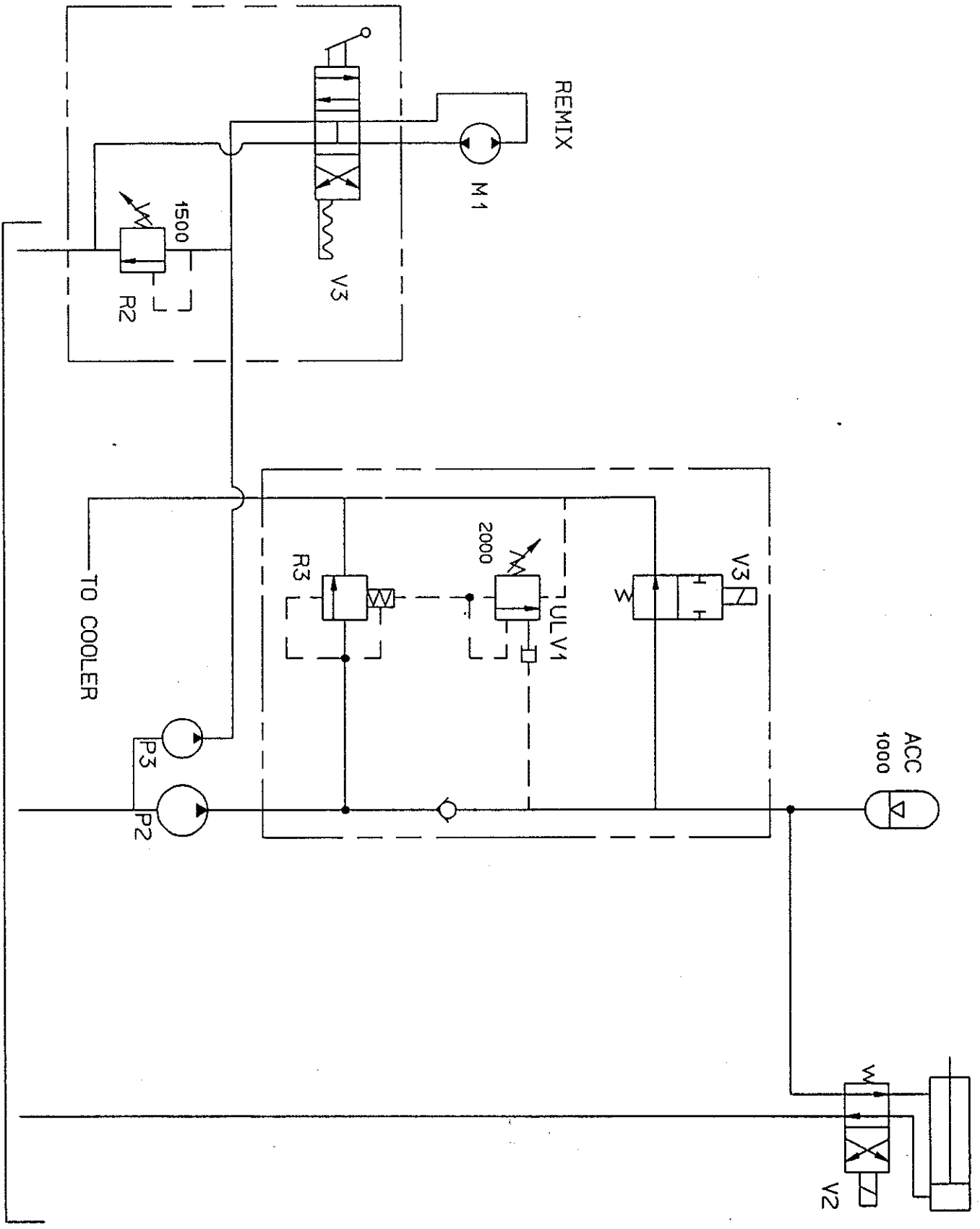


R 3000

HVD-100A  
12-2-92/EH

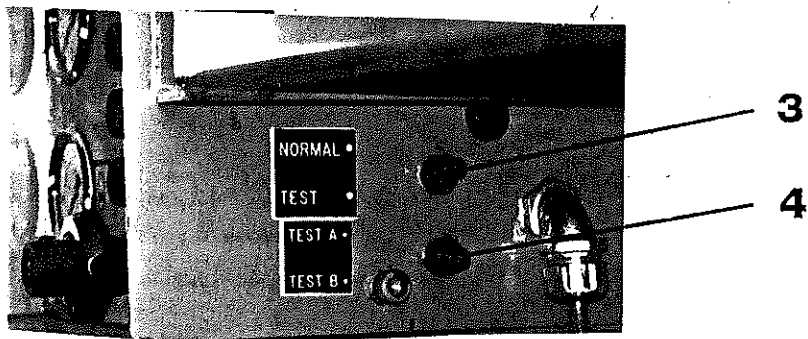
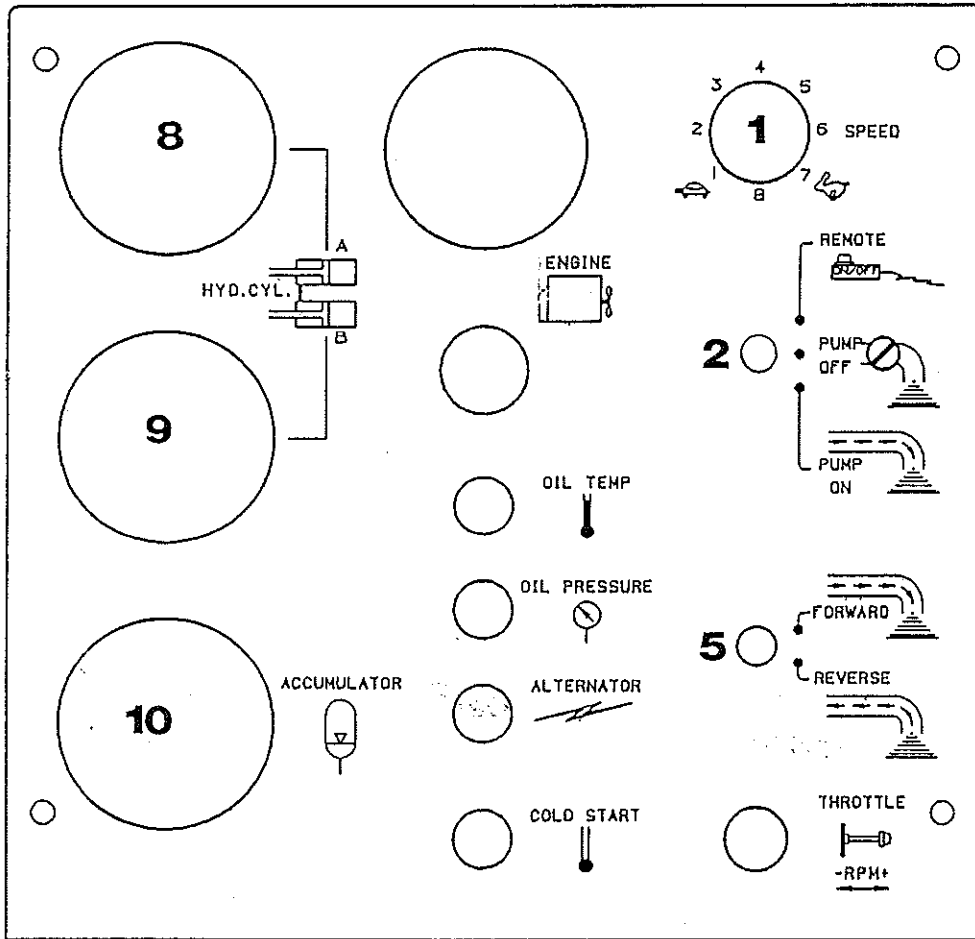


