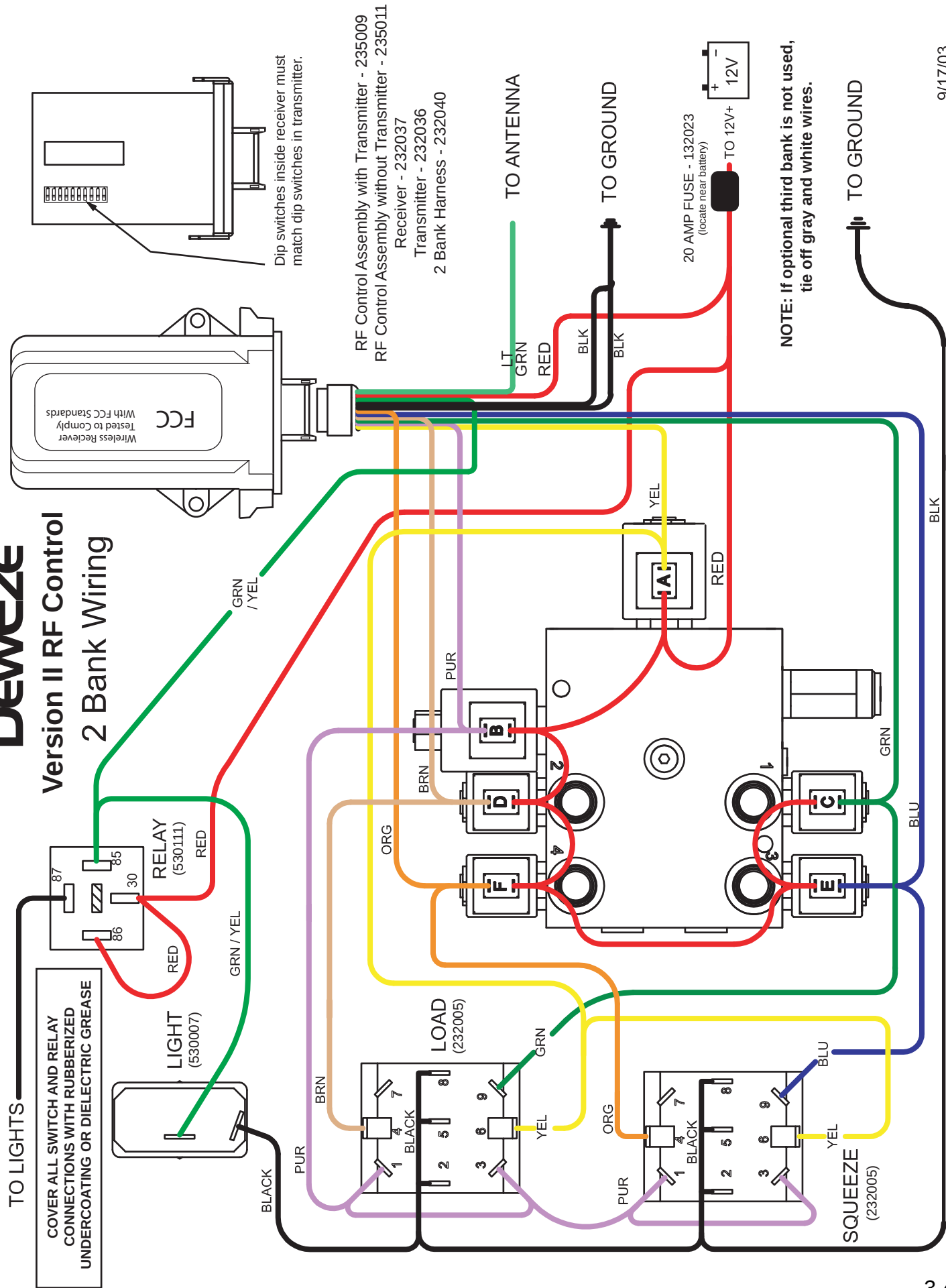
ADD 3RD BANK TO EXISTING 2 BANK VALVE

- 1- 232071 HARNESS
- 1- 223017 VALVE
- 2- 120288 ADAPTERS
- 2- 110046 7/8 SAE FLAT WASHER
- 1- 210280 COUPLER BRACKET
- 2- 220616 HOSE 7 COUPLERS (REAR OF BED)
- 2- 420051 DUST COVERS FOR COUPLERS
- 2- 120200 ADAPTERS FOR COUPLERS
- 1- 232005 SWITCH
- 1- 132035 BOOT

