T E L E S C O P I C

P E R M M A G

O P E R A T O R S M A N U A L

ARMLIFT

SERIAL NO. T-4-95-1386

MODEL NO. A-TEL 33' DC - P/M - H/L

ATTENTION: THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS LIFT. TAKE TIME TO CAREFULLY READ THE SERVICE MANUAL BEFORE USING THE LIFT. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN BODILY INJURY OR PROPERTY DAMAGE.

FOR ADDITIONAL MANUALS, CALL OR WRITE:

TG INDUSTRIES, INC.
PO BOX 108
ARMSTRONG, IOWA 50514

(712) 864-3737 Phone
(712) 864-3848 Fax

WHEN LIFT IS RECEIVED, RECORD THE FOLLOWING INFORMATION:

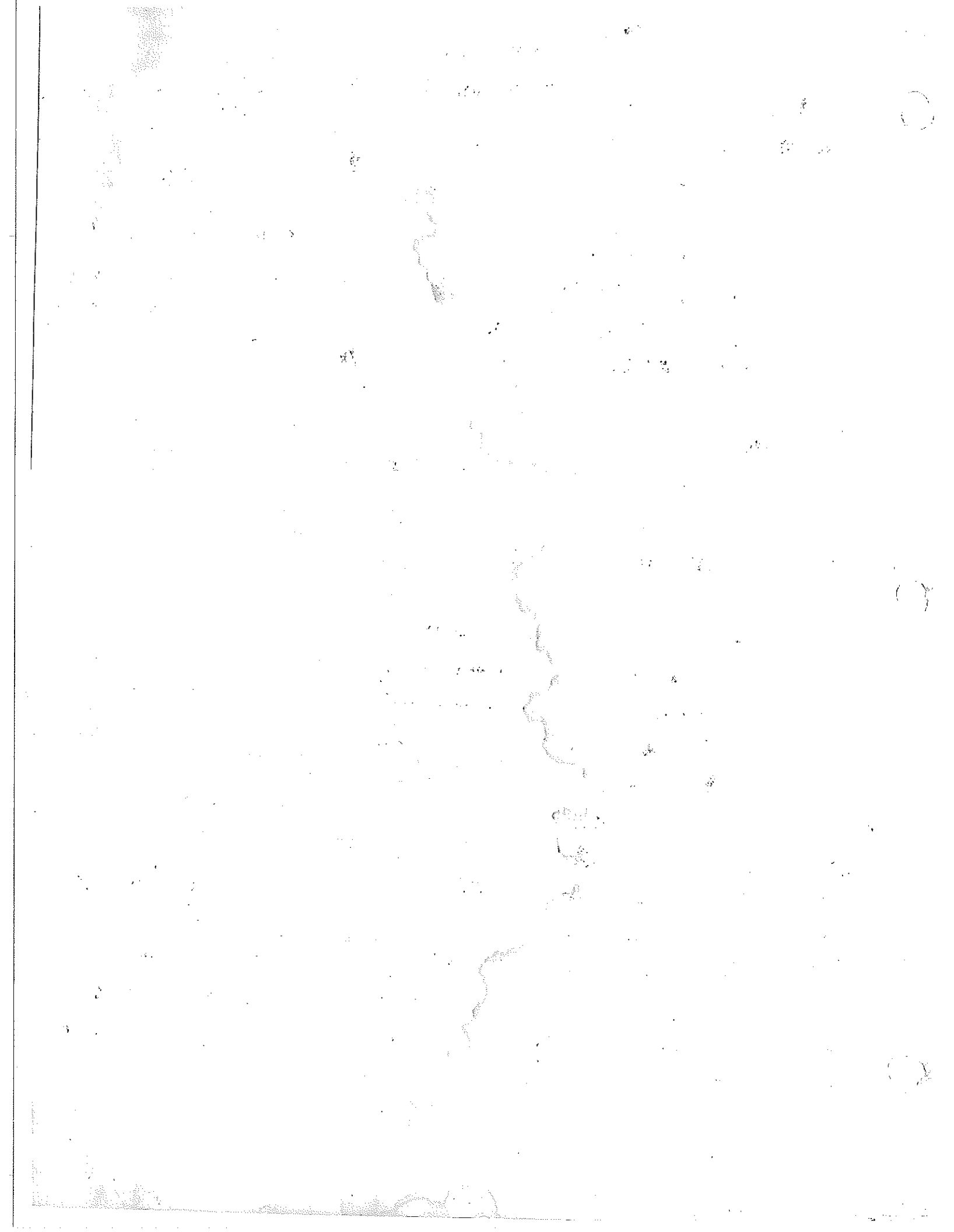
SERIAL NUMBER: T-4-95-1386

DATE OF PURCHASE: MARCH, 1995

DEALER: ABS FABRICATION INC

ALWAYS PROVIDE THE FOLLOWING INFORMATION WHEN ORDERING OR WRITING ABOUT PARTS.

1. PART NUMBER AND DESCRIPTION OF EACH ITEM.
2. QUANTITY OF EACH ITEM.
3. SERIAL NUMBER OF THE LIFT



PRODUCTION

PICKING TICKET

Order No.:	001025 PG 1
Date:	18-JAN-1995
Written By:	CE
Received Via:	FAX

TG Industries Inc.
Highway 15 South · P.O. Box 108 · Armstrong, Iowa 50514-0108
Phone: 712-864-3737 Fax: 712-864-3848

SOLD TO
ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

SHIP TO
ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

Customer Order No.	Req'd. Ship Date	Shipped Via	Date Shipped	Prepaid or Collect	Weight
A5504	04/03/95	IMT TRANSPORT		COLLECT	0

Quantity Ordered	Quantity Shipped	Back Ordered	Part No.	Description
1			A-TEL 33 DC PM H/L	33' STL TELESCOPIC PERM MAG W/ HYD/LEV
			OPTION 1.BKT-3 WALK	WALK THRU-DOOR TO BED
			2.5.9GL TANK	REPLACES 3 GALLON
			3.END PLATE1	PLAIN STEEL END PLATE
			CONSISTS OF:	
			1 100901	46" BASE-PIVOT ASS'Y HYD/LEV
			1 30102	DAN FOSS ROTATION MOTOR 151-2044 [30102]
			1 100912-1	TUBE ASSY STEEL SQUIRT HYD/LEV
			1 10641-1	120" EXT CYL SUB ASSY NO HOSES
			1 30243	1-1/2" X 120" CYLINDER [30243]
			1 30054	3" X 21-7/8" CYLINDER [30054]
			2 30049	1-1/2" X 12" STD CYL [30049]
			1 50115	W/THRU BKT LIP & POD SWITCHES [50115]
			1 50136	FIBERGLASS TOOL TRAY [501361]
			1 60230	CAUTION/DANGER DECAL SHEET STL [60230]
			1 102214-1	PERM MAG BASE ASSY HYD/LEV NO HYD FITTINGS
			1 101306-1	5.9 GAL TANK PERM MAG SQUIRT NO HYD FITTINGS
			1 101932-1	4 BANK VLV ASSY PERM MG SQUIRT NO HYD FITTINGS
			1 04009-1	2 SR BLOCK ASSY PERM MAG NO HYD FITTINGS
			1 100556-1	HYD LEV BLOCK ASSY NO HYD FIT
			1 101517-1	PERM MAG PUMP/MOTOR ASSY
			1 200173	MTE 12VDC PERM MAG 2 HP MOTOR 203 PUMP [200173]
			1 31034	PERM MAG WIRE HARNESS ASSY STL
			1 31125	BUCKET SWITCHES IN A POD
			1 40665	BASIC HOSE PKG-SQUIRT BOOM [40665]
			1 40669	PERM MAG W/O BACKUP HOSE/VALVE
				***** INSTALL ON BODY FOR SHIPMENT

PAINT - 3 DUPONT B9042 WHEATLAND YELLOW

Continued...

PLEASE notify us immediately if error is found in shipment.

☐ Order Complete

Packed By

PRODUCTION

PICKING TICKET

Order No.:	001025 PG 2
Date:	18-JAN-1995
Written By:	CE
Received Via:	FAX

TG Industries Inc.

...ghway 15 South · P.O. Box 108 · Armstrong, Iowa 50514-0108

Phone: 712-864-3737 Fax: 712-864-3848

SOLD TO
ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

SHIP TO
ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

Customer Order No.	Req'd. Ship Date	Shipped Via	Date Shipped	Prepaid or Collect	Weight
A5504	04/03/95	IMT TRANSPORT		COLLECT	0

Quantity Ordered	Quantity Shipped	Back Ordered	Part No.	Description
	...Continued			
			1 40677	BK7TANK PKG-SQUIRT [40669]
				HYD/LEV PKG-33' STEEL SQUIRT
				[40677]
			1 31172	STEEL SQUIRT DOOR ASSEMBLY DC
			1 60230	CAUTION/DANGER DECAL SHEET STL
				[60230]
			1 102644	DC P/M 46" SQUIRT ACESS. PKG
			1 30390	1203-3A ISOLATOR KIT
			1 101537	UNIT POWER DC UNITS
			1 [redacted] 80323	904 DEEP CYCLE BATTERY[803231
			1 [redacted]	[redacted]
1			04041	HYDRAULIC TOOL CIRCUIT ASS'Y
				33' STEEL SQUIRT
				4-6 GPM
			OPTION 1.THROTTLE	HEAVY DUTY THROTTLE CONTROL
			CONSISTS OF:	
			1 04036	TOOL CIRCUIT BLOCK ASSEMBLY
			1 00218	2 SPEED ELECTRIC THROTTLE
				CONTROL KIT
			1 30378	2 SP EL THRT P613-C1V12
				[30378]
1			~~102086~~ 100640	START/STOP: ~~PERM MAG W/12 V~~
				~~BACKUP 1 NOW/2 DIODES O/BLACK~~
1			21026	13' HOSE PACKAGE W/O BACKUP
				[21026]
1			102742	FORD 450 OVER THE FRAME BED
				MOUNTED TORSION BAR
1			100131	60 C/A FORD FIBERGLASS BED
				WHEATLAND YELLOW B9042
			OPTION 1.SIDE PAC-2	FB-60S SIDE PACS SPECIAL COLOR
			2.BUMPER-2	4X4-450 STEP BUMPER ON TG BED
			CONSISTS OF:	
			1 102160	108" BED FRAME W/O OUTRIGGERS
			1 99576	24" X 24" ARMLIFT MUDFLAPS
			1 99834	FB-60S SIDE PACS SPECIAL COLOR
				[99834]
			1 99833	SHELVING PACKAGE FOR FG BODIES
				*****INSTALL ON BODY FOR SHIPMENT

PLEASE notify us immediately if error is found in shipment.

☐ Order Complete ☐ Continued . . .
☐ Balance to Follow

Packed By _____

PRODUCTION

PICKING TICKET

Order No.: 001025 PG 3

Date: 18-JAN-1995

Written By: CE

Received Via: FAX

Industries Inc.

Highway 15 South · P.O. Box 108 · Armstrong, Iowa 50514-0108

Phone: 712-864-3737 Fax: 712-864-3848

SOLD TO

ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

SHIP TO

ABS FABRICATION INC

3650 HAUCK ROAD
CINCINNATI, OH 45241
PHONE: (513) 769-6700

Customer Order No.	Req'd. Ship Date	Shipped Via	Date Shipped	Prepaid or Collect		Weight
A5504	04/03/95	IMT TRANSPORT		COLLECT		0

Quantity Ordered	Quantity Shipped	Back Ordered	Part No.	Description
	...Continued			
			1 100536	[99833]
			1 99855	ASSY:STEP BUMPER 4X4 & F450
				PLASTIC GRAB HANDLES [99855]
			80326	PLASTIC BATTERY BOX [80326]
1			*****	INSTALL ON BODY FOR SHIPMENT

☐ Order Complete
☐ Balance to Follow

PLEASE notify us immediately if error is found in shipment.

Packed By _____

ARMLIFT DATA SHEET

MODEL NUMBER A-TEL 33 DC P/M - H/L SERIAL NUMBER T-4-95-1386

WORKING HEIGHT 33' PLATFORM HEIGHT 28'

RATED LINE VOLTAGE _____ PRODUCTION ORDER # 001025

CAPACITY RATING

WHEN THE UNIT IS MOUNTED IN ACCORDANCE WITH FACTORY INSTRUCTIONS ON A VEHICLE TYPE APPROVED BY THE FACTORY AND IS IN SERVICE ON A FIRM AND LEVEL SURFACE. ITS CAPACITY WITHOUT OUTRIGGERS EXTENDED IS 300 POUNDS PER BUCKET. FOR OTHER RATINGS. CONSULT FACTORY FOR INFORMATION.