HYDRAULIC SCHEMATIC - AUXILIARY CIRCUIT R 3000

SECTION 7

PRINCIPLES OF OPERATIONS

A. R 3000 SERIES CONTROL PANEL



## OPERATION OF THE REED 3000 SERIES

1. Prior to starting the engine, check hydraulic oil level and engine oil level.
2. Before starting the engine make sure that the pump switch is in the "OFF" position (switch #2).
3. To start pumping, move the pump switch to the "ON" position (switch #2).
4. For remote operation, move the pump switch to the remote position (switch #2). The pump can now be controlled both from the 100' remote cord or via the control panel. Switching the pump switch back to the pump "OFF" position will override the remote control cord for safety purposes.
5. The #1 switch controls the swing tube direction. When in "FORWARD" the swing tube cycle is in an A/B mode and when in "REVERSE" the swing tube cycle will be in an B/A mode.
6. For special situations such as servicing the pump or getting out of an extreme high pressure pack condition in which the swing tube will not reverse, hold switch No.5 (not shown) in the "TEST" position. This provides manual control of both pumping cylinders via switch No.6 (not shown). When in "TEST" mode it is recommended to have the speed control in a slow setting such as "4".
7. The No.3 gauges indicate the pumping cylinder hydraulic pressures. At 4000 psi on the gauge, the concrete piston face pressure is 1173 psi.
8. Gauge No.4 indicates the swing circuit pressure. This should read approximately 2000 psi with the engine running.

**NOTE:** Until the operator is familiar with the control panel, it is not uncommon to forget to set the "speed" control at a setting of approximately "4" or higher during start-up. If set too low the pump will not cycle.

## OPERATION OF THE REED 3000 SERIES

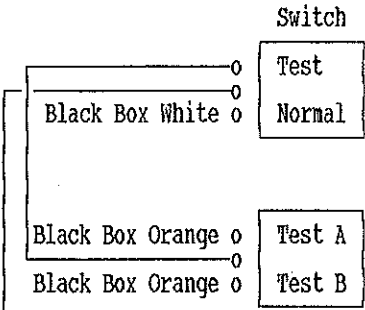
1. Prior to starting the engine , check engine oil and hydraulic oil (levels).
2. Before starting the engine make sure that the pump switch is in the off position (switch #2).
3. To start pumping, move the pump switch to the on position (switch #2).
4. For remote operation, move the pump switch to the remote position (switch #2). The pump can now be controlled both from the 100' remote cord or via the control panel. Switching the pump switch back to the pump off position will override the remote control cord for safety purposes.
5. The no. 5 switch controls the swing tube direction. When in "Forward" the swing tube cycle is in an A/B mode and when in "Reverse" the swing tube cycle will be in an B/A mode.
6. For special situations such as servicing the pump or getting out of an extreme high pressure pack condition in which the swing tube will not reverse, hold switch no. 3 in the "Test" position. This provides manual control of both pumping cylinders via switch no. 4, when in "Test" mode it is recommended to have the speed control in a slow setting such as "4".
7. Gauges 8 and 9 indicate the pumping cylinder hydraulic pressures. At 4000 psi on the gauge, the concrete piston face pressure is 1173 psi.
8. Gauge no. 10 indicates the swing circuit pressure. This should read approximately 2000 psi with the engine running.

Note: Until the operator is familiar with the control panel, it is not uncommon to forget to set the "speed" control at a setting of approximately "4" or higher during start-up. If set to low the pump will not cycle.

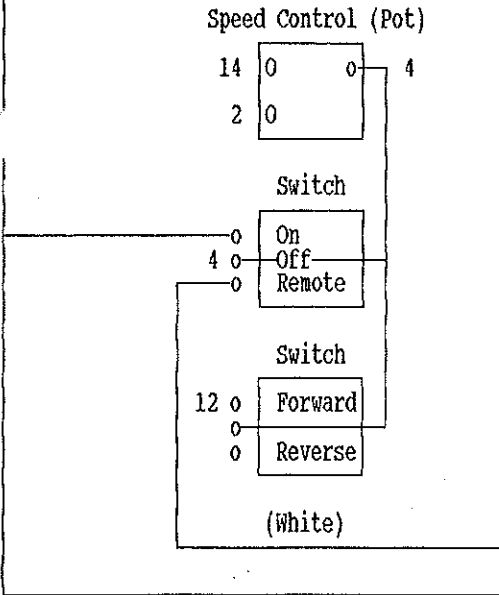
**REED MODEL 3040 CONCRETE PUMP (DIESEL)**  
**ELECTRICAL CONTROL PANEL (12 VOLT DIAGRAM)**  
 (REVISED 4/9/92)

TERMINAL BOARD

IN MAIN ELECTRICAL PANEL



IN REMOTE CONTROL PANEL



- Pot (Orange)
- Lights, Hourmeter, Temp Gauge, (Brown)
- Pot, On/Remote, Forward/Reverse (Blue)
- Dump Valve (Black)
- Hourmeter (Blue)
- Prox B (Black)
- Prox A (Black)
- Swing Valve (Black)
- Pump PCP A (Red)
- Pump PCP B (Yellow)
- Forward Switch (Red)
- Pump PCP (Green) & (Brown)
- Potentiometer (Green)
- White

0	1		Black Box (Brown)
0	2		Cold Start (White)
0	3		Prox Sensors (Brown)
0	4		Black Box (Blue), Ground (Blue)
0	5		
0	6		Temp (Blue), Prox Sensors (Blue)
0	7	0	Black Box (Black)
0	8	0	Black Box (Black/White)
0	9	0	Black Box (Green)
0	10	0	Black Box (Red)
0	11	0	Black Box (Yellow)
0	12	0	Black Box (Gray)
0	13	0	
0	14	0	Resistor (100 Ohms)
0	15	0	Optional On/Off Remote (100')
0	16	0	Optional On/Off Remote (100')

- Swing Valve (White)
- Key Switch (Brown)

