

PRE-OPERATION INSPECTION

The **CONDITION** of the unit prior to start-up is a very **IMPORTANT** factor as it directly affects the operator's safety as well as those around him. It should be a common practice that the operator perform a general inspection of the **MODEL XT 36** before each days' operation.

The purpose of the operator's inspection is to keep the equipment in **PROPER** working condition and to **DETECT** any sign of malfunction during normal operations between scheduled maintenance checks.

DOWNTIME is **COSTLY** and can possibly be prevented by taking a few minutes prior to start-up to do a thorough walk-around inspection. This inspection must be performed each day before the unit is operated. Report any damage or faulty operation immediately. Attach a sign, if need be, at the control panel which states ----- **DO NOT OPERATE** ----- . Repair any discrepancies before use.

Some major items to be considered for your inspection include the following:

1. CHASSIS

- Engine oil level
- Fuel tank level
- Battery condition and cable connections
- Tire condition and inflation
- Fuel, oil, transmission leaks
- Wheel lug nuts missing or loose
- Overall condition of chassis

2. HYDRAULIC SYSTEM

- Loose or damaged hoses, tubing, fittings
- Hydraulic leaks
- Hydraulic fluid level
- Cleanliness of fluid, filter condition indicators
- Hydraulic valves and control levers
- Hydraulic cylinders

3. HOPPER

- Grate in place not damaged
- S-tube connection
- Agitator condition, drive motor
- Outlet connection, cleanliness
- Lubrication, loose, broken lines

4. ELECTRICAL

- Frayed or broken wires or loose connections
- Condition of switches, lights, connections
- Instruments and gauges - condition

5. BOOM STRUCTURE

- Visually check condition of outriggers, pedestal
- Visually check boom sections, signs of damage, cracked welds
- Check condition of pivot pins, retainers, lubrication
- Check delivery pipe, clamps, mountings
- Check end hose condition, clamps

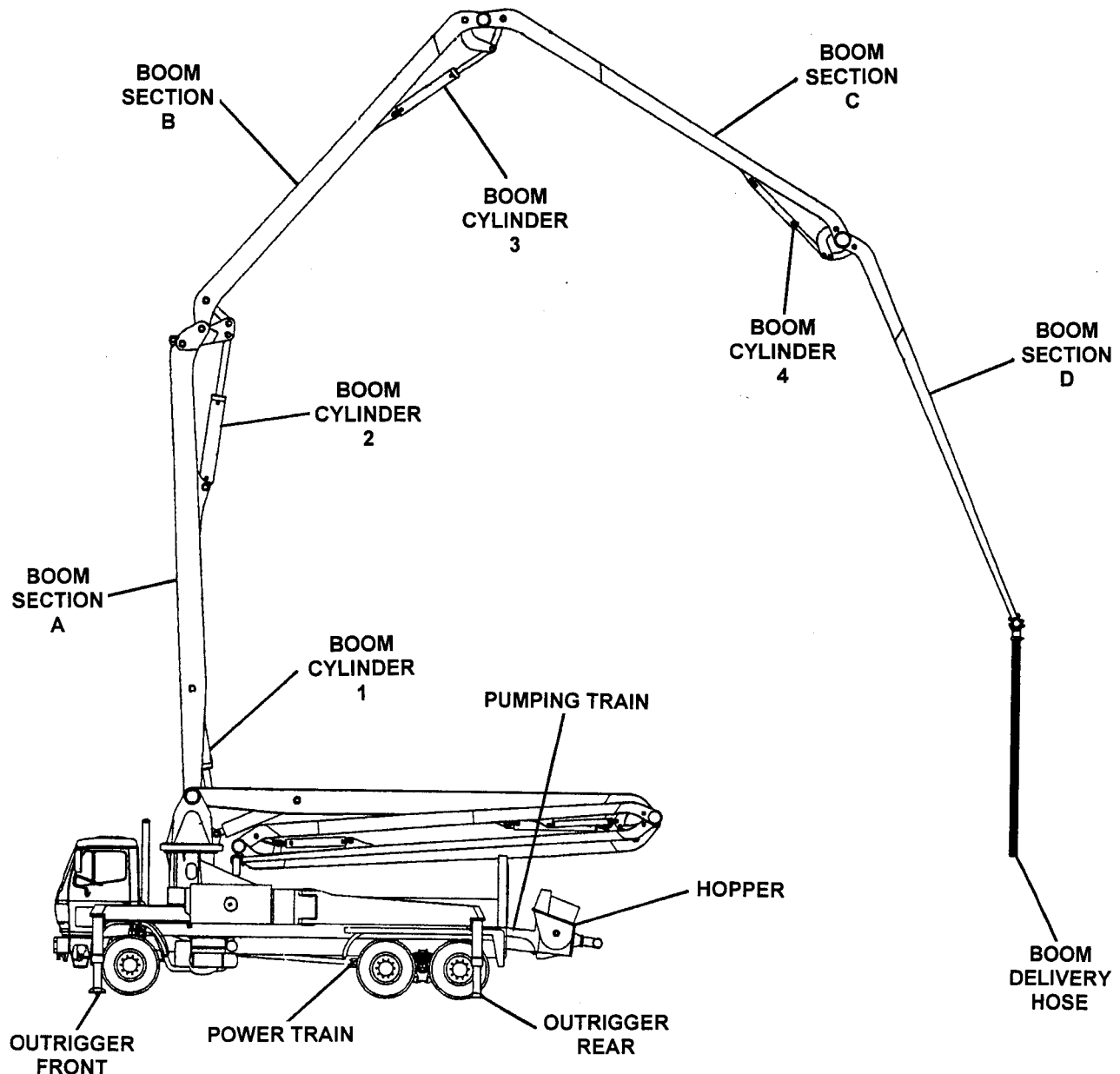
▲ CAUTION

Defective components, structural damage, missing parts or equipment malfunctions, jeopardize the SAFETY of the operator and other personnel and can cause extensive damage to the machine. A poorly MAINTAINED machine can become the greatest OPERATIONAL HAZARD you may encounter.

GETTING ACQUAINTED (UNIT FAMILIARIZATION)

As previously indicated, it is important from a **SAFE** operational standpoint that you, the **OPERATOR**, know your machine. This means the function of each control as to what happens when it is activated, how it might interact with other functions and any limitations, which might exist. A **GOOD UNDERSTANDING** of the controls and capabilities will enhance operation and assure maximum operating and efficiency and **SAFETY**.

These next few pages will assist you in **GETTING ACQUAINTED** with the **MODEL XT 36**. Carefully study these.

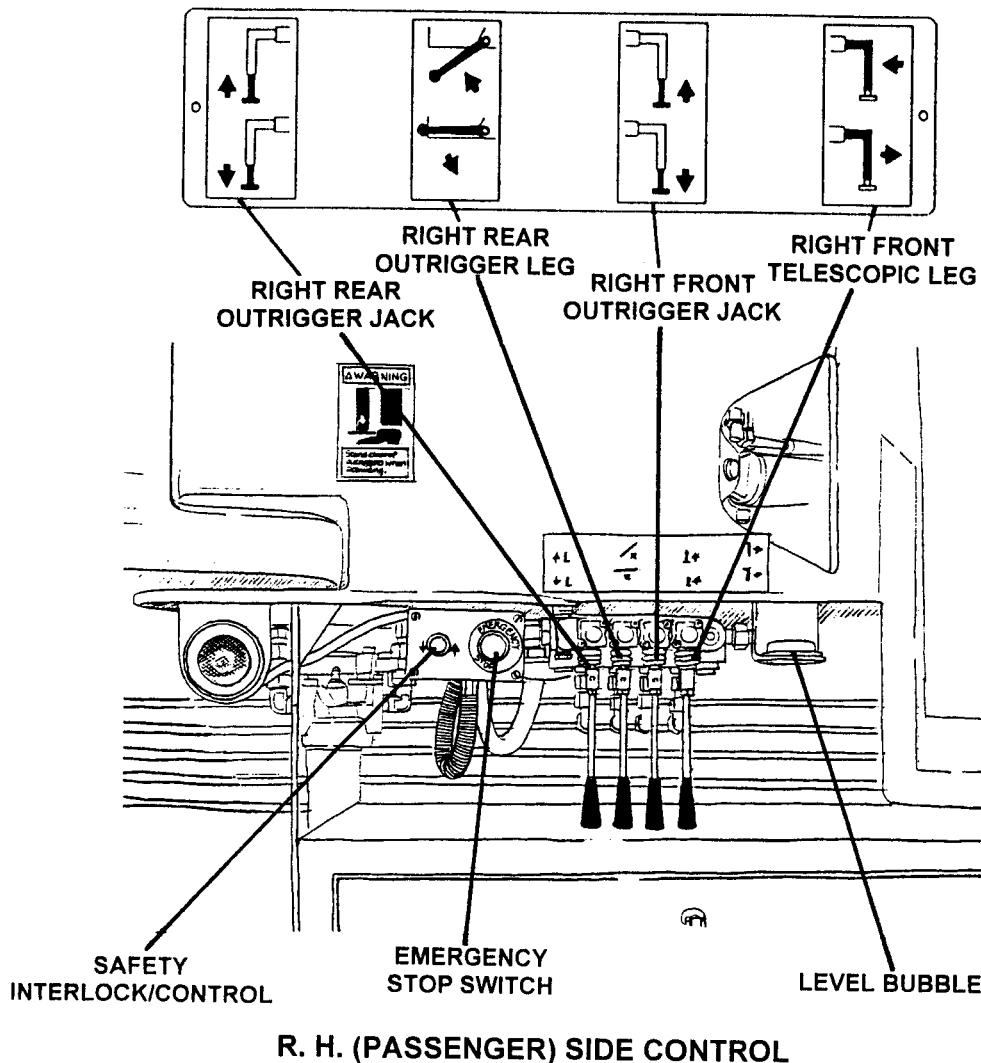


MAJOR COMPONENT IDENTIFICATION

OUTRIGGER - JACK CONTROL

The **MODEL XT 36** is equipped with two (2) sets of outriggers. One set, referred to as **FRONT**, is located adjacent to the pedestal and the other set, referred to as **REAR** has its pivot, just ahead of the rear axle. The front set consists of a hydraulic telescopic leg that extends on a diagonal direction out toward the chassis cab. The leg is equipped with a hydraulic leveling jack. The rear set consists of a single beam that hydraulically swings out away from the chassis to a diagonal position. It, too, is equipped with a leveling jack. Both sets are used to stabilize the unit before operation of the boom.

For operation of these outriggers, two (2) sets of controls are provided and are located one each side just ahead of the rear outrigger pivots. The right side (curb side) controls operate the right side legs and jacks, front and rear. The left side (street side) controls operate the left side legs and jacks, front and rear. These valves are of the hydraulic directional type activated by an electric signal. The levers are returned to center position. The outrigger controls are energized or de-energized by the toggle switch located on the main control panel installed on chassis deck.



▲ WARNING

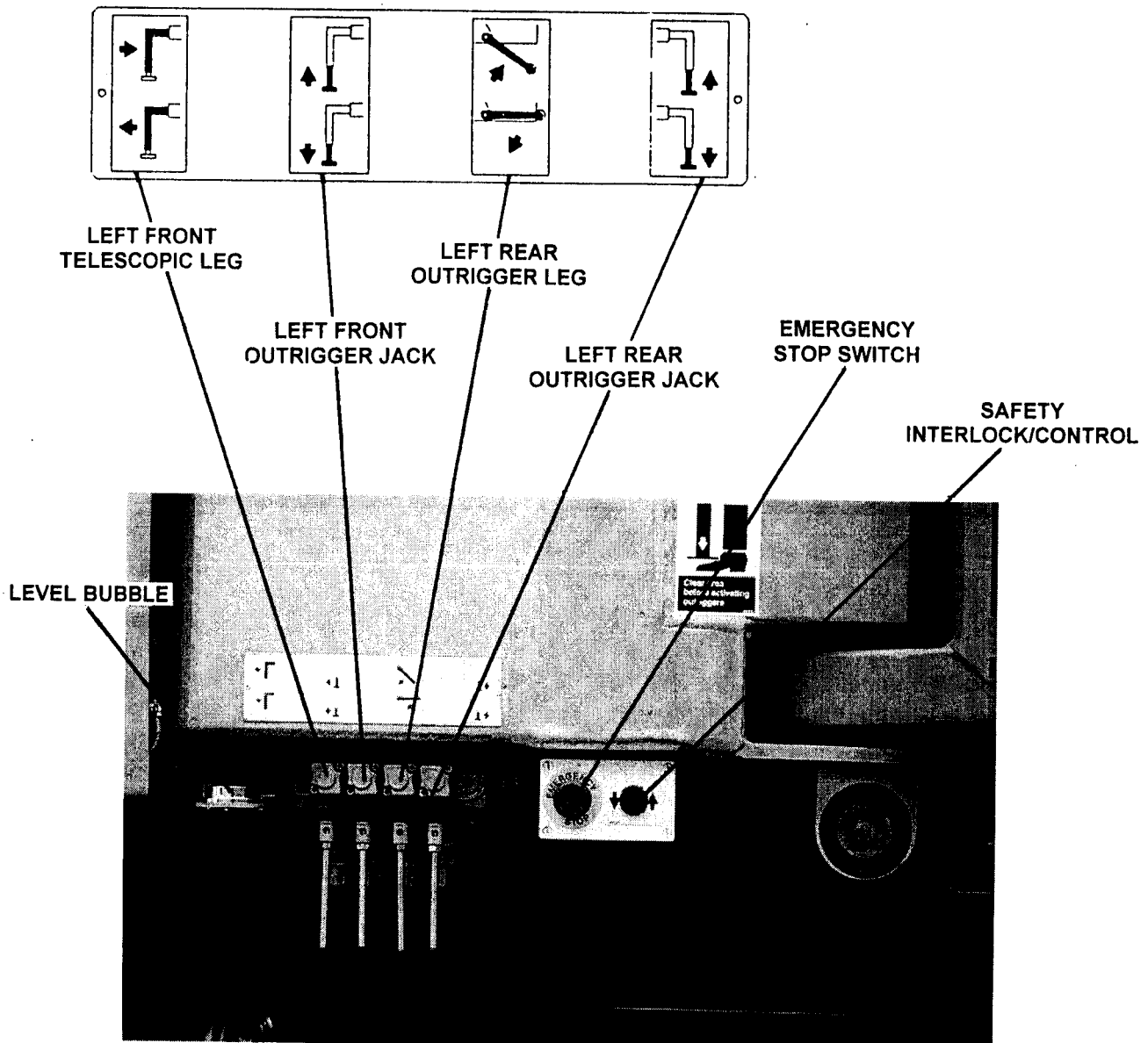
Stability during operation of boom is based on outrigger legs being fully extended. Overturning will occur if extension is less than maximum spread.