WARNING

BEFORE OPERATING UNIT. READ AND UNDERSTAND ALL OPERATING AND SAFETY INFORMATION IN MANUAL AND ALL INFORMATION ON THIS SHEET.

DATE OF MANUFACTURE MARCH 1995

CUSTOMER CITY OF MORAINE

ADDRESS _____

_____

PHONE NUMBER _____

DEALER ABS FABRICATION, INC

ADDRESS 3650 HAUCK ROAD

CINCINNATI, OH 45241

PHONE NUMBER (513) 769-0030

MOUNTED BY TG INDUSTRIES, INC

UNIT MOUNT: TRUCK X VAN _____ TRAILER _____ S/N _____

VEHICLE MFG _____ YEAR _____ SIZE _____

TYPE OF BODY _____ LAMP BOXES: 10' LAMP S/N _____

10' SERVICE S/N _____ 8' LAMP S/N _____

8' CROSS S/N _____ 36" UNDER BODY BOX _____

UTILITY BODY S/N _____

-INTRODUCTION-

The ArmLift Aerial Bucket is designed for a one man operation, with a rated capacity of 300 lbs., to position an operator at a work position up to 34 feet above ground level, depending on the model.

The purpose of this manual is to familiarize you with your ArmLift relating to installation, maintenance, operation, and safety of operation.

All operators and maintenance personnel should read and understand the contents of this manual.

A copy of this manual should be carried in the truck at all times.

Please read the operating and the maintenance instructions carefully before operating this equipment. Only authorized and trained personnel should operate this equipment.

No manual can cover every situation that might arise. Therefore, good judgement and common sense, are a must in the operation of this equipment.

** INDEX **

TELESCOPIC OPERATORS MANUAL

PERM MAG

SECTION I

INTRODUCTION II

OPERATIONAL SECTION III

OPTIONAL PARTS IV

W A R R A N T Y C E R T I F I C A T E

This is a limited warranty. All parts of the ARM-LIFT are warranted for a period of twelve months from the date of purchase. This warranty is issued only to the original user and promises that TG INDUSTRIES, INC., manufactured products are free from defects in material and factory workmanship when properly installed, serviced and operated under normal conditions, according to the Manufacturer's instructions.

Manufacturer's obligation under this warranty is limited to correcting without charge at its factory any part or parts thereof which shall be returned to its factory or one of its Authorized Service Stations, transportation charges prepaid, within twelve months after being put into service by the original user, and which upon examination shall disclose to the Manufacturer's satisfaction to have been originally defective. Correction of such defects by repair to, or supplying of replacements for defective parts, shall constitute fulfillment of all obligations to original user.

The ARM-LIFT Aerial Bucket Lift is engineered and designed to perform as stated on published specifications. Only quality materials and workmanship are used in the manufacture of this product. With proper installation, regular maintenance and periodic repair service, the equipment will provide excellent service.

This warranty shall not apply to any of the Manufacturer's products which must be replaced because of normal wear, which have been subject to misuse, negligence or accident of which have been repaired or altered outside of the Manufacturer's factory unless authorized by the Manufacturer. Misuse included driving the vehicle with the Arm-Lift up in the air or operating without a man in the bucket.

Manufacturer shall not be liable for loss, damage or expense directly or indirectly from the use of its product or from any cause. This includes injury to a person in the bucket incurred while the motor vehicle, the Arm-Lift is mounted on is moving.

The above warranty supersedes and is in lieu of all other warranties, expressed or implied, and of all other liabilities or obligations on part of Manufacturer. No person, agent or dealer is authorized to give any warranties on behalf of the Manufacturer nor to assume for the Manufacturer any other liability in connection with any of its product unless ma[illegible] in writing and signed by an officer of the Manufacturer.

GENERAL INFORMATION

TELESCOPIC - PERM MAG

CONTROL:

Full control in bucket is provided by 12 volt D.C. system operating a solenoid valve. Electric override control, located on the base door, must be pushed up in order to operate lower controls.

Only authorized personnel should operate the lift controls.

All Lift controls should be tested prior to operation to determine good working condition.

D.C. HYDRAULIC SYSTEM:
Hydraulic operating pressure is 2,500 PSI. Operating oil volume is 1 to 2 GPM. Hydraulic power is available from a 12 volt D.C., motor and pump.

Standard equipment on this model is a D.C. motor with permanent magnets. The standard flow is 2 G.P.M., a flow divider provides slow speed to be used when in close proximity to a building, pole, or tree and when unit is about up to full height.

The Releif Valve is located 90° degrees to the right from the pressure check port, this is the 6 O'Ring port facing the door on the aluminum block above the shelf. This is adjusted to 2,500# PSI. Place a gauge in the pressure port provided. Retrack upper boom until bottomed out. Read the pressure and if low, adjust the screw clockwise; if high adjust counter-clockwise, to decrease pressure setting. **DO NOT ADJUST UNDER PRESSURE.**

SAFETY FEATURES:
Counterbalance holding valves prevents creep and locks cylinders in the event of line failure. Self locking worm gear drive prevents rotation drift. The bucket is gravity leveled with hydraulic damper to prevent quick jerky movement. Optional hydraulic bucket leveling is available. Safety Belt with Landyard ring is standard on all units.

Mount torsion bar before installing lift. Torsion bars are recommended on truck mounted units and optional on van mounted units. Stabilizers provide extra stability, but are not essential.

GENERAL SAFETY INFORMATION

ALL ARMLIFT products are designed to meet or exceed the current industry and Federal Safety Standards at the time of manufacture. HOWEVER, no safety program is complete without a safety conscious operator. Safety information has been highlighted throughout this manual for the benefit of the workers who will use or service our equipment in their daily job.

THIS SYMBOL MEANS: ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

DANGER: Always run truck Engine in well ventilated area only. Failure to do so will cause death or severe personal injury. However DC power may be operated without this danger.

Always set wheel chocks on front and rear of front tire of Vehicle before operating unit. Chocks must be set on side of Vehicle, visible to operator in bucket. Setting wheel chocks on the wrong side will allow truck to roll over chocks. This is especially important on truck units with emergency brake located on drive shaft rather than wheels.

WARNING: Always keep hands, feet, and clothing clear of all moving parts. Failure to do so may cause severe personal injury.

Always use a piece of cardboard or wood to check for hydraulic leaks. Never use hands. Failure to so may cause severe personal injury by injecting oil into the skin.

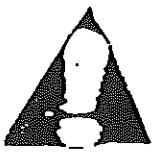
Always relieve system pressure before disconnecting hydraulic components. Failure to do so may cause personal injury because of instantaneous release of high pressure oil.

Always seek immediate medical attention if injured by escaping fluid. Fail to do so may cause severe infection.

CAUTION: Always use the necessary protective equipment such as hard hat, safety glasses, etc., to insure personal safety. Failure to do so may cause personal injury.

Always keep all unauthorized personal clear of the work area. Failure to do so may cause personal injury and / or damage to the equipment.

Always remove tools and materials from the bucket and set boom in cradle before transporting. Failure to do so may cause injury to someone or damage to the equipment.



WARNING:

A. Make sure boom is properly in boom support before moving vehicle.

B. Remove personnel, loose materials and tools from aerial bucket when traveling on roads and highways.

C. Keep over-all height Decal (located on dash of truck) of stowed Telescoping unit in cab visible to driver in order to avoid driving into any overhead obstruction.

PARKING AT JOB SITE:

A. Always park the unit in best position for stability. Avoid uneven or soft terrain. Back truck down slope as close to work position as practical to reduce tipping condition.

B. Set vehicle emergency brake securely.

C. Put wheel chocks at front and back of front tire on the side of vehicle visible to operator from the Bucket. Vehicle may roll over chocks if they are placed on the far side from bucket.

OPERATING:

A Always be secured by a safety belt and line to the eyelet on top of boom.

B. Never permit an unauthorized or unqualified person to ride or operate the lift.

C. Never exceed the rated bucket load capacity of 300# (pounds)

D. Avoid maximum outward reach position on downhill side when unit is parked on a sloping surface.

E. Do not allow unauthorized people on the ground to touch working units.

F. Do not enter or leave the bucket by walking or climbing on booms.

G. Do not transfer from aerial bucket to another structure when working aloft.

H. Always look in direction you are moving.

I. Keep away from contact with electrical lines.

J. Do not allow bucket to descend on, or strike a fixed object.

K. Do not use ladders, steps or other apparatus while working inside the bucket.

L. Do not sit on the edge of the bucket.

M. Never belt onto an adjacent pole or other structure when working from the unit bucket.

N. Stay clear if a pressure break occurs. Do not attemt to stop or slow the leak by any kind of physical resistance. Retract upper boom, rotate to normal stow position, then lower boom to stow position (by manual bleed-down if necessary) and shut down system as soon as a leak is detected.

O. Safety hats, and all other normal protective equipment and devices are recommended for use by the operators and support personnel

P. Always stow boom in boom support before moving vehicle.

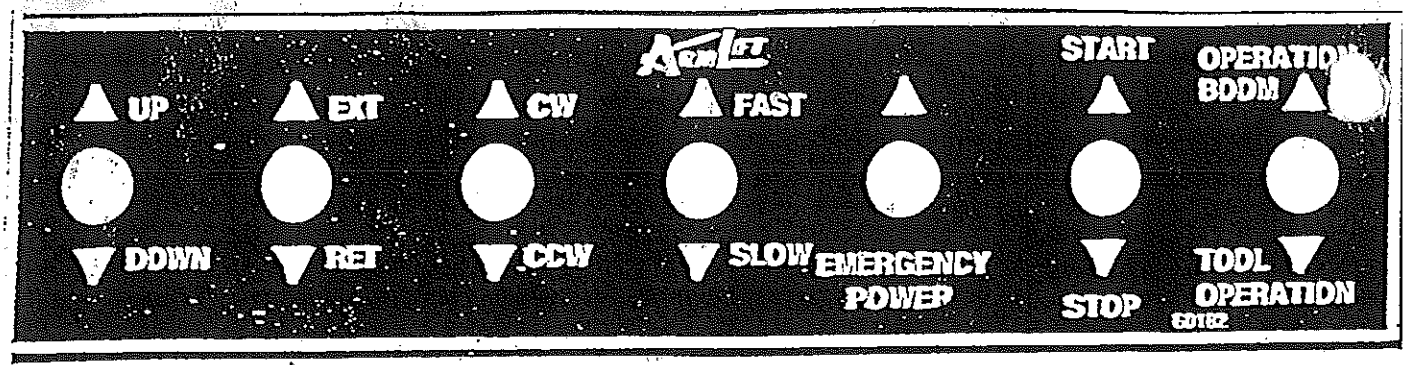
EQUIPMENT MAINTENANCE:

A. Always follow the Operator's Maintenance Schedule to keep equipment in top working order.

B. Keep vehicle properly serviced. Make sure tires are properly inflated, batteries charged, and brakes in good condition to provide proper holding power during operation of the Lift.

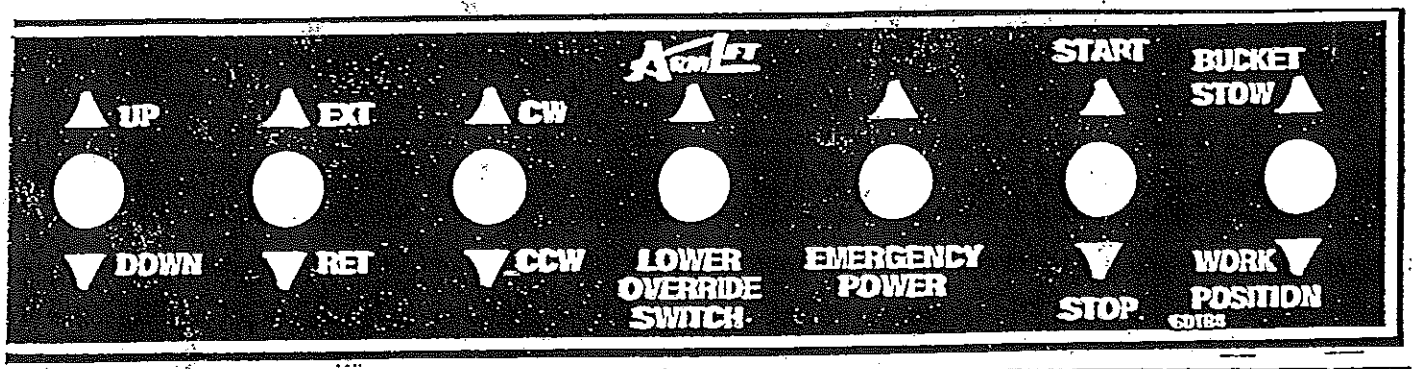
C. Make sure the Field Inspection Check List is conscientiously performed at appointed time intervals to fore-warn of any possible failures or malfunctions.

