STAHL

3200 Series Owner's Manual

As of November 4,2004

FOR THE LOCATION OF YOUR NEAREST DISTRIBUTOR CALL 330-264-7441

Revision 6/04

- It is YOUR responsibility to maintain and operate this crane safely -

The following words and symbols will be used in your owner's manual:

! **DANGER** ! Indicates immediate danger and that special precautions are necessary.

! **CAUTION** ! Warns against potential hazards or cautions against unsafe practices.

Your **STAHL** crane is designed to meet all applicable government safety standards. Warranty will be voided if the crane is misused due to:

- Overloading
- Abuse
- Lack of (or improper) maintenance
- Unauthorized modification

! CAUTION !

Operate your 3200 crane within the lifting capacities specified. Exceeding the lifting capacity for a given boom length can cause tipping or structural failure. Only the **STAHL** "New Machinery and Equipment" warranty shown on the last page of this manual is valid with this crane. No other warranty—verbal, written, or implied—is valid with this crane. Treat your **STAHL** crane with respect and service it regularly. These two things can add up to a safer working environment and longer equipment life.

! CAUTION !

Note locations of Danger, Caution, and Lift Capacity decals on the 3200 crane. Read and understand each of these before attempting to operate the crane. If any of these labels are missing or cannot be read, contact your **STAHL** distributor for immediate replacement.

GENERAL SAFE OPERATING PRACTICES

ALWAYS inspect your crane daily, prior to use, for malfunctions, defects, or misuse.

ALWAYS keep the vehicle as level as possible while loading or unloading.

ALWAYS set the vehicle emergency brake before beginning crane operations.

ALWAYS keep the load as close to the ground as possible.

ALWAYS store the crane and hook when moving the truck.

ALWAYS store the controller securely to avoid unauthorized use of the crane.

NEVER swing a load that passes over people.

NEVER operate the crane within ten feet of a power line.

NEVER exceed the rated lifting capacity. Deduct the weight of any load handling equipment from rated capacity.

NEVER leave a load suspended in the air.

NEVER use the winch to drag a load into position before lifting.

NEVER operate the crane during an electrical storm or when high wind conditions exist.

NEVER side load the boom by dragging a load from the side.

NEVER try to service or repair the crane while the crane is operating.

NEVER place yourself between the load and truck or other fixed object.

NEVER move the truck while operating the crane or with a load on the crane.

SAFETY CHECKLIST

STRUCTURAL SOUNDNESS: Inspect the unit for damaged members and loose fasteners.

CONTROLS: Make a short test for proper control and operation of all functions.

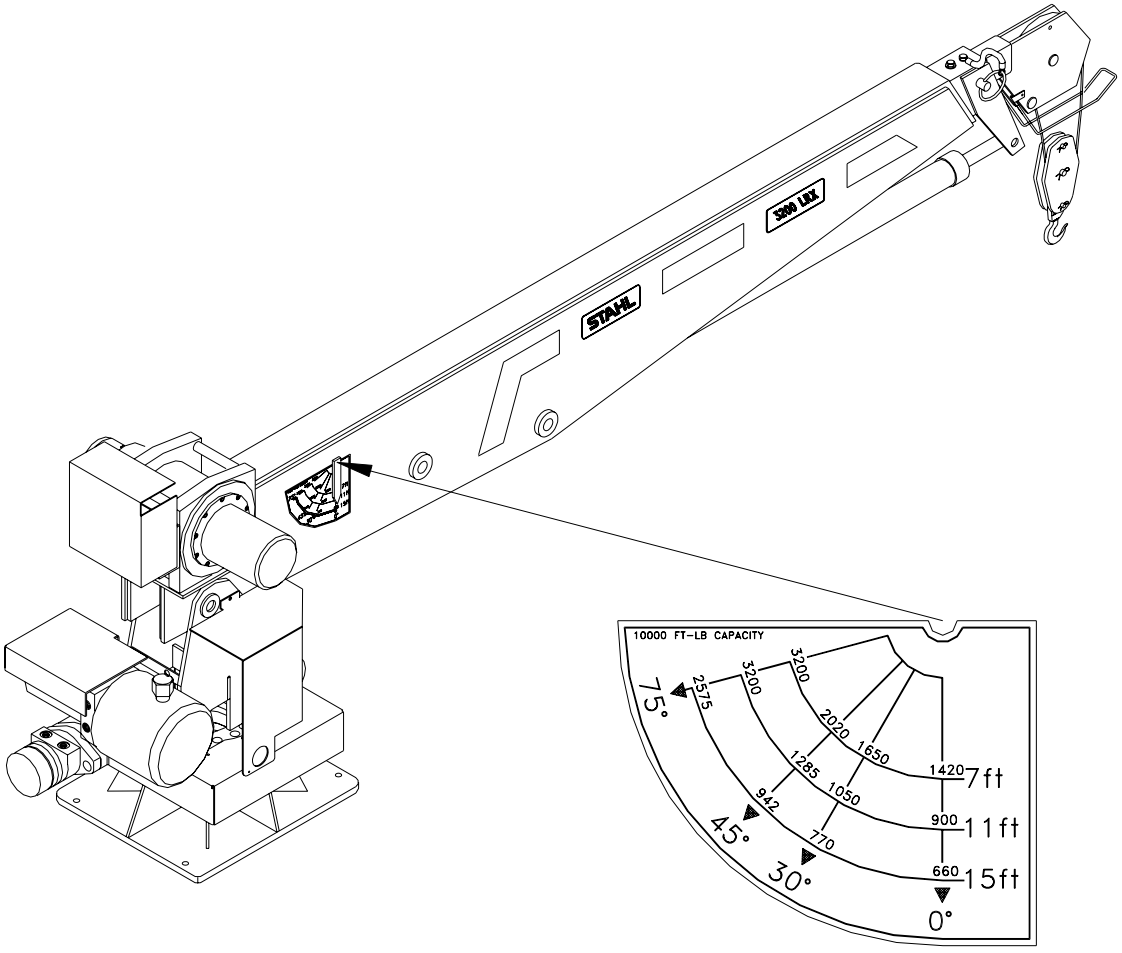
REPAIRS: Fix all problems before using your crane.

LEAKAGE: Examine all of the hydraulic lines for frays and blisters. Look for signs of lubricating or hydraulic oil leakage.

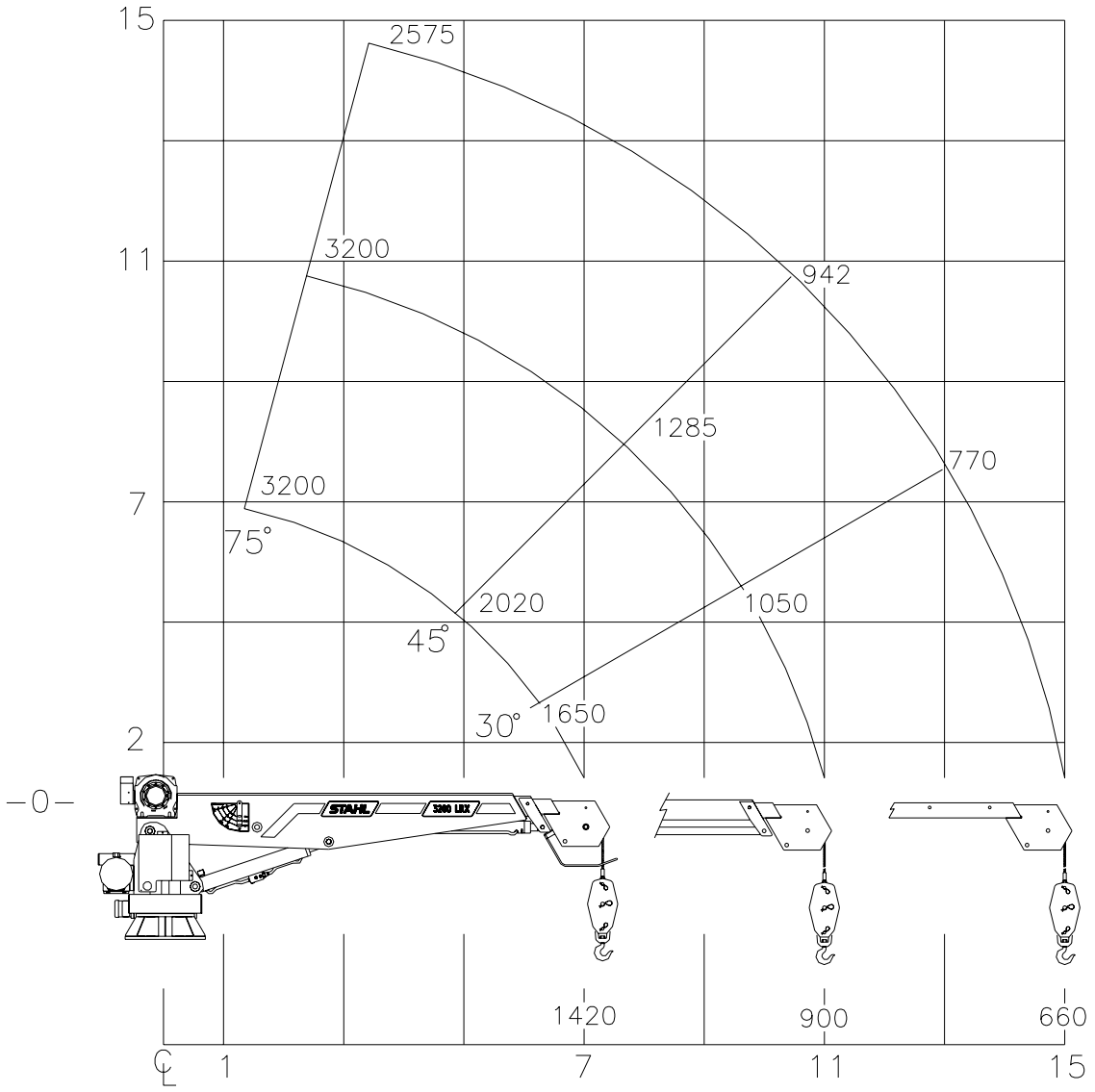
HYDRAULIC OIL SUPPLY: With the crane in a stored position, and all cylinders retracted, check oil level in the hydraulic reservoir.