- **OUTRIGGER POWER CONTROL** - This control is only located on the **RIGHT SIDE** outrigger control panel. This is a keyed switch control with the purpose of energizing or de-energizing (lockout) the outrigger circuit. With key in **VERTICAL** the circuit is **OFF**. Turn key to **RIGHT (CLOCKWISE)** to activate circuit to **ON**.
- **EMERGENCY STOP SWITCH** - Located in the box on both the right and left side outrigger controls is an **EMERGENCY STOP** switch. Its purpose is to shut down the complete operation in an emergency. **PUSH** red knob to **STOP** operation. **PULL** knob to **RELEASE** or re-activate system.
- **SAFETY INTERLOCK/CONTROL** - This is a spring return to off push button switch. It is used as a **SAFETY INTERLOCK**, meaning the switch must be held in appropriate position while a particular outrigger control is actuated. If the switch is released even if outrigger control lever is **ON**, operation will cease to function.
- **RIGHT FRONT TELESCOPIC LEG** - This control is used to extend or retract the telescopic beam of the leg. With **SAFETY INTERLOCK** switch depressed, move control lever **TOWARD** you to **EXTEND** leg. For **RETRACT** actuate **SAFETY INTERLOCK** and move control lever **AWAY** from you.
- **RIGHT FRONT OUTRIGGER JACK** - The outrigger vertical jack is used to assist in leveling the unit for boom operation. The jack is controlled by actuating **SAFETY INTERLOCK** down and holding while moving **JACK** control lever **TOWARD** you to **EXTEND** jack. **RETRACT** moving lever **AWAY** from you.
- **RIGHT REAR OUTRIGGER LEG** - This leg is of the swing out type however unlike the front there is no telescopic section. To swing out leg actuate **SAFETY INTERLOCK** switch and hold while moving appropriate control lever **TOWARD** you. To swing-in leg depress **SAFETY INTERLOCK** switch and move control lever **AWAY**.

- **RIGHT REAR OUTRIGGER JACK** - To operate jack depress **SAFETY INTERLOCK** switch and move **JACK** control lever **TOWARD** you to **EXTEND** jack. **RETRACT** by depressing **SAFETY INTERLOCK** switch and moving jack leg lever **AWAY** from you.

NOTE

The LEFT side FRONT and REAR outrigger legs and jacks controls operate in the same manner as the right side except for controlling the left side.



L. H. (DRIVER) SIDE CONTROL

BOOM FUNCTION CONTROLS

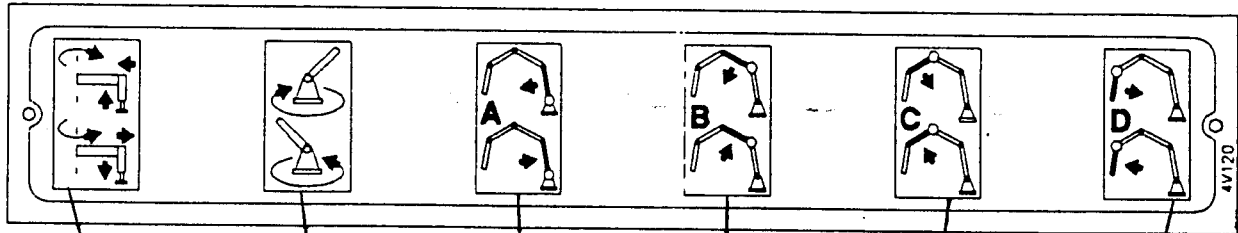
The boom functions can be controlled either by using the manual levers on the valve bank located on right side of unit on the deck near the turntable; or at the remote control console or using the radio control remote. Regardless of which control panel is used the controls are all labeled the same and the functions are alike.

The unit consists of four (4) booms and each of its movements are independently controlled. A control is also provided for the rotation of the complete structure. The boom sections are identified by letters, which appear on both sides of the boom and are labeled accordingly on the control panel decals. In addition the panel decal indicates the specific boom section by a solid red color.

- **LETTER "A"** - This is used to denote the main or first boom section which has one end attached to the turntable.
- **LETTER "B"** - Denotes the second boom section which has one end attached to the first section.
- **LETTER "C"** - Denotes the third boom section which has one end attached to the second boom section.
- **LETTER "D"** - This is the last section and has one end attached to the third section.

A) MANUAL BOOM CONTROL FAMILIARIZATION

Located on the right deck side (curb side) of the unit near the turntable is a bank of valves with levered knobs. These valves are used to control the function of each boom when remote controls are not used. The control valves are 3 position hydraulic directional type valves, which can be operated manually or electrically when using the remote control. The levers are a spring return to center, meaning they must be held in the actuated position.



OUTRIGGER
DIRECTION
CONTROL

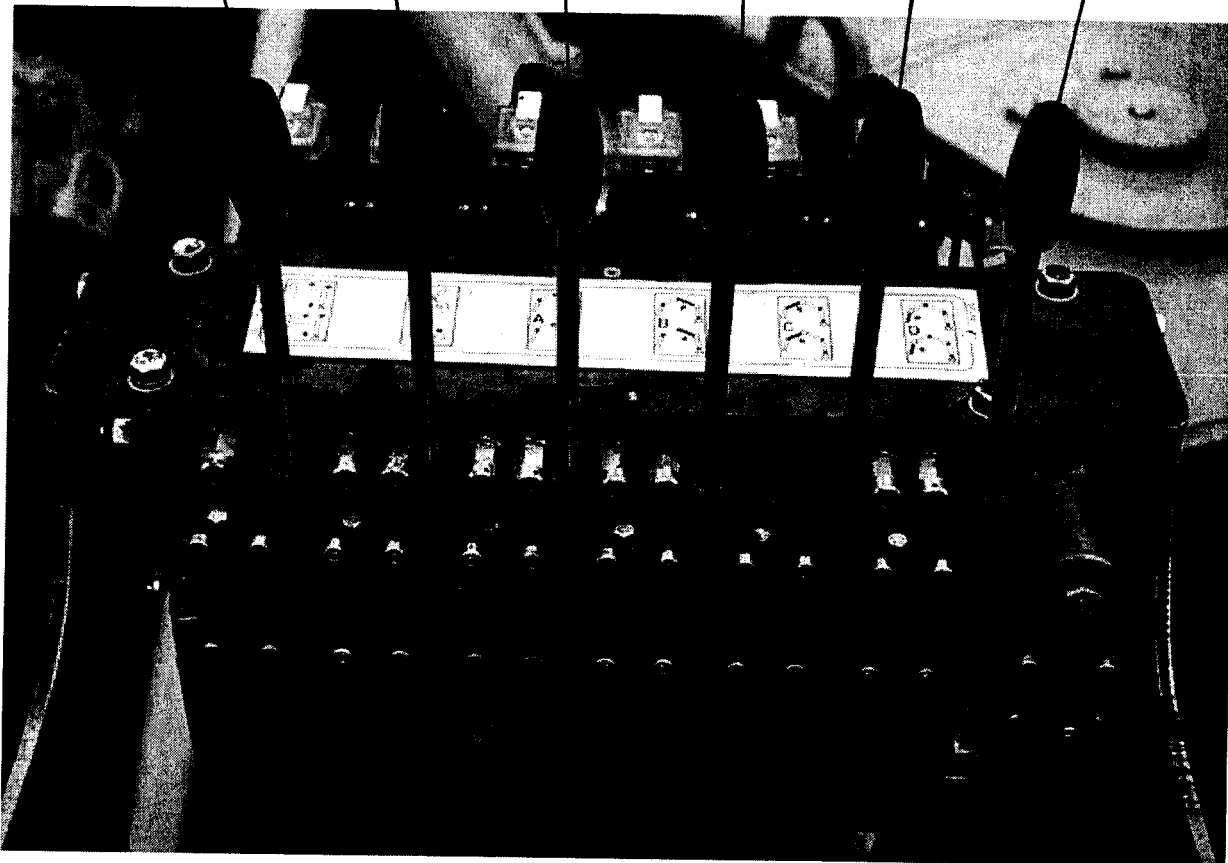
ROTATION/
TURNTABLE

BOOM
SECTION
"A"

BOOM
SECTION
"B"

BOOM
SECTION
"C"

BOOM
SECTION
"D"



The function of each control is as follows:

1. OUTRIGGER DIRECTION CONTROL

The function of this control is a duplication of the Safety Interlock control previously explained in the Outrigger Control Familiarization paragraph. It is basically used only in an emergency situation when there is a failure in the electrical circuit or switch of the Safety Interlock.

Whenever it becomes necessary to use the control, moving control lever **DOWN** will direct the flow of oil to **EXTEND** outriggers and jacks. Pull lever **UP** to direct oil for **RETRACTION** of outriggers and jacks. Keep in mind lever must be held in position or it will return to neutral.

2. ROTATION - TURNTABLE

Manual lever used to control the rotation of the boom structure. The boom structure can be rotated 370° non-continuously. This means that with the boom in normal stowed position, extending out over the rear of truck, the boom once raised to 60° can be rotated left (clockwise) or right (counterclockwise) toward front of cab.

▲ CAUTION

Left and right rotation is determined with operator standing at the hopper and facing front of unit. This may also be determined that in rotating over street side of chassis toward cab is left; over curb side of chassis is right. LEFT rotation is CLOCKWISE; RIGHT rotation is COUNTERCLOCKWISE.

NOTE

The working range of the placement boom is out over the chassis cab. If boom is first rotated toward right side, (CLOCKWISE), the left side can only be reached by continuing to rotate out over the cab. The left side cannot be reached by rotating back over the rear of the truck.

Moving ROTATION lever **DOWN** will cause the boom to rotate **COUNTERCLOCKWISE**. Moving lever **UP** will cause boom to rotate **CLOCKWISE**. When lever is in **CENTER** position, the rotation circuit is **OFF**.

3. BOOM SECTION "A"

This section is the main or first section of the boom assembly and it is directly attached to the pedestal turret. It has an articulation travel range of 96° total. This is based on having the ability to travel 3° below horizontal through 90° to vertical then 3° beyond vertical.

Move lever **DOWN** to **RAISE** boom section. Move lever **UP** to **LOWER** boom.

4. BOOM SECTION "B"

This section is the second section of the boom assembly and is attached to the end of the main boom and folds down to the underside of the main boom. It has an articulation travel range of 180° total. This is based on having the ability to travel from the folded position under main boom to a full open position, which allows this section to be in a straight line with the main boom.

NOTE

Before SECTION B can be unfolded the main boom SECTION A must be raised to a height of 27 feet - 9 in. (8.46m)

Move **SECTION B** control lever **DOWN** to **UNFOLD** or **RAISE** boom. Move lever **UP** to **FOLD** or **LOWER** boom section.

5. BOOM SECTION "C"

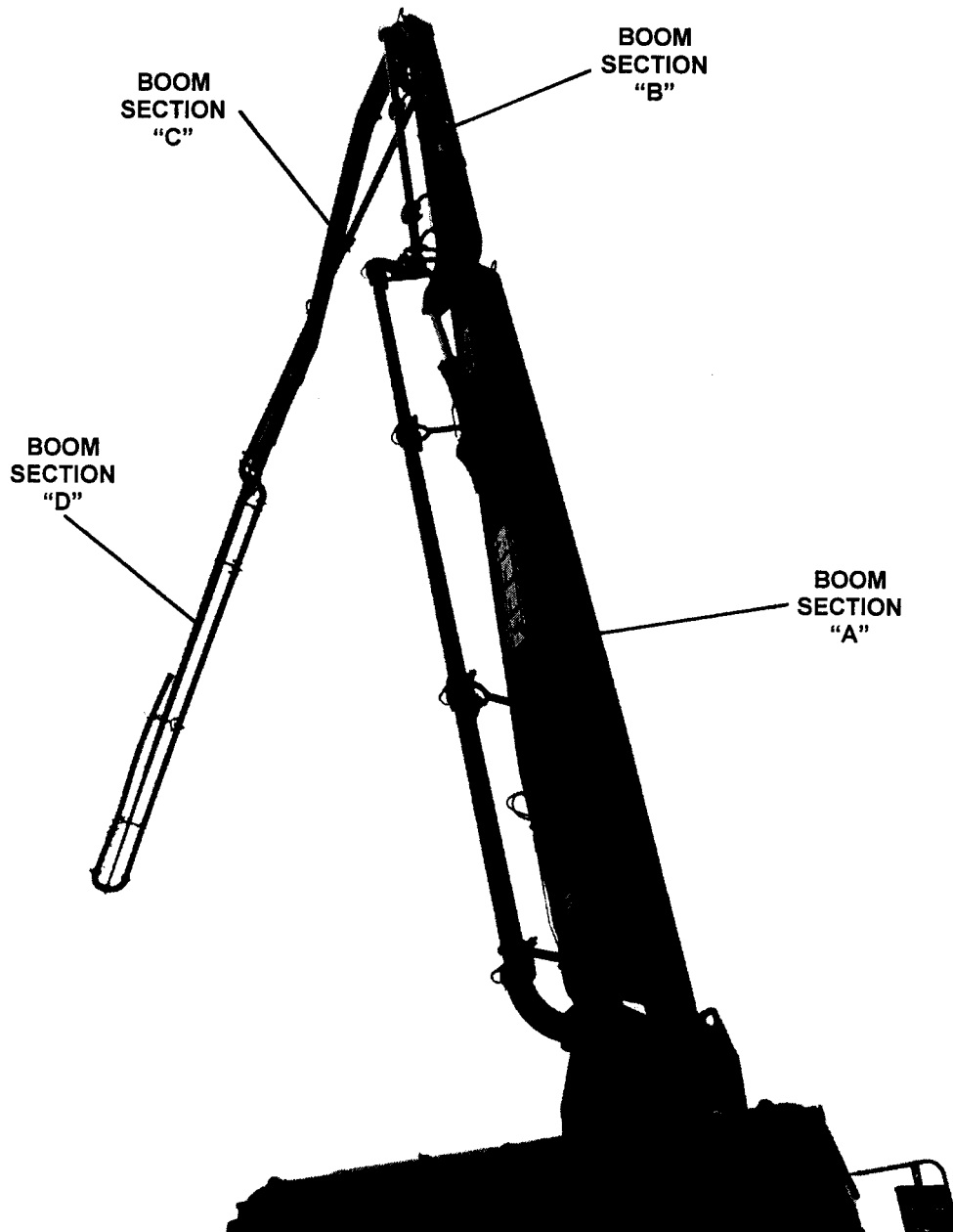
This section is the third section of the boom assembly and is attached to the end of the second section and folds along side the second section. It has an articulation range of 180° total. This is based on having the ability to travel from the folded position along side of the second section to a full open position, which allows this section to be in a straight line with the second and main boom.

MOVE SECTION C control lever **DOWN** to **RAISE** boom. Move lever **UP** to **LOWER** boom section.

6. BOOM SECTION "D"

This section is the end or fly section of the boom assembly. It is attached to the third section and folds down to the underside of the third section. It has an articulation travel range of 230° total. This is based on having the ability to travel from the folded position under the third boom to vertical with the other booms then 50° beyond vertical or over center.