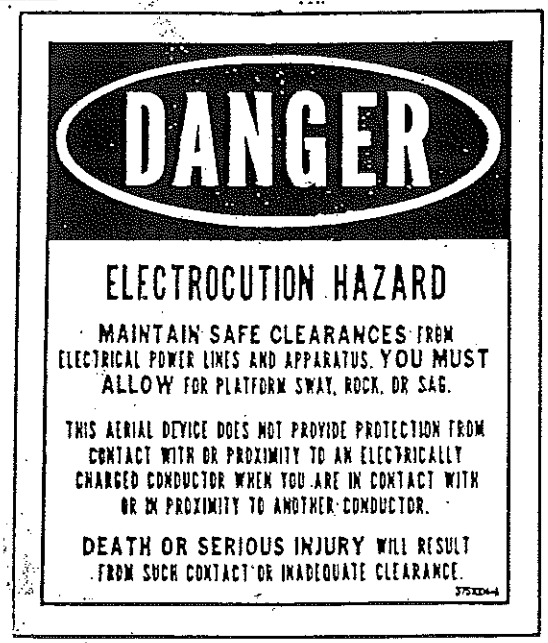
IF A SAFETY PROBLEM IS ENCOUNTERED WHICH IS NOT COVERED IN THIS MANUAL, CONSULT THE FACTORY FOR ADVICE AND RECOMMENDATIONS.



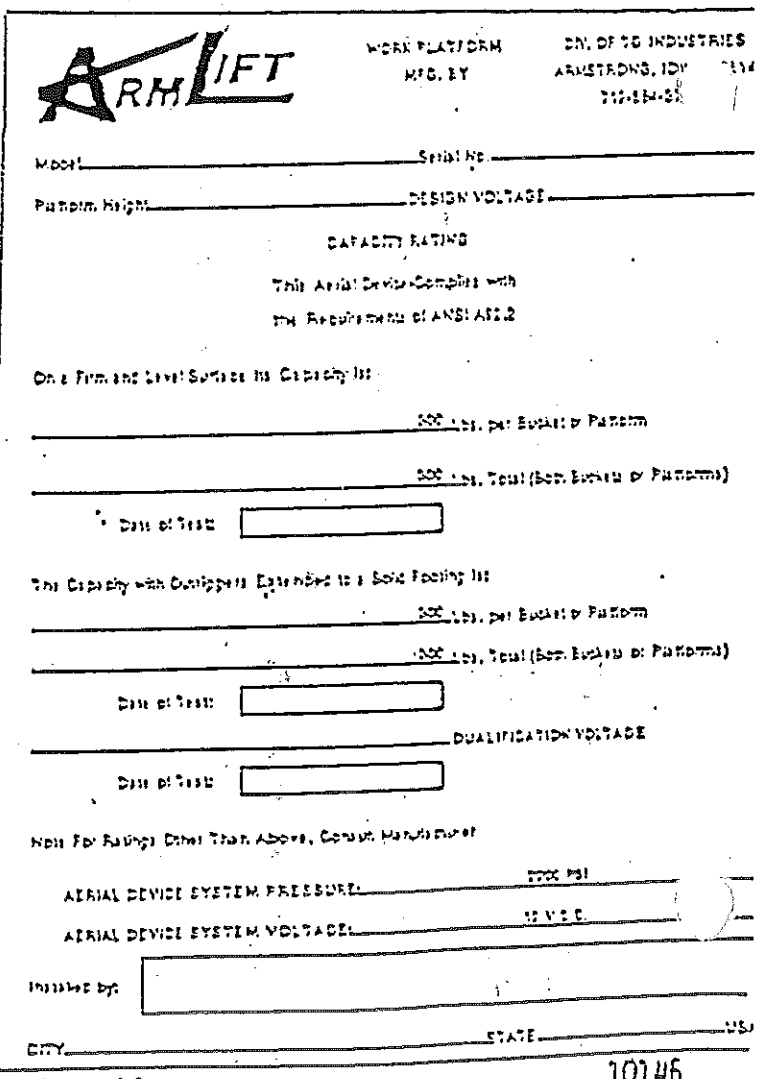
#6 60182

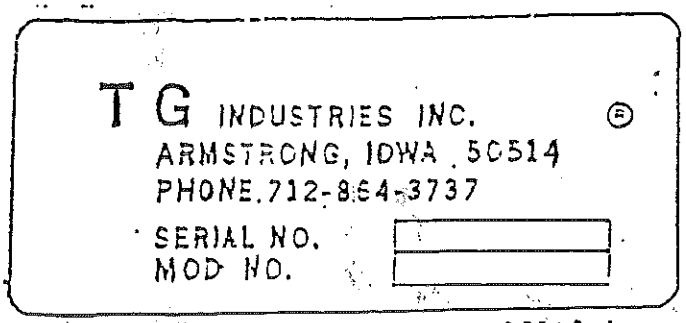
#7 60184





#8 INSULATED UNITS ONLY 60213





SIGN 9 10146-A

SIGN 10 10146

DANGER

YOU MUST NOT OPERATE THIS MACHINE UNLESS:

1. YOU HAVE BEEN TRAINED IN THE SAFE OPERATION OF THIS MACHINE, AND
2. YOU KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUALS, YOUR EMPLOYER'S WORK RULES AND APPLICABLE GOVERNMENTAL REGULATIONS.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY

SIGN 1 60212

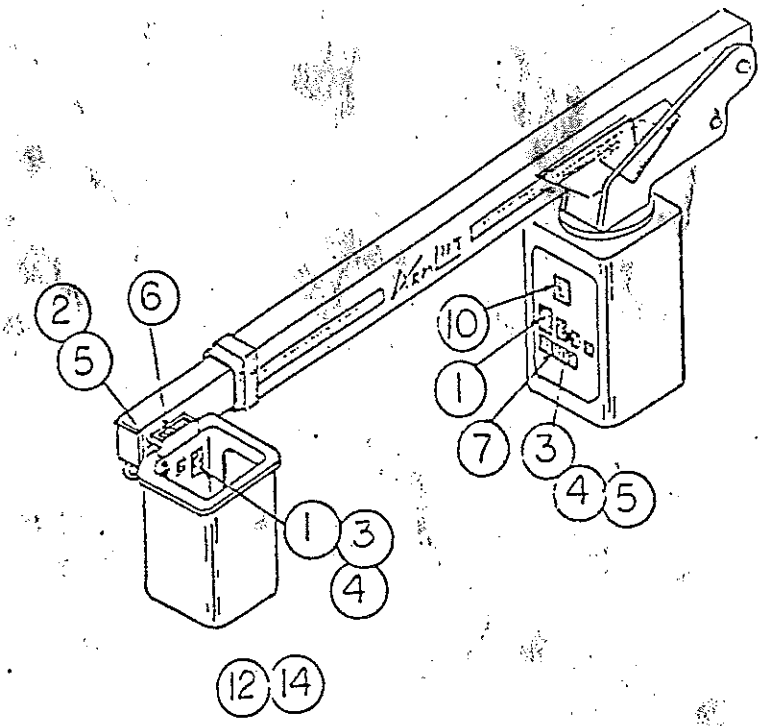


FIGURE 2-1

DANGER

EACH PERSON IN PLATFORM MUST WEAR A BODY BELT ATTACHED WITH A LANYARD TO ANCHOR POINT PROVIDED

WITHOUT A BELT YOU CAN BE SERIOUSLY INJURED

SIGN 2 60211

CAUTION

1. INSPECT VEHICLE AND AERIAL DEVICE, INCLUDING OPERATION, PRIOR TO USE, DAILY.
2. FOR STATIONARY OPERATION VEHICLE MUST BE SECURELY PARKED AND STABILIZED FOR THE WORK TO BE PERFORMED BEFORE AERIAL DEVICE IS OPERATED.
3. OUTRIGGERS WHEN REQUIRED MUST BE ON SOLID FOOTING.
4. OPERATORS SHALL WEAR A BODY BELT AND ATTACH WITH A LANYARD TO BOOM OR PLATFORM.
5. OPERATE ALL CONTROLS SLOWLY FOR SMOOTH PLATFORM MOTION.
6. DO NOT LOAD BEYOND RATED CAPACITY.

SIGN 3 60207

DANGER

ELECTROCUTION HAZARD

THIS MACHINE IS NOT INSULATED

MAINTAIN SAFE CLEARANCES FROM ELECTRICAL POWER LINES AND APPARATUS. YOU MUST ALLOW FOR PLATFORM SWAY, ROCK, DI SAG.

THIS AERIAL DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.

DEATH OR SERIOUS INJURY WILL RESULT FROM SUCH CONTACT OR INADEQUATE CLEARANCE.

SIGN 5 60203

* STEEL UNITS ONLY

CAUTION!

EMERGENCY DESCENT VALVE

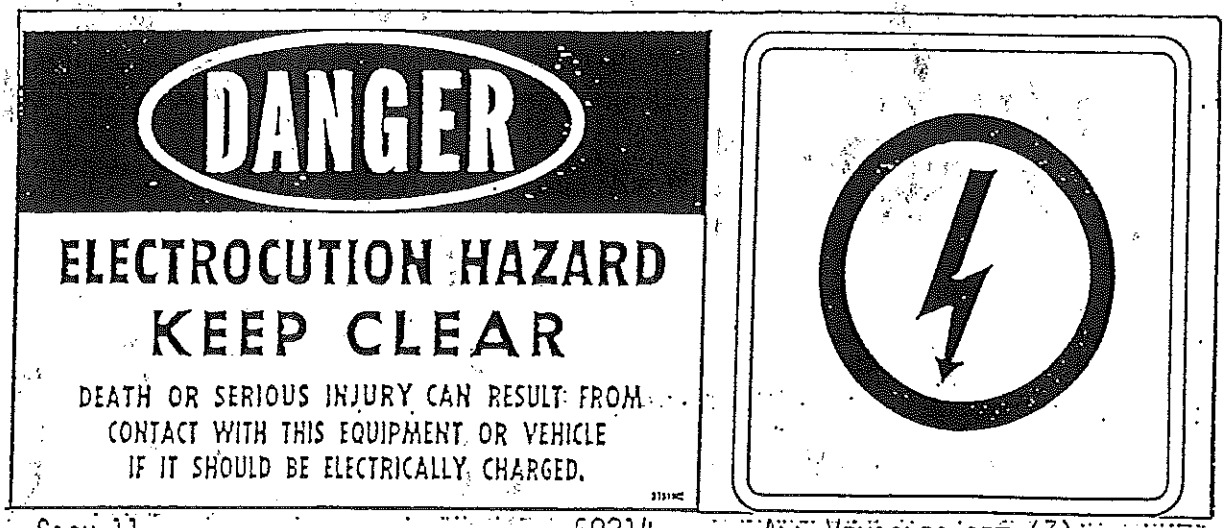
(1) Use only if boom cannot be operated by normal operation.

(2) Make sure upper boom is in a position where it can be lowered without coming into contact with any obstructions.

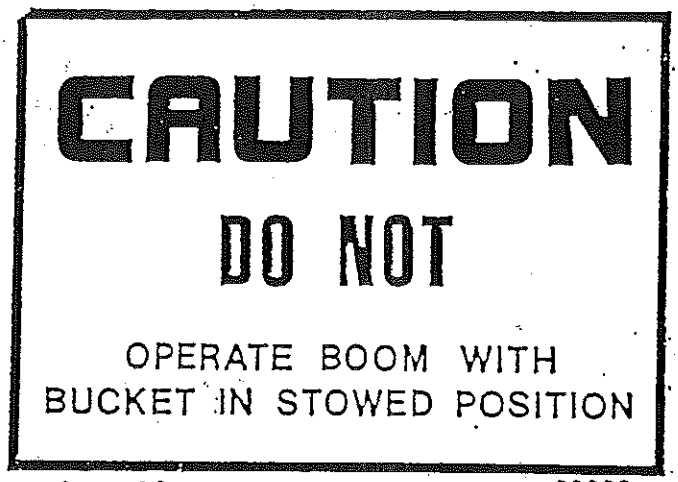
(3) Open needle valve slowly until boom starts to lower.

(4) Make sure valve is fully shut before operating unit again.