DECAL PLACEMENT

Note locations of the DANGER, CAUTION, and LIFT CAPACITY decals on **STAHL** 3200 cranes. Read and understand each of these decals before attempting to operate your crane. If any decals are missing or cannot be read, contact your **STAHL** distributor for immediate replacement.



LOAD CAPACITIES
MEASURED IN POUNDS
CRANE RATING : 10,000 FT./LB.



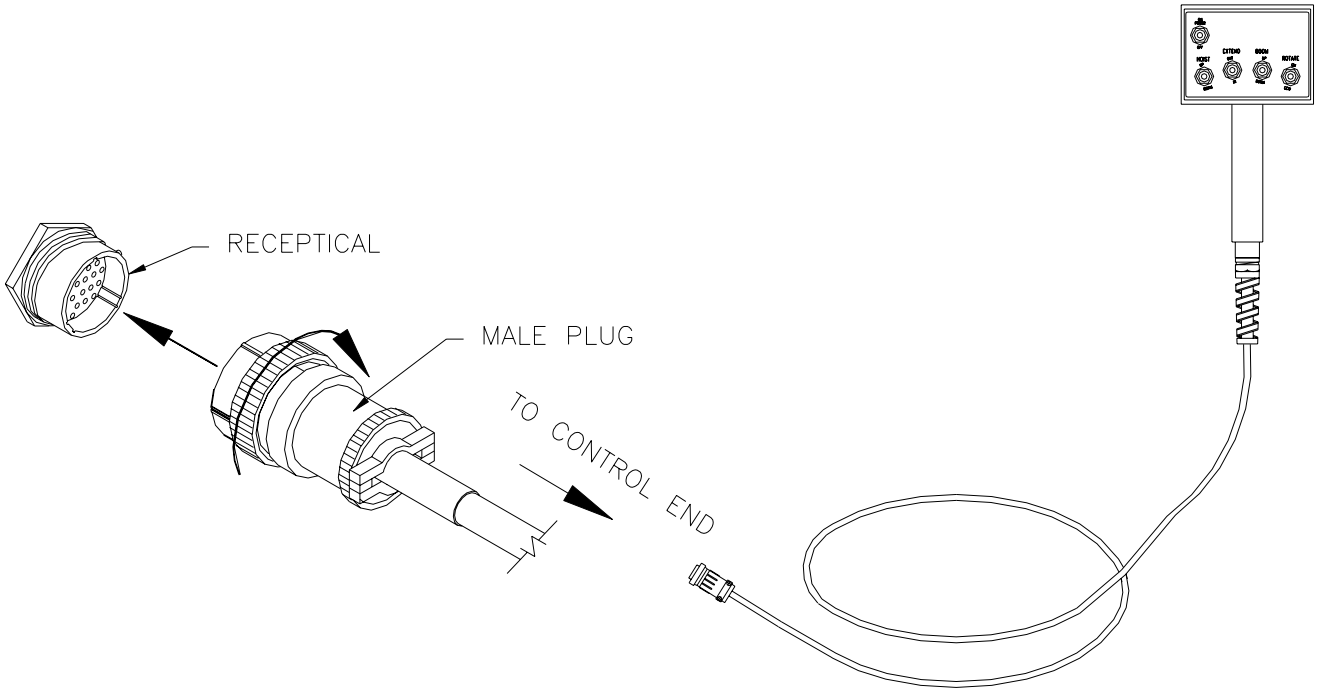
DISTANCE IN FEET

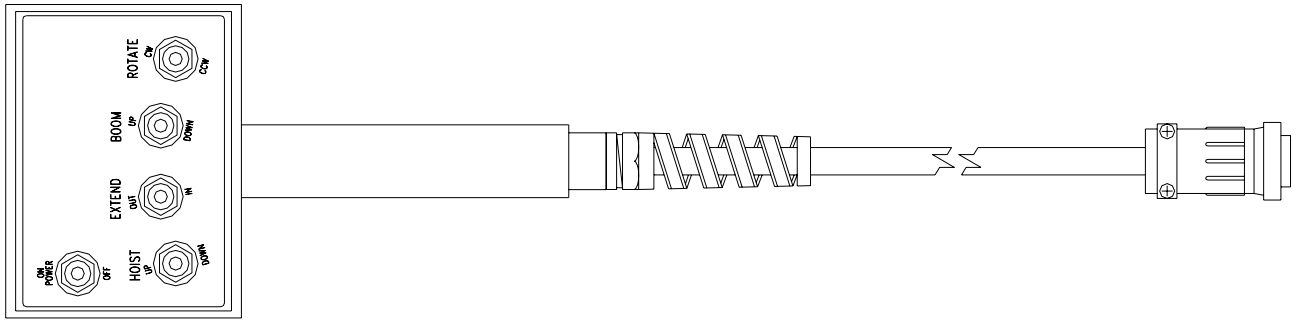
NOTE: Load capacities are based on 85% of tipping when all outriggers are extended and have firm contact with a solid surface. Vehicles must have proper axle load distribution and crane must be mounted in accordance with manufacturer's instructions.

REMOTE CONTROL

The crane remote control plugs into a receptacle. The blue line on the male plug on the remote control must line up with the flat spot on the receptacle at the base of the crane. Push the male plug onto the receptacle while turning the serrated portion of the male plug clockwise. Continue turning until the pin on the receptacle can be seen through the hole in the male plug and a “click” is felt.

There are five switches on the remote control. Each is labeled as to the function and direction. For example: To activate the winch, push up on the switch to “winch up”; push down on the switch to “winch down”.





The 3200 crane is designed to provide excellent service if operated within the maximum allowable load specifications stated on the unit's "Angle Indicator Plate" located on either side of the boom. A load chart is also included on page 5. Load information charts should be studied before operating the crane. Exceeding the stated load limit can cause tipping or structural failure. You should familiarize yourself with proper operation procedures to avoid overloading the crane. As an example: If a load of 3200 pounds is lifted at an 11' boom length at 75°, lowering the boom would cause an overload situation.

The 3200 crane is relatively simple to operate. Prior to field use, you should familiarize yourself with the controls and how the unit reacts to the controls. Practice operations should be performed with a light test weight progressing to a heavier test weight.

LIFTING OVER 1,600 POUNDS

A "two-part" line must be used whenever the load is **1,600 pounds** or greater. In order to "two-part" the line:

- Connect the winch cable eye to the pin on the bottom of the manually extendible boom section.
- Insert cable through the snatch block by removing the cotter pin and disassembling.
- Reassemble the snatch block. Be sure to reinsert the cotter pin in the snatch block.

You should also use a "two-part" line for loads under 1,600 pounds if you want to slow down the line speed of the cable.

LOAD LIFTING

It must be understood that all load ratings are formulated on 85% of tipping. Tipping is defined as a tire breaking contact with the ground. Further, all load ratings are dependent upon compliance with the following:

- The unit has been correctly installed in accordance with chassis requirements and truck body manufacturer's specifications.
- The intended operation is carried out on a level, solid surface with proper outrigger placement.

TASK PERFORMANCE

1. Position the 3200 crane as close to the job as possible on a firm, dry, and level surface. Avoid overhead obstruction on the work side of the unit.
2. Set the parking brake.
3. Extend and lower the outriggers until firm ground contact is made. On soft ground, use bearing pads to prevent sinking or tipping.
4. Run the winch line out before extending the boom.
5. Make sure the connection to the load is secure and will not come loose when lifting the load.

OVERLOAD PROTECTION

The 3200 crane is equipped with a counterbalance valve inside the lift cylinder to protect against overloading. In an overload condition, the boom will not elevate. Attempts to winch the load will cause a downward feathering of the boom until the overload condition is reduced. The counterbalance valve will also keep the boom from coming down in the unlikely event of a rupture to the hydraulic hoses that supply oil to the lift cylinder.

A pressure sensitive switch is located in the lifting cylinder. It can sense an overload situation. This causes a shutdown of the winch up, boom extension out, and boom elevation functions, and automatically resets after the crane has been moved out of the overload position.

An anti-two block feature is provided on the LRX models, and optional on all others.

RELIEF VALVES

The 3200 crane has a relief valve located on the hydraulic power unit. This is the main system relief. It is factory set at 2550 PSI. The main function of this relief valve is to prevent overloading of the system if the boom is inadvertently rotated against an immovable object, while one of the other hydraulic functions is also being used. The relief valves would not normally require adjustment, but if the correct relief valve setting is suspect, refer to the maintenance section of this manual for the proper adjustment and testing procedure.

Proper maintenance on a regular schedule is essential to keep the unit operating at peak efficiency.

LUBRICATION

Maintenance and proper lubrication schedule will vary with climate conditions and the amount of usage the unit receives. The lubrication chart below is intended to serve for a normal workload and moderate weather variance. Periods of heavy use shorten service intervals.

ITEM	WHERE	INTERVAL	LUBRICATION PRODUCT
Slewing Ring	Grease Fitting	1 Month	Chevron Moly Grease #2
Winch Cable	Surface	6 Months	Light Oil
Pulley Block	Not Required	- - - -	- - - - - -
The Worm and Gear Mesh	Directly on Gears	1 Month	Mobiltac "C", Shell Cardium EP Silver Streak 200, Mollube Alloy 936
Sheave Bushing	Not Required	- - - -	- - - - - -
Cylinder Pin Bushing	Not Required	- - - -	- - - - - -
Turret to Boom Bushing	Grease Fitting	6 Months	Chevron Moly Grease #2

HYDRAULIC FLUID SPECIFICATION

Minimum viscosity specifications for hydraulic oil to be used in the crane should be Chevron AW68 or equivalent to eliminate the necessity of seasonal oil changes under normal temperature conditions. For operations in below freezing temperature, use a hydraulic fluid having a viscosity of 3000 SSU's.

Operating temperature of the hydraulic fluid should be within the range of 120°F—160°F (49°C—82°C).

NOTE: Arctic conditions present special requirements and considerations. Consult your oil supplier for the proper fluid for working under these severe conditions.

In addition to meeting the viscosity requirements, hydraulic fluid used in the system should contain the following additives:

- Anti-foam inhibitors
- Antioxidant inhibitors
- Anti-wear additives
- Rust resistant additives

PURGING AIR FROM THE SYSTEM

Air that is trapped in the cylinder will cause an erratic “bumpy” condition. To expel the air, hold the affected control open after the function has “bottomed out”. Move the function in the opposite direction and again hold the control open. Attempt to operate the crane in a normal manner to determine if the air has been purged. When purging is complete, reevaluate hydraulic fluid level and add fluid if necessary.