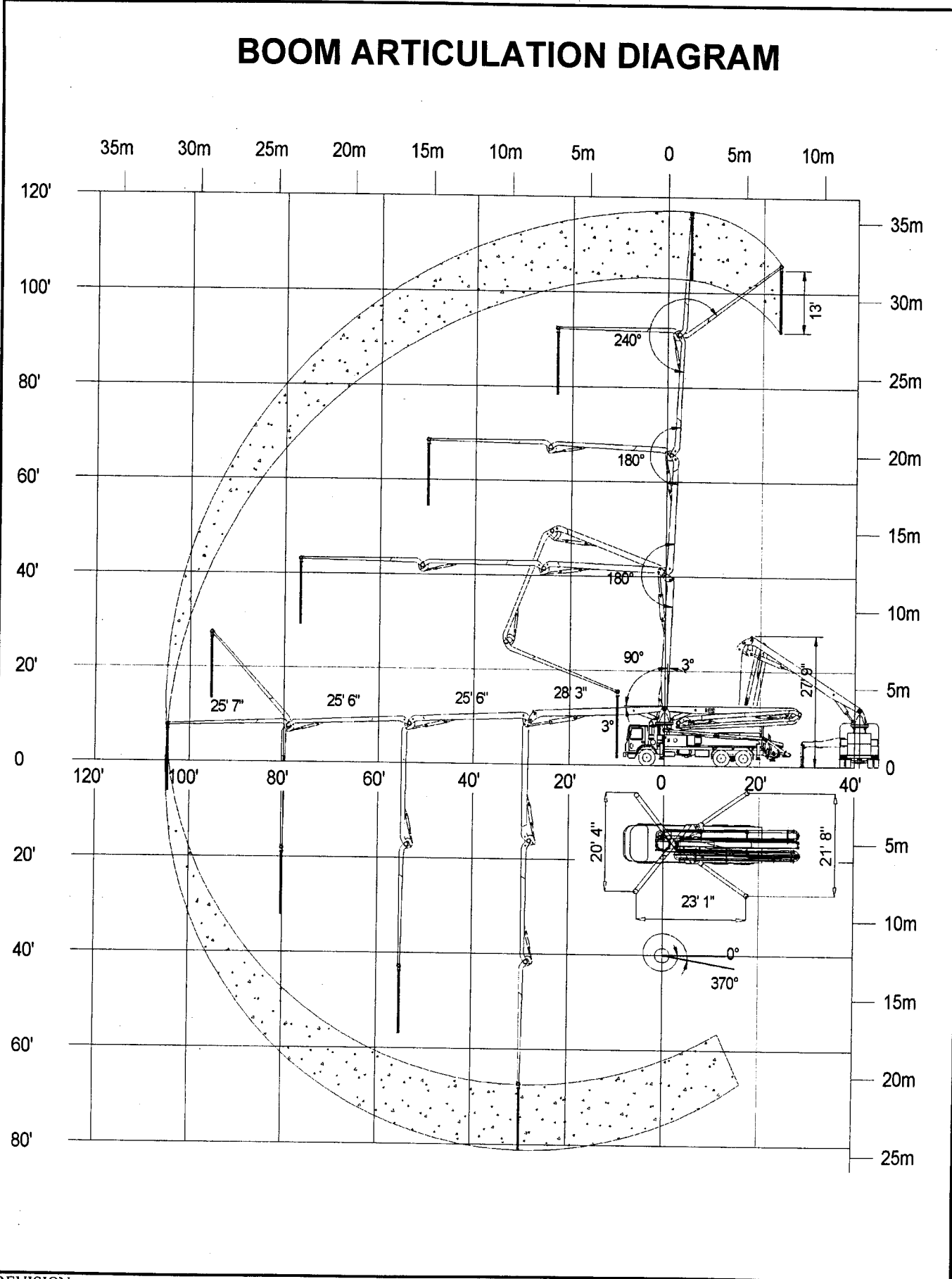
Move **SECTION D** control lever **DOWN** to **RAISE** boom. Move lever **UP** to lower boom section.





XT 36 TRUCK - MOUNTED CONCRETE BOOM PUMP

BOOM ARTICULATION DIAGRAM



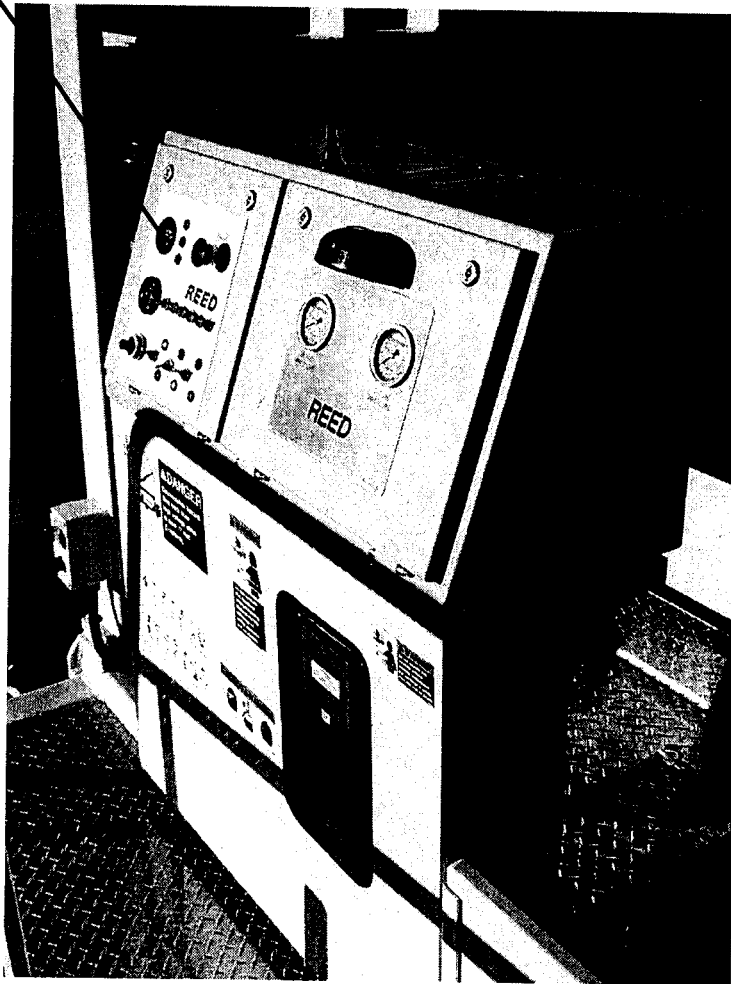
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CONCRETE PUMP CONTROL FAMILIARIZATION

In the previous pages you were introduced and familiarized with the outrigger and boom controls. Now we would like to acquaint you with the concrete pump controls. The boom and pump circuits are separate systems. One can be operated without the other.

Like the boom functions, the concrete pump can be controlled at a stationary panel on the chassis or from the remote control console or by the radio control unit. The next few pages are offered to familiarize you with these controls, their purpose, function and what happens.

SEE NEXT PAGE
FOR MORE DETAILS

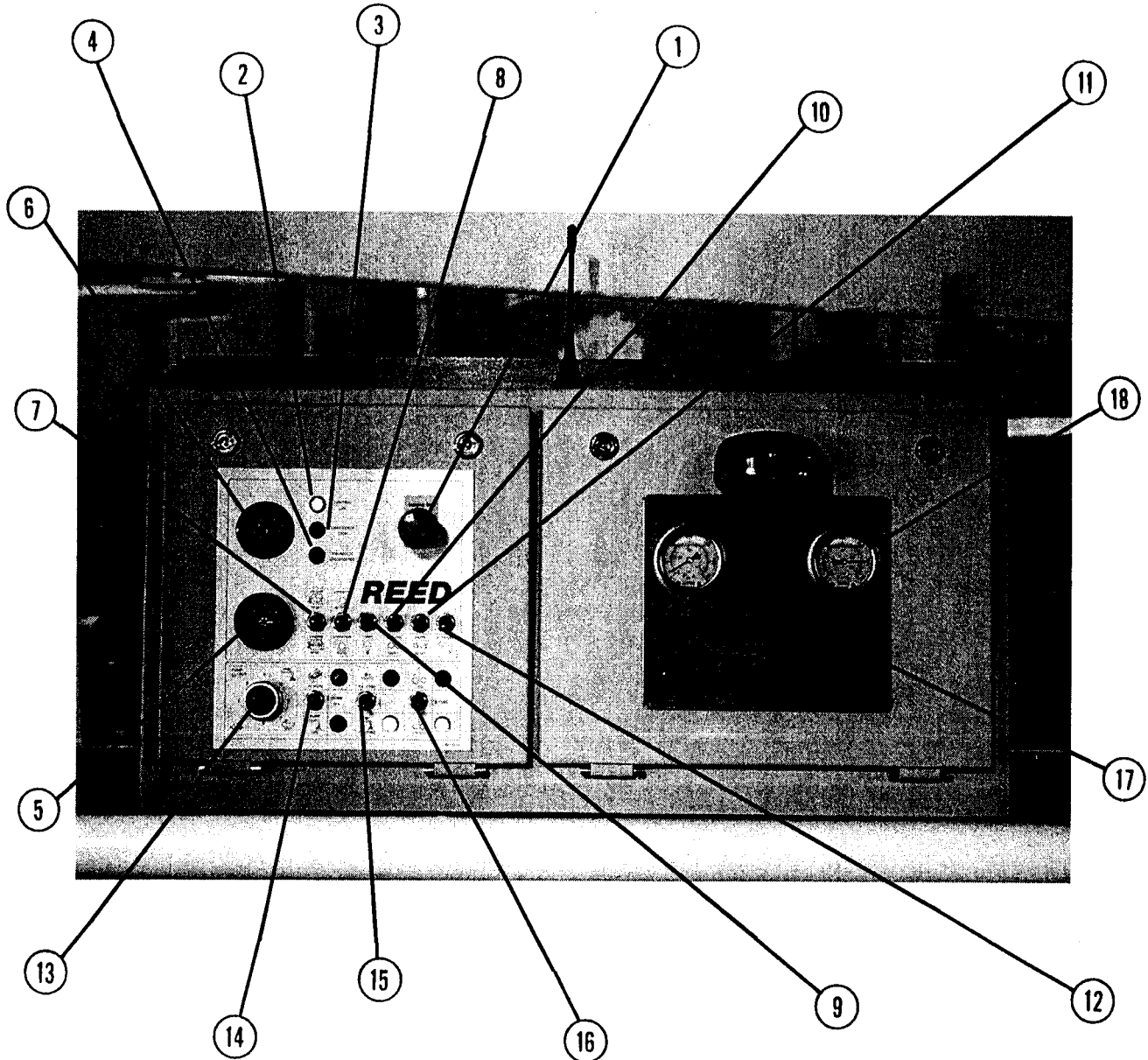


STATIONARY PUMP CONTROL PANEL

This control panel is located on the right (curb) side of the chassis, up on the chassis deck near the rear. This panel enables complete operational control of the concrete pump as well as having the abilities to monitor the system.

1. EMERGENCY STOP SWITCH

This switch is used to shut down the complete operation of the concrete pump and boom in an emergency. **PUSH** red knob to **STOP** operation. **PULL** knob out to **RELEASE** or re-activate system. The **STOP** switch is equipped with a light which flashes when switch knob is depressed.



2. GREEN LIGHT - READY

An indicator light used to denote that the PTO (Power Take-Off) is properly engaged and concrete pump system is **READY** for operation.

3. E-STOP INDICATOR

This light when lit, is used to denote that one of the **E-STOP** switches has been depressed.

4. HYDRAULIC OVERHEAT LIGHT

This indicator light when lit, denotes the hydraulic fluid is overheated.

5. HOURMETER

This instrument is used to record the number of hours the concrete pump has cycled. It is only operable when the pump is cycling.

6. OIL TEMPERATURE

This instrument is used to indicate the hydraulic oil temperature.

7. ENGINE RPM SWITCH

This is a 3 position momentary return to center position toggle switch. It is used to control and set the **THROTTLE** or **ENGINE** speed. Activate the toggle switch **UP (+)** and hold to **INCREASE** RPM; move toggle to **DOWN (-)** position and hold to **DECREASE** RPM. Speed of engine will be retained as set until reset. Center position of switch is neutral.

8. VIBRATOR SWITCH

This is a two position toggle switch used to control the hopper grate vibrator unit. Place toggle in **UP-MANUAL** position for continuous operation of vibrator. With toggle in **DOWN-AUTO** position, vibrator will operate intermittently on a timing cycle.

9. LIGHT SWITCH

This is a 2 position toggle switch used to turn on or off the work light located above hopper as well as the panel light. Switch in **DOWN** position light is **ON**. Place in **UP** position to turn light **OFF**.

10. GREASE SWITCH

This is a 2 position momentary toggle switch used to interrupt the preset timing cycle of the lubrication system. The lubrication cycle is preset and will automatically start and stop as set. However, by moving toggle to **GREASE** position this will activate the system to pump when in between preset cycle.

11. HORN SWITCH

This is a 2 position momentary toggle switch used to activate the chassis horn for reactivation of system after **E-STOP** switch has been depressed.

12. OUTRIGGER POWER CONTROL SWITCH

This is a 2 position momentary toggle switch control with the purpose of energizing or de-energizing (lockout) the outrigger circuit.

13. PUMP VOLUME SWITCH

This is a potentiometer type control and is used to adjust and set the **OUTPUT** discharge volume of the concrete pump or the **SPEED** in which the pump is cycling. Note there are eight (8) position ranges indicated on the control decal. Position 1 is **LOW** speed; position 8 is **HIGH** speed.

14. PUMP SWITCH

This is 3 position toggle switch use to turn the concrete pump on-off or energizing the remote. With toggle in **CENTER** position, pump is **OFF** or not cycling. Place toggle in **DOWN** position to turn pump **ON** – cycling, which will be indicated by the **LIT** light. Place toggle in **UP** position –**REMOTE** to activate the remote system. In so doing, it will be indicated by a **LIT** light.

15. PUMP DIRECTION SWITCH

This is a 2 position toggle switch used to control the cycle direction of the concrete pump. With toggle in **DOWN** position, the pump will operate in a **FORWARD** cycle. This will be indicated by a **LIT** light. Place toggle in **UP** position to operate pump in a **REVERSE** cycle. This will be indicated by **LIT** light.

16. S-TUBE SWITCH

This is a 2 position toggle switch with a momentary position. The purpose of this switch is to manually shift the S-Tube from one cylinder to the other. In normal operation of the concrete pump, the S-tube is always shifted to the material cylinder which has been fully retracted. This action allows, on the pistons forward stroke, to push the material out through the discharge. However, in certain pumping situations, you JUNE choose to change over from one cylinder to the other for maintenance and/or clean out purposes to expose the cylinder piston. When released, switch will return to **NORMAL** position causing S-tube to shift back.

17. PRESSURE GAUGE – CYLINDER “A” OR CYLINDER “B”

This is a 6000 PSI hydraulic gauge and is used to indicate the pressure being applied to the hydraulic cylinder piston of **CYL A** or **CYL B** on the forward stroke.