SIGN 4 60208

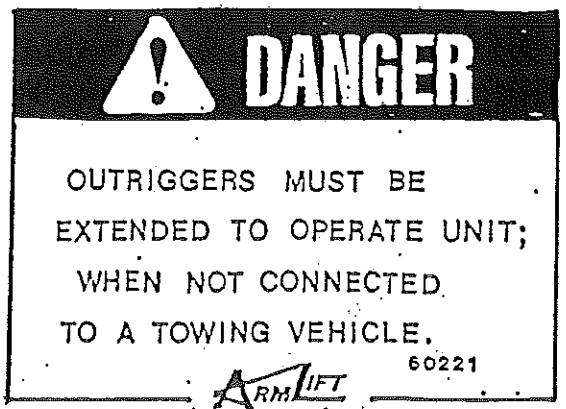


SIGN 11 60214 ALL VEHICLES GET (3)
ALL TRAILERS GET (2)

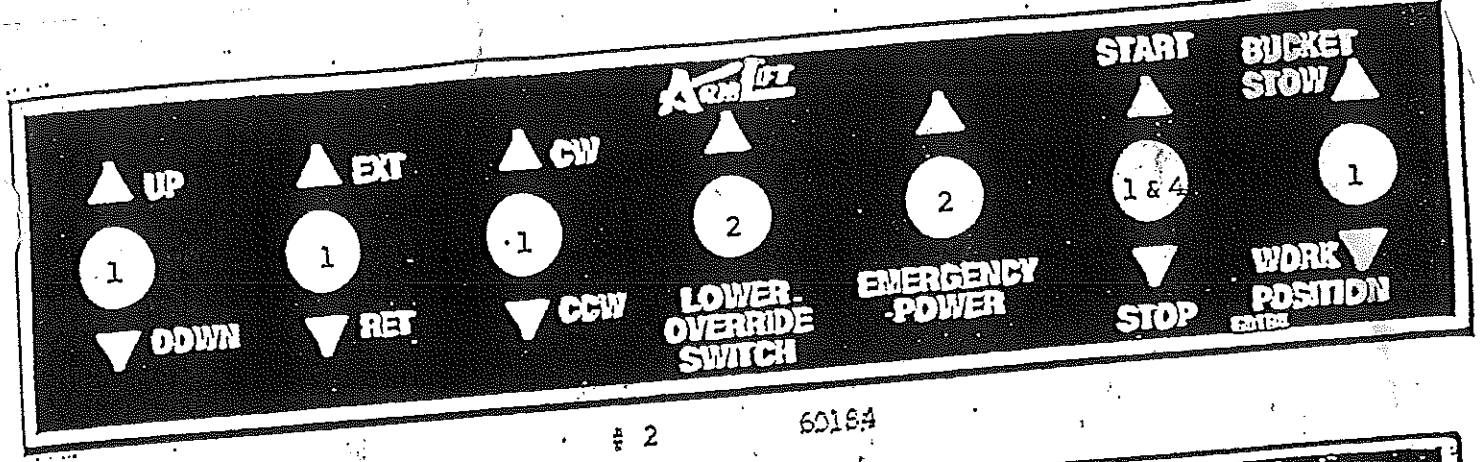


SIGN 12 60222
HYD. BUCKET LEVELING OPTION

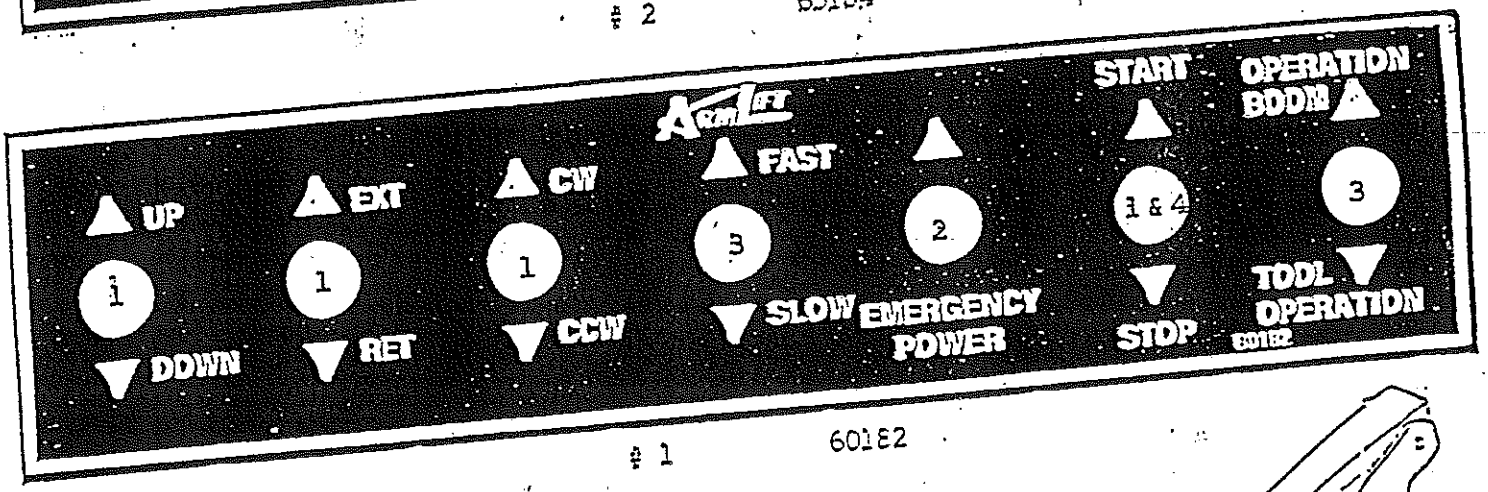
SIGN 14 START/STOP OPTION 60220



SIGN 13 TRAILER UNITS 60221



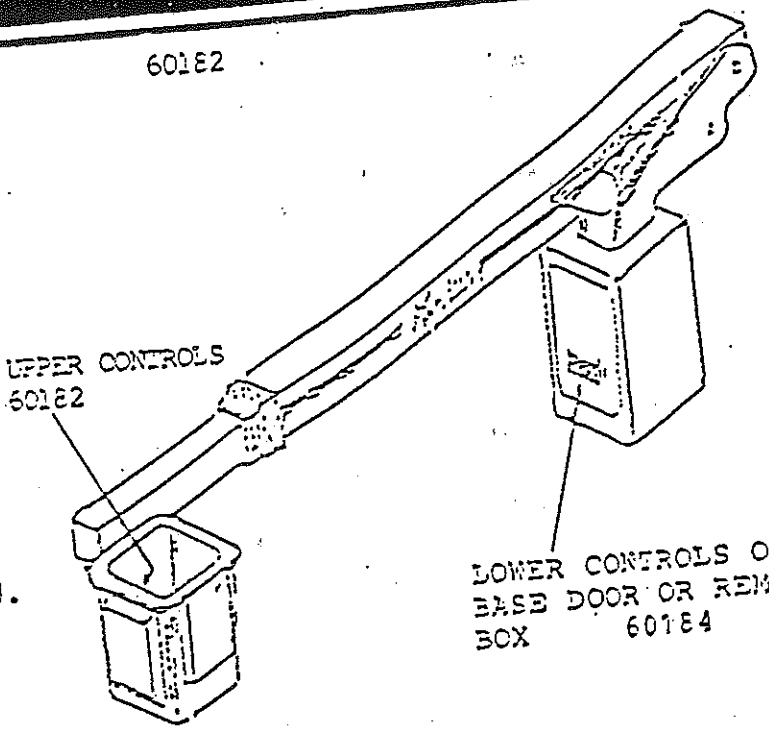
2 60184



1 60182

NOTE: NUMBERS ARE USED TO IDENTIFY TYPES OF SWITCHES (To Functions)

NOTE:
Lower Controls on base door and remote box are operable by holding override switch up. The functions are now in full control of the bucket, until override switch is released.



SWITCHES & CONTROLS
(D.C. UNITS)

KEY	PART NO	DESCRIPTION	QUANTITY
1.	80220	Switches	(5) Lower (4) Upper
2.	80223	Switches	(2) Lower (1) Upper
3.	80222	Switches	(2) Upper
4.	80230	Switches	(1) Upper (1) Lower

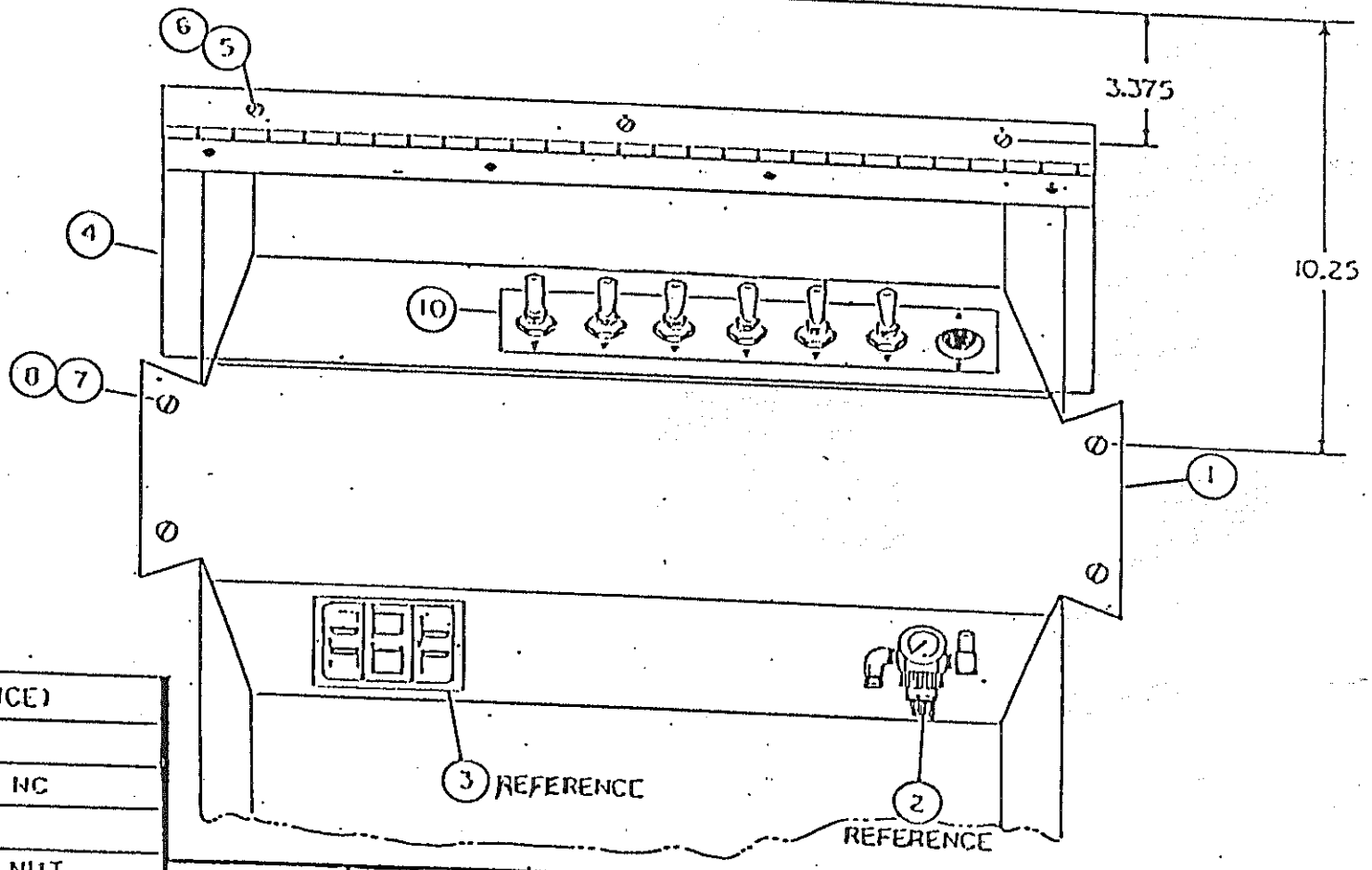
MATERIAL SPEC'S.
MAT.
TYPE
PC/LB.
SQ.IN./PC.
.