PARTS FOR KIT # 225008

Deweze

Version II RF Control 2 Bank Wiring



DewEZE

Version II RF Control

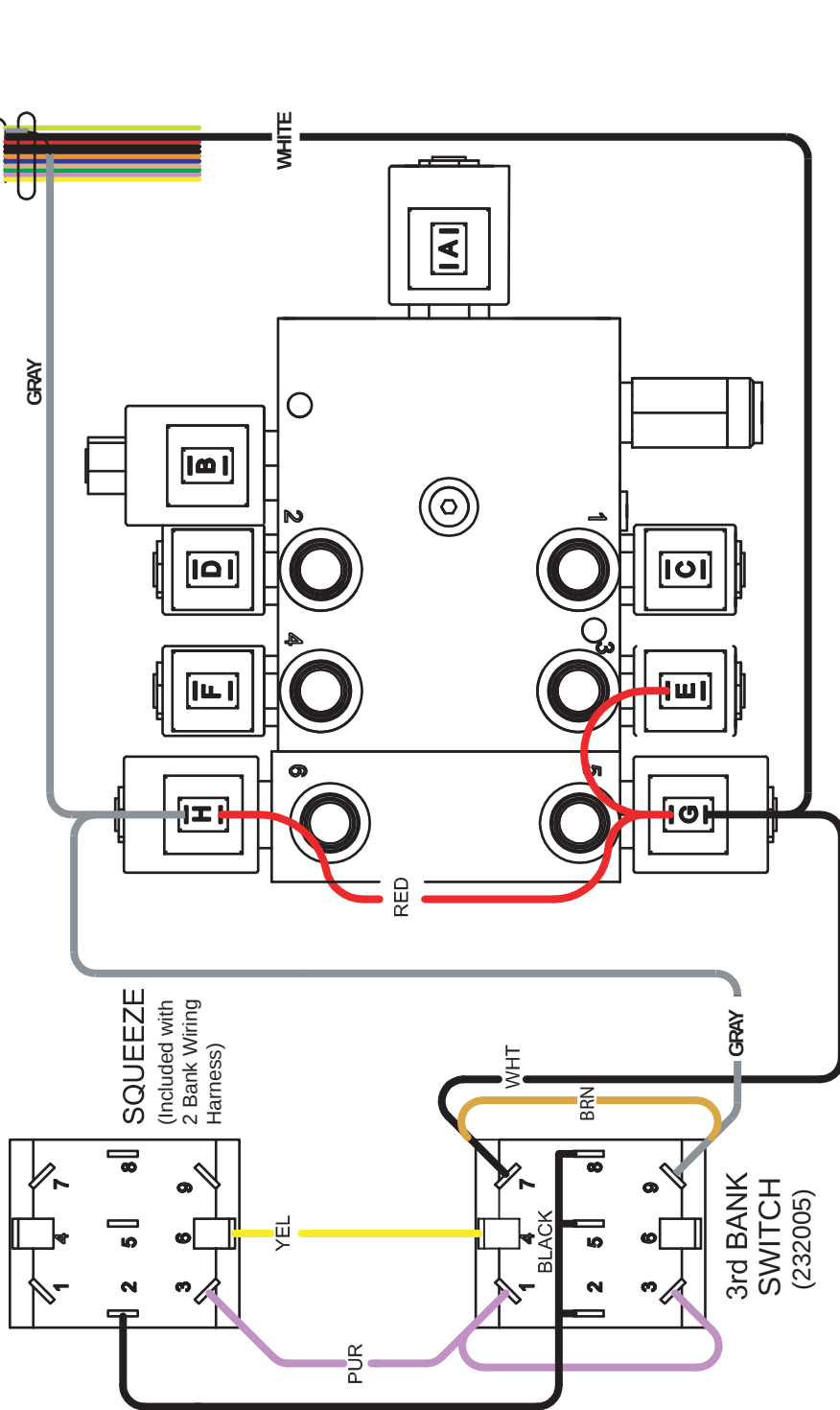
3rd Bank Wiring

Add-on Valve - 223017

Harness - 232041

Note: The add-on valve (223017) used for 3-bank, New Generation (Gen II) hydraulic systems is also required for 2-bank systems with 17 gpm pumps. In the 2-bank, 17 gpm system, ports 3 and 4 are plugged with the caps removed from 223017. The jumper wire connected to solenoid E must be moved to solenoid C.

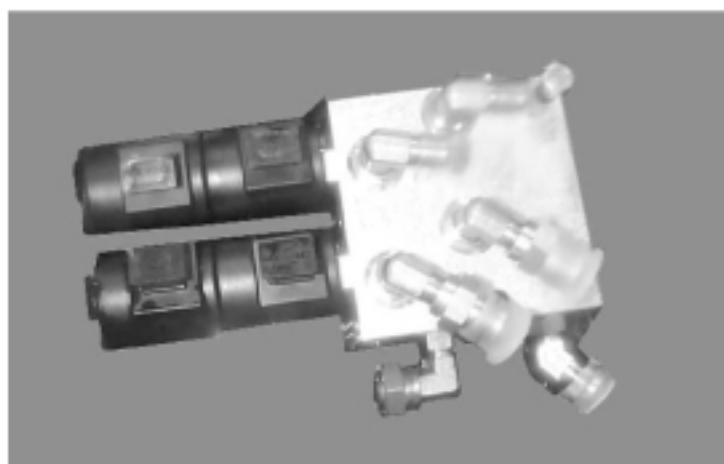
COVER ALL SWITCH AND RELAY CONNECTIONS WITH RUBBERIZED UNDERCOATING OR DIELECTRIC GREASE