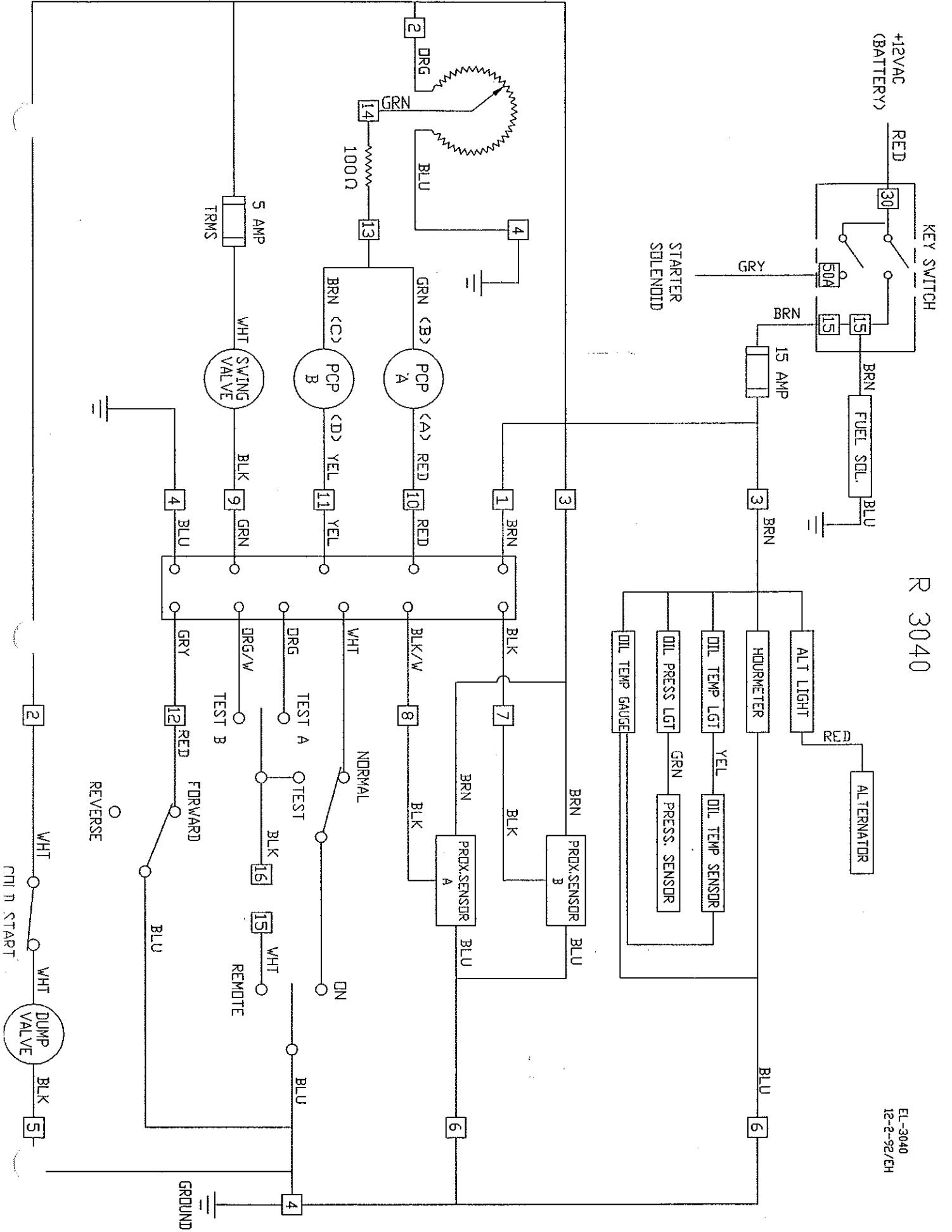
5 Amp  
 P/N 72828  
 15 Amp  
 P/N 90386

REMOTE PANEL WIRE COLORS

- F/R (Red)
- Ground (Blue)
- Optional 100' Remote (Black, White)
- Potentiometer (Green, Orange)

# R 3040

EL-3040  
12-2-92/EH



**REED MANUFACTURING**

**Section 9: DELIVERY LINE DATA**

**CONCRETE PLACING SYSTEM  
ENGINEERING DATA**

Pipe Diameter (Inside)		In.	2	3	4	5	6	7	
Cross-Sectional Area (Inside the Pipe)	In. <sup>2</sup>		3.1	7.1	12.6	19.6	28.3	38.5	
	Ft. <sup>2</sup>		.02	.05	.09	.14	.20	.27	
Volume of Concrete Per 100 ft. of Pipe	Ft. <sup>3</sup>		2.0	5.0	9.0	14.0	20.0	27.0	
	Yd. <sup>3</sup>		.07	.19	.33	.52	.74	1.00	
Weight of Concrete Per 10 ft. Section of Pipe	at 150 lb. per cu.ft.	Lb.	30	75	135	210	300	405	
Pipe Length Per Yd <sup>3</sup> of Concrete		Ft.	1,350	540	300	193	135	100	
<b>Yd<sup>3</sup> Per Hour Velocity</b>									
Delivery Capacity (Yd <sup>3</sup> /Hr) For Placing Line System Indicated by Feet Per Second	FEET PER SECOND VELOCITY	1	Yd. <sup>3</sup>	2.9	6.6	11.7	18.2	26.2	35.7
		2		5.7	13.2	23.3	36.3	52.4	71.3
		3		8.6	19.7	35.0	54.5	78.6	107.0
		4		11.5	26.3	46.7	72.6	104.8	142.6
		5		14.4	32.9	58.3	90.8	131.1	178.3
		6		17.2	39.5	70.0	108.9	157.3	213.9
Nominal Maximum Size Aggregate	Rich Mix	In.		.75	1.00	1.50	1.75	2.00	2.50
	Lean Mix			.50	.75	1.00	1.25	1.50	1.50+

Capacities were obtained by standard hydraulic formula (multiply cross-sectional areas given by velocities listed).



**REED MANUFACTURING**

**Facts - For Your Information in  
SETTING UP SYSTEMS**

Here is some general information you can use for determining the setup requirements for concrete placing line system.

**CONCRETE PLACING LINE WEIGHTS**

Weight in Lbs./Linear Foot

Inside Diameter (Inches)	Gauge of Steel	Line Empty	Concrete Only	Line Full	Total Weight Per 10 Ft. Sections
2"	11 ga.	2.9	3.3	6.2	62
3"	11 ga.	4.1	7.4	11.5	115
4"	11 ga.	5.5	13.1	18.6	186
4"	.250 wall	11.4	13.1	24.5	245
5"	11 ga.	6.9	20.5	27.4	274
5"	.250 wall	14.0	20.5	34.5	345
5"	9 ga.	7.4	20.5	27.9	279
5"	7 ga.	10.4	20.5	30.9	309
6"	11 ga.	8.5	29.5	38.0	380
6"	9 ga.	10.0	29.5	39.5	395
6"	.312 wall	21.1	29.5	50.6	506

**FLEXIBLE DISCHARGE HOSE WEIGHTS  
COUPLED BOTH ENDS**

Weight in Pounds

Inside Diameter (Inches)	<u>10 Ft. Length</u>		<u>12 Ft. Length</u>		<u>25 Ft. Length</u>		<u>50 Ft. Length</u>	
	Empty	Full	Empty	Full	Empty	Full	Empty	Full
2"	16	49.2	18	57.2	36	117.8	67	230.5
3"	33	106.0	31	125.4	63	247.4	113	481.5
4"	49	180.0	56	213.2	99	426.5		
5"	75	279.6	85	330.5	152	663.5		
6"	92	383.0	105	454.2	188	915.5		

A rule of thumb to consider when making special pours and when setting up your placing line:

- 1 foot vertical equals 6 feet horizontal
- A 90° bend equals 40 feet horizontal
- A 45° bend equals 30 feet horizontal
- A 30° bend equals 13 feet horizontal
- 1 foot rubber hose equals 1-1/2 feet of steel placing line

PRESSURE RATINGS  
PIPE & TUBE

ID	Wall Thick (Inch)	Working Pressure (PSI)	Burst Pressure (PSI)
Tubing - Straights			
2	11 gauge	1387	5547
3	11 gauge	960	3840
4	11 gauge	734	2936
5	11 gauge	594	2377
5	9 gauge	743	2971
5	7 gauge	905	3618
6	11 gauge	499	1997
6	9 gauge	624	2496
Pipe - Straights			
4	1/4 wall	1333	5333
5	1/4 wall	1273	5091
6	5/16 wall	1130	4521
Bends & Reducers			
3	1/4 wall	1607	6429
4	1/4 wall	1250	5000
5	1/4 wall	1023	4091
6	5/16 wall	1130	1010
6	11 gauge	499	1997
6	9 gauge	624	2496

NOTES:

1. The working pressure ratings in the next to last column are figured with a safety factor of 4. To find the working pressures at another safety factor, take the burst pressure rating and divide by the desired safety factor.
2. The values tabulated above are theoretical values only. Actual burst pressure in service may vary due to manufacturing tolerances, material quality and conditions of use.