PIECE PARTS

NEXT ASSY.	QTY.
BUCKET ASSY	1

H

- 13 -



ITEM	QTY	PART NO	DESCRIPTION
10	1	60102	DECAL (REFERENCE)
9			
8	4	70233	1/4" NYLOCK NUT NC
7	4	69950	1/4 X 1.0 FLT HD
6	3	69960	1/4 NC PLASTIC NUT
5	3	69959	1/4 X 1.0 PLASTIC BOLT
4	1	101665	CONTROL COVER ASSY
3	1	101547	HO TOOL CIRCUIT
2	1	101693	AIR REGULATOR ASSY
1	1	101	BUCKET CONTROL

TOLERANCES
UNLESS OTHERWISE NOTED
DECIMAL
±
FRACTIONAL
±
ANGULAR
±

REVISIONS		
NO.	DATE	BY
1	4-24-91	TK
2		
3		
4		
5		

CONTROLS IN BUCKET -POD

DRAWN BY TK	SCALE NONE	MATERIAL
CHK'D	DATE 2-25-91	DRAWING
TRACED		

INTRODUCTION

SECTION

II

ARMLIFT SPECIFICATIONS

THE ARMLIFT IS A ONE MAN AERIAL BUCKET LIFT DESIGNED FOR THE JOB OF PUTTING A MAN AT A WORK POSITION UP TO 35 FEET ABOVE THE GROUND, DEPENDING ON THE MODEL AND THE TRUCK SIZE.

FULL CONTROLS AT THE BUCKET AND BASE GIVE COMPLETE FREEDON OF MOVEMENT THROUGH 720° DEGREES ROTATION. THE ARMLIFT TELESCOPING BOOM IS TRULY A ONE MAN PLATFORM.

CAUTION: PLEASE READ THE OPERATING AND THE MAINTENANCE INSTRUCTIONS CAREFULLY BEFORE OPERATING THIS EQUIPMENT.

PLEASE NOTE: BECAUSE OF CONSTANT EFFORTS TO IMPROVE OUR PRODUCT, SPECIFICATIONS MUST REMAIN SUGJECT TO CHANGE WITHOUT NOTICE.

TELESCOPIC SPECIFICATIONS

TRUCK AND VAN MOUNTED UNITS

SIDE HUNG BUCKETS MODELS	A-TEL 29' AF-TEL 29' VAN MODEL AVAILABLE	A-TEL 33' AF-TEL 33' VAN MODEL AVAILABLE	A-TEL 34' AF-TEL 34' VAN MODEL AVAILABLE
GROUND TO BUCKET	24'	28'	29'
WORKING HEIGHT	29'	33'	34'
SIDE REACH	17'	21'	21'
FIBERGLASS SECTION	74"	74"	74"
*STOWED HEIGHT LIFT ONLY	6'2"	6'2"	7'4"
STOWED LENGTH			
STEEL UNIT	13'1"	15'1"	15'1"
FIBERGLASS UNIT	15'4"	17'4"	17'4"

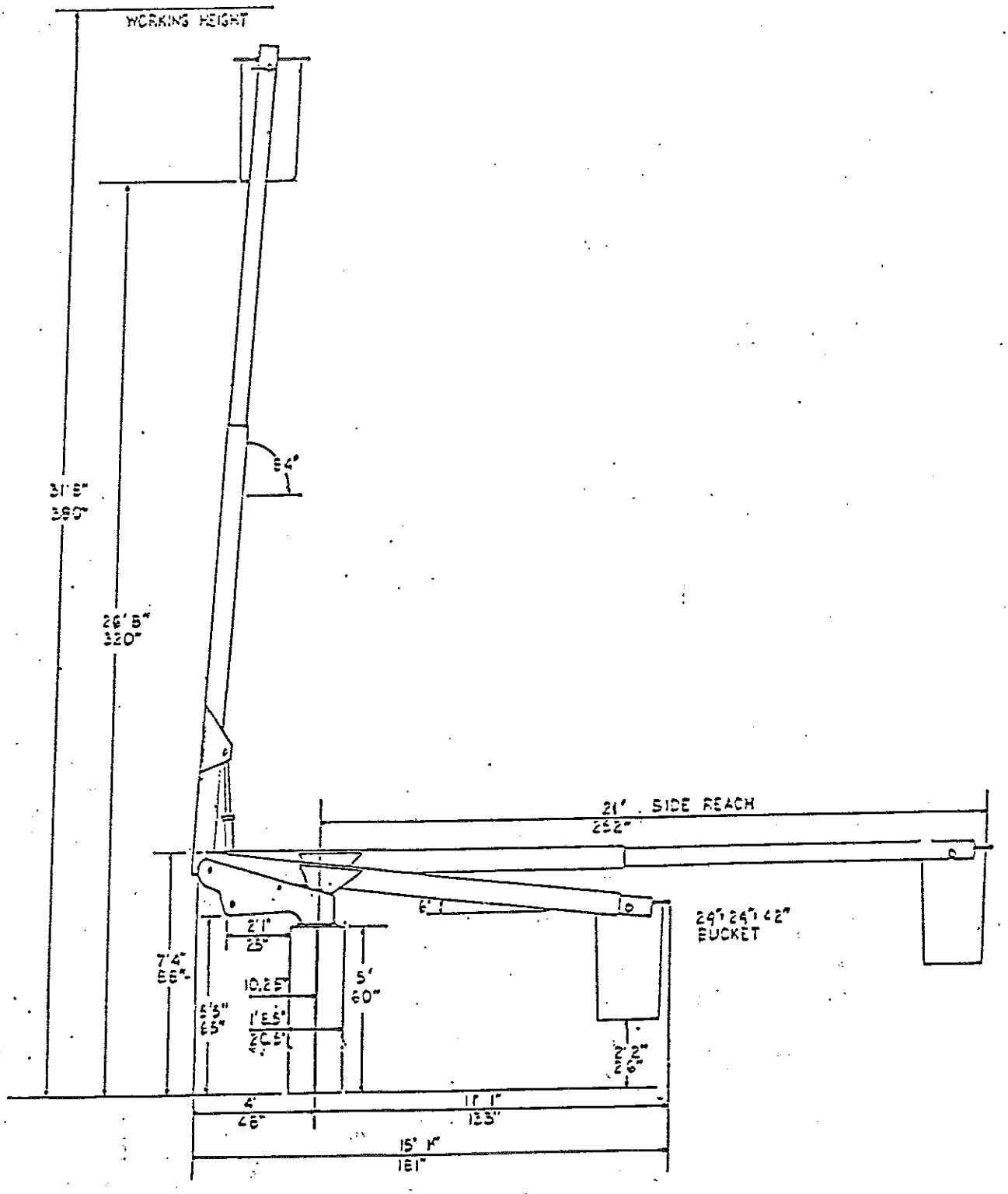
* ADD VEHICLE DECK HEIGHT TO GET TOTAL STOWED TRAVEL HEIGHT

ALL MODELS:			
BUCKET CAPACITY	300#	300#	300#

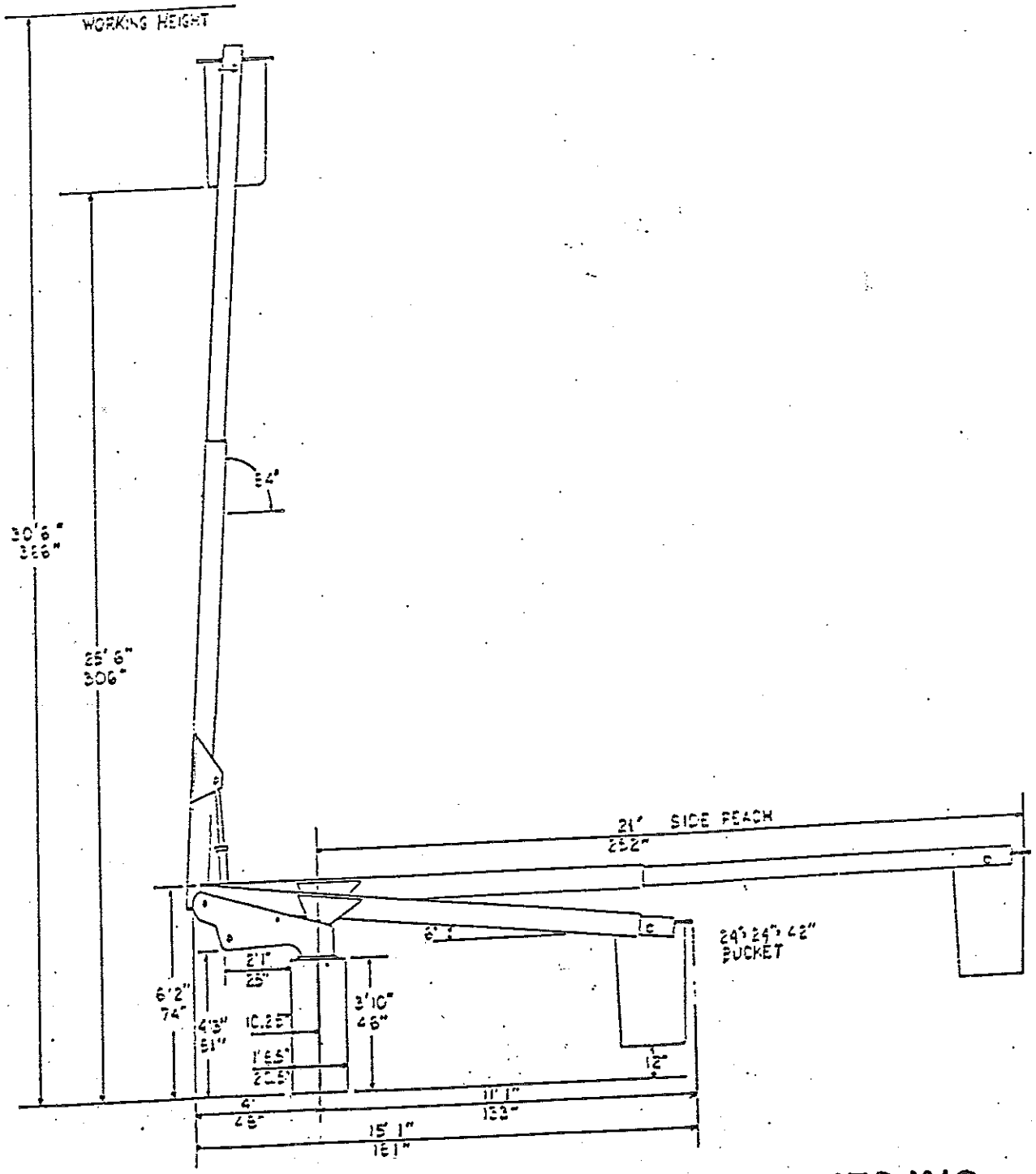
BOOM TRAVEL ON ALL MODELS: +84 DEGREES ABOVE AND -6 DEGREES BELOW HORZONTAL.

STABILITY: 450# BUCKET LOAD ON LEVEL GROUND
400# BUCKET LOAD ON 5 DEGREE SLOPE

CENTER OF GRAVITY: 41.5" ABOVE BOTTOM OF BASE AND 3" TOWARD REAR (BUCKET) FROM ACCESS DOOR ON 46" BASE. 43.5" ABOVE BOTTOM OF BASE AND 3" TOWARD REAR FROM ACCESS DOOR ON 60" BASE.



TG INDUSTRIES INC.
ARMSTRONG, IOWA 50514
A TEL 34' 60" BASE
3 2 90 CE



T G INDUSTRIES INC.
ARMSTRONG, IOWA 50514

A-TEL 33' 46" BASE
8 2 90 CE

A R M L I F T

MINIMUM VEHICLE SPECIFICATIONS

CAB AND CHASSIS REQUIREMENTS:

GVW MINIMUM	10,500 LBS.*
FRONT AXLE CAPACITY	3,800 MINIMUM
REAR AXLE CAPACITY	7,500 MINIMUM
CAB-AXLE DIMENSION (CA)	60" MINIMUM
WHEEL BASE (WB)	138" MINIMUM
TIRE SIZE	7.50 X 16-D SERIES OR EQUIVALENT
ALTERNATOR	100 AMP, 12 VOLT

VAN REQUIREMENTS:

GVW MINIMUM	8,600 LBS.*
FRONT AXLE CAPACITY	3,900 LBS.
REAR AXLE	5,400 LBS.
WHEEL BASE	125" MINIMUM
TIRE SIZE	8.75 X 16.5-E SERIES OR EQUIVALENT
ALTERNATOR	100 AMP, 12 VOLT

NOTE: GVW RATING AND AXLE RATINGS ARE MINIMUM. IF THE EQUIPMENT IS GOING TO BE SUBJECTED TO ROUGH USAGE SUCH AS OFF THE ROAD USE, OR HEAVY LOADS OF ACCESSORY EQUIPMENT AND TOOLS, A TRUCK WITH A GREATER GVW RATING AND AXLE CAPACITIES SHOULD BE SELECTED.

RECOMMENDED BODY LENGTH: THE RECOMMENDED UTILITY BODY LENGTH IS 9' (108"). UTILITY BODIES SHOULD BE FURNISHED WITH TAIL LIGHTS AND TURN SIGNAL LIGHTS TO MEET FEDERAL MOTOR VEHICLE STANDARDS AND ICC REQUIREMENTS.