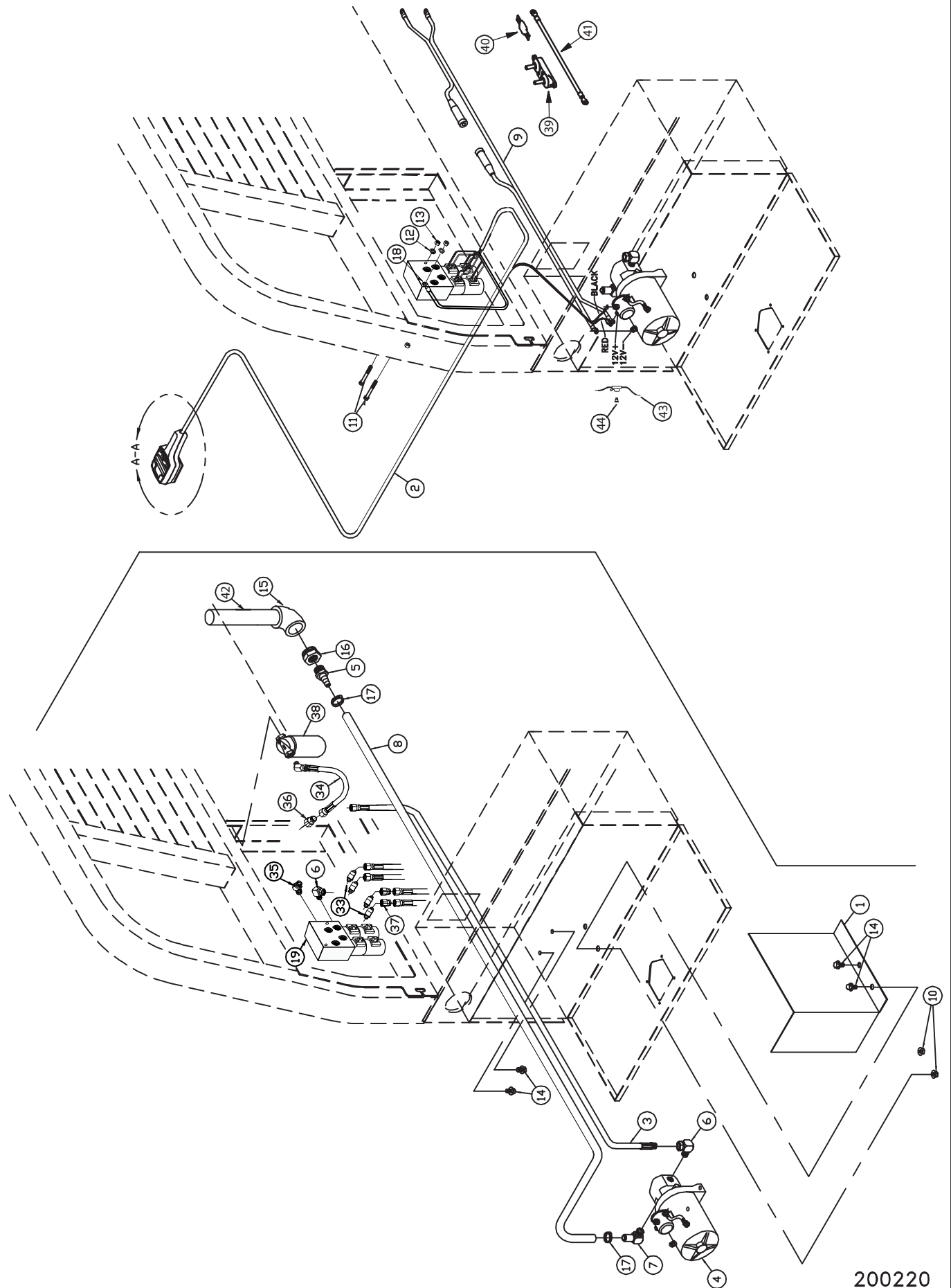


ELECTRIC / HYDRAULIC KIT

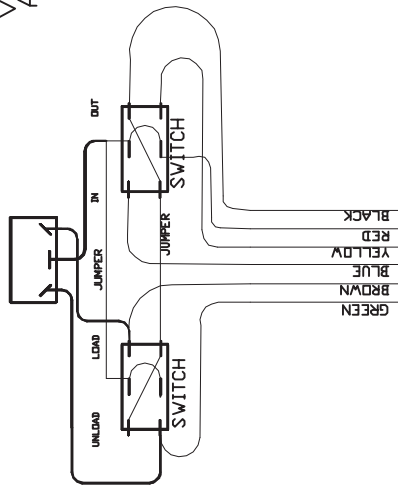
PARTS & INSTALLATION



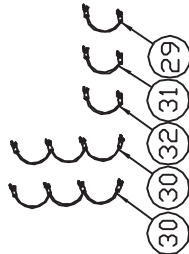
E/H HYDRAULIC & WIRING ASSEMBLY



VIEW
A-A

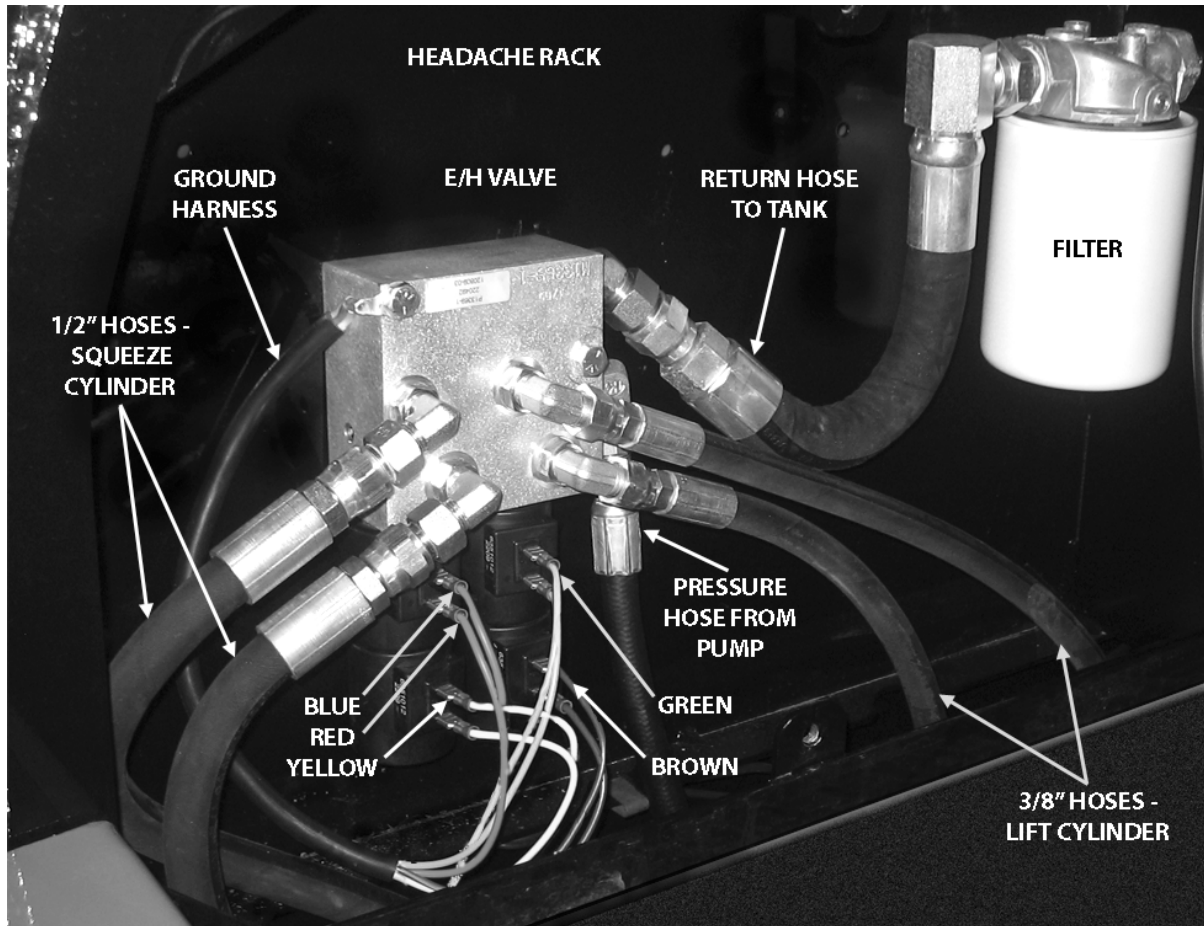


WIRING DIAGRAM
SWITCHES SHOWN FROM BOTTOM



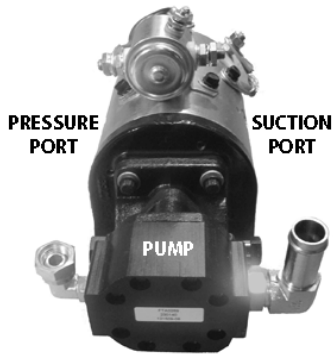
ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	211353	E/H SHIELD (1)	20	150001	TOP HOUSING (1)
2	150027	HAND CONTROL & CABLE ASSY. (1)	21	150003	BOTTOM HOUSING (1)