## REED 3040 CONCRETE PUMP

### SECTION 10:

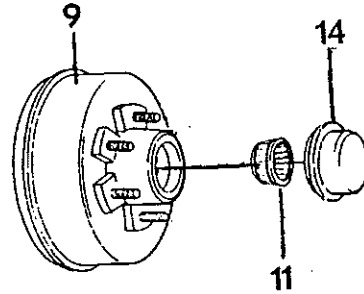
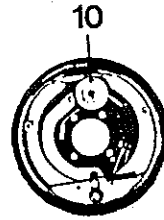
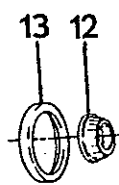
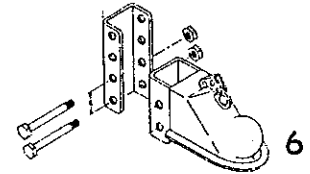
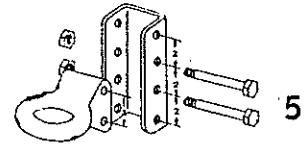
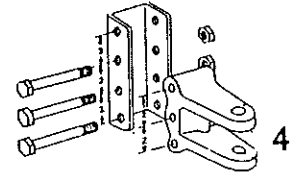
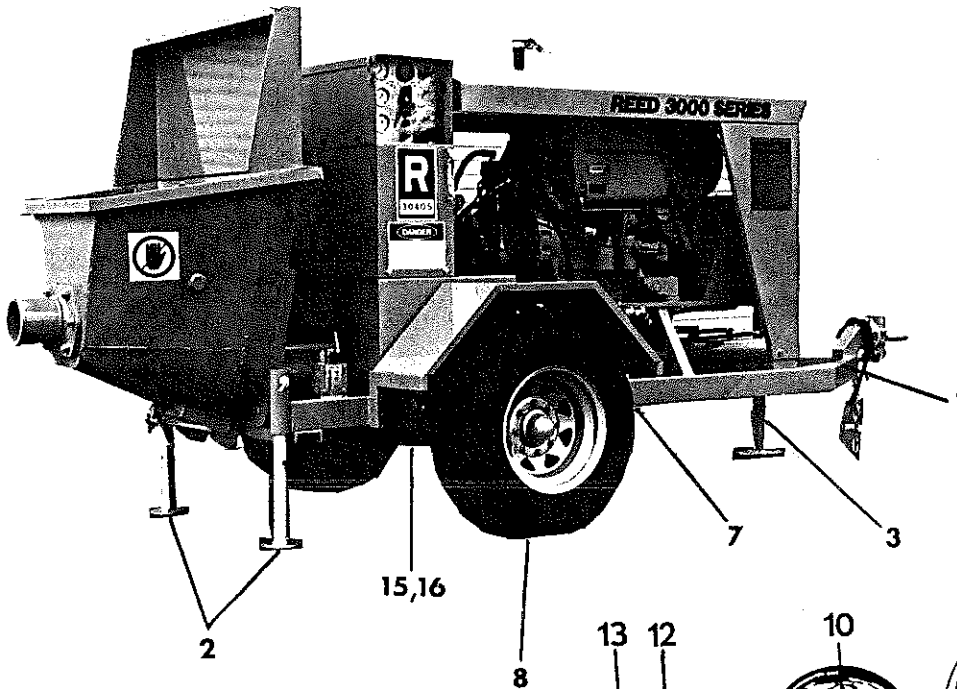
#### PARTS INFORMATION, WARRANTY & SERVICE

---

##### PAGE

1	FRAME & AXLE ASSEMBLY
2	CONTROL PANEL
3	POWER TRAIN ASSEMBLY
4	HYDRAULIC VALVES
5	FLUSHBOX AREA
6	HYDRAULIC PUMP - Sauer/Sundstrand 90 Series
7	HYDRAULIC PUMP - Sauer/Sundstrand Technical Data
8	CONCRETE & HYDRAULIC CYLINDERS
9	SWING TUBE ASSEMBLY OUTLET HOPPER
10	REAR HYDRAULIC TANK
11	FRONT ENCLOSURE
12	AGITATOR ASSEMBLY

# FRAME AND AXLE ASSEMBLY

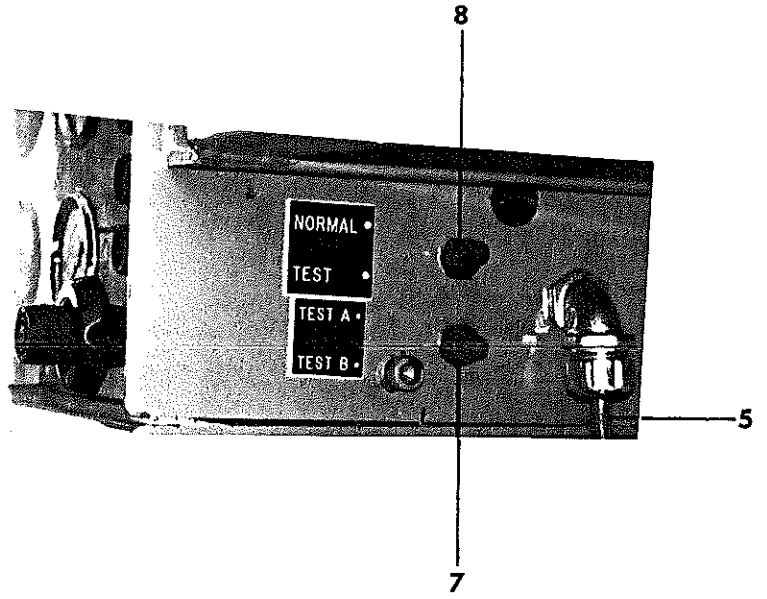
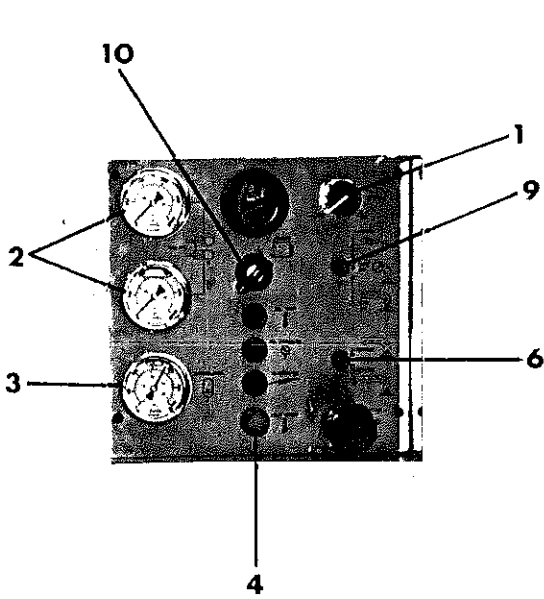