REMOTE CONTROL

The remote control is subject to corrosion and must be checked at least twice a year and more often if operated in severe, wet conditions. To check for corrosion:

1. Remove the cover plate and inspect for lack of luster. Metal should appear bright and untarnished.
2. Spray the inside of the box with an ignition sealer such as Krylon.
3. Check all connections to make sure they are tight.

FEATURES

- Crane Rating: 10,000 ft/lb capacity.
- Hydraulic extension boom provides reach up to 11′ with manual boom adding an additional 4′.
- Electric winch for efficient operation.
- Self-lubricating Nylatron™ bearing allows smooth operation of inner and outer booms.
- Multifunction, removable remote control provides safe operation up to 25′ away.
- Electrical solenoid-operated valves.

SPECIFICATIONS

- Extension: Electric to 11′ - with manual extension to 15′.
- Lifting Height Above Base: 15′
- Weight: 800 lbs.
- Length: 104.00″
- Width: 19.00″
- Height: 33.50″
- Base Dimensions: 14.00″ x 16.00″ (10.50″ x 14.75″ bolt pattern)
- Rotation System: 360° continuous hydraulic - turntable bearing w/planetary drive & dynamic brake.
- Remote Control: Lightweight remote control unit with 25′ cable.
- Winch Cable: 62′ of 1/4″ aircraft cable, with latch hook traveling block and down haul weight.
- Rotation Speed: 1 RPM.
- Boom Elevation Speed: -5° to +75° - 15 seconds.
- Boom Extension Speed: 11′ to 15′ - 18 seconds.
- Winch Line Speed: 15′ per minute - single line.
- Min. Chassis Req.: 8000 GVWR.

OUTRIGGER REQUIREMENT

Jackleg or outrigger available.

SYMPTOM	PROBABLE CAUSE
Function fails to respond to controls	Pressure switch malfunctioning Low hydraulic fluid Faulty hydraulic pump Short circuit in remote control Crane not grounded to truck Solenoid in control valve malfunctioning Bad ground on control valves Circuit breakers tripped Dead battery Optional anti-two block malfunctioning
Slow down of functions speed	Relief valve set too low Low hydraulic fluid Clogged filter/strainer Pump not providing enough GPM
Boom drifts under load	Cylinder piston seals leaking Counterbalance valve defective Crane is overloaded
Boom or winch will not lift load	Restriction in hydraulic line Cylinder piston seals leaking Relief valve not set properly Pump losing prime Overload condition Filter clogged Counterbalance valve defective
Cable mis-wrap	Loose cable being wound on drum
Unusual noise during operation	Cavitation due to low hydraulic oil Load is excessive Suction line filter is clogged Relief valve set too low Relief valve defective Air in the lines
Winch motor runs but fails to wind cable	Gear train is damaged
Erratic operation of hydraulic function	Air in hydraulic system
Crane will not rotate	Low hydraulic fluid Hydraulic motor defective Bad ground on control valve
Rotation speed too fast or too slow	Flow controls set incorrectly Control valve defective

! CAUTION !

Improperly mounted cranes can injure people or damage property. These instructions describe installation of a **STAHL** crane on a typical **STAHL** service body. Contact the dealer for other service body/truck chassis combinations.

! CAUTION !

The truck chassis must be capable of safely supporting the entire chassis, body, crane, other equipment and the maximum capacity of the crane - 3200 pounds.

STAHL 3200 cranes must be installed on a truck chassis with a GVWR of at least 8000 pounds. The GVWR must exceed the curb weight of the complete vehicle by at least the rated load of the crane (3200lbs). The curb weight is the total weight of the chassis, body, crane, and other equipment. (See example below.)

GVWR = 8800LBS

CURB WT. = BODY WT. (1200 LBS) + CRANE WT. (800 LBS) + CHASSIS WT. (3500 LBS) = 5500 LBS

GVWR (8800 LBS) – CURB WT. (5500 LBS) = 3300 LBS > 3200 LBS

! CAUTION !

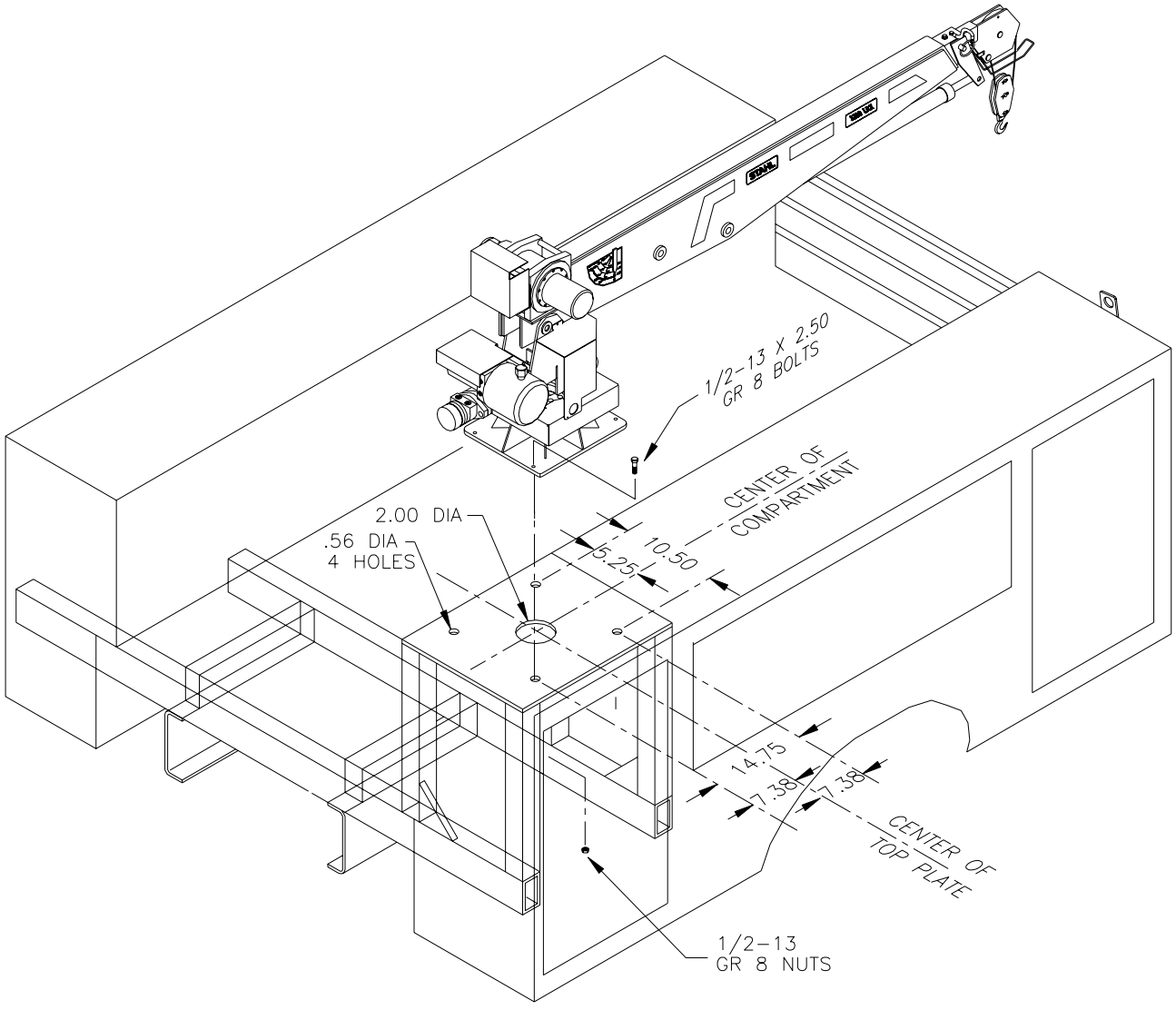
Never attach, change, or use unauthorized components on your **STAHL** crane. This could result in failure of the crane and/or possible injuries and voids any warranty or liability.

! CAUTION !

MOST SERVICE BODIES ARE NOT STRONG ENOUGH TO MOUNT A CRANE!

You must reinforce the compartment and floor before you mount the crane. Get help from the truck dealer or distributor if the **STAHL** 3200 crane is installed on a non-**STAHL** body, in another body/chassis combination or in a different location. It is recommended that a **STAHL** crane body and outriggers be used with the 3200 crane. Consult the distributor for the proper body required for your application.

1. Layout the mounting holes on the mounting surface (refer to figure below). Drill four (4) 0.56" diameter holes and flame cut the two inch (2") diameter hole.
2. Lift the crane into position. Make sure the power lead is fed through the two inch (2") diameter hole.
3. Bolt the 3200 crane to the mounting surface with four (4) 0.50" grade eight bolts and four (4) grade eight lock nuts. Torque the 0.50" bolts to 100 foot pounds. Use of other than 0.50" grade eight bolts and lock nuts may result in the crane breaking loose from the mounting surface when in use. Additionally, star washers should be used between mounting bolts and crane mounting plate to ensure crane is grounded to body.
4. It is necessary to support the boom in the stored position. The boom support should also have a place to secure the hook in the stored position. The figure below shows a typical boom support.