* 10,500 LBS. GVW OR LESS MAY REQUIRE ADDITIONAL INSTALLATION REQUIREMENTS.

TELESCOPIC OPERATING INSTRUCTIONS

D.C. M-340 & PERM MAG

Park the truck on firm level ground and apply Parking brake and Micro-Brake, if so equipped.

CAUTION:
Never operate lift with the truck parked parallel on a slope exceeding 5°. If this condition is exceeded, the truck may become unstable and tip over. If it is necessary to work on an incline, it is recommended that the truck be parked in the work position so that the unit will not have to be rotated up the hill causing excessive loads to be induced on the rotation system. Be sure to use wheel chocks both in front of and behind the rear wheel on the side of the truck you will be working. YOU MUST BE ABLE TO SEE THE WHEEL CHOCKS FROM THE BUCKET.

LIFT CONTROLS:
The control switches for all functions of the lift are located on the control box mounted on the tip lip of the basket. As an option, the controls can be mounted in a control pod located inside the bucket.

The lower override controls are located on the access door of the base. As an option, these controls can be attached to a remote control box which can be mounted at any remote location by a quick attachment method. Providing a removable hand held control box, allowing full sight of bucket

THE 1992 ANSI STANDARDS REQUIRES A BUCKET ENABLE, OUR SOLUTION WAS TO USE THE TWO SPEED SWITCH AS A DUAL PURPOSE SPEED AND ENABLE. YOU NEED TO HOLD THE DESIRED FUNCTION AND THE ENABLE/SPEED SWITCH.

IF YOUR UNIT BECOMES IN-OPERATIVE THERE IS A BLEED DOWN VALVE LOCATED ON THE OIL RESERVOIR. LOOSEN THE JAM RING AND THEN THE NEEDLE, TAKE CARE TO SEAT NEEDLE FIRST THEN LOCK JAM RING.

IF UNIT IS OVER AN OBSTRUCTION PROHIBITING A DIRECT DESCENT THE GEAR BOX IS EQUIPPED WITH A 1-3/4" HEXAGON COUPLER WHICH CAN BE USED TO ROTATE THE LIFT MANUALLY.

BUCKET CONTROLS:
Decals designate the function of each switch. 1. The (Up-Down) switch to raise and lower the elevation of the lower boom. 2. Upper Boom (Extend-Retract) switch to extend & retract the upper boom. 3. (CW-CWW) to rotate the boom in a clockwise or counter-clockwise direction. 4. (Fast-Slow) to select fast or slow operational speed for the boom. 5. (Emergency Power) - Optional Feature - this switch must be held in the direction of arrow to turn on a relay which switches battery sources to the truck battery. (EMERGENCY POWER - PERM MAG ONLY) push switch in the direction of the arrow and select function, this will engage a back-up pump & motor. 6. (Start-Stop) is an Optional Feature - this switch is used to start and stop the vehicle or other auxiliary engine by moving the switch in the direction of arrows.

OPERATION:
First verify that the truck has been left in neutral on the manual transmission and in park on the automatic transmission. Be certain that the parking brake has been applied and that any auxiliary braking devices have been applied. Verify that the wheel chocks have been properly placed. Then switch the unit power switch to the on position for start/stop (Start/Stop is an Option). You will need to leave the truck ignition key in the ON position only if your unit is equipped with a start/stop system for the vehicle engine and only if you are going to be requiring the vehicle engine to be running for some purpose.

Upon entering the bucket, fasten the safety belt lanyard to the eyebolt located on the top of the upper boom.

If your unit is equipped with a standard DC powered system, the pump motors are only to be run 3 minutes out of every 10 minutes. However by alternating between fast and slow mode (this particular system uses a fast pump and a slow pump) it is possible to double the time to 6 minutes. One method is to use the fast mode to go up and the slow mode to go down.

If your unit is a D.C. Perm Mag system the pump & motor is designed to run continuously at normal operating pressure, giving boom movement as equal to Fan Belt Pump or PTO unit without running engine.

To move the bucket to the work position start in slow, raising the boom and a bucket several feet to clear all obstructions on the truck and surrounding area. In the fast mode the boom can finish raising and simultaneously be rotating at your final work position. At this point switch to the slow mode and make final adjustments to your positioning. Leaving the work position is just the reverse. Still in the slow mode, move the boom away from all obstacles in the work area, then switch to fast mode and continue to lower the booms until you are within a few feet of the boom stand. At this point switch to the slow mode and continue to carefully lower the boom to the boom stand. IF YOU ARE AT ANY TIME IN THE VICINITY OF ANY OBSTACLES, SWITCH TO THE SLOW MODE AND MAKE ANY PRECAUTIONARY ALTERNATE MOVEMENTS. If you have a non-insulated unit do not operate within 10 FEET of electrical high voltage power lines and even if your unit is an insulated model do not operate in the vicinity of these lines unless you have been trained and certified to work directly on these lines.

DANGER: YOU ARE NOT PROTECTED FROM DEATH BY ELECTROCUTION IF YOU SHOULD GET TO CLOSE TO A HIGH VOLTAGE LINE WHILE CLOSE TO OR TOUCHING ANOTHER LINE OF A DIFFERENT POTENTIAL OR PHASE OR ANOTHER LINE GOING TO GROUND.

NOTE THAT THE TWO FULL TURNS OF ROTATION PROVIDED BY THE ARMLIFT UNIT WILL ALLOW YOU TO MOVE TO THAT (HARD TO GET AT) WORK POSITION WITHOUT ROTATING CLOSE TO POWER LINES OR OVER A LANE OF TRAFFIC.

CAUTION: PERSONS USING THE BUCKET SHOULD ALWAYS MAKE USE OF THE NECESSARY PERSONAL PROTECTIVE EQUIPMENT SUCH AS HARD HATS, SAFETY SHOES AND INSULATED GLOVES WHERE NECESSARY. NEVER OPERATE UNIT WITHOUT USING THE SAFETY LINE AND BELT.

CAUTION: PERSONS OPERATING THE LIFT BUCKET SHOULD STAND ON THE FLOOR OF THE BUCKET AND NOT SIT OR CLIMB ON THE EDGE OF THE BUCKET OR USE EXTENSIONS IN THE BUCKET DURING THE COURSE OF WORK.

START/STOP: (OPTIONAL ON D.C. UNITS)

This section is only for those units equipped with the start/stop option.

Read and understand the operating section above for the proper vehicle setup prior to starting the engine.

Move the switch to the start position to turn the ignition on and engage the starter. When the vehicle engine starts, release the switch and the switch will remain in the run position.

On vehicles equipped with diesel engines the engine may not start during the initial cranking. If it doesn't, release the switch to stop cranking, and wait 5 seconds allowing glow plugs to warm up, then try starting again. If engine does not start and you decide you do not need it, be sure to position switch back in stop mode TO PREVENT GLOW PLUG CYCLING ON DIESELS stopping undue battery drain from ignition.

Move the switch to the stop position to shut the engine off. this start/stop switch will control all vehicle functions that are normally turned on and off by the vehicle ignition switch such as radio, fan, etc.

A start/stop switch is also located at the lower controls, however, the override switch must be held in the on position before this switch will work.

EMERGENCY POWER:
On units equipped with the emergency power option, you will find a 12-volt solenoid located in the upper right hand side of pedestal to switch battery sources.

At the bucket control station the emergency power switch must be continually held in the on position while the other function switches are activated. This switch controls a relay that switches from lift batteries, and uses vehicle battery for power source. However, over use of this could draw truck battery below vehicle starting point.

The emergency power function is also provided at the lower override control station. The Emergency Power Switch acts as the override, so only one switch is required to enable the lower controls. This option switches battery source to the vehicle battery (over usage can draw battery below engine starting point). On the Perm Mag system a second pump & motor can be installed for the Emergency Power Function, it runs off of the vehicle batter. All functions operated from this lower control will automatically operate in the slow speed mode only.

OPARTIDC

OPERATIONAL

SECTION

III

FIBER OPTIC CONTROL SYSTEM

I. GENERAL:

This control system consists of a transmitter card, a receiver card, and a fiber optic cable. The transmitter will accept up to 15 switch inputs and tramsmit their status, via the fiber optic cable, to the receiver. The receiver will cause the outputs to follow the condition of the input switches. This means that whenever an input switch on the transmitter is closed, the associated output on the receiver will supply ±12VDC at 10 amps. The receiver has the ability to accept inputs from 2 different transmitters. When 2 transmitters are transmitting, the input marked "Override" will be in control. When only one transmitter is being used, it should be connected to the "Override" input.

K16 on the receiver card is an output enable relay. It must be energized before power is supplied to the 15 output relays (K1-K15.) A 9 volt lithium battery should last approximately 1000 hours. (A 9 volt alkaline battery should last approximately 500 hours.)

On the transmitter cards marked Rev. A or later, the transmitter will only transmit whenever an input switch is closed. This means that power can be left on continuously and the power switch can be used for an emergency stop switch. The only time the transmitter uses power is whenever an input switch is turned on.

II INSTALLATION:

Refer to the field wiring diagram included in the service manual. The transmitter was designed to operate on a 9 volt battery, however it will work on any voltage 5-15 VDC. The low battery output will function at approximately 6.5 VDC. The receiver will operate on 11-15 VDC.

The transmitter enable should only be used when there are two transmitters used with one receiver and the transmitter connected to the override input is being used to keep the transmitter, which is connected to the control input, from having control. Leaving the transmitter enable connected causes the transmitter to transmit continuously and will significantly reduce battery life.

The transmitter input common is approximately 1 volt less than the positive side of the battery. This means that the common side of all the input switches must be connected to TB2-7 only.

Polarity must be correct when connecting power to both the transmitter and receiver. Connecting polarity to either unit backwards will not cause damage, but the system will not function until the error is corrected.

Each output is capable of supplying 12 VDC at 10 amps with the total supply current fused at 15 amps.

As is indicated on the field wiring diagram, if only one transmitter is being used, it must be connected to the override input on the receiver. If the control input is used, ambient light could cause intermittent operation of the control input.

MATERIAL SPEC'S.
MAT.
TYPE
PC/LB.
SQ.IN./PC.

PIECE PARTS

NEXT ASS'Y.	QTY.
101719	1

CAUTION!

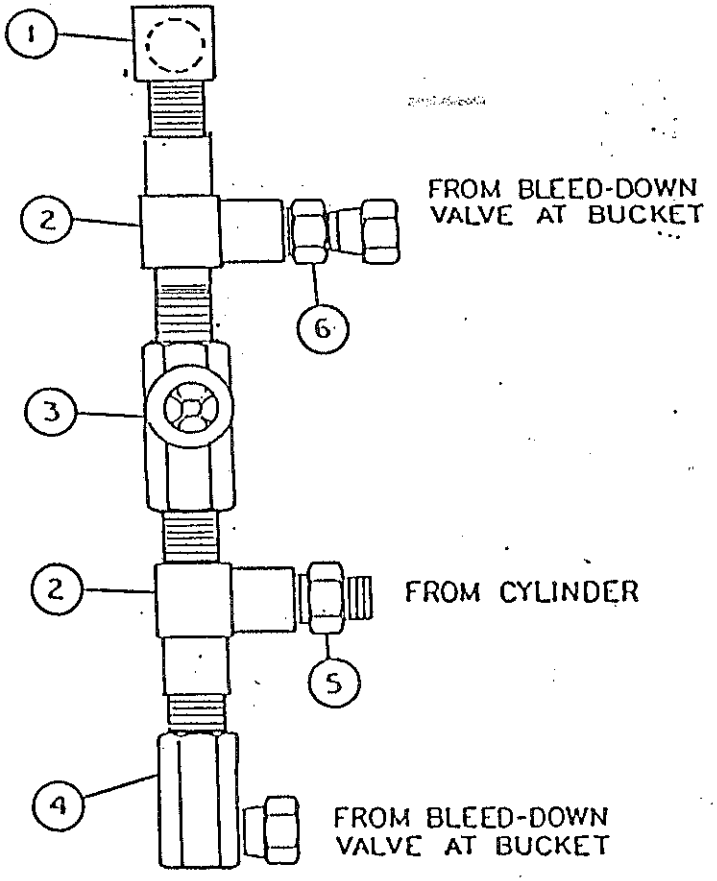
EMERGENCY DESCENT VALVE

(1) Use only if boom cannot be operated by normal operation.

(2) Make sure upper boom is in a position where it can be lowered without coming into contact with any obstructions.

(3) Open needle valve slowly until boom starts to lower.