18. PRESSURE GAUGE – S-TUBE

This hydraulic pressure gauge is a 3000 PSI gauge and is used to indicate the hydraulic operating pressure of the S-tube shifting circuit.

19. TEST SWITCH

This switch is a three (3) position momentary switch used to test the operation of the material hydraulic cylinder labeled **A** or **B**. Turn switch to “**A**” position and hold. Cylinder will bottom out enabling pressure to be read on **CYL** gauge. The switch can also be used to **JOG** cylinders a little at a time for maintenance/repair operation.

NOTE

The following controls are located on the right (curb) side of the chassis at the end right before the hopper.

WATER PUMP
CONTROL LEVER



AGITATOR
CONTROL LEVER

20. AGITATOR & WATER PUMP

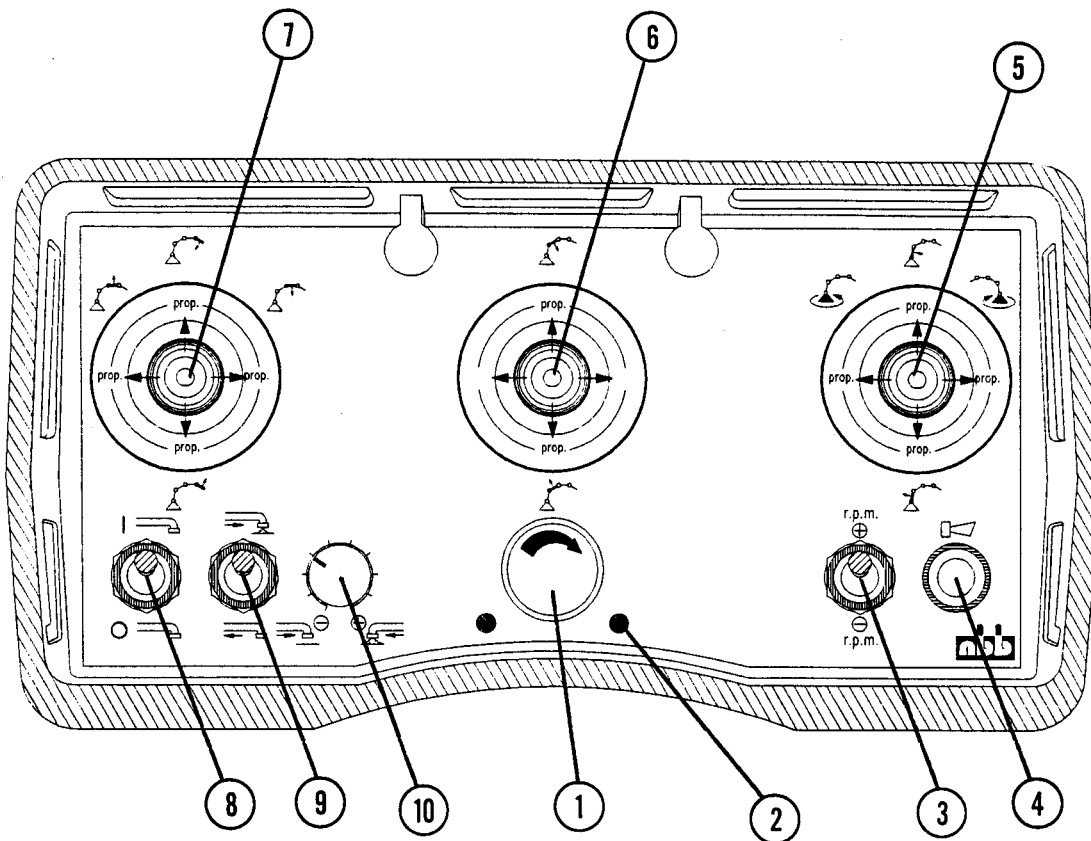
These are controlled by a manually operated 2 spool hydraulic directional control valve. One section of the valve bank is used to control the agitator/remixer and the other is used to control the water pump.

- **AGITATOR** - This lever controls the rotation direction of the hydraulic drive motors used on the agitator, sometimes called remixer. With lever in the **VERTICAL** position valve is **OFF**. **PUSH** lever in direction of chassis bed to rotate agitator in a **CLOCKWISE** direction. **PULL** lever toward hopper to rotate agitator **COUNTERCLOCKWISE**.
- **WATER PUMP** - This lever is used to control the operation of the water pump, which draws water from water tank to hose. With lever in the **VERTICAL** position the water pump is **OFF**. Push lever in direction of chassis bed to **START** pump.

REMOTE CONTROL FAMILIARIZATION (CABLE TYPE)

A remote control console is provided and used to enable the operation of the boom functions and concrete pump operation away from the immediate vicinity of the chassis. The remote unit is easily portable in a lightweight console. A behind the neck carry strap is provided to facilitate the use of the remote control console with both hands.

The console is connected to the chassis by a 25M (82 ft) umbilical electric cord with connector plugs at each end. A portable reel is provided to enable the cable to be stored during or after use.



1. KEYED - EMERGENCY STOP SWITCH

This is a red colored knob switch and serves two (2) purposes. The primary purpose is to shut down the machine in an emergency situation. Depressing **PUSH** knob in will **STOP** operation of the unit. The switch is also keyed, with the key being part of the removable red knob. Once emergency switch has been depressed, it can only be released by **PUSHING IN** on knob and turning knob with key **CLOCKWISE**.

2. INDICATOR LIGHTS

Two (2) small lights, one each side of emergency stop switch, are installed and used to indicate status of control. The **RED** light indicates **NON-OPERATIONAL** and **GREEN** light indicates **OPERATIONAL**.

3. ENGINE RPM SWITCH

This is a three (3) position momentary return to center position toggle switch. It is used to control and set the **THROTTLE** or **ENGINE RPM**. Activate the toggle to **UP(+)** and hold to **INCREASE** RPM; move toggle **DOWN** to **DECREASE** RPM. Engine RPM will remain as set until once again reset. Center position of switch is neutral.

4. HORN

This is a momentary push button switch and is used to activate and sound the chassis horn for signaling purposes. **DEPRESS** button to sound horn, **RELEASE** to silence horn.

NOTE

The following three (3) controls are used for operation of the boom functions. They are of the five (5) position momentary joystick type switch, meaning the lever must be held in position to keep the particular function activated and operational. Lever will automatically return to CENTER position when released and function will CEASE to operate.

5. BOOM "A" AND ROTATION

This lever is used to control the **MAIN (A) BOOM** and **ROTATION** of turret or turntable. The "A" boom lever movement is in a vertical up-down direction. Move lever back, **TOWARD** operator, to **RAISE** boom and forward, **AWAY** from operator, to **LOWER** boom.

The **ROTATION** lever movement is a side to side direction. Move lever to the **LEFT** for **COUNTERCLOCKWISE** rotation. Move lever to the **RIGHT** for **CLOCKWISE**.

6. BOOM "B"

This lever is used to control the function of the "B" or second boom. The direction of lever movement is vertical up-down. Move lever **FORWARD, AWAY** from operator, to **LOWER**, fold boom and **BACK, TOWARD** operator, to **RAISE** boom.

7. BOOM "C" AND BOOM "D"

This lever is used to control the operational functions of the "C" or third boom and "D" or fourth boom. The "C" boom lever is in a side to side direction. Move lever to the **LEFT** to **RAISE** boom and move to the **RIGHT** to **LOWER** boom.

The "D" boom lever movement is in a vertical direction. Move lever **FORWARD, AWAY** from operator, to **LOWER** boom and **BACK, TOWARD** operator, to **RAISE** boom.

8. PUMP SWITCH

This is a two (2) position toggle switch used to activate the concrete pump circuit. Move the toggle to **UP** position to **START-UP** pump and place toggle in **DOWN** position to **SHUT-OFF** pump.

9. PUMP DIRECTION SWITCH

This is a two (2) position toggle switch used to select the pumping direction of the concrete pump. Move toggle to **UP** position pump **FORWARD**, out of hopper and into delivery line. Move toggle in **DOWN** position to pump in **REVERSE**, drawing material in from the delivery line.

10. PUMP VOLUME CONTROL

This is a rotary type control and is used to adjust and set the **OUTPUT** discharge volume of the concrete pump or the speed in which the pump is cycling. Rotate knob **CLOCKWISE** to **INCREASE** output.

RADIO CONTROL FAMILIARIZATION

A radio control system is provided and used to enable the operation of the boom functions and concrete pump operation away from the immediate vicinity of the truck. The radio control system consists of a:

- Portable transmitter complete with halter, waist straps and two (2) rechargeable/replaceable batteries
- A receiver with multi-pole connecting cable
- Automatic battery charger

PRODUCT DESCRIPTION

The transmitter of the radio control contains the individual controls for operation of the boom movements and concrete pump operation. As a specific control is energized, a radio signal is generated and sent on a preset frequency to the receiver. The receiver is cable connected to the main junction box. This junction box contains the connections for the boom and pump operational functions.

The power for operation of the transmitter is provided by a 7.2-volt rechargeable battery that is stored in a compartment located on the transmitter. A full charged battery is of sufficient capacity to enable the transmitter to operate continuously for a period of approximately eight (8) hours. Indicator lights are provided to alert the operator that the battery is nearing exhaustion. The battery charger is mounted in the chassis cab and operates on the 12-volt chassis system.

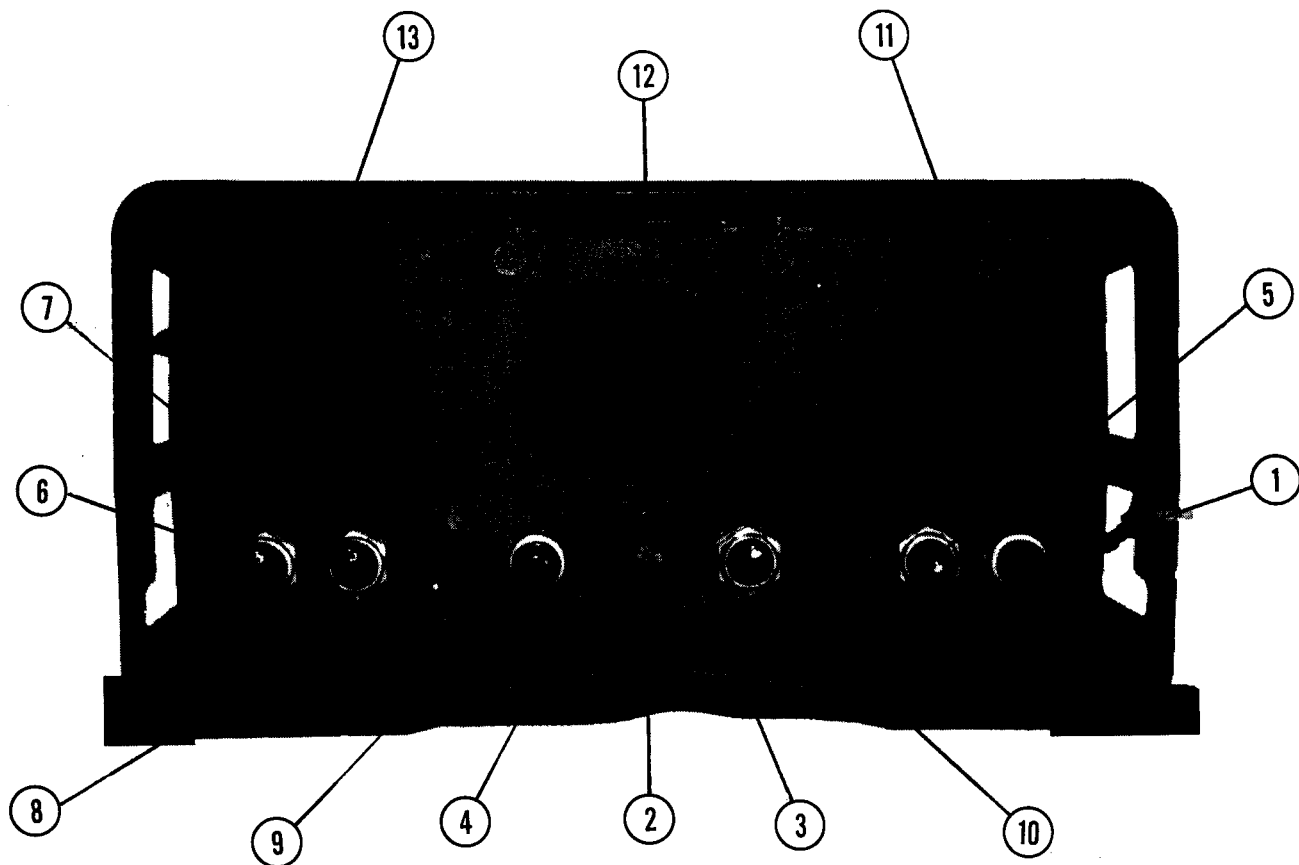
The receiver unit is located on the chassis deck in a protected area under the pump control console. Its purpose is to receive the radio signal from the transmitter and turn this signal, using its electronics, into the means to operate the controlling valves and components of the boom and concrete pump.

One of the features of the **NBB-REED** radio remote is the ability to program the output signals of the analog channels. This in turn presets the maximum operating speed of those functions that are based on speed. This is accomplished by using the "TEACH" battery and the 50%/100% switch.

Your transmitter and receiver are a matched set and should not be mixed with other components without first consulting **REED**.

CONTROL FUNCTIONS

It is important that you, the operator, know your machine and have a good understanding of the controls and the capabilities. The following will assist you in **GETTING ACQUAINTED** with the radio remote:

**1. ON/HORN (MASTER SWITCH)**

This is a push button switch and is used to turn "ON" the units main power system. After this function has taken place, then the button is used to activate the chassis horn as required for safety at work regulations.

2. KEYED EMERGENCY STOP SWITCH

This is a red colored knob switch and serves two (2) purposes. The primary purpose is to shut down the machine in an emergency situation as well as de-energizing the radio control transmitter. Depressing **PUSH** knob **IN** will stop operation of the unit.

The switch is also keyed, with the key being part of the removable red knob. Once emergency switch has been depressed, it can only be released by **PUSHING IN** on knob and turning knob with key **CLOCKWISE**. This also will activate the radio transmitter.

3. FREQUENCY INDICATOR

This green light is used to indicate, when lit, that the control is **ON** and is operational on the proper frequency. It will flash regularly. Commands or usage of controls can now be made.

4. BATTERY INDICATOR

This red light is used to indicate, when lit, that the battery is nearing exhaustion. Under most situations, the transmitter can be operated for approximately 15 minutes more after light is lit.

5. ENGINE RPM SWITCH

This is a three (3) position momentary return to center position toggle switch. It is used to control and set the **THROTTLE** or the **ENGINE RPM**. Activate the toggle to **UP(+)** and hold to **INCREASE RPM**; move toggle **DOWN (-)** to **DECREASE RPM**. Center position of switch is neutral.

6. PUMP SWITCH

This is a two (2) position toggle switch used to activate the concrete pump circuit. Move the toggle to **UP** position to **START-UP** pump. place toggle in **DOWN** position to **SHUT-OFF** pump.