3	230148	CABLE /6-WIRE JUMPER WIRES INCLUDED (1)	22	150002	SWITCH PLATE (1)
4	220508	HOSE ASSY. (1)	23	150004	DECAL (1)
	230140	E/H MOTOR-PUMP UNIT (1)	24	150013	SCREW (4)
	210884	MOTOR	25	150015	SCREW (2)
	220651	PUMP	26	150014	SCREW (2)
	222006	SEAL KIT, PUMP	27	130029	SWITCH DPDT (2)
5	530018	SOLENOID	28	130002	MOMENTARY SWITCH (1)
6	120227	ADAPTER, 12BH-12MP (1)	29	150029	JUMPER WIRE/HOT (1)
7	120149	ADAPTER, 6MB-6FPX90 (2)	30	150030	JUMPER WIRE/HOT (2)
8	120187	ADAPTER, 12BH-8MB90 (1)	31	150031	JUMPER WIRE/GRN. (1)
9	220603	HOSE, SUCTION .75*46.00 (1)	32	150032	JUMPER WIRE/BRN. (1)
10	230144	BATTERY CABLE - E/H (1)	33	120222	ADAPTER, 6MJ-6MB90 (4)
11	110645	NUT, 3/8-16, WIZ FLANGE (2)	34	220691	HOSE, RES..75*12.25*12-10FJX (1)
12	110396	BOLT, 5/16-18 X 2.5 HHCS (2)	35	120087	ADAPTER, 6MB-8MJ45 (1)
13	110674	WASHER, 5/16 LOCK (2)	36	120457	ADAPTER, 8FJ-10MJ (1)
14	110608	NUT, 5/16-18 (2)	37	120142	ADAPTER, 6FJ-8MJ, EXPANDER (2)
15	110437	BOLT, 3/8-16 X .75, WIZ FLNG (4)	38	720041	FILTER HEAD (1)