14

11

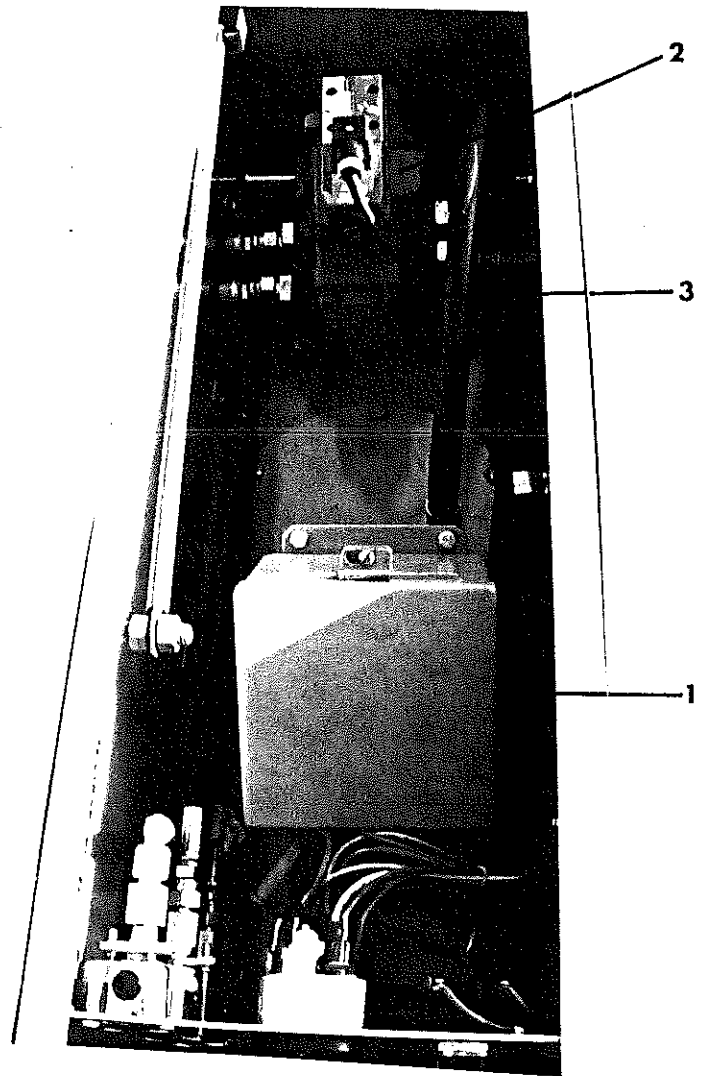
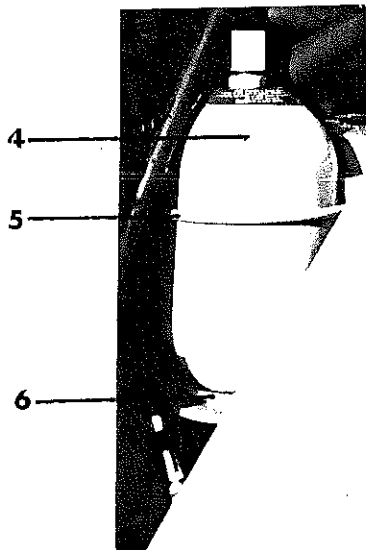
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	FRAME WELDMENT	72974	1
2	REAR JACK STAND	72952	2
3	TOP WIND JACK	73013	1
4	CLEVIS	71050	1
5	LUNETTE EYE 3"	71051	1
6	COUPLER 2-5/16	71009	1
7	AXLE	73046	1
8	WHEEL AND TIRE	72996	2
9	BRAKE DRUM	71097	2
10	ELECTRIC BRAKE	71056	2
11	OUTER BEARING	71098	2
12	INNER BEARING	71094	2
13	GREASE SEAL	71095	2
14	DUST CUP	71199	2
15	TAIL LIGHT	72984	2
16	TAIL LIGHT BRACKET	72947	2

CONTROL PANEL



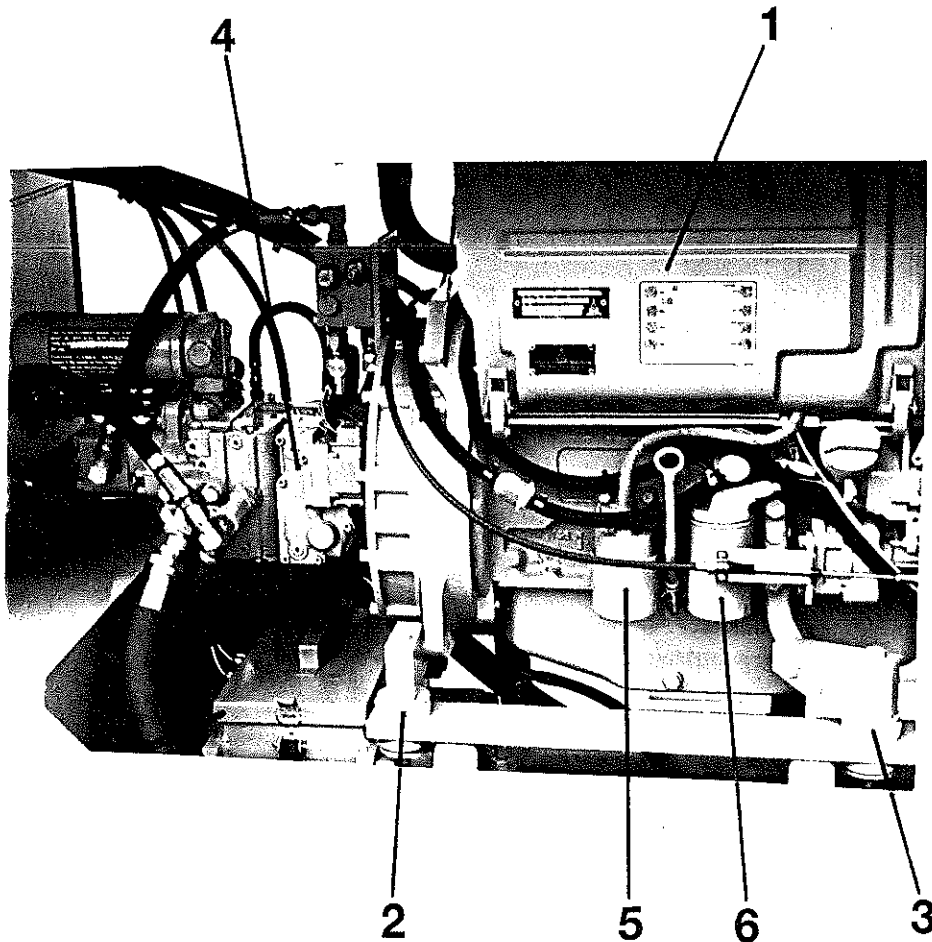
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	POTENTIOMETER	72966	1
2	0-5000 PSI GAUGE	74562	2
3	0-3000 PSI GAUGE	70366	1
4	PLUG	72951	1
5	PLUG - PANEL MOUNT	72002	1
6	SWITCH	72963	1
7	SWITCH	72963	1
8	SWITCH	72964	1
9	SWITCH	72965	1
10	IGNITION SWITCH	72946	1