7. PUMP DIRECTION SWITCH

This is a two (2) position toggle switch used to select the pumping direction of the concrete pump. With toggle in **UP** position, the material is pumped out of the delivery line. With toggle in **DOWN** position, the material is being drawn **IN** from the delivery line in reverse.

8. PUMP VOLUME SWITCH

This is a potentiometer type control that is used to control the volume output of the pump. With knob rotated to **(-)** position, volume **OUTPUT** is **MINIMAL**. Turn knob **CLOCKWISE** toward **(+)** to **INCREASE** volume output.

9. FREQUENCY CHANGE

This is a two (2) position momentary push button switch which is used to change the frequency. This is used in conjunction with the **ON/HORN** button while operating the **FREQUENCY** button until horn sounds.

10. SWITCH 50%-100%

This is a two (2) position toggle switch which is used to control the maximum speed of the boom and concrete pump functions. The 100% position is full speed; the 50% position sets the maximum pump speed of the function at one-half full speed. Refer to **OPERATION** of radio to set the speed.

NOTE

The following three (3) controls are used for operation of the boom functions. They are of the five (5) position momentary joystick type switch, meaning the lever must be held in position to keep the particular function activated and operational. Lever will automatically return to CENTER position when released and function will CEASE to operate.

11. BOOM "A" AND ROTATION

This lever is used to control the **MAIN (A) BOOM** and **ROTATION** of turret or turntable. The "A" boom lever movement is in a vertical up-down direction. Move lever back, **TOWARD** operator, to **RAISE** boom and forward, **AWAY** from operator, to **LOWER** boom.

The **ROTATION** lever movement is a side to side direction. Move lever to the **LEFT** for **COUNTERCLOCKWISE** rotation. Move lever to the **RIGHT** for **CLOCKWISE**.

12. BOOM "B"

This lever is used to control the function of the "B" or second boom. The direction of lever movement is vertical up-down. Move lever **FORWARD, AWAY** from operator, to **LOWER**, fold boom and **BACK, TOWARD** operator, to **RAISE** boom.

13. BOOM "C" AND BOOM "D"

This lever is used to control the operational functions of the "C" or third boom and "D" or fourth boom. The "C" boom lever is in a side to side direction. Move lever to the **LEFT** to **RAISE** boom and move to the **RIGHT** to **LOWER** boom.

The "D" boom lever movement is in a vertical direction. Move lever **FORWARD**, **AWAY** from operator, to **LOWER** boom and **BACK**, **TOWARD** operator, to **RAISE** boom.

SAFETY PRECAUTIONS

Safety can't be overstated. We have and will continue to make you **AWARE** of **SAFETY** on the job. Below we have pointed out some safety points, which are important and need to be followed when operating the radio remote.

- Even if you are accustomed to working with a radio control system, familiarize yourself thoroughly on the **REED** system.
- In some areas, an operating permit and registration may be required.
- Observe all applicable work safety and accident prevention regulations without fail.
- Only fully trained, authorized personnel may use the radio control equipment.
- When the radio control unit develops a fault, it must be shut-down immediately using the **EMERGENCY OFF** switch.
- A charged battery is a concentrated energy source. Never store a charged battery in a tool box or similar area where it could be short circuited by metal components. Even a key in your pocket can cause a short circuit if next to the battery.
- Never expose the transmitter or receiver to a high pressure cleaning jet.

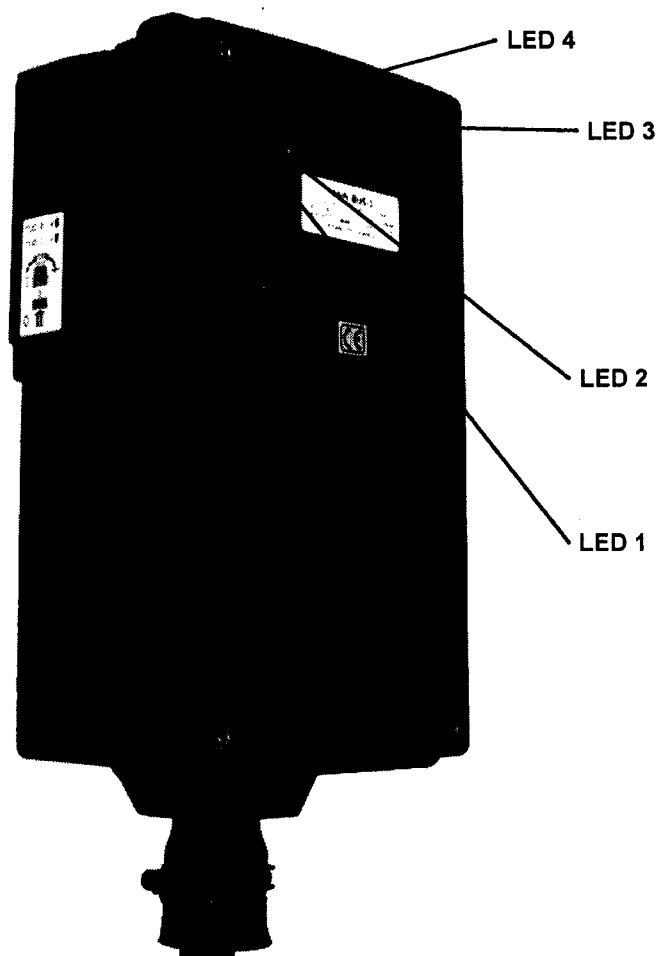
▲ WARNING

NEVER WELD ON ANY PART OF THE MACHINE WITHOUT DISCONNECTING THE RADIO RECEIVER, BATTERY SWITCH AND TRUCK COMPUTER. FAILURE TO COMPLY WITH THIS WARNING WILL BE A COSTLY OVERSIGHT.

OPERATION INSTRUCTIONS

Having **READ** and **UNDERSTOOD** the previous pages on **SAFETY** and **CONTROL FAMILIARIZATION**, you are now in a position to learn how to operate the unit using the radio remote.

- Set up the unit outriggers, etc. using the manual controls as previously outlined in the **OPERATION SECTION** of this manual.
- Make the Radio Control ready for use
 - Insert a charged battery into the battery compartment of the transmitter. Note – to remove the battery, depress the pin and slide out the battery.
 - Check the connections for the receiver that they are secure.
 - Switch **ON** the transmitter by turning or releasing the **EMERGENCY OFF** button on transmitter.



- **MAKING FUNCTION CHECKS**

Regular function checks of the radio remote control are essential to insure that operating safety is maintained. It is recommended that the checks be done at least once a week. With transmitter **POWER-ON** check the following:

- **LED** of the receiver, located on receiver face.
 - **LED 1: POWER ON** – Indicator should be lit. If not check:
 - Emergency E-Stops on chassis
 - Outrigger switch is in **BOOM** position
 - Switch on main panel is in **REMOTE**
 - **LED 2: HF AVAILABLE** – This indicator should remain lit continuously when transmitter is switched on the E-Stop.
 - **LED 3:** This indicator flashes at regular intervals during fault-free operation. Irregular flashing means the HF channel is probably disrupted. This can be remedied by switching to an alternate channel.
 - **LED 4:** If this indicator flashes the HF channel has been disrupted.

- **COMMAND FUNCTION – TEST**

It is a good habit to run this check-out procedure at the beginning of each day and before the actual pumping of concrete. This will assist in ensuring the unit is functioning properly.

- Test the command functions of the boom, starting with the operation of **BOOM "A"** and proceed with the operation of the other booms and turntable rotation. Observe that movement of the functions correspond with the movement of the control.
- Push **EMERGENCY – OFF** switch. Operation of transmitter should cease. Verify by activating a control. Function should not operate.
- Release **EMERGENCY** switch. Activate a control, function should not operate.
- Remove battery, transmitter should cease to function. Replace battery, activate a control, function should not operate.
- Depress **ON/HORN** switch to activate function.

CHANGING THE FREQUENCY

The transmitter sends its signal to the receiver on a preset radio frequency. Often some interference may be encountered during operations resulting in a need to change the frequency. This is accomplished as follows:

- Depress the **FREQUENCY CHANGE** button and hold and simultaneously depress **ON-HORN** button until the horn sounds. When horn sounds, a new frequency is established.

SETTING ANALOG CHANNELS

The **REED** radio remote system is equipped with a means to individually set the analog channels basic settings. The output signals can be individually programmed by use of the transmitter. The setting of the functions is in reality the setting of the operational speed, at full 100% maximum speed. To program the functions, the following is offered:

1. ACTIVATE THE PROGRAMMING MODE

- Check that all joy stick controls are in center position.
- Insert the **TEACH** battery into the transmitter battery compartment.
- Release **EMERGENCY OFF** switch and press the **ON/HORN** switch.
- The program mode is now activated.

2. SELECT ANALOG FUNCTION

- Select the function to be programmed by moving the control lever in desired direction.
- Place the 50% - 100% switch to 50% position.
- To **TEACH** threshold, move function lever until function just begins to move then back off a little.
- At this point, to save this value, depress the **ON/HORN** button.
- Now place the 50% - 100% switch to 100% position.



XT 36 TRUCK - MOUNTED CONCRETE BOOM PUMP

OPER.

PAGE 29

- To **TEACH** maximum move function lever until desired fast maximum speed is obtained. Watch movement of manual control valve handles.
- Save this value by depressing the **ON/HORN** switch.
- Press the **FREQUENCY CHANGE** button.

The opposite direction of this function and other functions can be programmed in the same manner and immediately afterward.

- The concrete pump speed can be programmed in the same way as the boom functions except the knob is used instead of the handles. We recommend to teach the maximum speed just below where the cylinders spike.

NOTE

*The programmed value or speed can be checked after the setting by depressing the **FREQUENCY CHANGE** button and holding while operating the function control. As soon as the button is released, the program mode can be continued.*

3. CLOSING THE PROGRAM MODE

- Depress the **EMERGENCY-OFF** switch
- Remove the **TEACH** battery from the transmitter battery compartment and insert normal work battery.
- Release the **EMERGENCY-OFF** switch.
- Press the **ON/HORN** switch to energize the transmitter.

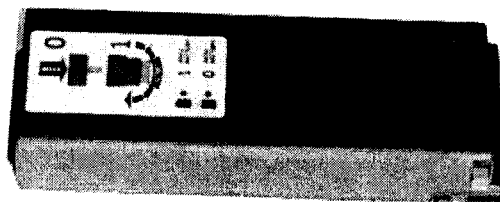
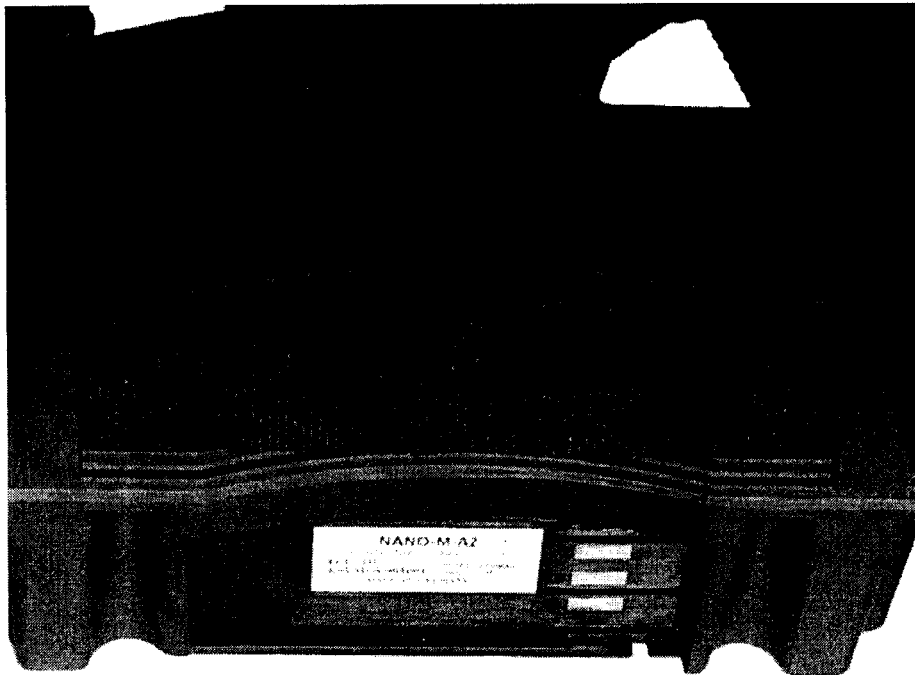
NOTE

*In the programming mode, all functions are inoperable except **ON/HORN** and the functions selected to be programmed.*

BATTERY CHARGER

The battery charger is located in the chassis cab and operates utilizing the chassis electrical system. To charge a battery the following is offered:

- Turn chassis ignition key **ON**. Green indicator light on charger should be lit.
- Insert dead battery into charger. Both green and red light should be lit.
- Battery will continue to charge as long as ignition switch is **ON**. An exhausted battery will take about 3½ hours to fully charge.
- When battery is fully charged, both the green and red light will flash.
- The battery can be left in the charger without doing harm to the battery itself.



BATTERY

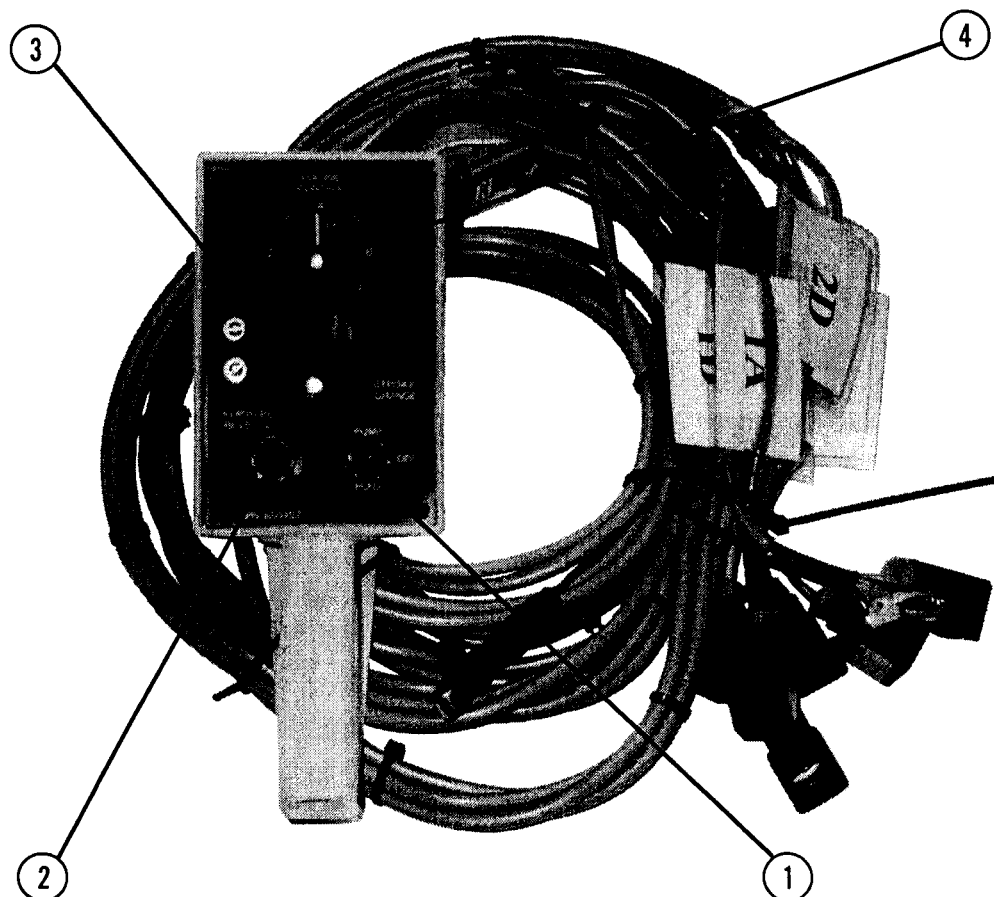
EMERGENCY STROKE/REVERSE CONTROL

The purpose of this **EMERGENCY STROKE/REVERSE CONTROL** is to enable the concrete pump to be operated in an emergency situation, which might involve a faulty proximity switch or a loss of electrical power to a major component and/or main control system. This control when properly connected will enable continued operation for completion of pumping job.