16	720158	FITTING, ELL 1.25 (1)	39	720043	FILTER (WIX 51551) (1)
17	720071	FITTING, REDUCER 1-1/4 X3/4NPT	40	232001	FUSE BLOCK, AMG (1)
18	520099	HOSE CLAMP #12 (2)	41	232002	FUSE, 200 AMP (1)
19	230119	CABLE/SOLENOID GROUND (1)	42	230151	BATTERY CABLE, 12" (1)
	220492	VALVE (1)	43	200083	FITTING, NIPPLE, 1-1/4 X 6 (1)
			44	132001	FUSE HOLDER, ATC, 14 GA, MINI (1)
				132002	FUSE, MINI 30 AMP (1)

E / H KIT INSTALLATION INSTRUCTIONS

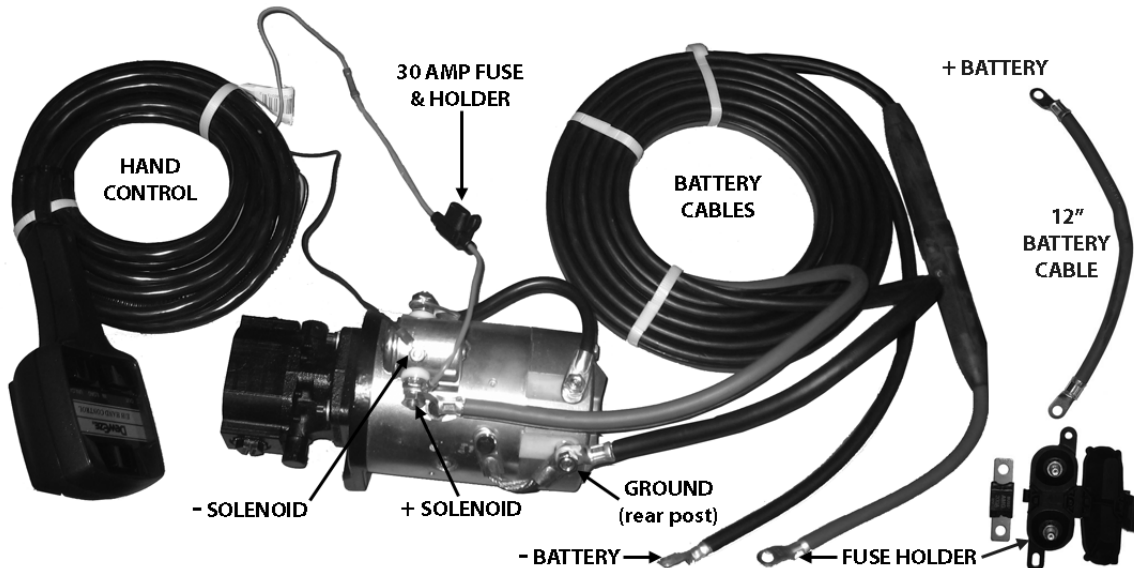
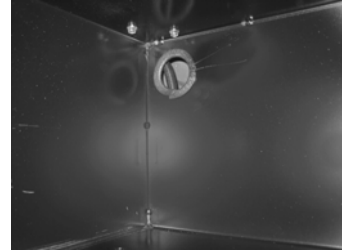