HYDRAULIC VALVES/ACCUMULATOR



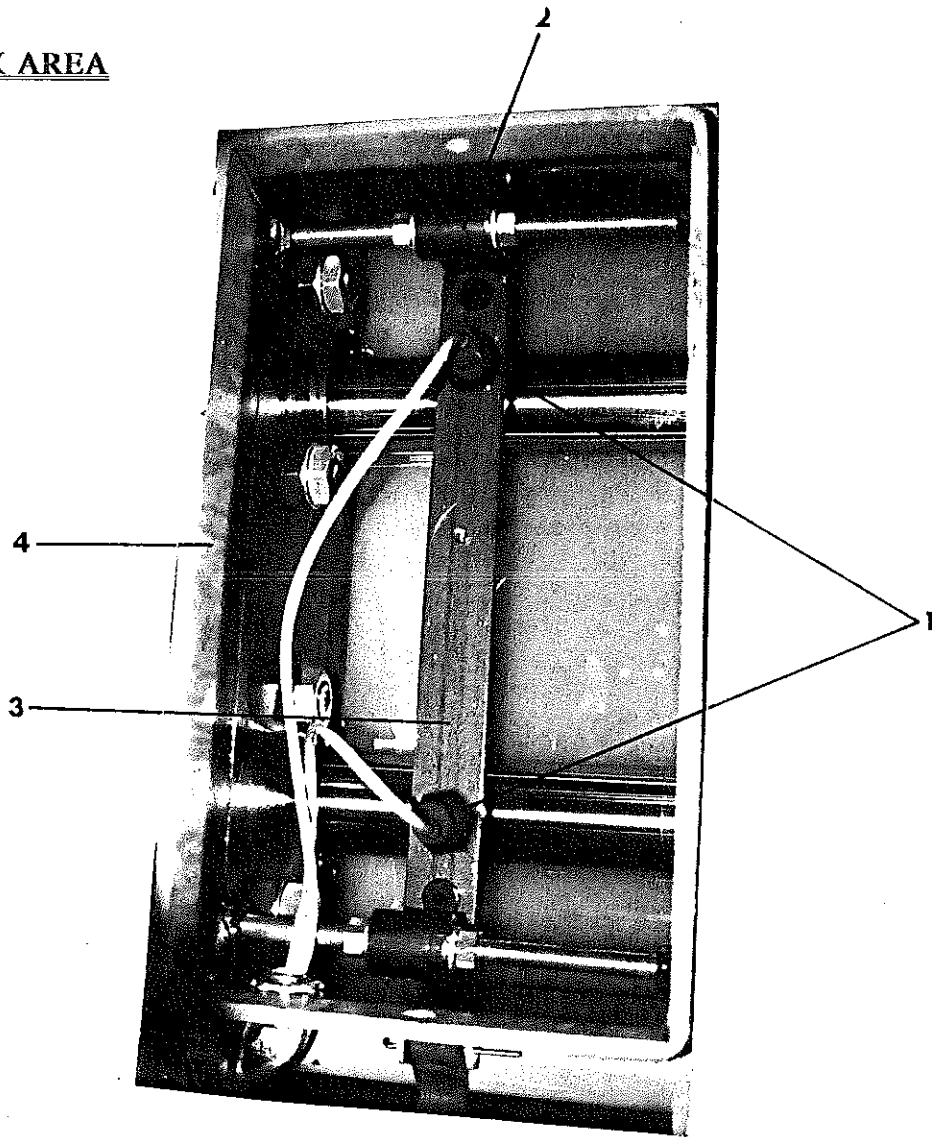
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	BLACK BOX	70750	1
2	D08 VALVE	75160	1
3	SUB PLATE	75161	1
4	ACCUMULATOR	74515	1
5	U-BOLT	70066	1
6	WASHER	12075	1

POWER TRAIN ASSEMBLY



<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	ENGINE	73466	1
2	ENGINE MOUNT (FRONT)	71125	2
3	ENGINE MOUNT (REAR)	71126	2
4	MAIN HYDRAULIC PUMP	72999	1
5	FUEL FILTER	72960	1
6	OIL FILTER	72909	1

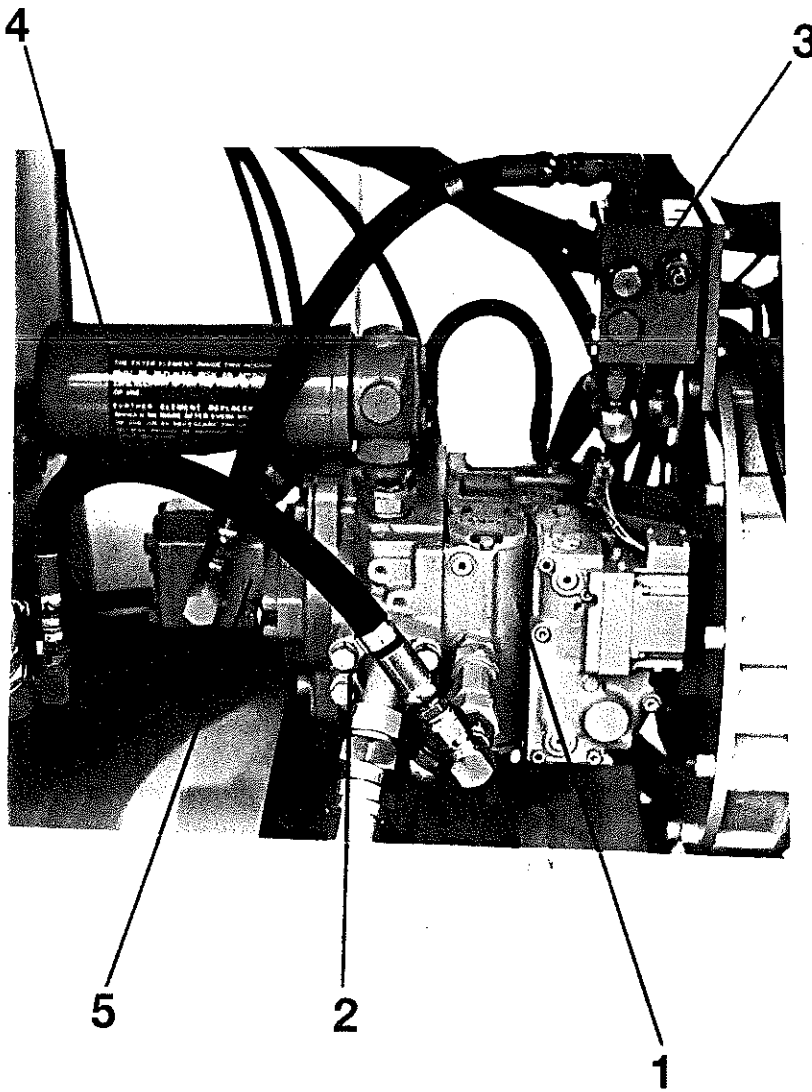
FLUSHBOX AREA



<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	PROXIMITY SENSOR	72961	2
2	MOUNTING ANGLE	72940	2
3	MOUNTING BAR	72941	1
4	FLUSHBOX	70300	1
		.02	



HYDRAULIC PUMP - Sauer/Sundstrand Series 90



<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	MAIN HYDRAULIC PUMP	72999	1
2	FLANGE KIT	74752	2
3	UNLOADER MANIFOLD BLOCK	72803	1
4	FILTER ELEMENT	73310	1
5	AUXILIARY PUMP	72981	1