(4) Make sure valve is fully shut before operating unit again.



III

- 3 -

NO	QTY	PART NO	DESCRIPTION
6	1	30413	1404-4-2
5	1	40534	4-4 FLO-S
4	1	30226	1501-4-2
3	1	30107	NEEDLE VALVE
2	2	30182	5602-4-4-4
1	1	30288	5500-4-4

REFERENCE DRAWING

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

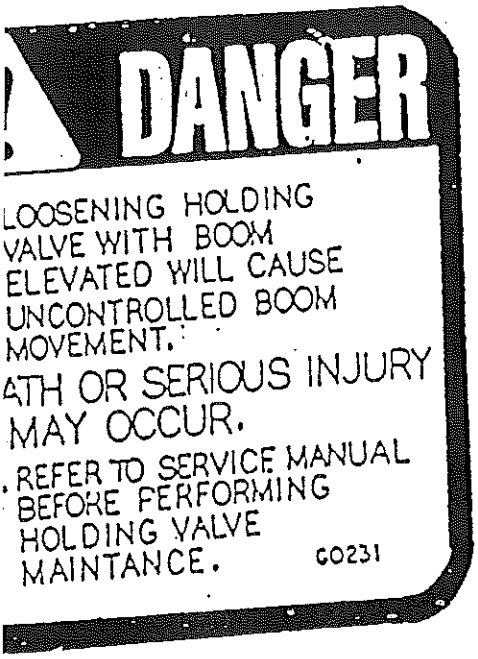
MANUAL BLEED-DOWN FITTINGS

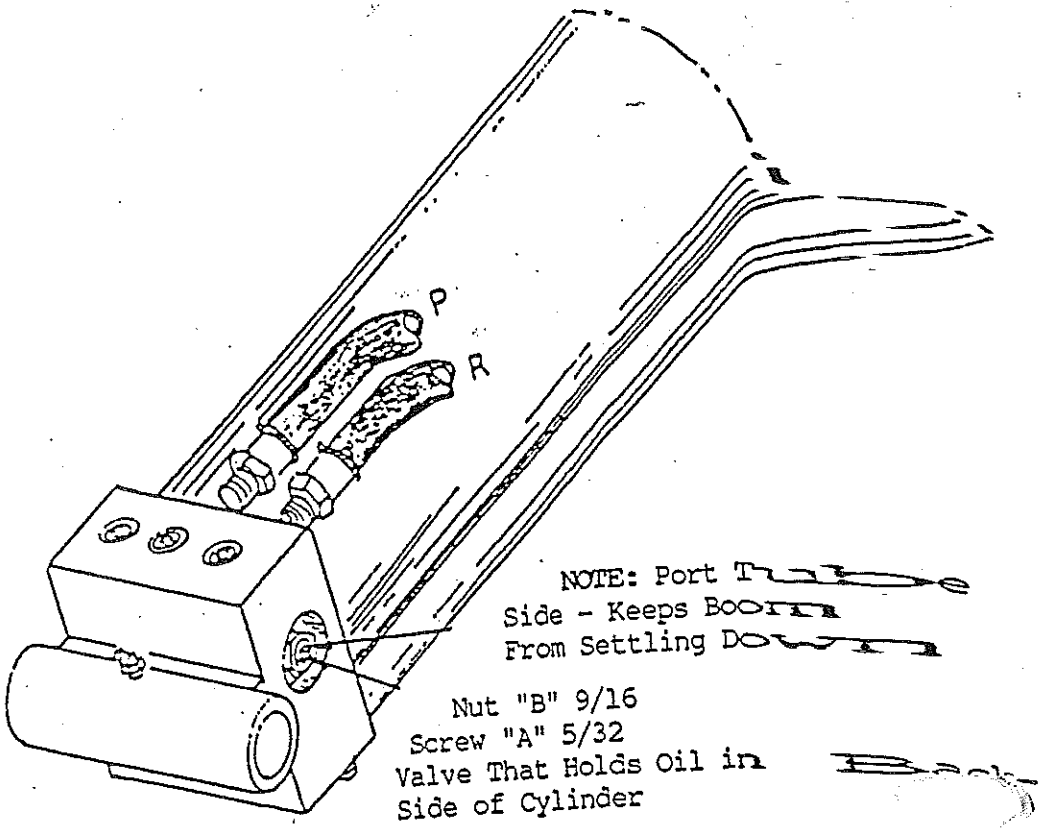
TG INDUSTRIES INC.

ARMSTRONG, IOWA 50514

DRAWN BY TK	SCALE NONE	MATERIAL
CHK'D	DATE 6-17-91	DRAWING NO. 102101
TRACED	APP'D	

RETURNING BOOM TO STOWED POSITION





There are Counter Balance Valves built into every Cylinder. These valves prevent settling or free fall in the event of a sudden loss of hydraulic pressure. The Counter Balance Valves are factory pre-set and should NOT be tampered with except by authorized and trained personnel.

If boom needs to be lowered without hydraulic power and D.C. back-up is inoperative or not so equipped, and no manual descent valve is available, use the following directions.

DANGER: Tampering with the holding valve (counter balance valve) will cause uncontrolled movement which can result in death or serious injury.

DANGER: Before lowering boom watch out for possible obstructions or dangers.

If unit needs to be transported, work on retracting extension tube first, if tubes are elevated 60° or more they will more then likely gravity down, if less tube may not gravity down and need to be forced in.

To lower extension tube remove 6 X 8" end cap at pivot end of tube. Loosen lock nut "B" with 9/16" wrench, turn allen screw "A" 5/32 clockwise 2 to 3 turnes (keep track of turns for repositioning). Push RED BUTTON on right side of the first section. To let oil back to tank, (SEE RED BUTTON DIRECTIONS).

Verify whether or not the unit is equipped with a D.C. back-up system. A manual descent valve is standard equipment on the lift cylinder. The valves are located in the pedistal on the oil reservoir. Make sure boom can be lowered without hitting something. Close lock valve after use.

To let lift down, oil must be let out of the blind side, (behind piston) of cylinder. The holding valve that does this is visible to you when you are on the side of the cylinder that you can visually see the port tube. (See Diagram) Loosen the lock nut "B" with a 9/16" wrench. !! DO NOT REMOVE VALVE !! Removal of counter balance valve will allow uncontrolled falling of lift because of high velocity ejections of valve and oil. Both of which can cause death or serious injury.

Turn allen screw (#5/32) in a clockwise rotation 2 or 3 full turns (KEEP TRACK FOR REPOSITIONING AFTER LOWERING.)
Go to lower controls hold override switch up in override position and hold respective boom down function. If no movement occurs verify correct valve was adjusted and that lower switches are in working order. You should hear or feel a click in valve bank. If not see red button directions.

RED BUTTON:

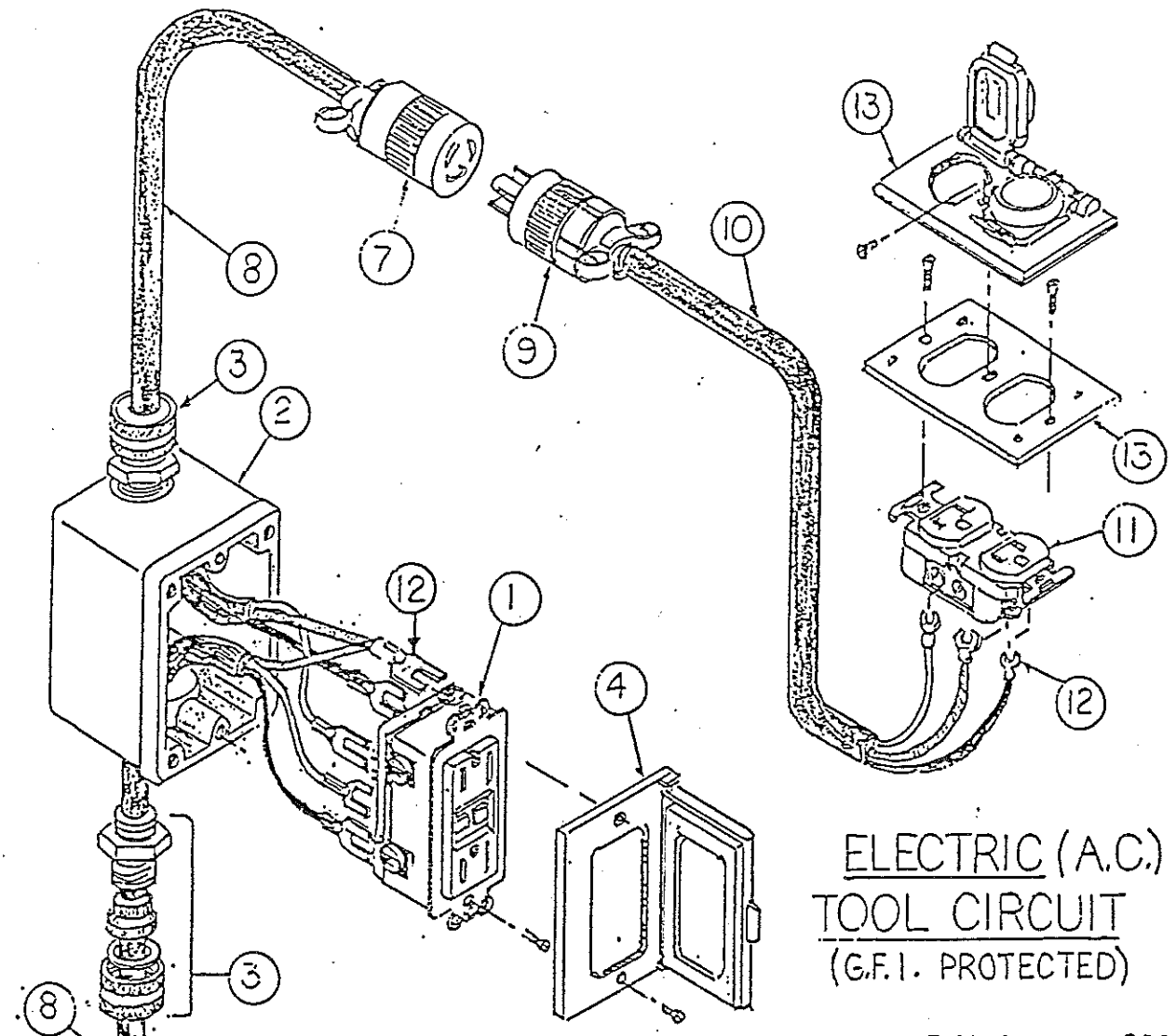
On electric hydraulic units the red buttons on valve bank in pedestal may have to be pushed. Find wire color and hose tie, upper boom down is Blue/Black wire with Green/Red hose tie. Lower boom down is white wire with Blue/Red hose tie on the right hand side of valve bank.

PUSH RED BUTTONS TO MANUALLY SHIFT VALVE SECTION LETTING OIL BACK TO TANK.