- 1) Attach adapters to E/H valve and install inside cavity on headache rack.
- 2) Attach return hose to valve and filter housing. Attach pressure hose from pump.
- 3) Attach blue and yellow wires from hand control to valve cartridge that controls squeeze cylinder as indicated.
- 4) Attach green and brown wires from hand control to valve cartridge that controls lift cylinder as indicated.
- 5) Attach ground harness to valve coils with similar color wires (yellow, brown and green). Blue and red wires are on same coil.
- 6) Attach 1/2" hoses from squeeze cylinder to side of valve controlled by blue and yellow wires. If hand control does not respond as desired, pioneer couples on rear of bed may be reversed or blue and yellow wires may be reversed.
- 7) Attach 3/8" hoses from lift cylinder side of valve controlled by green and brown wires. If hand control does not respond as desired, green and brown wires may be reversed.

- 8) Use diagram to locate holes in driver's side toolbox.
- 9) Drill 2.5" hole with hole saw and use molding to protect hoses from rough edges.
- 10) Drill 3/8" holes for pump as indicated and bolt pump to inside of toolbox.



- 11) Attach suction hose and pressure hose to pump with adapters provided.
- 12) Attach suction hose to bottom of reservoir as indicated in diagram.
- 13) Attach black wire from hand control to negative terminal on solenoid.



- 14) Attach 30-amp fuse holder to positive terminal on solenoid and then to red wire from hand control.
- 15) Run battery cables through hole in toolbox and attach to E/H motor as indicated (black cable to rear post).
- 16) Run battery cables along frame rail and attach black cable to negative terminal on battery.
- 17) Attach 200-amp fuse holder to 12" battery cable on one end and red battery cable on other end.
- 18) Insert 200-amp fuse and attach 12" battery cable to positive terminal on battery.
- 19) Test unit to ensure that all functions operate correctly and check for oil leaks.





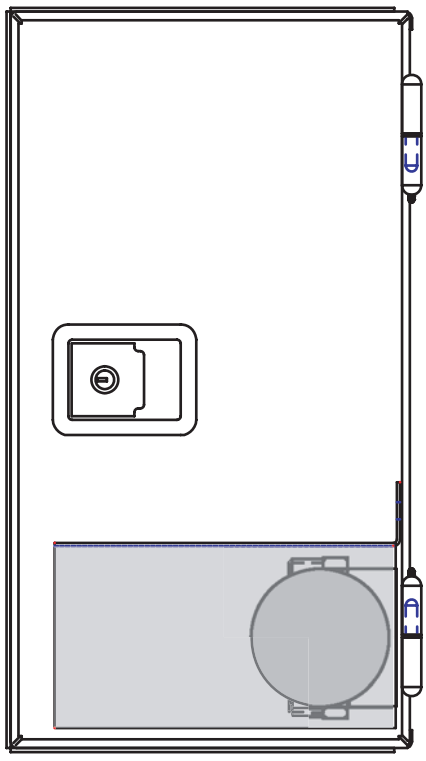
SAFETY WARNING!