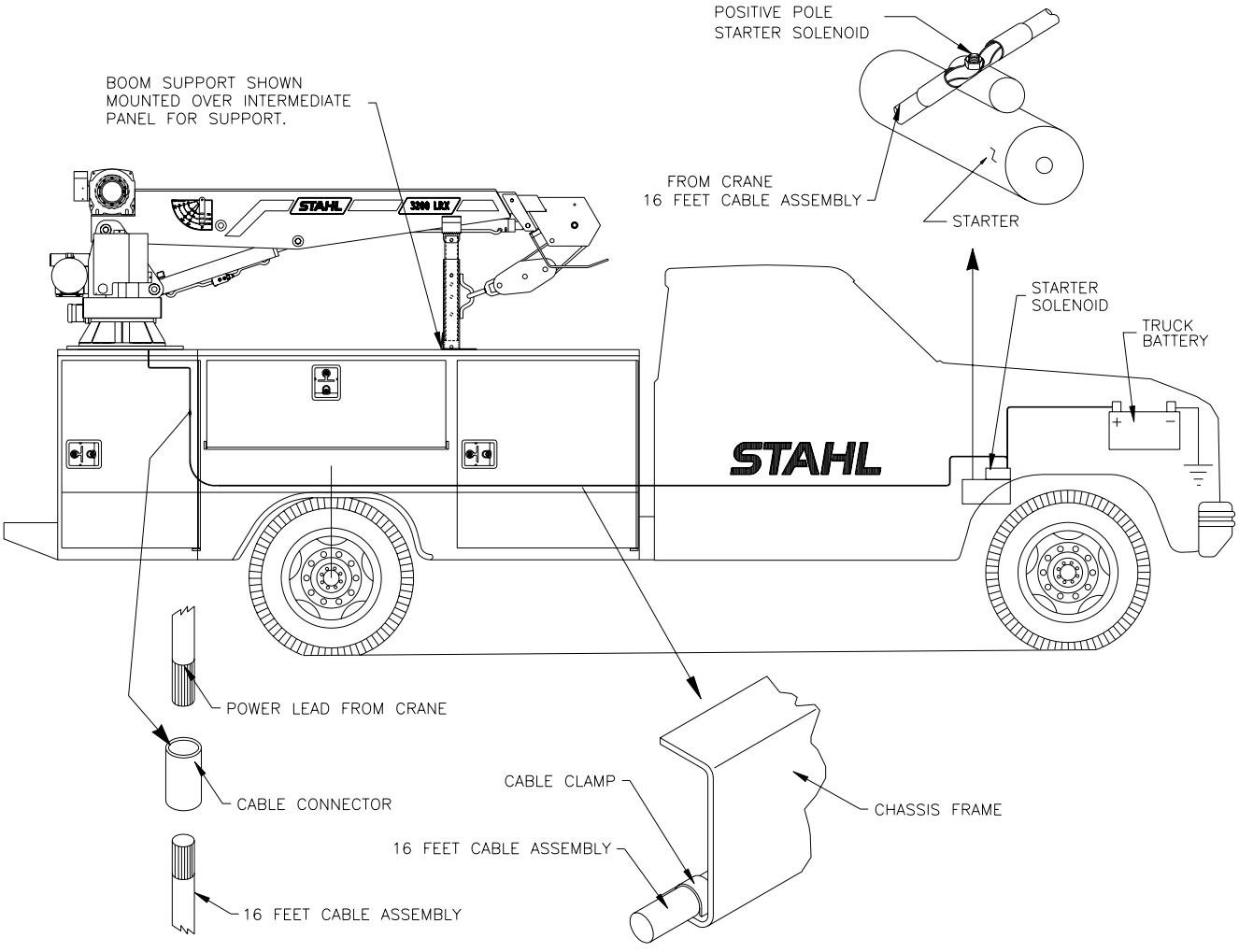
! CAUTION !

-DISCONNECT NEGATIVE BATTERY CABLE BEFORE PROCEEDING-

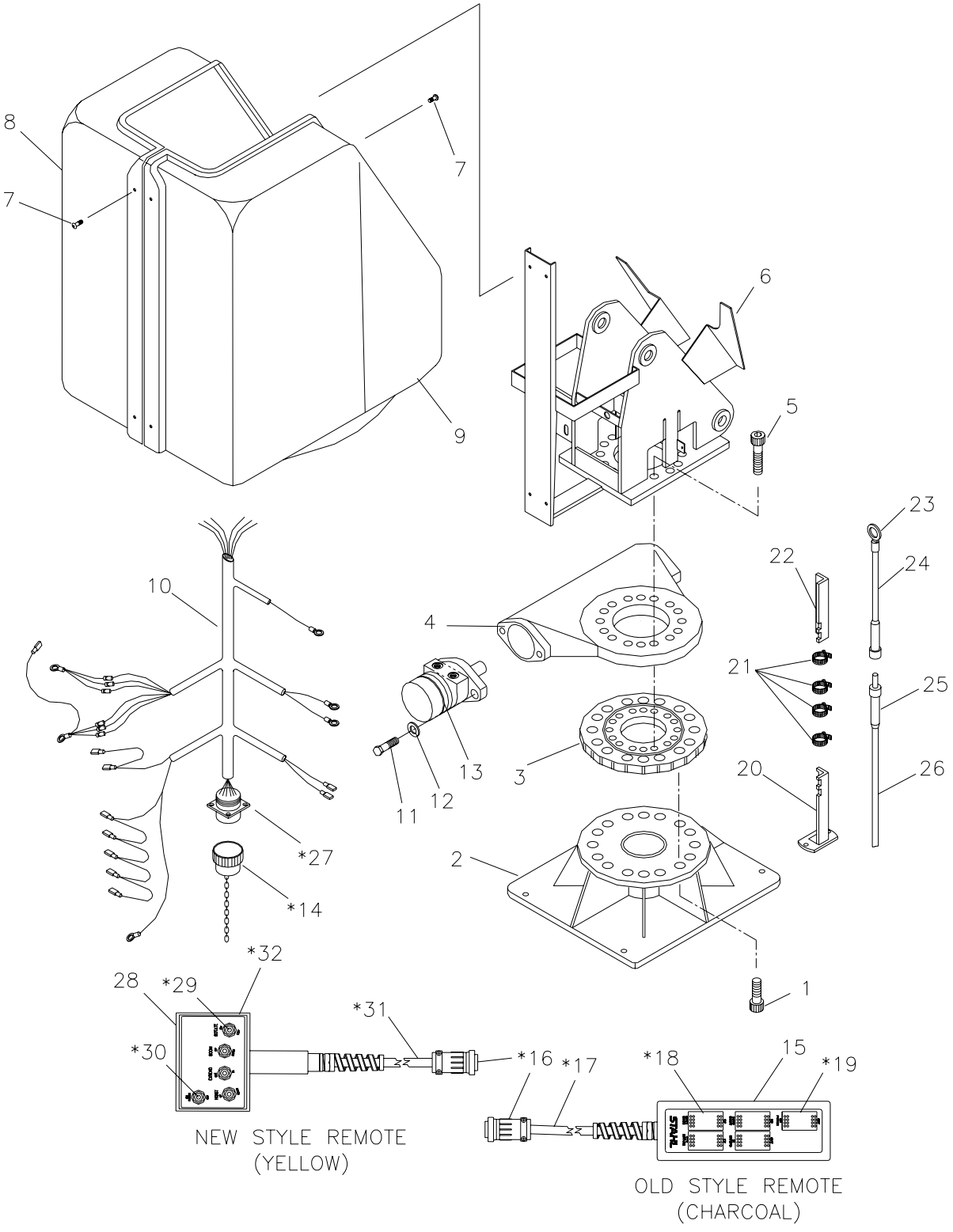
5. Run the power lead to the front of the truck. Locate the lead so that it will be protected. Install cable clamps to hold the wire securely in place.
6. Connect the power wire to the positive terminal on the vehicle battery. **A 250-amp in-line circuit breaker is required near the battery to protect harness from electrical shorts**.
7. Reconnect the negative battery cable. The 3200 crane is self-grounding and does not require an additional ground cable.

! CAUTION !

IF THE POWER WIRE IS ROUTED SO THAT IT PASSES THROUGH ANY BODY OR CHASSIS SHEET METAL, A GROMMET MUST BE USED TO PROTECT WIRES FROM BEING CUT. IF THE POWER WIRE COMES INTO CONTACT WITH A GROUNDED SURFACE, A DEAD SHORT WILL OCCUR POSSIBLY CAUSING DAMAGE TO THE CRANE, VEHICLE BATTERY OR ELECTRICAL SYSTEM.



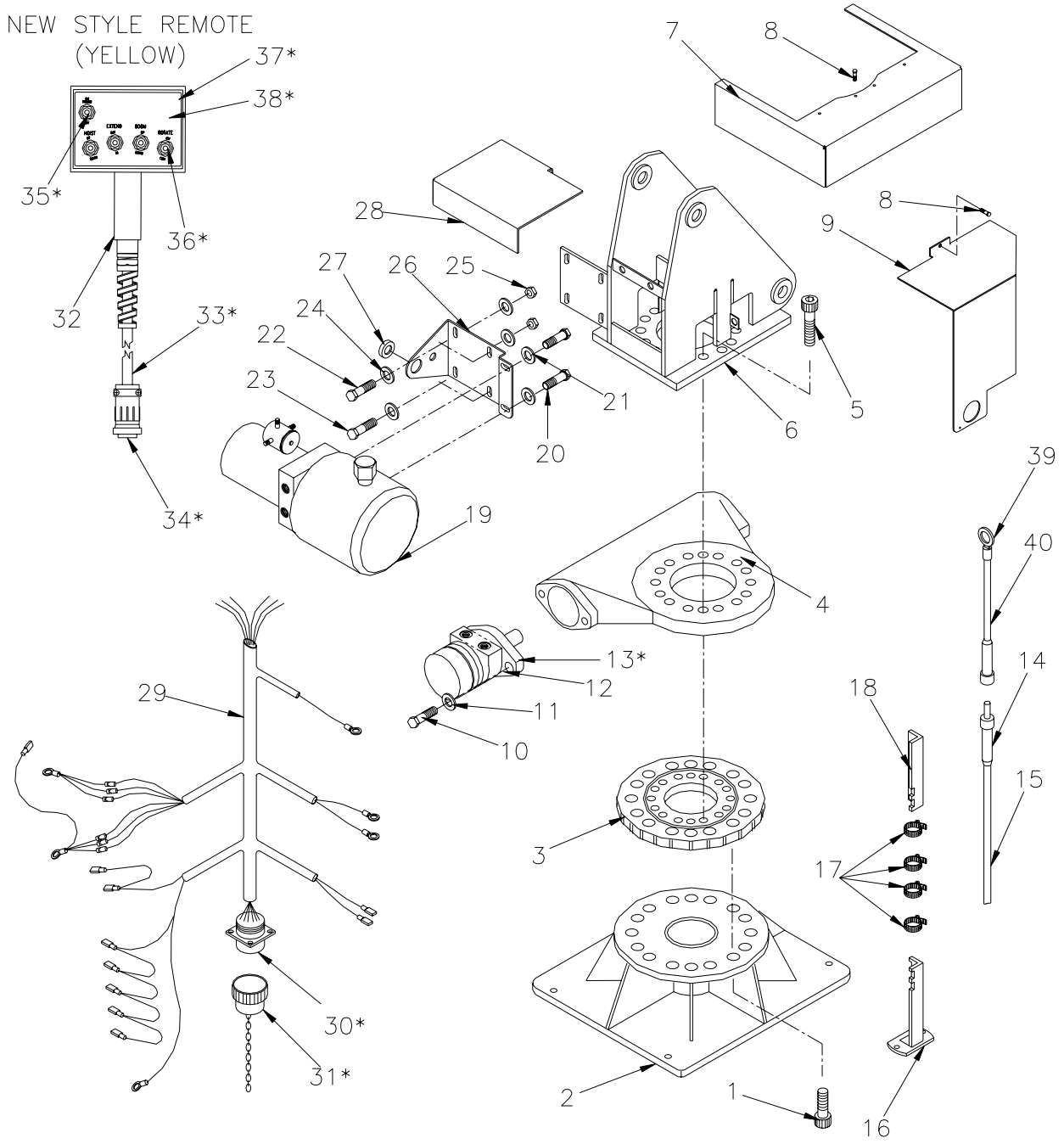
TURRET AND BASE SERVICE PARTS - ILLUSTRATION (PLASTIC SHROUD OPTION)