## SUNDSTRAND - SERIES 90 PUMP

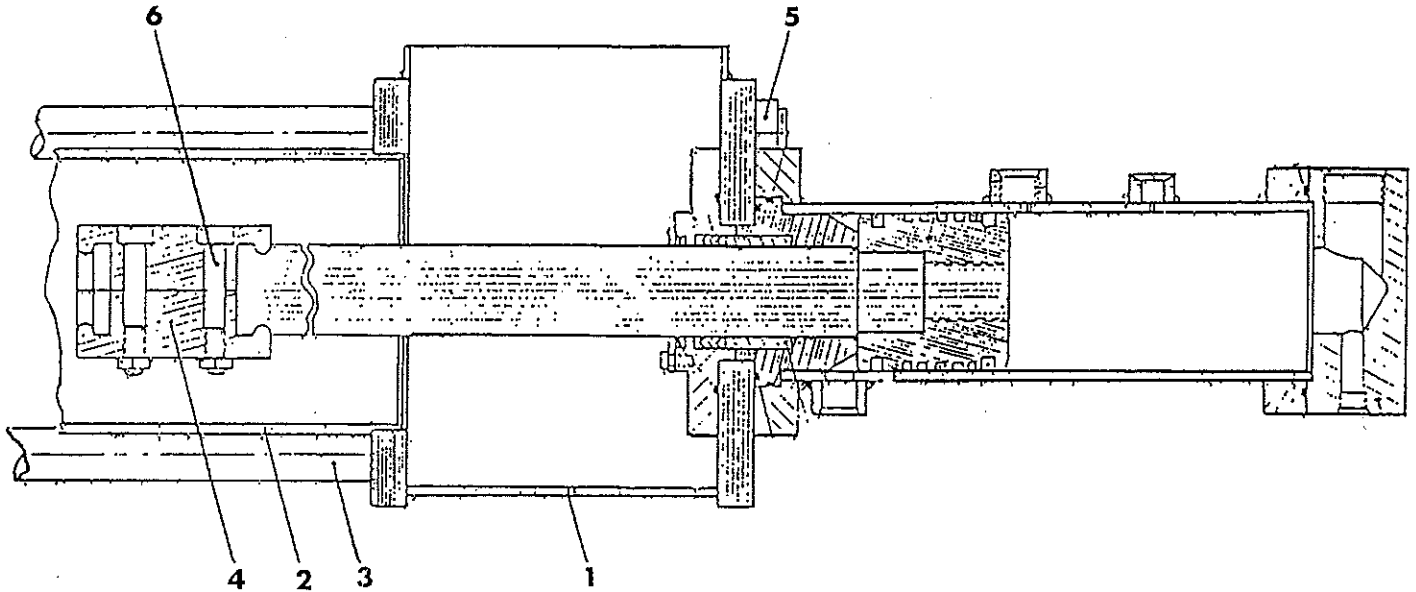
### SERIES 90 PUMPS & MOTORS - CONFIGURATION

- ★ THE SERIES 90 PUMPS AND MOTORS PROVIDE AN INFINITELY VARIABLE SPEED RANGE BETWEEN ZERO AND MAXIMUM IN BOTH FORWARD AND REVERSE MODES OF OPERATIONS.
- ★ THE SERIES 90 VARIABLE DISPLACEMENT PUMP IS A COMPACT, HIGH POWER DENSITY UNIT WITH ADVANCED DESIGN, USING THE PARALLEL AXIAL PISTON/SLIPPER CONCEPT IN CONJUNCTION WITH A TILTABLE CRADLE SWASHPLATE TO VARY THE PUMPS DISPLACEMENT. REVERSING THE ANGLE OF THE SWASHPLATE REVERSES THE FLOW OF OIL FROM THE PUMP AND THUS REVERSES THE DIRECTION OF ROTATION OF THE MOTOR OUTPUT.
- ★ THE VARIABLE DISPLACEMENT PUMPS ARE CONTROLLED BY A COMPACT RESPONSIVE CLOSED LOOP SERVO CONTROL WITH AN ELECTRICAL INPUT.
- ★ THESE PUMPS CONTAIN TWO (2) PATENTED, MULTI-FUNCTION VALVE CARTRIDGES WHICH PROVIDE THE CHECK, PRESSURE LIMITING, HIGH PRESSURE RELIEF AND BYPASS FUNCTIONS.

### TECHNICAL DATA - SERIES 90 PUMPS & MOTORS

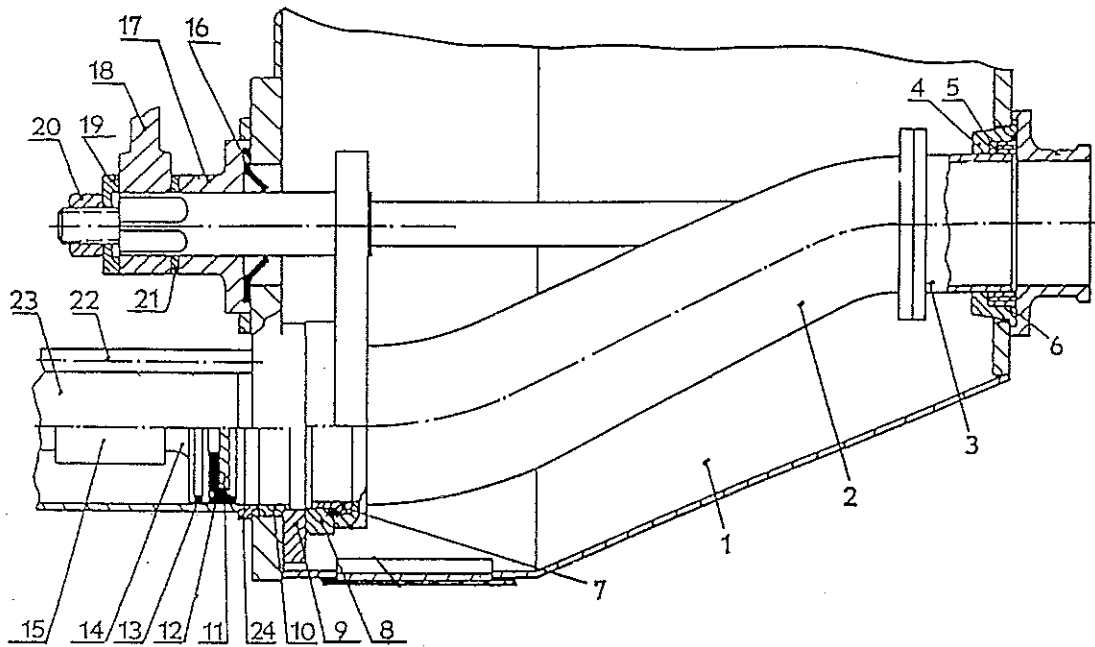
Temperature at hottest point in transmission (normally at case drain)		
Maximum	°F	240
	°C	115
Continuous	°F	220
	°C	104
Fluid viscosity limits - SUS (CST)		
Optimum		70 (13)
Minimum Continuous		47 (6.4)
Minimum Intermittent		42 (5.0)
Maximum Continuous		500 (110)
Maximum Cold Start		7500 (1600)
Fluid Contamination Levels - ISO Code		
Recommended Limit - Continuous Operation		18/13
Limit for Machine Assembly (at roll off)		21/15