OPTIONAL PARTS

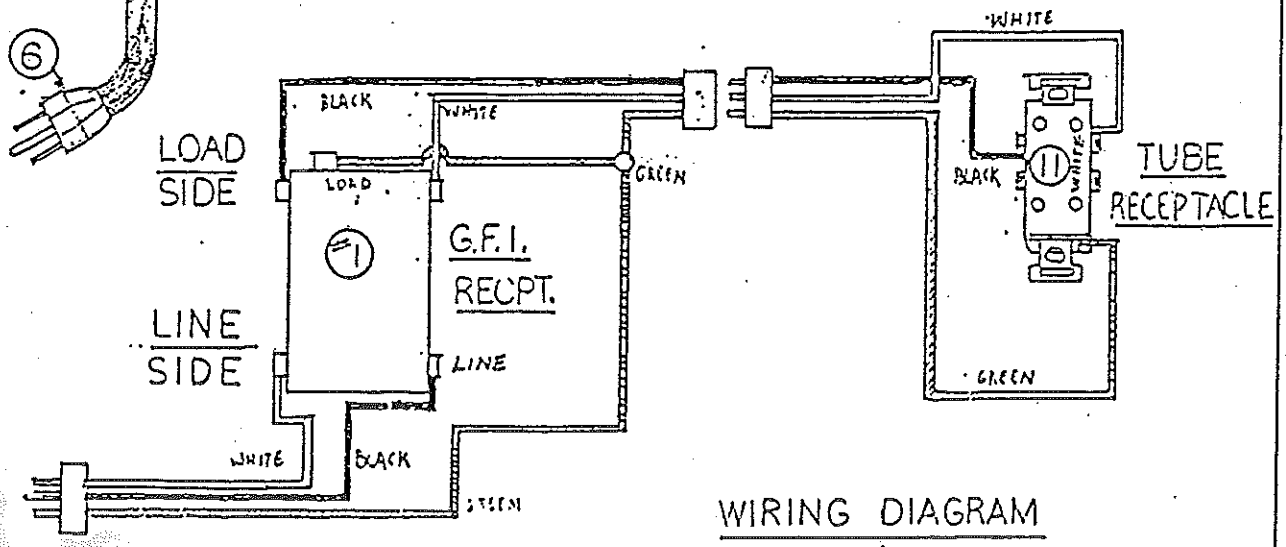
SECTION

IV



ELECTRIC (A.C.) TOOL CIRCUIT (G.F.I. PROTECTED)

TGSB .D634 13·5·8GRM
LK 4-4-89



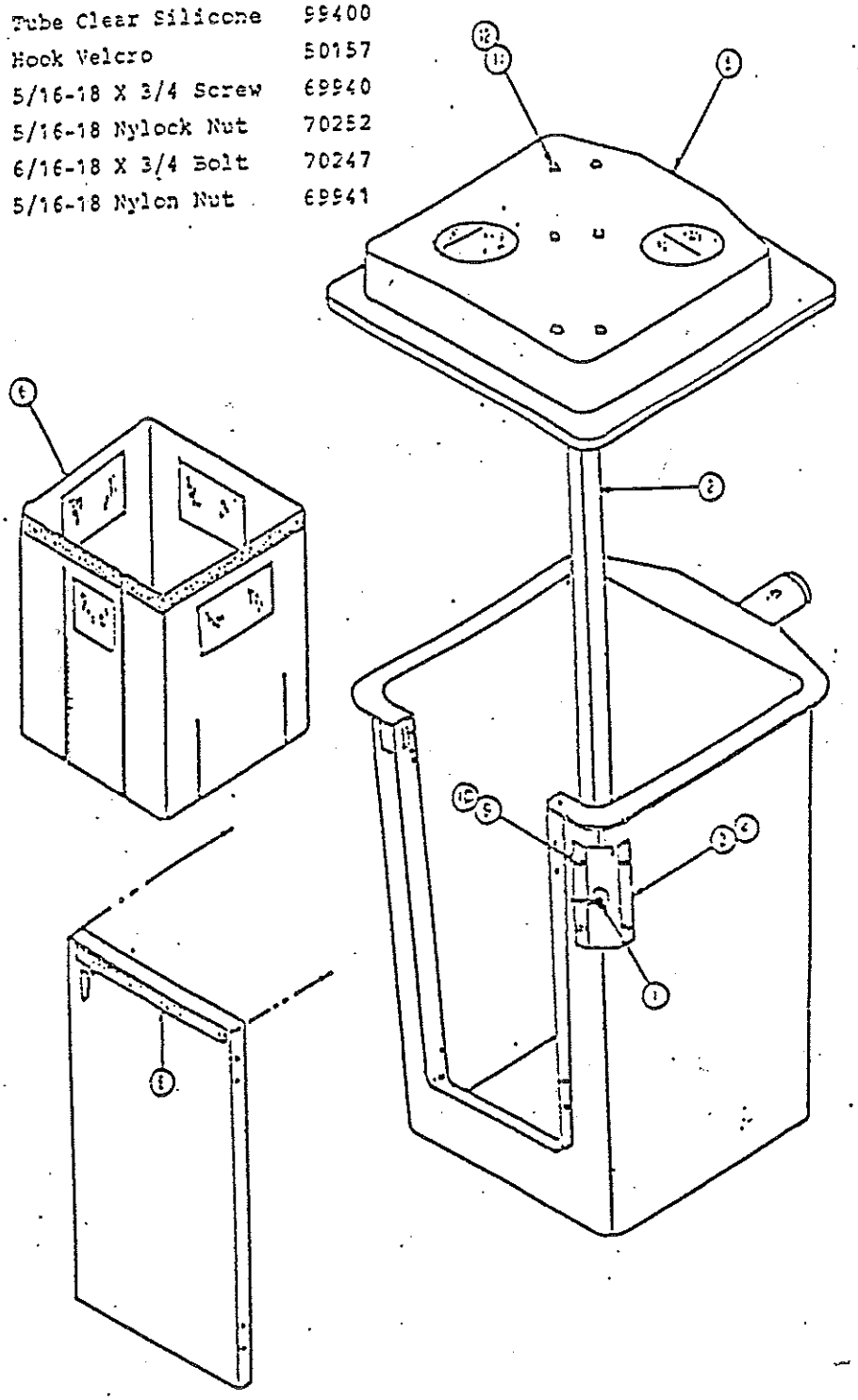
WIRING DIAGRAM

ELECTRIC (AC) TOOL CIRCUIT ASSEMBLY

KEY	PART NUMBER	DESCRIPTION	QUANTY
1.	20409	GFI Receptacle	1
2.	20407	Receptacle Box FC-12	1
3.	20403	Cord Grip	2
4.	20414	Weather Proof Receptacle Cover (Articulating Units Only)	1
5.			
6.	20419	Male Connector (4732N)	1
7.	4732-N	Female Connector	1
8.	99120	12-3 Wire - 2'	1
9.	20402	Male Connector	1
10.	99120	12-3 Wire - 36'5" (Telescope) 45' (Articulating)	1
11.	20413	15A-125V Receptacle	1
12.	20434	Wire - Fork Terminal	3
13.	20408	Weather Proof Receptacle Cover	1

SPLICING BUCKET PARTS LIST

1.	(1)	Bucket Lock	50274
2.	(1)	Support Post	50195
3.	(1)	Mount Support	50196
4.	(1)	Backing PLate	50201
5.	(1)	Splicing Hard Top	50385
6.	(1)	Splicing Curtain	50202
7.	(1)	Tube Clear Silicone	99400
8.	(8)	Hook Velcro	50157
9.	(4)	5/16-18 X 3/4 Screw	69940
10.	(4)	5/16-18 Nylock Nut	70252
11.	(6)	6/16-18 X 3/4 Bolt	70247
12.	(6)	5/16-18 Nylon Nut	69941



TOLERANCES	REVISIONS			SPLICING BUCKET CURTAIN & LID ASS'Y
	NO.	DATE	BY	
				T.O. INDUSTRIES INC.

CONTACT FACTORY FOR OPTIONAL EQUIPMENT

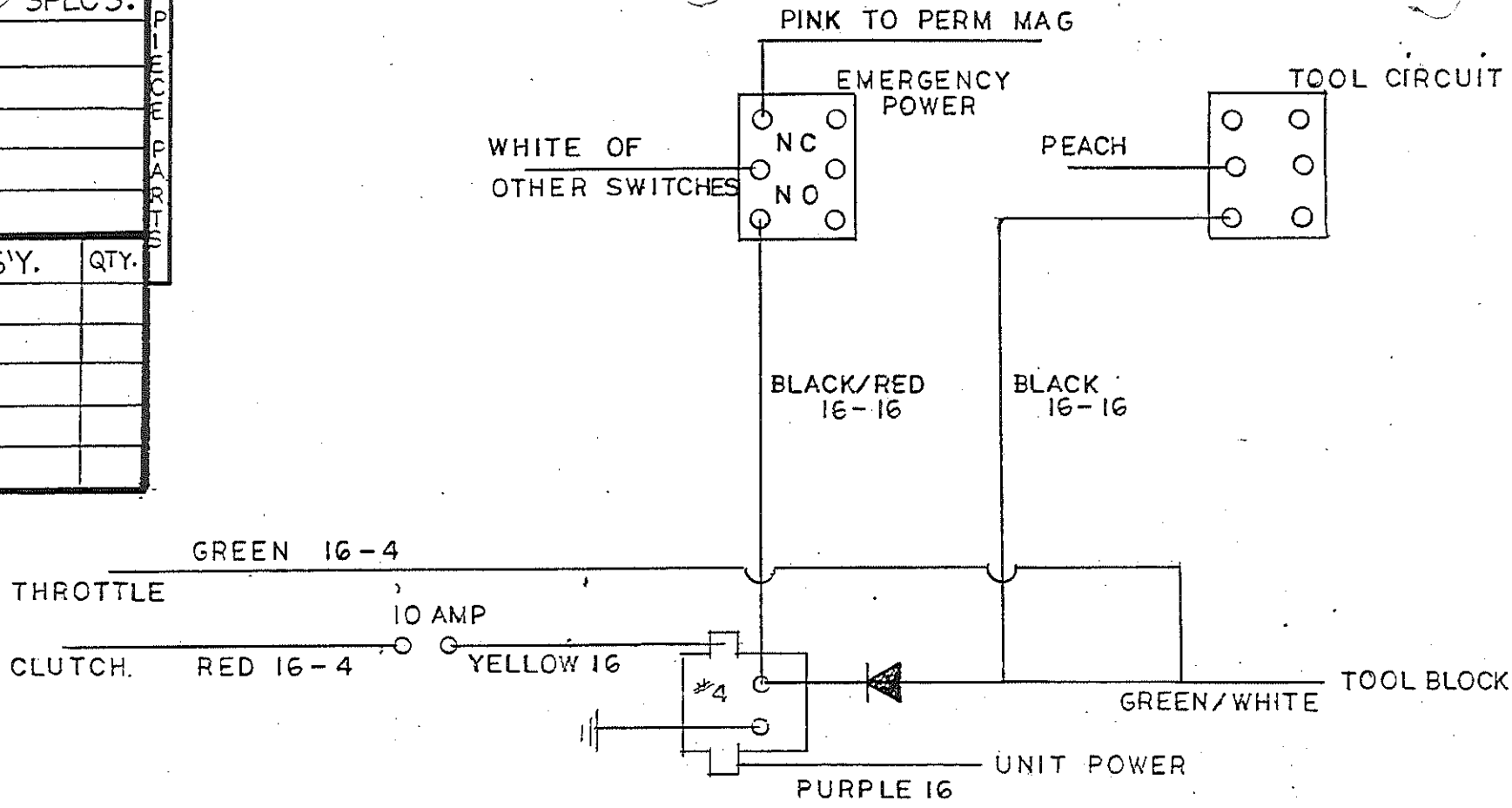
* TORSION BAR FOR ONE-TON CHASSIS
* OUTRIGGERS
* 12-VOLT EMERGENCY BACK-UP AT BUCKET & BASE
* 110 TOOL CIRCUIT AT BUCKET & BASE WITH GFI (NOT AVAILABLE ON INSULATED UNITS)
* HYDRAULIC TOOL CIRCUIT
* INVERTERS AND GENERATORS FOR AC POWER
* AIR LINE AT BUCKET
* HYDRAULIC BUCKET LEVELING (ON TELESCOPIC UNITS ONLY)
* MANUAL EMERGENCY BLEED DOWN VALVE AT BUCKET
* DEMAND THROTTLE
* TWO SPEED ELECTRIC THROTTLE
* WALK THROUGH BUCKET WITH SWITCH POD AND DOOR
* VINYL BUCKET COVER
* HARD BUCKET COVER
* BUCKET HEATER (NON-INSULATED UNITS ONLY)
* BUCKET LINER
* E-Z STEP
* SPLICING BUCKET OPTIONS
* LADDER RACKS
* STROBE LIGHTS
* SPOT LIGHTS
* ELECTRIC BACK-UP ALARMS
* FIBERGLASS OR STEEL UTILITY BODIES
* UNDER BODY BOXES
* D.C. BACK-UP
* STOP/START - (D.C. UNITS ONLY)
* SAFETY BELT
* TOOL TRAY - STANDARD 18" X 6" BOLTED
* TOOL TRAY - REMOVABLE 18" X 8" X 8"
* TOOL POUCH

OPTIONS Continued -

* LADDER FOR BUCKET ACCESS
* MICO-BRAKES
* WHEEL CHOCKS
* TOW HOOKS
* PINTAL HITCH
* GRAB HANDLES
* BOOM STOW LIGHT
* ENGINE HOUR METER
* WINDOW GUARD
* BUMPERS (STEP AND SHELF)
* ISOLATORS
* VAN INTERIORS
* NEON RACK

TERIA SPEC'S.	PIECE PARTS
B.	
./P.C.	

T ASS'Y.	QTY.



TOLERANCES (EXCEPT AS NOTED)	REVISIONS		
	NO.	DATE	BY
DECIMAL ±	1		
	2		
FRACTIONAL ±	3		
	4		
ANGULAR ±	5		

ABS FANBELT BACK UP

DRAWN BY LK	SCALE	MATERIAL
CHK'D	DATE 3 3 95	DRAWING NO.
TRACED	APP'D