TURRET AND BASE SERVICE PARTS - PART LIST (PLASTIC SHROUD OPTION)

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	16	964050	5/8"-11 x 2.00" screw
2	1	95477-001	Base weldment
3	1	95483-001	Slewing ring
4	1	95484-001	Rotation drive
5	15	964047	5/8" - 11 x 3.00" SCREW
6	1	95476-001	Turret weldment
7	8	964049	1/4" - 20 x 1/4" ss screw
8	1	95468-001-L	Crane cover-left hand
9	1	95468-001-R	Crane cover-right hand
10	1	95418-001	Harness
11	2	917453	1/2" -13 x 2.00" screw
12	1	95420-001	Hydraulic motor
13	2	919874	1/2 " Lock washer
14	1	95618-006	Dust cap
15	1	95403-001	Remote control
16	1	961675	Male plug
-	12	961676	16 gauge socket
-	4	961679	12 gauge socket
-	7	961677	Seal plug
17	25'	961762	Cable
18	4	963941	Rocker switch-spdt-(on/off/on)
19	1	963942	Rocker switch-spst-(on/off)
20	1	95699-014	Angle-power rotation
21	4	95457-001	Clamp-hose
22	1	95472-001	Angle-power rotation upper
23	1	960680	Copper lug
24	3'	961758	Cable-1 gauge-red
25	1	95453-001	Tweco-connector assembly
26	25'	961758	Cable-1 gauge -red
27	1	95618-007	Receptacle
-	4	95618-009	12 gauge pin
-	12	95618-010	16 gauge pin
-	7	95618-008	Seal plug
28	1	95907-400	Remote control (new style)
29	4	95907-424	Switch-momentary
30	1	95907-425	Switch-maintained
31	1	95907-426	Cable-remote control
32	1	95907-429	Casing-remote control

TURRET AND BASE SERVICE PARTS - ILLUSTRATION (METAL SHROUD-STANDARD)

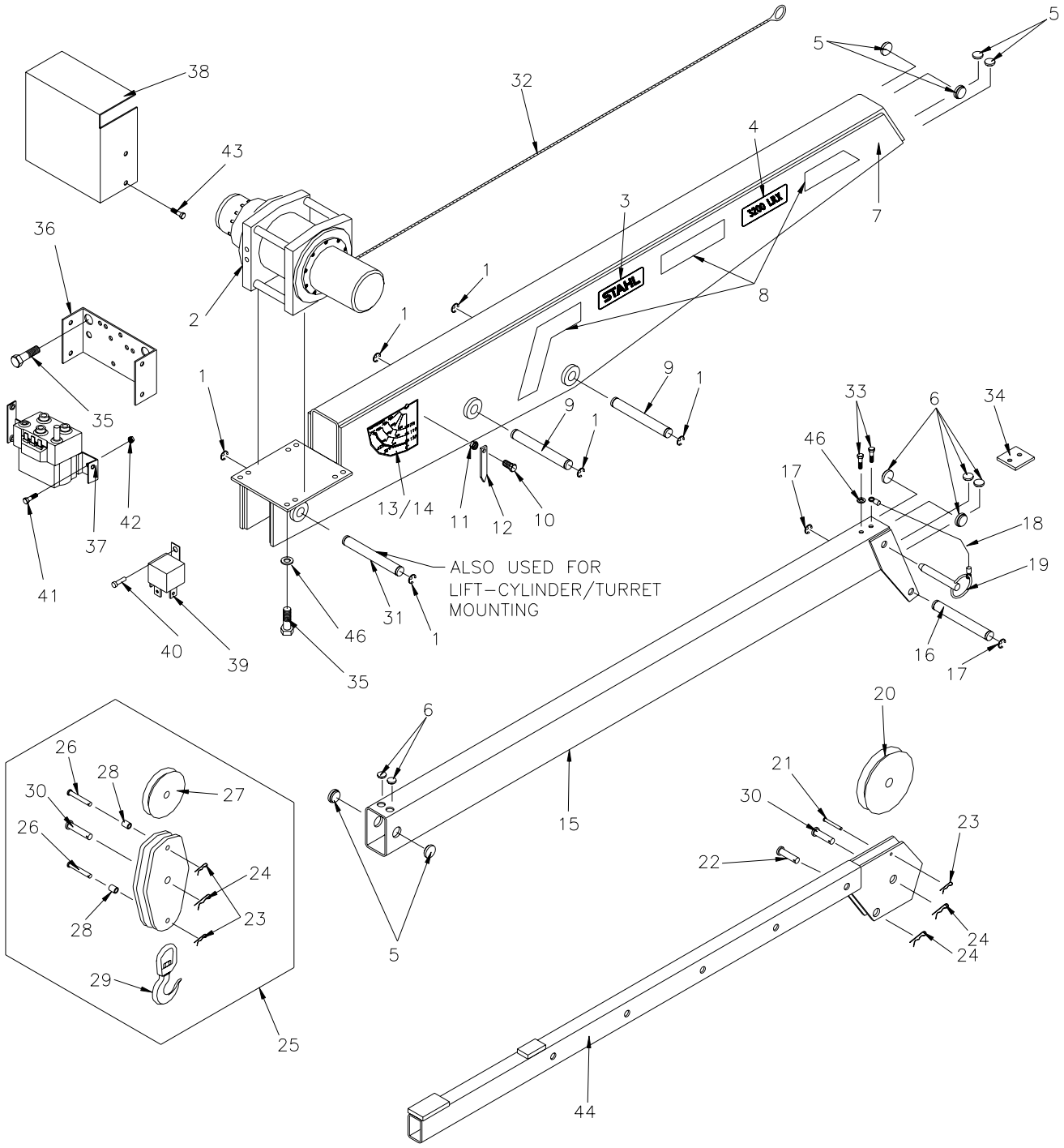


STAHL

TURRET AND BASE SERVICE PARTS - PART LIST (METAL SHROUD-STANDARD)

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	16	964050	5/8"-11 x 2.00" screw
2	1	95477-001	Base weldment
3	1	95483-001	Slewing ring
4	1	95484-001	Rotation drive
5	15	964047	5/8" - 11 x 3.00" SCREW
6	1	95476-001	Turret weldment
7	1	95468-004	Shroud base
8	6	962111	Self tapping screw – 10-24 x 3/8
9	1	95499-024	Shroud – valve cover
10	2	917453	1/2" -13 x 2.00" screw
11	2	919874	½" lock washer
12	1	95420-001	Hydraulic motor
13	1	95907-195	Seal kit-hydraulic motor
14	1	95453-001	Tweco connector assembly
15	20	961767	Cable-1 gauge -red
16	1	95699-014	Angle-power rotation weldment
17	4	95457-001	Clamp-hose
18	1	95472-001	Angle-power rotation upper
19	1	95419-001	12-volt hydraulic power unit
20	2	917351	3/8-16 x ¾ hex head cap screw
21	2	152608	3/8 external tooth lock washer
22	2	917353	3/8-16 x 1.25 hex head cap screw
23	2	917352	3/8-16 x 1.00 hex head cap screw
24	8	919870	3/8 flat washer
25	4	919723	3/8-16 lock nut
26	1	95907-136	Bracket-pump mounting
27	1	95419-012	Grommet
28	1	95168-022	Shroud – solenoid
29	1	95418-001	Harness
30	1	95618-007	Receptacle
-	4	95618-009	12 gauge pin
-	12	95618-010	16 gauge pin
-	7	95618-008	Seal plug
31	1	95618-006	Dust cap
32	1	95907-400	Remote control (new style)
33	1	95907-426	Cable-remote control
34	1	961675	Male plug
-	12	961676	16 gauge socket
-	4	961679	12 gauge socket
-	7	961677	Seal plug
35	1	95907-425	Switch-maintained
36	4	95907-424	Switch-momentary
37	1	95907-429	Casing-remote control
38	1	95907-467	Face plate
39	1	960680	Copper solder lug
40	6'	961758	Cable-1 gauge-red