The control consists of a hand held console equipped as follows:

1. STROKE CHANGE SWITCH

This is a three (3) position momentary toggle switch and is used to change the stroke of the material and hydraulic cylinders to pump from one side to the other. **CENTER** position of switch is **OFF** (non-cycling). Move switch **UP** and **HOLD** to cycle pump. When piston has bottomed out (completed stroke), move switch **DOWN** and **HOLD** to cycle other cylinder.



2. FORWARD/REVERSE

This is a two (2) position toggle switch and is used to change the pumping direction of the material cylinders. With switch in **DOWN** position, pump is cycling in **FORWARD** position, discharging material out from hopper. Move toggle to **UP** position, pump will cycle in **REVERSE**.

3. EMERGENCY STOP

This is an emergency switch and is used to shut down the pump in an emergency situation. It is of the push-pull type. Depress **PUSH** knob to **STOP** operation. **PULL** knob out to **REACTIVATE** system.

4. VOLUME CONTROL

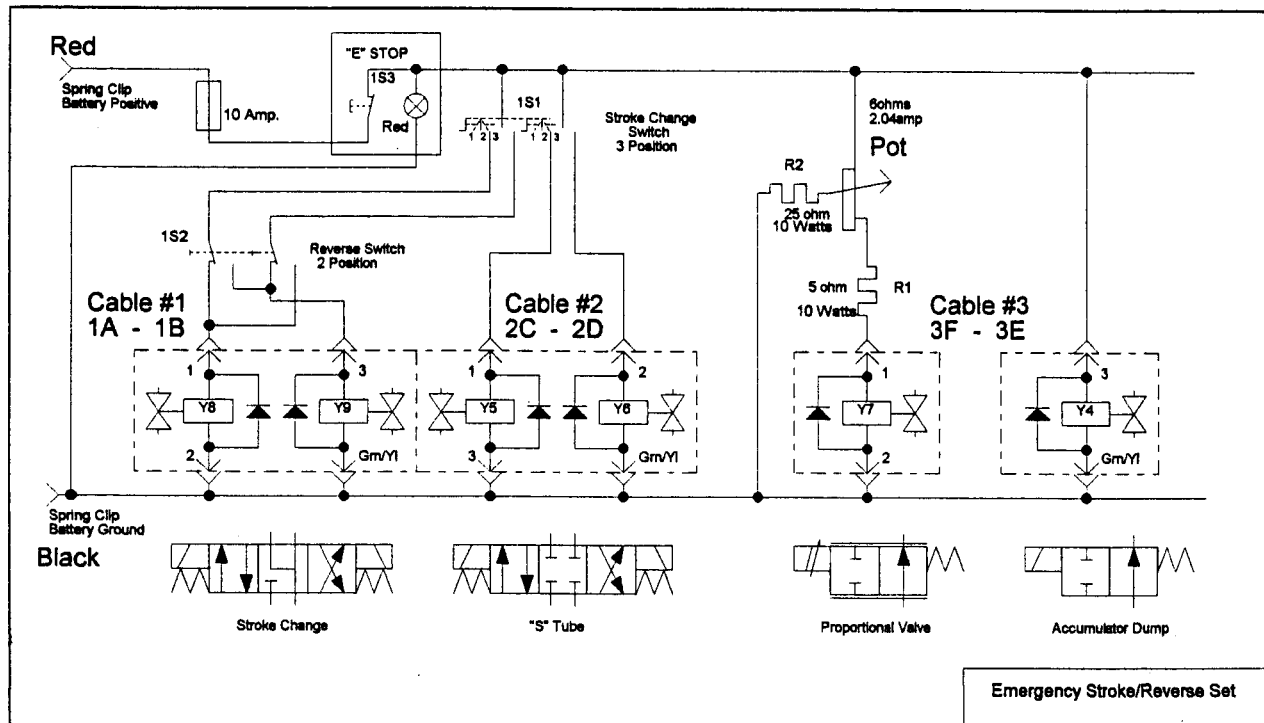
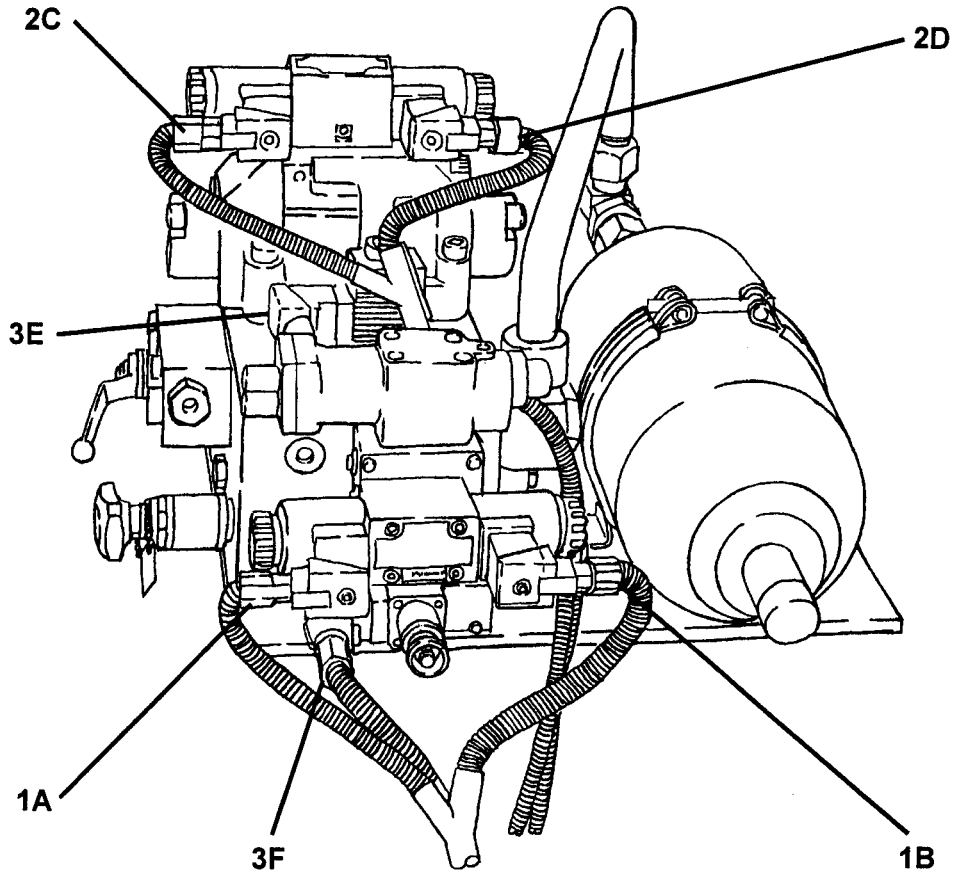
This is a potentiometer type control and is used to adjust and set the **OUTPUT** discharge volume of the concrete pump or the **SPEED** in which the pump is cycling. Position #1 is **LOW** speed; position #8 is **HIGH** speed.

OPERATION CONNECTION

When the situation calls for the use of the Emergency Stroke/Reverse Control, it will be necessary to make certain connections for it to be operational. The control unit is equipped with three (3) cables, each having two (2) connectors. These are to be connected to the main systems hydraulics which are mounted on top of the hydraulic drive cylinders.

Make the connections as follows:

1. On the stroke change valve, remove the existing connectors marked "Y8 – Y9" and connect cable #1 – "1A" to "Y8" and "1B" to "Y9".
2. On the S-tube valve, remove the connections "Y5" – "Y6" and connect cable #2 – "2C" to Y5 and "2D" to Y6".
3. On proportional valve, remove connector "Y7" and on accumulator dump, remove "Y4. Replace with cable #3 – "3F" on "Y7" and "3E" on "Y4".
4. On the end of the battery supply cable there are two alligator clips, red and black. Connect the red clip to the positive terminal of the battery and the black clip to ground terminal of battery. Any 12 VDC battery will work (ie pick up truck / Car).
5. Check operation and connections; push in on **EMERGENCY STOP**, knob should not be lit up. This will indicate that the control is not receiving power. Pull up on knob to activate system. System should now function. Knob will light up **RED**.



OPERATION INSTRUCTIONS

Having **READ** and **UNDERSTOOD** the previous pages on **SAFETY** and **CONTROL FAMILIARIZATION** you are now in a position to learn how to operate the unit. If you have not **READ** the **PREVIOUS** pages we **SUGGEST** you do so **BEFORE PROCEEDING**.

▲ CAUTION

*For your own **SAFETY** and others around you it is your **RESPONSIBILITY** to insure the unit is in proper working condition. Check out the unit by using the **PRE-OPERATION INSPECTION** notes previously identified.*

▲ WARNING

OBSERVE ALL SAFETY PRECAUTIONS WHILE OPERATING THIS MACHINE.

OPERATING INSTRUCTIONS SAFETY TIPS

SAFETY can't be **OVERSTATED**. We have and will continue to make you **AWARE** of **SAFETY** on the job. Below we have pointed out some safety tips, which are important and need to be followed during operation.

1. All those that are involved in the operation, maintenance and repair of the **XT 36** must read and be familiar with this operator's manual prior to operation of the equipment.
2. Always wear an approved safety helmet while working around the concrete pump and construction site. Protective safety goggles to eliminate eye burns and damage as well as hearing protection may be found helpful.
3. Make sure only authorized personnel are in the vicinity of the unit or on the unit.

4. Be sure those other than the operators are aware the unit is remote controlled and could start up at anytime.
5. Never allow anyone to stand on hopper grate.
6. If failure or malfunctions occur, stop the operation and have repaired immediately.
7. Safety devices **MUST NEVER** be disconnected, altered or removed.
8. Clear area of personnel and obstructions before extending outriggers.
9. Outriggers and jacks must be fully extended before boom is operated, unless precautions are taken as noted in **WARNING – OPERATING CONFIGURATION** decal.
10. Ensure stability of unit. When in doubt of the ground condition use extra blocking under jack legs.
11. Maintain a safe distance from excavations when setting up operation.
12. Do not drive with boom unfolded or outriggers extended.
13. Boom should not be used where wind speed exceeds 48 MPH. In a storm condition lower boom and place in stored position on chassis.
14. The main boom must be raised to 28 feet to release transport hook before boom section B can be opened.
15. Safety chain, whip check or other suitable securing devices must be used to secure the tip hose to the boom.
16. No structural extension or additional hose should be added to the boom tip section. Only one (1) tip hose 13 feet long is allowed, unsupported.
17. Do not use boom structure as a crane, hoist or any other form of lifting. This is strictly **PROHIBITED**.
18. **DANGER OF ELECTROCUTION** - Keep a minimum of 17 feet away from any electrical wires. Even though you are away from the chassis and using the remote control the umbilical control cable is still conductive. **BEWARE**. Climatic conditions (wet, fog, and rain) are more conductive. Keep at least 35 feet or more away depending on voltage.
19. Engage outrigger transport lock device before traveling, if so equipped.

SELECTION OF SET-UP AREA

Your first and primary concern when arriving at the job site is to insure the machine can be safely set up and safely operated. Don't jeopardize a safe operation for moving a few feet closer to the placement site.

Remember the **MODEL XT 36** weighs over 50,000 lbs. (22,700 kgs) and should receive special care and attention around the job site.

Choose an area as near as possible to the placement site. When selecting the set up area, look and determine if the operator will have a perfect view over the whole area. If the operator does not have a total clear view, a second person must be available as a guide to marginal viewed areas

Get out of the truck, look and walk around the entire area of the proposed set-up. The machine should be located on as level ground as is possible. It should be set up in such a manner that its stability is ensured. Keep a sufficient distance away from slopes, pits, trenches and excavations. These areas may collapse under the pressure of the outrigger legs. Refer to **OPER. PAGE 39** for pressure fact. Never set up on dumped dirt or ground.

What about the overhead area? Is the area clear of any obstructions such as electrical wires, trees etc., that may hinder the operation of the boom? Don't take chances. The boom can be maneuvered into various articulated configurations, which, if working in a tight area could be an unsafe operation.

▲ WARNING

The operator is responsible for the complete working area when using the machine. He must determine if the area will provide the required stability, overhead clearance and unobstructed view. If the planned location does not meet the requirements of safe set-up he must REFUSE to set-up and look and propose alternate areas even if it means relocating and reset-up during the job.

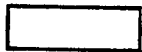
STABILIZING THE MACHINE AND SAFE OPERATING AREA

Position the **MODEL XT 36** so that safe stability is guaranteed for the entire operating range of the boom. To accomplish this, it is necessary that all outriggers must be fully extended and vertical jacks must be properly set. This is the **RECOMMENDED – SAFE** manner in which to operate the boom pump. However, situations may be encountered that prevent the setup of total or full outrigger extension. In these conditions, the following guidelines must be observed and it is the responsibility of the operator to be **ALERT** to the **OPERATING CONFIGURATIONS**.

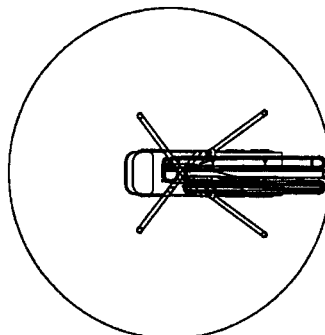
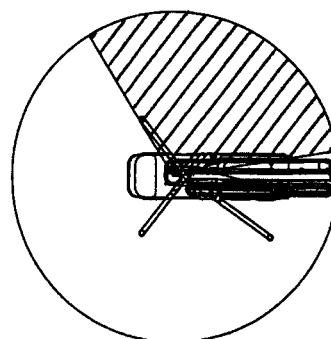
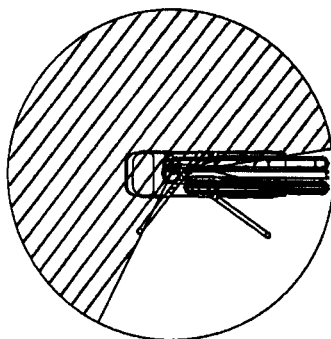
The chart below indicates areas of operation and non-operation when all outriggers are not extended. Extreme care must be exercised when operating under these conditions.