**Escaping fluid under pressure can penetrate skin causing serious injury.
To prevent serious injury or death:**

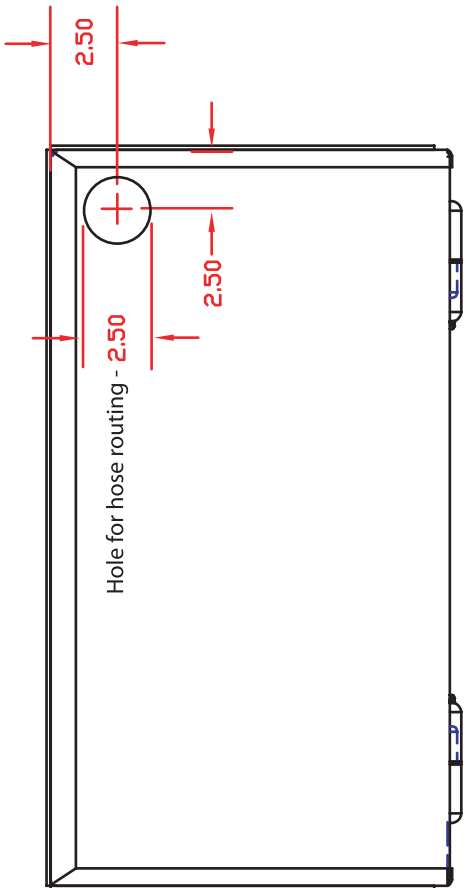
- Relieve pressure on system before repairing, adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks.
- Use wood or cardboard instead of hands when looking for leaks.
- Keep all components in good repair.
- Do not use any type of heat, (welding, soldering, cutting torch, etc) near pressurized lines.

NOTES

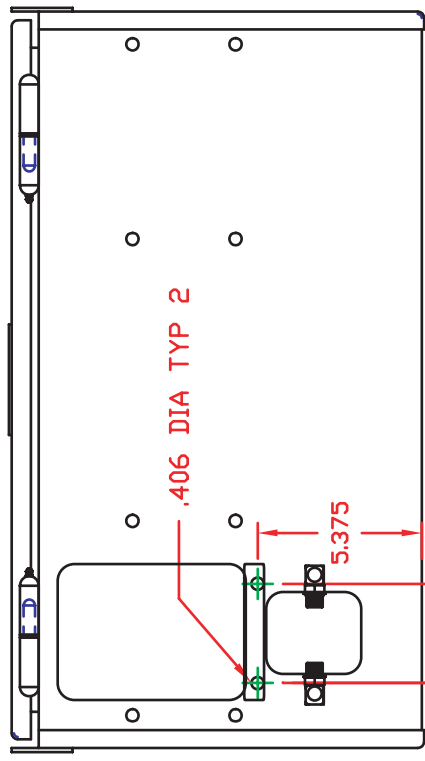
DEWEZE E/H KIT - 30" TOOLBOX MODIFICATION



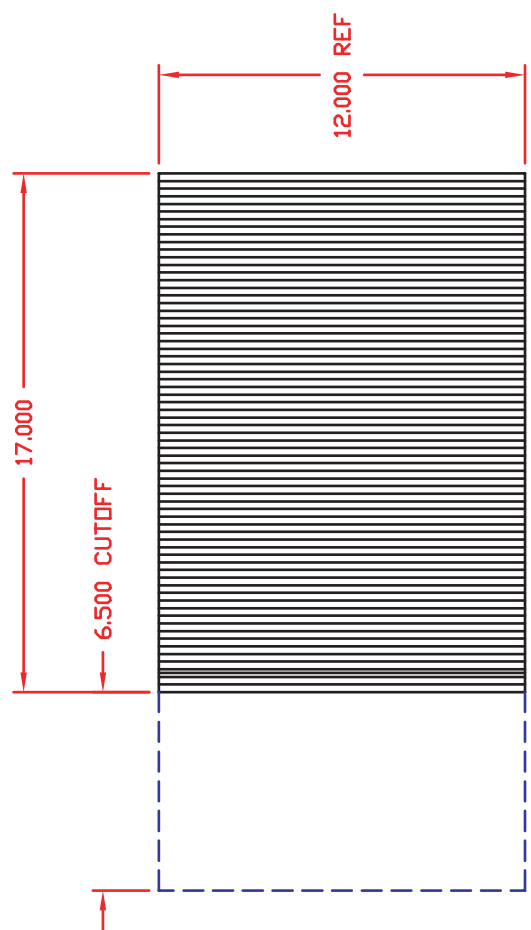
FRONT VIEW



REAR VIEW



BOTTOM VIEW



TOOL BOX MAT MODIFICATION

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