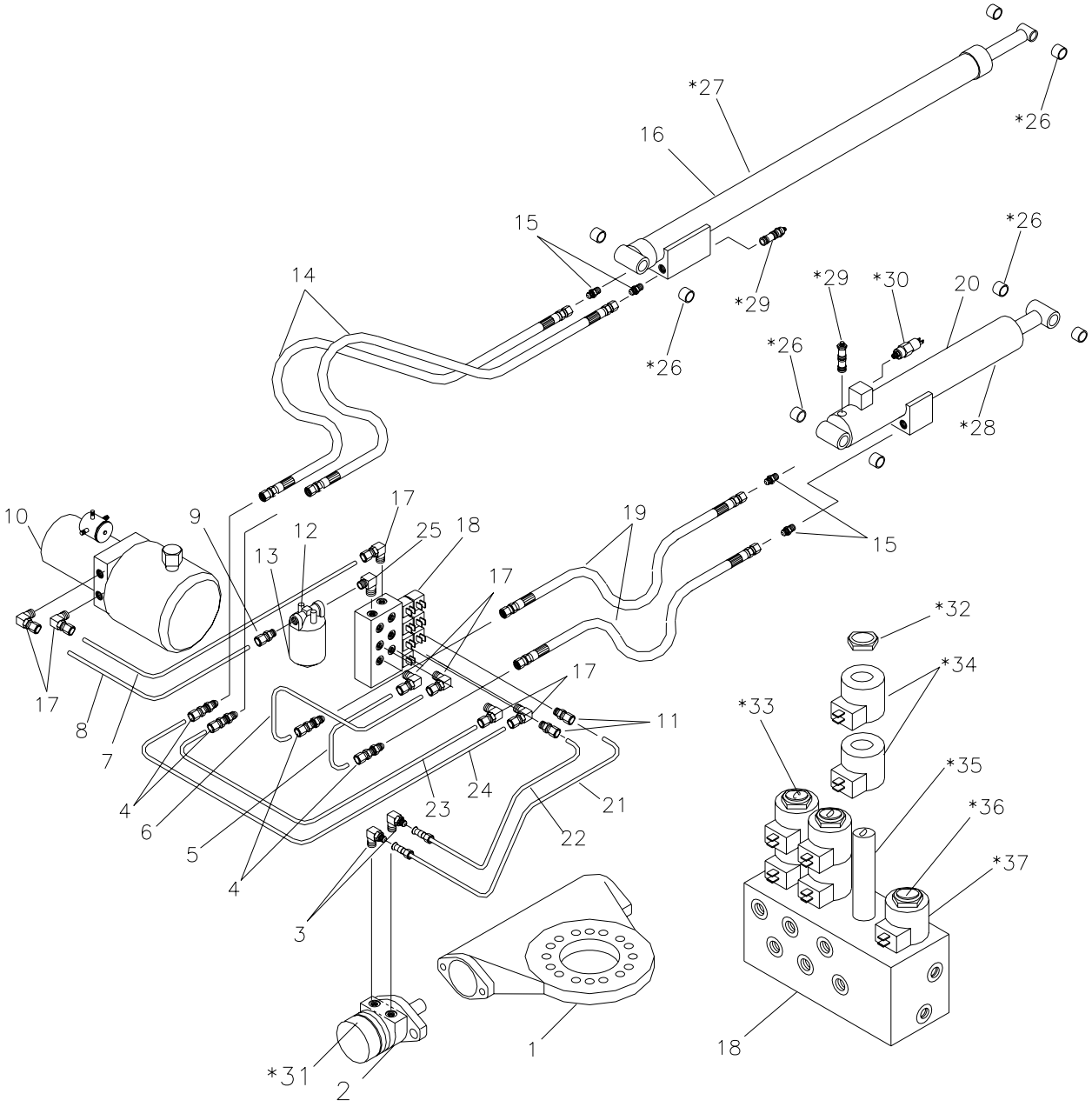
BOOM ASSEMBLY SERVICE PARTS - ILLUSTRATION



BOOM ASSEMBLY SERVICE PARTS - PARTS LIST

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	8	95456-001	Snap ring – 1.00" shaft
2	1	95499-023	Hoist
3	2	95415-001	STAHL decal
4	2	95417-001	3200 LRX decal
5	6	95079-001	Large boom plug
6	6	95421-001	Small boom plug
7	1	95431-001	Main boom weldment
8	1	95475-001	Black striping decal
9	2	95459-001	1.00" boom pin
10	2	917494	1/4"-20 x 3/4" hex head cap screw
11	2	919003	1/4" - 20 nut
12	2	95480-001	Arrow
13	1	95416-001	Load chart – 3200 Left hand
14	1	95416-002	Load chart – 3200 right hand
15	1	95435-001	Hydraulic boom weldment
16	1	95461-001	Extension cylinder pin
17	2	95458-001	Snap ring – 3/4" shaft
18	1	95499-001	12" lanyard
19	1	95499-003	1/2" x 3.50" Clevis pin
20	1	95410-001	Jib end sheave
21	1	95422-004	3/8" x 1.75" Clevis pin
22	1	95422-003	3/4" x 2.00" Clevis pin
23	3	925063	2.31" cotter pin
24	3	95424-002	2.68" cotter pin
25	1	95427-001	Snatch block complete
26	2	95422-001	1/2" Clevis pin
27	1	95411-001	Pulley block sheave
28	2	95428-001	Spacer
29	1	95413-001	Hook with catch
30	2	95907-197	Clevis pin with grease fitting - 3/4" x 2.00"
31	2	95460-001	1.00" turret pin
32	1	95401-002	1/4" diameter X 62' cable
33	2	917326	¼-20 x 0.50 hex head cap screw
34	1	95487-001	Plate-stop, front
35	6	-	M12 x 1.75 8.8 metric bolts 1.18" (30mm) long
36	1	95499-015	Cover mounting bracket
37	1	95907-231	Contactor-hoist-12 volt
38	1	95499-016	Cover contactor
39	1	963940	Relay-12 volt
40	1	918388	3/16 x 5/16 aluminum pop rivet
41	2	917155	10-24 x ½ round head machine screw
42	2	919505	10-24 lock nut
43	4	962111	Self tapping screw – 10-24 x 3/8
44	1	95440-001	Manual boom assembly
45	5	919874	½" lock washer
46	1	919864	¼" lock washer

HYDRAULIC COMPONENT SERVICE PARTS - ILLUSTRATION



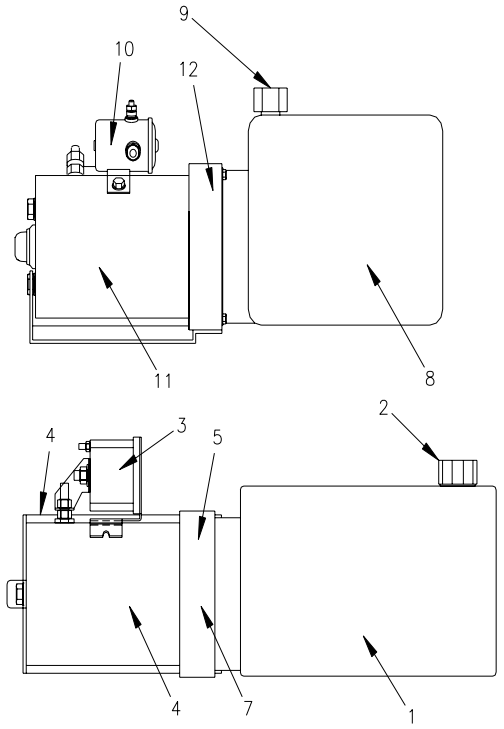
STAHL

HYDRAULIC COMPONENT SERVICE PARTS - PARTS LIST

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	1	95484-001	Rotation drive
2	1	95420-001	Hydraulic rotation motor
3	2	95488-003	Male elbow-3/8 JIC to 7/8 o-ring
4	4	95488-005	Bulkhead union-3/8 tube to 3/8 JIC
5	1	95498-005	Tube – valve to lift
6	1	95498-007	Tube – valve to lift
7	1	95498-008	Tube – valve to pump
8	1	95498-006	Tube – valve to pump
9	1	95488-004	Male connector-3/8 pipe to 3/8 JIC
10	1	95419-001	12-volt hydraulic power unit
11	2	95488-010	Male connector-3/8 tube to 9/16 o-ring
12	1	938814	Filter housing
13	1	938815	Filter
14	2	95498-010	33" hose
15	4	95488-001	Male connector-3/8 JIC to 9/16 o-ring
16	1	95408-001	Extension cylinder
17	7	95488-006	Positionable elbow-3/8 tube to 9/16 o-ring
18	1	95482-001	Valve – 3200
19	2	95498-009	18" hose
20	1	95407-001	Lift cylinder
21	1	95498-001	Tube – valve to motor
22	1	95498-002	Tube – valve to motor
23	1	95498-004	Tube – valve to extension
24	1	95498-003	Tube – valve to extension
25	1	95488-009	Male elbow-3/8 pipe to 9/16 o-ring
26	8	903124	Bushing-16du16
27	1	95907-177	Seal-kit-extension cylinder
28	1	95907-176	Seal-kit-lift cylinder
29	2	95907-093	Counter balance valve
30	1	95723-003	Pressure switch
31	1	95907-195	Seal kit
32	4	95907-331	Nut
33	1	95907-192	Cartrage-4 way #8 (rotation port)
34	6	95907-297	Solenoid –12v #8
35	2	95907-199	Cartrage-4way #8 (cylinder ports)
36	1	95907-171	Dump valve cartrage-2 way
37	1	95907-098	Solenoid – 10v #8 (dump valve)

HYDRAULIC POWER UNIT SERVICE PARTS - ILLUSTRATIONARTS LIST

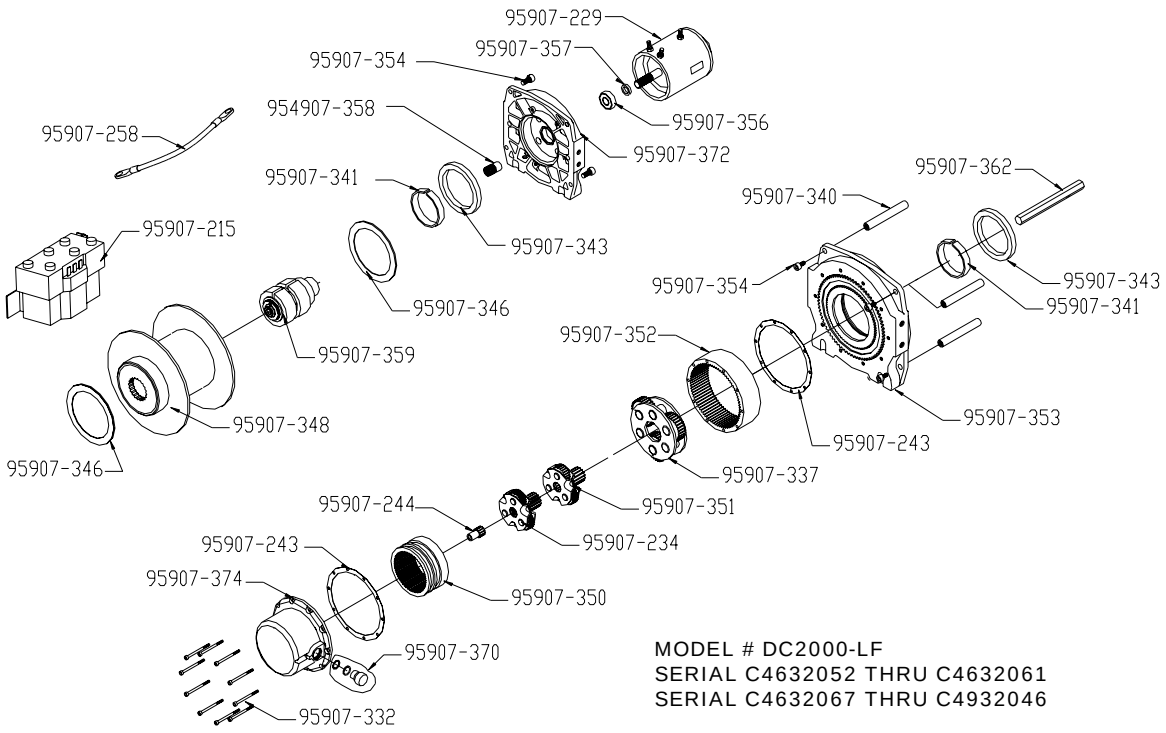
OLDER SERIES PUMP
SERIAL NUMBERS 1990-C4432007 & C4432009-C44320026