▲ WARNING**NON-OPERATING AREA**

DO NOT OPERATE OR ROTATE ANY PORTION OF BOOM IN THIS AREA. DUE TO DANGER OF TIPOVER.

**OPERATING AREA**

THIS AREA REQUIRES OUTRIGGER TO BE FULLY EXTENDED AND OPENED AS SHOWN. ALL FOUR (4) VERTICAL JACKS MUST BE SET PROPERLY ON FIRM LEVEL GROUND. CHASSIS MUST BE LEVEL SIDE TO SIDE AND FRONT TO REAR.

REED MODEL XT36*TYPICAL OPERATING CONFIGURATIONS*

PRECAUTION AWARENESS (OUTRIGGER NOT FULLY EXTENDED)

BE ALERTED to these and try to **PREVENT** the inevitable of **TIPOVER**.

- Telescopic front leg(s) must be fully extended and rear leg(s) must be fully swung out.
- Boom must be folded and in vertical position before rotating to operating area.
- Tip, boom and hose must always remain on the same side and between two fully extended outriggers.

SUPPORT OF OUTRIGGER JACKS

When stabilizing the machine, keep in mind that when the outriggers and jacks are positioned, the entire weight of the chassis and boom is supported by the jacks. At some positions, the load may be equally distributed on the jacks and depending on the position of the boom, the load on one or two jacks may be substantially increased.

Each jack leg is equipped with a circular pad, however when unit is set up it is **REQUIRED** that the furnished outrigger pads be placed beneath the jacks. This aids in spreading out the force over a large area. There may be times when it will be necessary to place additional larger pads or blocking under the jack pads to keep from sinking.

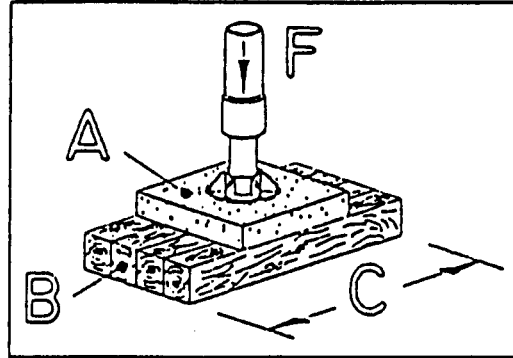
There is no fool proof method that can be used to ensure positive and absolute stability as there are too many factors involved. We have inserted the following data to assist you in determining the condition, however, it will all depend on how well you know your equipment, your experience and how alert you are to the ground conditions as you operate the unit.

TABLE 1

PERMITTED SURFACED PRESSURES (Ps)	
Type of Surface	KN/m²
Normal Ground	150
Asphalt with 7.8"(20 Cm) minimum thickness	200
Tamped crushed stone	250
Clayish and slimy ground	300
Different degree of granulated ground	350
Gravel	400/500
Suitable compressed gravel	750
Crumbly weathered rock	1000

NOTE

The load bearing capacity on the subsurface is express in PSI. The table above depicts a few indicative values by which the resistance of the support surface can be determined.



		PERMITTED SURFACE PRESSURES (P_s) from the table above, expressed in KN/m^2														
		STABILIZER LOADS (F) from the jack plates, expressed in KN														
		50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
150			84	112	138	166	194									
200			84	104	126	147	166	187								
250				84	89	117	132	150	166	184						surfaces unsuitable for stabilizing operations
300	surfaces				84	96	112	126	138	154	166	180				
350	suitable for					84	96	106	120	132	144	153	166	180	190	
400	stabilizing operations using						84	94	104	115	126	135	147	156	166	
500	only the 60x60 cm. support plate (A)							74	84	91	98	109	117	126	132	
750	without using wooden joists (B)											73	77	84	89	
1000																↑

MINIMUM LENGTH (C) OF THE JOISTS (B) expressed in cm.

TABLE 2

Table 2 is arranged according to the resistance values of the ground and the stabilizing load of the machine depicting the minimum length of wooden blocks/joists that are to be positioned under the auxiliary plate of the jack. It also indicates whether the ground surface is unsuitable or unreliable for the stabilizing operation.

EXAMPLE IN TABLE USE

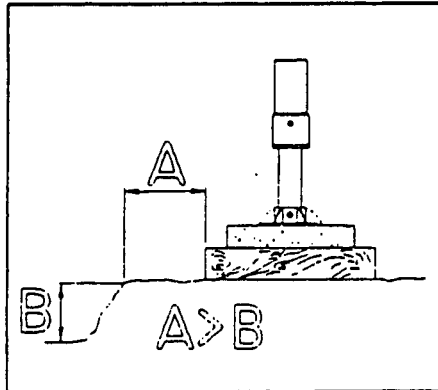
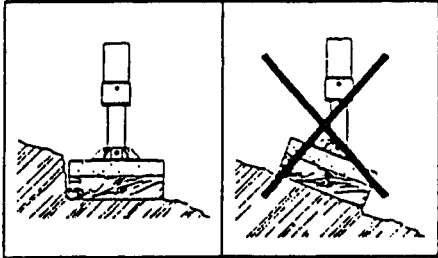
You are going to set up on an asphalt surface that has minimum thickness of (20 Cm). Look at Table 1, it shows the resistance value for asphalt is 200 KN/m^2 . Take note of the plate fastened to each vertical jack. This indicates vertical jack/stabilizer load expressed in KN. Check maximum loads on both front and rear stabilizers as the values may differ.

Now look at Table 2, the left side vertical column denotes the values of permitted surface pressure found in TABLE 1 (Asphalt = 200 KN/m²). The stabilizer loads (identified on jack plates) are noted across the top of the table. Assume the stabilizer load was 150 KN/m², find that column and read down to where it reads across for the 200 KN/m² value in left column. The intersecting figure is 126 Cm (49.6 in). This means that the minimum length of the joist/blocks to be placed under pad is 126 Cm (49.6 in).

⚠ WARNING

The positioning of the machine on slopes or embankments may cause instability as a result of the support surface sliding.

The ground surface should be level. If the support plates are positioned on upward projecting hills, bumps or hollows they will break. On sloping ground condition position the plates on a level as shown below.



Always remain at a safe distance from slopes, foundation excavations and the like. Follow the simple guideline noted above: the distance between the stabilizer jack and the trench should always be equal to or greater than the depth of the trench itself.

OPERATING THE OUTRIGGERS

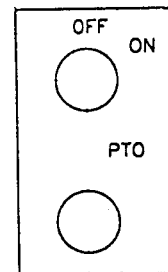
- While in the chassis cab, depress clutch pedal and place transmission in **NEUTRAL**.
- Start truck engine and deactivate Jake Brake (if engaged) by placing switch on dash to **OFF** position.
- Depress clutch pedal and engage power take off by turning **PTO KEY SWITCH** on dash to **ON** position. Indicator light adjacent to switch will light when **PTO** engaged.
- Shift transmission to fourth gear.

TO OPERATE PUMP AND BOOM

1. POSITION TRUCK AND SET PARKING BRAKE.
2. DEPRESS CLUTCH AND SHIFT TO 7TH GEAR HIGH.
3. TURN PTO ON.
4. RELEASE CLUTCH TO ENGAGE PUMPS.
5. SET THROTTLE AT 1600 RPM MAXIMUM.

TO RETURN TO DRIVING MODE

1. RETURN THROTTLE TO IDLE.
2. DEPRESS CLUTCH AND TURN PTO OFF.
3. SHIFT TO NUETRAL AND RELEASE CLUTCH.



NOTE

The PTO KEY SWITCH is interlocked with the clutch pedal. Before switch can be turned the clutch pedal needs to be depressed and held while making switch.

- Check that the chassis brake is applied.
- Outside the chassis cab **INCREASE** the engine **RPM** to 1400. This can be accomplished by using the **RPM** toggle switch at rear control panel.
- Place chocks under the chassis wheels.

CAUTION

Before proceeding, walk around the unit and make sure the area where outriggers will extend is clear of obstructions. Also once again check the ground condition.

- If your unit is equipped with lock pins or lock bars on the outrigger to retain them during travel, be sure to remove before any operation of the outriggers.
- At **RIGHT** (curb) **SIDE** outrigger control panel insert the **KEY** into the **POWER CONTROL** (master) switch and turn key to **ON** position. The outrigger controls are now operable.
- Standing off to the side, clear of the telescopic path of the front beam, push the **SAFETY INTERLOCK** switch and **HOLD**.
- Proceed with the other hand to actuate the **FRONT BEAM** control lever moving it **TOWARD** you. This causes the beam to telescope out away from the chassis toward the cab. Hold both controls until beam is fully extended.
- Actuate **RIGHT FRONT JACK** lever **TOWARD** you and lower jack pad to approximately 12 inches (304mm) from ground.
- Move **RIGHT REAR OUTRIGGER LEG** control lever **TOWARD** you causing leg to swing out. Hold until leg is fully extended.
- Actuate **RIGHT REAR JACK** control lever and again lower pad to about 12 inches (304mm) from ground.

- Proceed to **LEFT** (street) **SIDE** outrigger control panel and operate the appropriate controls to position the left side outriggers, front and rear, following same procedure as that for right side.
- **NOTE** - Each jack leg is equipped with an extension to which the foot plate is mounted. The purpose of the extension is to provide additional jack stroke for better leveling on uneven terrain.

To use, remove retaining clip on lock pin, then remove lock pin. Keep clear of extension as it will fall down. Line up top hole of the extension with jack cylinder hole and reinsert lock pin and retaining clip.

- If jack leg is resting on ground, use jack controls to raise leg. Place the **AUXILIARY PADS** and any required **BLOCKING/JOISTS** under jack legs.
- Do this for all four (4) jack legs, then using controls **LOWER** jack **DOWN** until chassis tires are raised approximately 5-6 inches (127 - 152mm) off the ground.

NOTE

The unit shall be set up as level as possible in both directions, latitudinal (side to side) and longitudinal (front to rear).

- To level unit, actuate the jack control in appropriate direction while holding **SAFETY INTERLOCK** switch. Monitor the **LEVEL SIGHT** gauge located near control panel. When bubble is lined up in center the chassis is level.

CAUTION

THE MAXIMUM ADMISSIBLE INCLINATION IS 3 DEGREES

- With unit now stabilized to your satisfaction **DE-ACTIVATE** outrigger controls by turning **KEY** of **MASTER** switch to **OFF**.

NOTE

Removal of key from master switch prevents accidental or unintentional actuation of the outrigger controls.

AMERICAN CONCRETE PUMPING ASSOCIATION HAND SIGNALS



1. **BOOM
UP**



2. **BOOM
DOWN**



3. **BOOM
LEFT**



4. **BOOM
RIGHT**



5. **OPEN OR
EXTEND BOOM**



6. **CLOSE OR
RETRACT BOOM**



7. **STOP
BOOM**



8. **START PUMP
SPEED UP**



9. **SLOW PUMP
DOWN**



10. **STOP
PUMP**



11. **LITTLE
BIT**



12. **ADD WATER
4-GALLONS**



13. **ALL DONE
CLEAN UP**

OPERATION OF THE BOOM

Prior to operation of the boom it is suggested that a **REVIEW** be made of the **GETTING ACQUAINTED (UNIT FAMILIARIZATION)** section, in particular the area pertaining to the **BOOM CONTROLS**. This will reinforce your understanding of the functions of each control and the corresponding reactions or movement of the boom.

NOTE

*The boom functions can be operated at the ground panel on the right side of the chassis or from the remote control console. It is **RECOMMENDED** that the **REMOTE CONTROL** be used as it permits more operator movement and better visual contact of the operation.*

With a good understanding of the control and boom movement the operation is relatively simple. However, certain points need to be noted for efficient safe operation.

- Boom "A" - main boom needs to be raised to a height of 27' 9" (8.45 m) before unfolding boom.
- Rotate the pedestal turret in a **RIGHT** or **LEFT** direction until the boom can be unfolded out over the cab.

⚠ CAUTION

*Before operating or unfolding **BOOM "B"**, visually check if catch hook has released. If hook has not released, operate **BOOM "B"** control to **DOWN** position.*

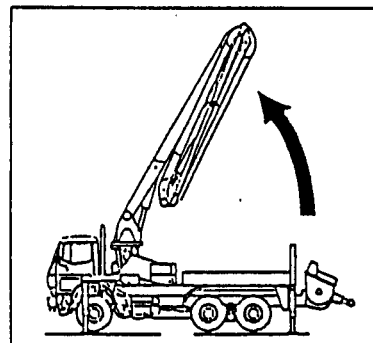
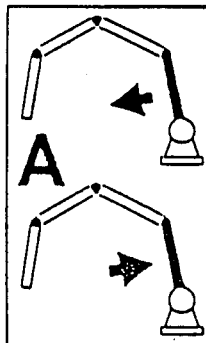
- Check that **EMERGENCY STOP** switch for boom remote control is **RELEASED**.

CAUTION

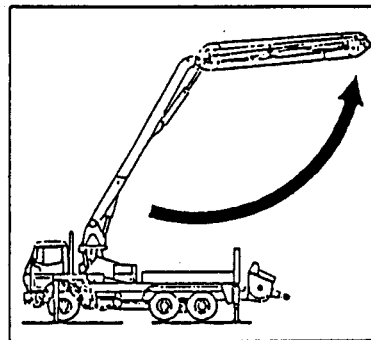
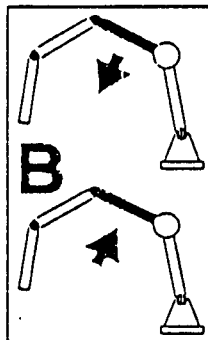
*Keep in mind that when an emergency or danger condition is imminent the boom operation can be stopped by **DEPRESSING** the STOP switch.*

With remote control console connected to panel on chassis bed or using the radio remote and engine started, PTO engaged and RPM set, proceed to operate boom controls as follows:

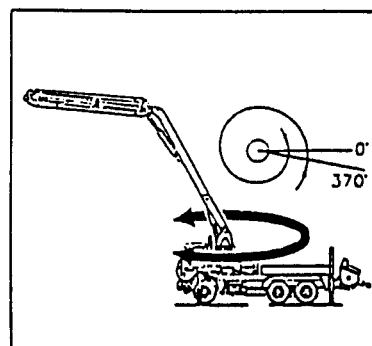
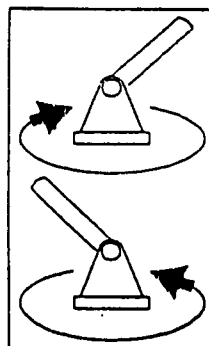
1. Actuate control lever "A" so that the entire structure is raised to approximately 60°.