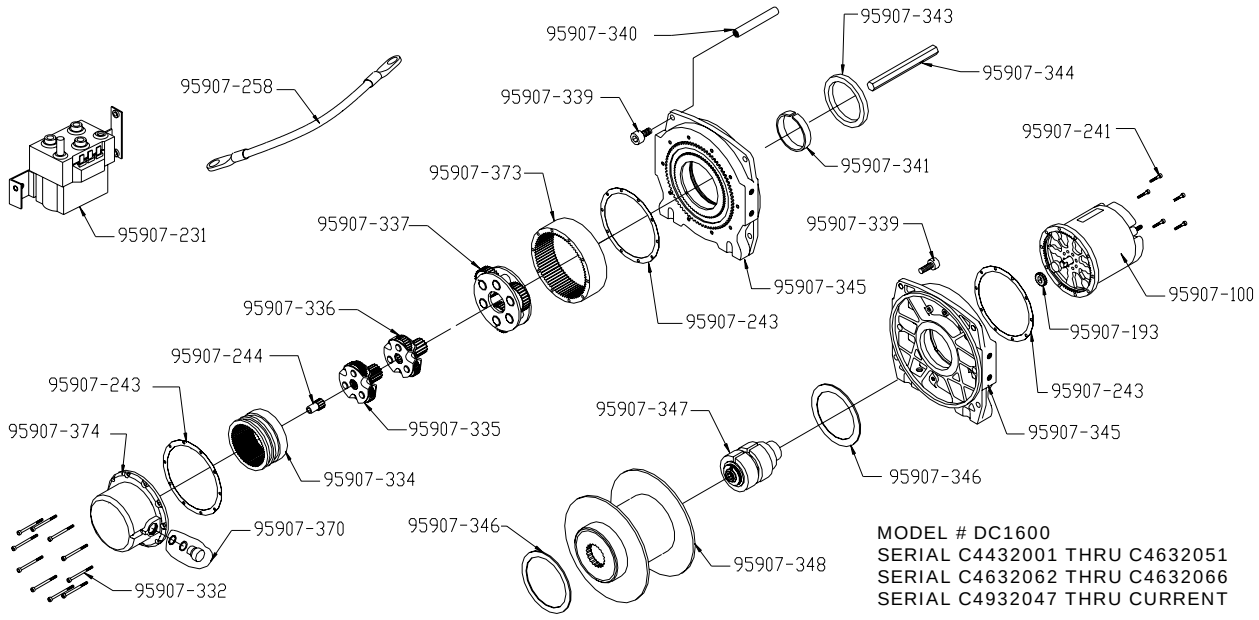
NEW STYLE PUMP
SERIAL NUMBERS C4432008 & C4432027-PRESENT

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	1	95907-517	Reservoir -1 gallon
2	1	95907-519	Breather cap – reservoir
3	1	95907-518	Starter solenoid
4	1	95907-516	Motor 12 volt
5	1	95907-522	Valve manifold
6	1	95907-521	Mounting bracket
7	1	95907-520	Pump
8	1	95907-490	Reservoir – 1 gallon (old style)
9	1	95907-173	Breather cap – reservoir (old style)
10	1	95907-143	Starter solenoid (old style)
11	1	95907-191	Motor – 12 volt (old style)
12	1	95907-491	Pump (old style)

WINCH SERVICE PARTS - ILLUSTRATION

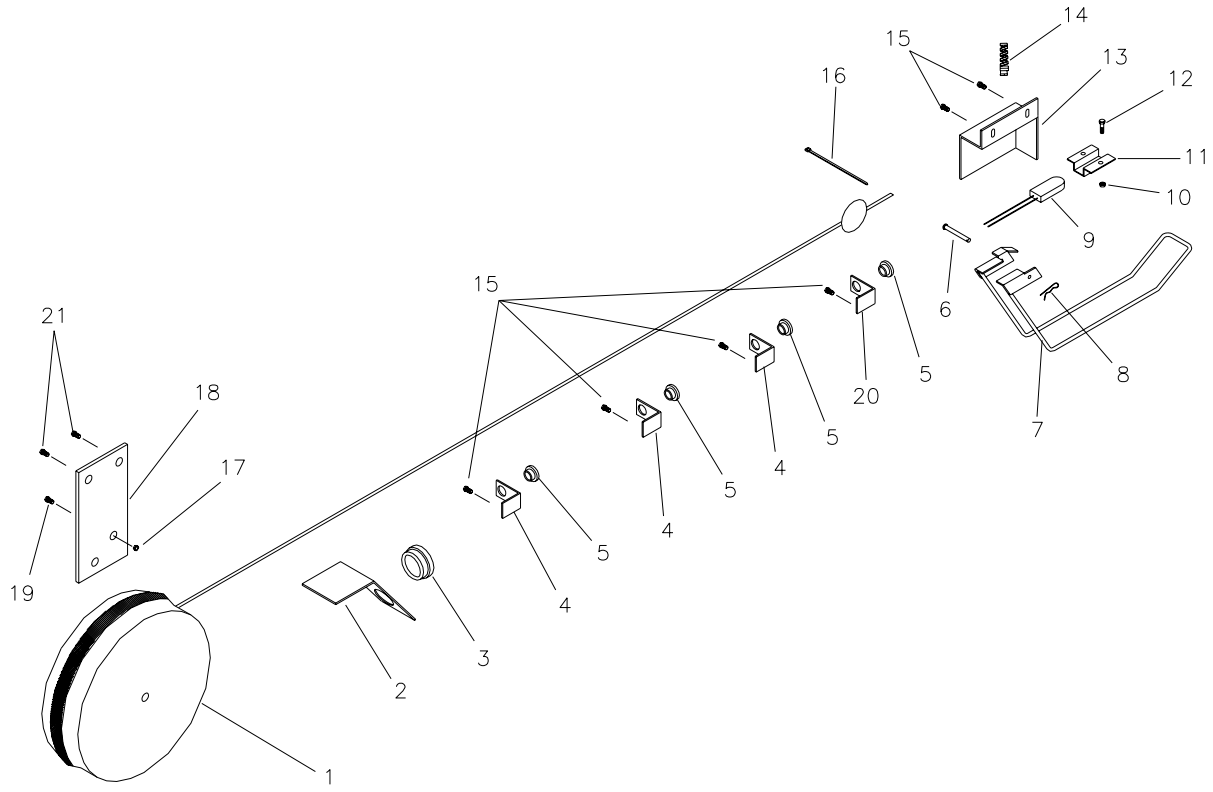


MODEL # DC2000-LF
SERIAL C4632052 THRU C4632061
SERIAL C4632067 THRU C4932046



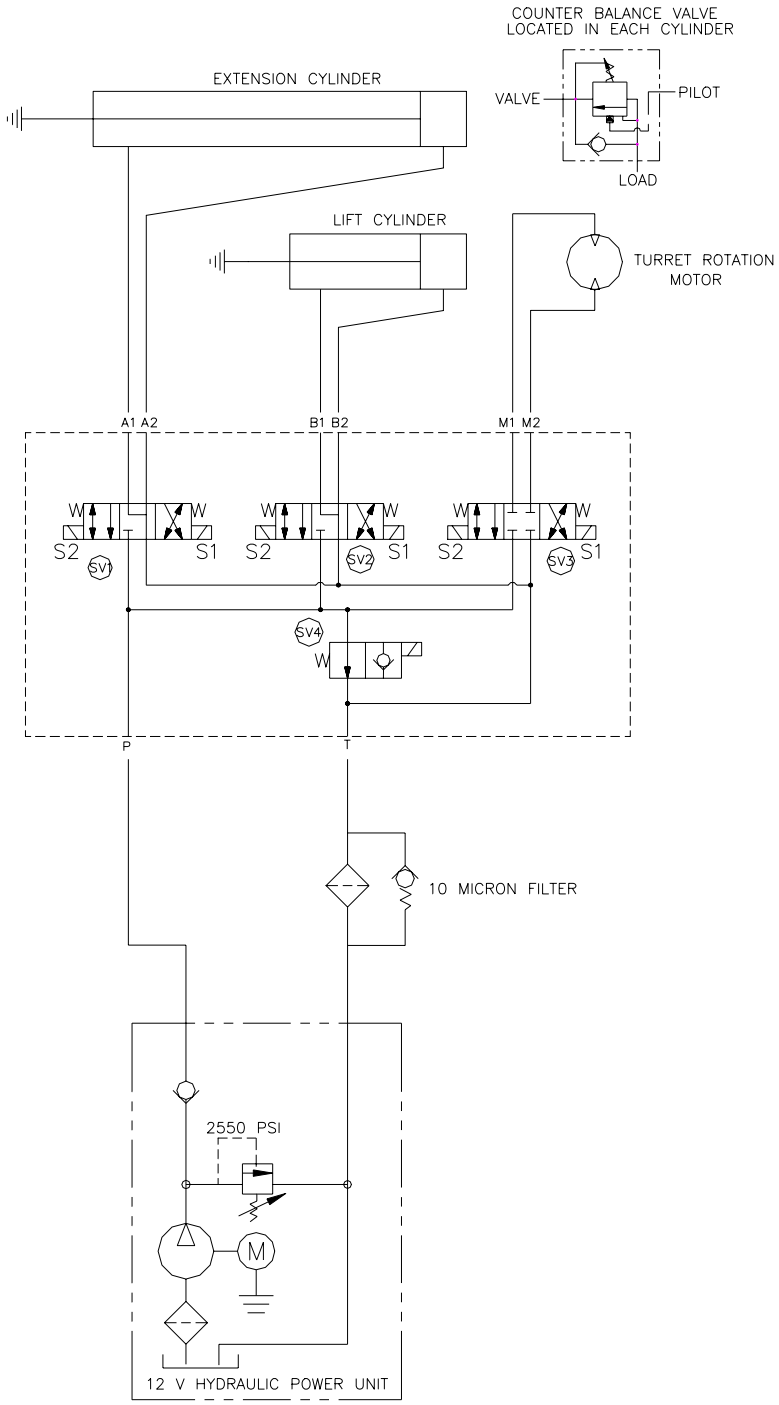
MODEL # DC1600
SERIAL C4432001 THRU C4632051
SERIAL C4632062 THRU C4632066
SERIAL C4932047 THRU CURRENT

ANTI TWO-BLOCK PARTS

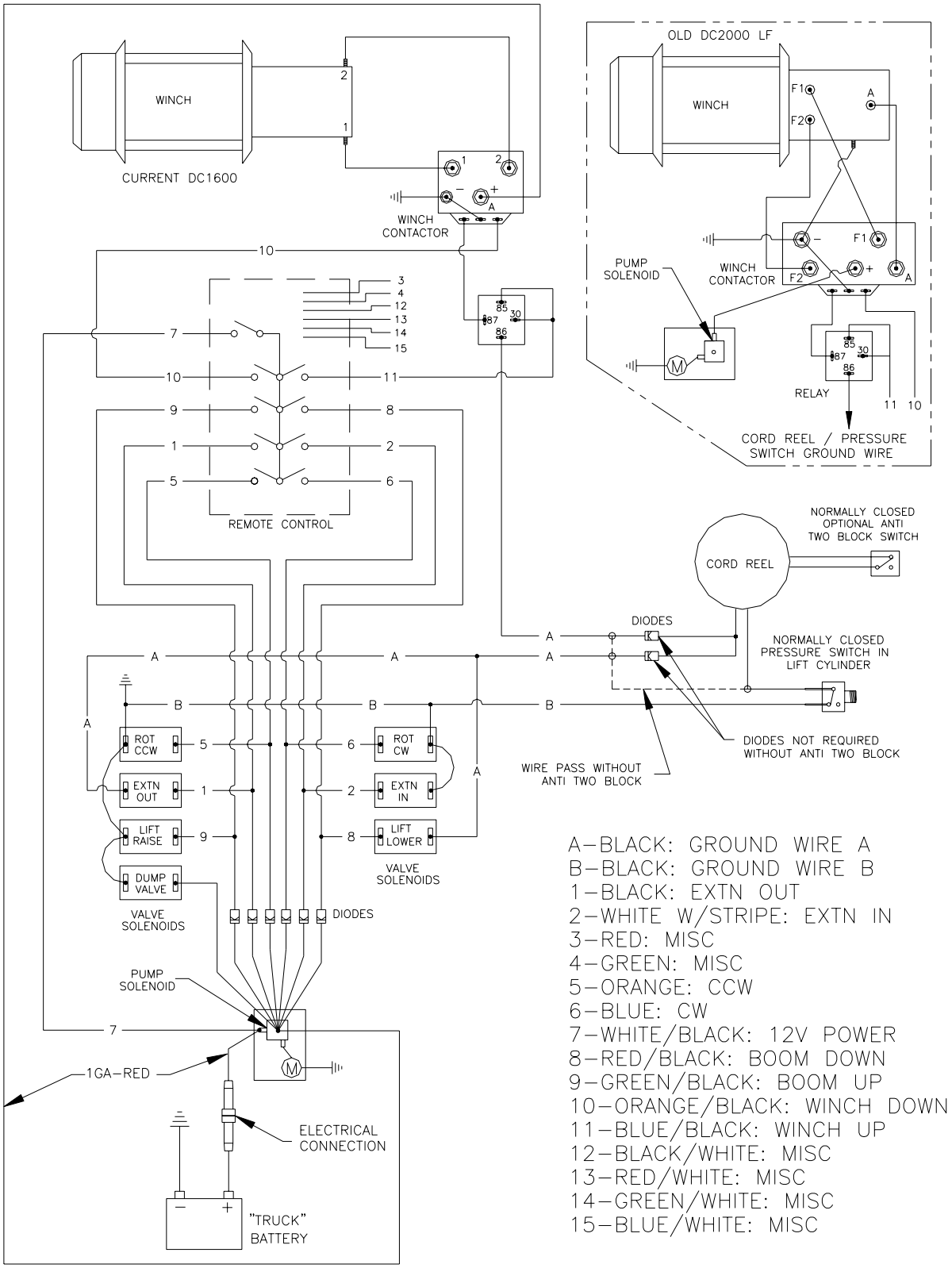


ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	1	95467-001	Cord reel
2	1	95493-012	Bushing bracket–winch
3	1	927204	Bushing
4	3	95493-006	Bracket bushing – main
5	4	95493-005	Short bushing
6	1	95422-005	Clevis pin
7	1	95493-015	Cable Guide Weldment
8	1	95424-001	Cotter pin
9	1	95493-002	Waterproof switch
10	2	919717	8-32 lock nut
11	1	95493-003	Switch holder – genelco
12	2	917144	8-32 x 1/2" screw
13	1	95493-007	Cover
14	1	95493-004	Strain relief
15	6	962110	¼-20 x 3/8" self tapping screw
16	1	960802	Nylon tie strap
17	1	919001	8-32 nut
18	1	95493-013	Bracket cord reel
19	1	917092	8-32 flat head screw
	1	95493-011	Hydraulic bracket bushing
21	2	962111	10-24 x 3/8" self tapping screw

HYDRAULIC SCHEMATIC



WIRING DIAGRAM



A–BLACK: GROUND WIRE A
B–BLACK: GROUND WIRE B
1–BLACK: EXTN OUT
2–WHITE W/STRIPE: EXTN IN
3–RED: MISC
4–GREEN: MISC
5–ORANGE: CCW
6–BLUE: CW
7–WHITE/BLACK: 12V POWER
8–RED/BLACK: BOOM DOWN
9–GREEN/BLACK: BOOM UP
10–ORANGE/BLACK: WINCH DOWN
11–BLUE/BLACK: WINCH UP
12–BLACK/WHITE: MISC
13–RED/WHITE: MISC
14–GREEN/WHITE: MISC
15–BLUE/WHITE: MISC

COVERED PRODUCTS:

- ***STAHL*** **Crane –** One (1) year from the date of purchase by the original owner of record for s parts including the structural integrity of the crane boom assembly, turret assembly, and base plate weldment. Product(s) not made of galvaneal steel are warranted to the original owner of record for 180 days from the date of purchase.
- Should the warranted product rust through s will cover labor and materials to replace and/or repair defective materials and/or install new materials (solely at the discretion of s)
- The foregoing collectively constitutes the "Warranty".

ELIGIBILITY.

- This Warranty shall only apply to products listed herein and initially purchased after June 1, 1995
- Product(s) warranted must be properly maintained and serviced under the guidelines recommended in the owner's manual. The original owner must complete and submit the warranty registration card within thirty (30) days of purchase.
- This Warranty applies only when an authorized s up fitter properly installs the product, and it is used for the purpose for which it was designed.
- This Warranty is not transferable.

EXCLUSIONS

- This Warranty applies to s Cranes only and excludes all items supplied by distributors or mounting stations including, but not limited to finish paint, lettering, installation, wiring, optional parts, modifications and the like.
- Product(s) that have been misused, abused, altered, or intentionally damaged.

SPECIFIC "NO RUST, NO BUST" WARRANTY EXCLUSIONS

- Product(s) must have perforation in the metal. Rust in the paint or surface rust is not considered rust through.
- Product(s) purchased in prime paint condition.
- Product(s) purchased and used outside the United States and Canada.
- Product(s) used to carry corrosive materials.
- ***STAHL*** shall not be liable to the original owner/user or any third party for any direct or indirect, incidental or consequential damages including, but not limited to, transportation costs, lost profits, and loss of income, as a result of a vehicle being out of service.

WARRANTY CLAIMS PROCEDURE

- Claims may be handled by contacting your nearest authorized s distributor. All claims are to be filed in writing and will be administered through a ***STAHL*** distributor. All repairs must be authorized by s prior to any work being performed and must be done by an authorized s distributor or by a person or company pre-approved by s in writing.
- ***STAHL*** reserves the right to inspect products returned by the original owner under this Warranty to determine whether the product is covered. Inspection shall, at ***STAHL***'s option, be performed at the factory, or at such other reasonable place as may be designated by s, and in such event freight for returning products shall be paid by the original owner. ***STAHL*** also reserves the right to require dated proof of purchase from the original owner. Unauthorized repair or replacement prior to inspection or repair or replacement not in accordance with s recommendations and procedures may void the Warranty.

.

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATIONS OF REMEDIES:

THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, GIVEN BY s FOR THIS PRODUCT. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED. THE PURCHASER'S REMEDIES FOR LOSS, DAMAGE, OR EXPENSE RESULTING FROM THE USE OR MISUSE OF THIS PRODUCT ARE LIMITED TO THOSE EXPRESSED IN THIS LIMITED WARRANTY.

THIS LIMITED WARRANTY GIVES PURCHASER SPECIFIC LEGAL RIGHTS, AND PURCHASER MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE. SOME STATES DO NOT ALLOW DISCLAIMERS OF OR LIMITATIONS ON IMPLIED WARRANTIES OR THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE DISCLAIMER AND LIMITATION MAY NOT APPLY TO PURCHASER