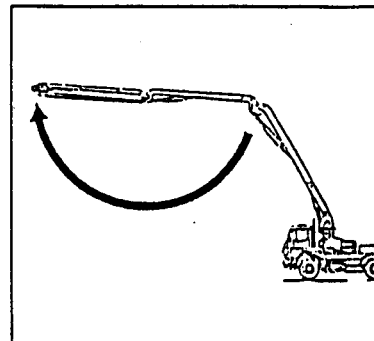
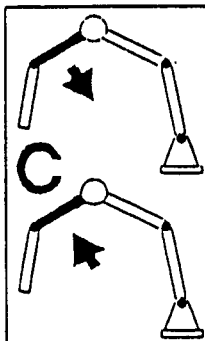
2. Actuate control lever "B" to raise boom "B" opening to at least 120°.



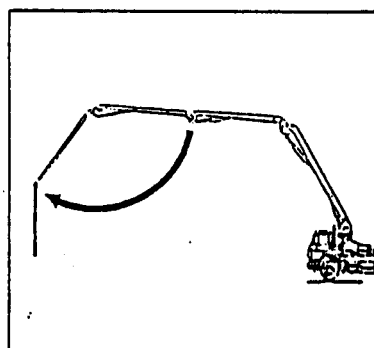
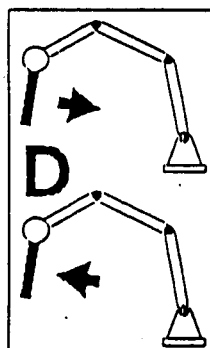
3. Actuate the ROTATION control moving the unit RIGHT or LEFT until structure is over front of cab.



4. Open BOOM "C" with appropriate control to approximately 180°.



5. Open BOOM "D" to desired position.



▲ WARNING

The working position shown in the previous illustrated diagram must not be exceeded during the pump operation. DO NOT WORK THE BOOM OUTSIDE THESE POSITIONS.

CLOSING AND BOOM STORAGE

At the conclusion of the pumping job it will be necessary to fold boom and prepare it for transport. Fold boom in **REVERSE** manner from that depicted to unfold boom.

OPERATION OF THE CONCRETE PUMP

Prior to operation of the concrete pump it is suggested that a **REVIEW** be made of the "GETTING ACQUAINTED" (UNIT FAMILIARIZATION) section, in particular the area pertaining to the **PUMP CONTROLS**. This will reinforce your understanding of the functions of each control and the corresponding reactions or movements.

Observe all safety precautions while operating the unit. Remember it is your **RESPONSIBILITY** to insure that the unit is in proper working condition. If you have as yet not done so, please run your pre-operation inspection now prior to **START-UP**.

Take a moment to visually inspect that all delivery piping from the hopper to boom tip is in good condition. Check all the piping fittings and clamps that they are secure. With this accomplished, start up chassis engine, engage **PTO** and allow hydraulic system to warm up.

NOTE

Before proceeding to cycle the concrete pump, it will be necessary to prime the pump and delivery system. A coating of lubricating grout will need to be pumped through the S-tube and delivery lines. This enables the regular concrete mix to flow smoothly.

PRIMING THE PUMP AND DELIVERY

The grout used for priming and lubrication should consist of two (2) parts sand and one(1) part cement and mixed to a consistency of thick soup. This will coat the delivery line ahead of the actual concrete mix to lessen the possibility of packing when the line is filled with concrete.

The amount of grout needed to lubricate the system depends on the harshness of the material to be actually pumped. The boom itself is over 117 feet (35.8m). Experience will eventually indicate the amount to be required.

- At outlet end of hopper, open clamp connecting discharge elbow to transfer tube. Remove elbow lock bar and swing elbow open.
- Insert two (2) wet sponge balls into the delivery line transfer tube. Close discharge elbow, lock in place and reinstall clamp.

- With agitator operating, controlled by lever just behind hopper, pour slurry into the hopper.

NOTE

The operation of the concrete pump can be controlled at the CHASSIS control panel or using the REMOTE control.

CHASSIS PANEL OPERATION

- Check that **PUMP** switch is **OFF** and the **DIRECTION** switch is in **FORWARD** position.
- Adjust **THROTTLE / ENGINE SPEED** moving switch to **INCREASE** and holding until speed reaches 1400 RPM.
- Turn **VOLUME** control to **LOW** position. **DO NOT OPERATE** at full volume while priming and lubricating the system.
- Start the pump by placing **PUMP** switch to **ON**.

REMOTE CONTROL OPERATION

- Connect remote control umbilical cord to the fitting at chassis panel, or set up the radio remote transmitter.
- Place **PANEL** switch to **REMOTE**.
- On remote panel, insert **KEY** and turn to **ON** position to energize control panel.
- Check that **PUMP** switch is **OFF** and **DIRECTION** switch is in **FORWARD** position.
- Adjust **ENGINE SPEED**, moving switch to **INCREASE**.
- Actuate **VOLUME** switch to **LOW**. **DO NO OPERATE** at full volume while priming and lubricating the system.
- Start pump by placing **PUMP** switch to **ON**.

NOTE

*Regardless of which control panel is being used make it a practice during priming operation to pump **VERY SLOW** until a full steady flow of concrete slurry is discharged from end of tip hose. **RETRIEVE** the **SPONGE BALLS**.*

Fill the hopper with a uniform concrete mix that is required to do the job and continue to pump the concrete. After the actual mix starts coming out the tip hose, the pump **VOLUME** can be **INCREASED** if so desired.

CAUTION

*When operating the pump, the **MAXIMUM** conveying **PRESSURE** must not be **HIGHER** than that which has been stamped on the **DATA PLATE**.*

PUMPING TIPS AND PRECAUTIONS

Your **SAFETY** is our utmost **CONCERN** and it is your **RESPONSIBILITY** to operate the equipment in a **SAFE** manner. The following **TIPS** and **PRECAUTIONS** are offered as **AWARENESS** facts and should be **OBSERVED** for proper safe operation.

- Always maintain the material level in the hopper to no less than the height of the remixer shaft height or 1/2 full. This is **IMPORTANT** otherwise air will be sucked into the material cylinders and the continuous smooth flow may be interrupted.
- The concrete output is influenced and related to the quality and consistency of the concrete mix. Mix consistency is a decisive factor when it comes to the filling rate of the material cylinders.

With stiffer consistency and unfavorable grading curve of the aggregate, (smaller portion of sand, crushed materials) the rate of filling the material cylinders becomes less efficient resulting in a lesser concrete output. When you encounter this condition it is suggested that pumping at a slower speed can positively increase the output by allowing more time to fill the material cylinders.

- When it is necessary to pump unfavorable mixes such as extremely stiff, under sanded, lightweight concrete, the best procedure is to keep the remixer/agitator shaft visible all the time. In so doing, the hopper will only be filled to the lower edge of the remixer shaft making the concrete easier to pump.

This method is called the **AIR-PLUG** method, which allows air to be sucked into the material cylinders along with the unfavorable concrete mix.

- When it is necessary to pump concrete that is very liquid and has a high percentage of rough aggregate that tends to separate, keep the concrete level in the hopper as low as possible in case you encounter a work stoppage.
- Concrete that has separated or has begun to set and become lumpy should never be pumped.
- It is common that at sometime during the concrete placement you will be required to stop pumping for a period of time. This could be job site problems or possibly lack of concrete. Regardless of the reason, it is **IMPORTANT** to **MOVE** the concrete in the line during these periods. This can be accomplished by operating the pump in **REVERSE** for 2-3 strokes and then after another 10-15 minutes operate the pump **FORWARD** for 2-3 strokes.

Downtime between forward and reverse movements will depend on the consistency and type of mix. Also if shut-down is for too long a period it may be necessary to clean out the delivery system and concrete pump. Determine this from your experience in the material being pumped.

- Avoid having the material in the hopper separate during shut down. Vibration caused by chassis engine could have an effect on the material separating. We suggest the **PTO** be disengaged and engine be turned off if shut down exceeds 4-5 minutes.
- Air pockets in the delivery line can be dangerous as the air compresses within the delivery line and when it is released abruptly at the end of the line, the concrete being pumped is discharged in an explosive manner. Avoid air pockets. Keep sufficient material in hopper to prevent the induction of air into the material cylinders.
- Never bend or kink the concrete flexible end hose during the pumping operation. A kink is an obstruction, which can stop the material flow, allowing pressure to build up in the system creating a dangerous condition.

When this occurs the pumping direction must be **REVERSED** for 3-4 strokes to relieve the pressure in the line. Stop the pump and straighten out the kink, then resume pumping.

- There is a risk of accident should the tip hose be immersed in concrete. Should this occur for any period of time, operate pump as noted above, then fill hose. When pumping operations begin after cleaning an obstruction, allow end hose to hang free and keep personnel from entering the area.

▲ WARNING

Never extract an immersed tip hose from the concrete by lifting with the boom.

- Do not allow the tip boom to be guided or maneuvered by hand especially during the initial phase of the pumping operation. Insist that the person assigned to guide the hose use a special tool.

CLEARING A PACK OR BLOCKAGE

Blockage in the delivery line during pumping operation will no doubt happen at one time or another. An observant alert operator, who can recognize the symptoms is of great value. A blockage can create excessive pressure in the system, which is a dangerous condition. When this occurs **IMMEDIATELY STOP** the pump.

- Place the pump direction switch to **REVERSE**. Then turn the pump switch to **ON** allowing the pump to stroke 2-3 times in reverse to assist in relieving the pressure from the delivery line blockage back to the pump outlet
- Switch the pump **OFF**

▲ WARNING

**NEVER ATTEMPT TO CLEAR A PACK OR
BLOCKAGE IN THE DELIVERY SYSTEM USING
THE PUMP PRESSURE.**

- Warn all personnel in the immediate area of the imminent **DANGER** and to stay clear of the area.
- Make sure those assigned to clear the blockage are fitted with **EYE PROTECTION** before they open the clamping device.

▲ WARNING

Extreme caution must be exercised when opening the clamping devices on any part of the delivery system. The possibility may still exist that there is still some pressure trapped in the line.

- Open the clamp in the area of the blockage and clear the pack.
- When blockage has been cleared **START** pump, placing **DIRECTION** switch to **FORWARD**. Pump the material at a **LOW VOLUME** until material flows steadily out the end hose.

CLEANING THE SYSTEM

This sometimes may seem tedious, tiresome and a distasteful task, more so because the pump job is finished and cleaning the system is the last operation of the day. However, the cleaning up of the **MODEL XT 36** is a **VERY IMPORTANT** operation. This function will set the stage as to how well the unit will perform the next time it is used. The clean-up involves the removal of unpumped concrete remaining in the hopper, swing tube, material cylinders and delivery system piping.

Two (2) different methods can be used and each in its own way will produce a satisfactory job if done correctly. The two methods to be used are the **SUCTION** method and **WATER UNDER PRESSURE** method. The following is offered to describe the procedure for accomplishing this operation.

NOTE

*The flushing and cleaning operation should only be done at **LOW RPM** and at **LOW VOLUME** position.*

SUCTION CLEANING

- All the concrete material is to be pumped from hopper down to the level of the top of the material cylinders.
- Stop the **FORWARD** direction of pumping and switch direction to **REVERSE**. Pump in this manner for about 3-4 strokes. Turn the pump **OFF**.
- Position the boom, operating the controls, so that each section is raised to produce a relatively straight in line configuration and the entire structure has a gradual ascending position.
- Insert into the end of the tip hose a **WATER SOAKED** sponge ball. Make sure it is firmly pressed into hose.
- With pump **DIRECTION** switch in **REVERSE** position, **START** pump. This will cause the sponge to be sucked back through the delivery piping toward the hopper. **REMEMBER LOW SPEED - LOW VOLUME.**
- With a hammer lightly tap on the delivery transfer line just ahead of the elbow at hopper (toward boom). Continue to tap until a hollow sound is heard. This indicates that the sponge ball has passed the area being tapped.
- Wait a minute or so to allow the material and sponge ball to be sucked back into the hopper. Using manual switch, shift swing tube to opposite direction. Place **DIRECTION** switch to **FORWARD** position and pump until sponge ball can be retrieved from cylinder.

NOTE

If once is GOOD.....twice is BETTER. Running a second sponge ball through the delivery line will ensure a thorough cleaning.

- If a second cleaning is to be made, do so as previously described and outlined.
- Remove any remaining concrete by opening hopper drain and washing the inside of the hopper using the water hose.

NOTE

The control for operation of the water pump is located on the curb side behind the hopper adjacent to the AGITATOR control.

- Open the discharge elbow and place water hose with spray nozzle attached, set to create some water pressure, inside the outlet. Feed the hose down into the S-tube being careful not to go all the way through the S-tube.
- Remove hose and close discharge elbow and put some water inside hopper. Turn pump **ON** and pump in **REVERSE** for a few strokes to enable the flushing of the material cylinders.
- Turn pump **OFF**. Drain hopper and water box and wash and clean up outside of machine.

WATER PRESSURE CLEANING

- Pump all the remaining material from the hopper. Place **DIRECTION** switch in **REVERSE** and pump 2-3 strokes to relieve any pressure in the delivery line.
- With pump turned **OFF** open the hopper drain and remove any remaining concrete.
- Using spray hose thoroughly wash down the inside of the hopper and the inside of the material cylinders.
- Close the hopper drain and fill the hopper with water. Leave hose run inside hopper
- Open discharge elbow and insert two (2) or three (3) **WATER SOAKED** sponge balls into transfer tube. Replace elbow and lock in place.
- Place **DIRECTION** switch to **FORWARD** and start pumping. This will push the water and sponge balls up through the delivery line cleaning out any remaining material. Keep **SUFFICIENT** water in the hopper.



XT 36 TRUCK - MOUNTED CONCRETE BOOM PUMP

OPER.

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- When the sponge balls come out the tip hose the pump can be stopped.
- Increase the slant of the boom structure slightly. Place **DIRECTION** switch to **REVERSE** and pump for several strokes to allow the cleaning water to flow out of boom.
- Turn pump **OFF**. Open hopper drain to remove any remaining water and concrete. Clean the rest of the machine. Drain the water box.

PREPARE UNIT FOR TRAVEL

Having done the distasteful job of clean-up, you can now ready the unit for the trip home.

- Using the appropriate controls, proceed to fold or lower each boom section, starting with section "D". Do not lower main "A" boom unless it is already over rear of chassis.
- Rotate boom structure so that boom is positioned over rear of chassis. Align so that boom will be centered on chassis and proceed to lower boom down onto travel rest.
- Using the controls at the outrigger panel either right or left side **RETRACT** outrigger jacks, and legs.
- Pick up auxiliary jack pads and any cribbing joist that were used and place in proper storage area.
- De-energize the remote control panel turning key **OFF**. Disconnect the remote cord from the connection on the chassis panel and place remote control in a secure location.
- Pick up and store any wheel chocks, cones and other equipment
- In chassis cab, engage clutch pedal, shift transmission to **NEUTRAL** then place **PTO** switch in **OFF** position.

D R I V E S A F E L Y