## CONCRETE & HYDRAULIC CYLINDERS



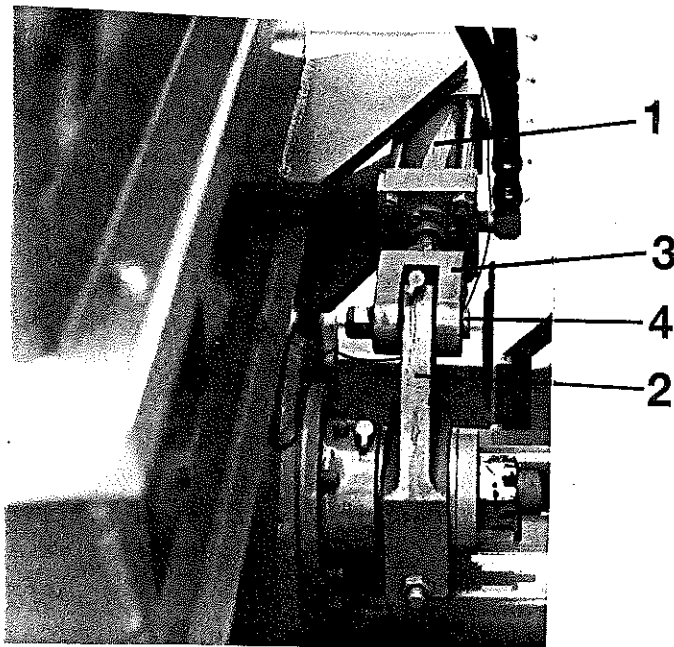
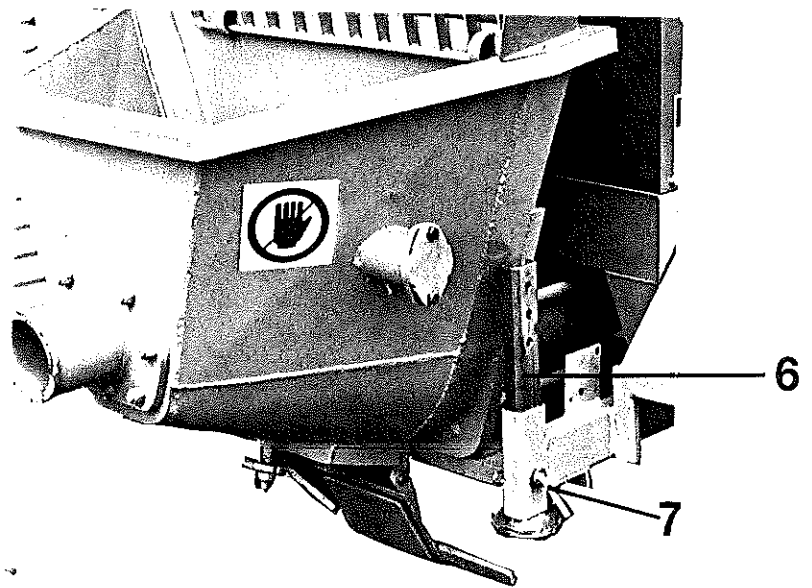
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	FLUSH BOX	70300	1
2	CONCRETE CYLINDERS	70067	2
3	TIE ROD CONCRETE CYLINDER	70315	4
4	COUPLING ASSEM MATCHED PAIR	70077	2
5	NUT 1-1/4" -12 (CONC. TIE ROD)		4
6	SOCKET HEAD CAP SCREW (1-1/2" -20 X 3")		
7	HYDRAULIC CYLINDER ASSEM COMPLETE	70985	2

# SWING TUBE ASSEMBLY OUTLET HOPPER



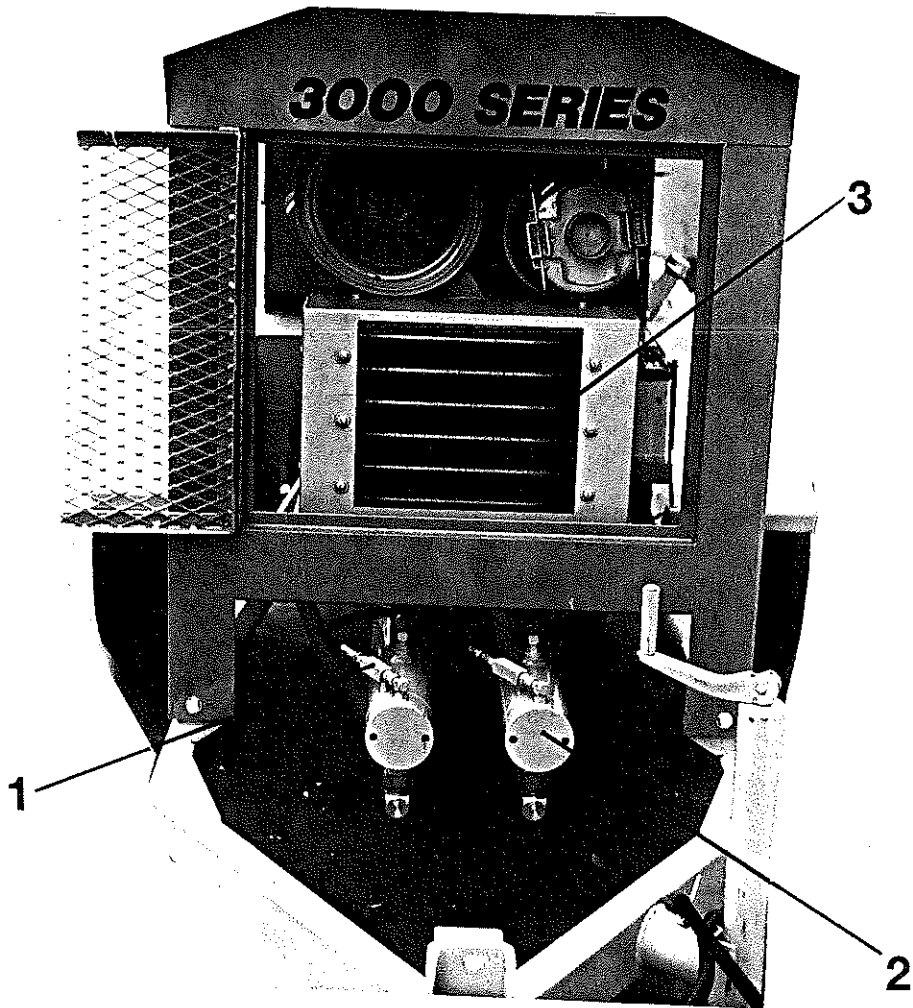
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	HOPPER	73055	1
2	SWING TUBE ASSEMBLY (SQUARE SHAFT)	73190	1
3	OUTLET CHROMED	70042	1
4	OUTLET SEAL HOUSING	70123	1
5	OUTLET SEAL	70049	1
6	O-RING 262	74013	1
7	WEAR RING LOCATOR	70392	1
8	WEAR RING	70391	1
9	WEAR PLATE (NEW STYLE)	70348	1
10	ANTI CHIP RING	70047	2
11	PISTON PLATE	70057	2
12	PISTON CUP 6"	70048	2
13	O-RING 433	74001	2
14	CONCRETE PISTON ADAPTOR	70076	2
15	PISTON COUPLING	70077	2
16	SEAL - FLANGE BEARING	70126	1
17	FLANGED BEARING	70124	1
18	BELL CRANK	70127	1
19	NUT SPACER CONCRETE CYLINDER	70125	1
20	HEX NUT 1-1/2" -12 SELF-LOCKING	71021	1
21	THRUST WASHER	70141	1
22	TIE ROD - CONCRETE CYLINDER	70315	4
23	CONCRETE CYLINDER	70067	2
24	ADAPTOR RING 7" / 6"	70318	2

REAR HYDRAULIC TANK



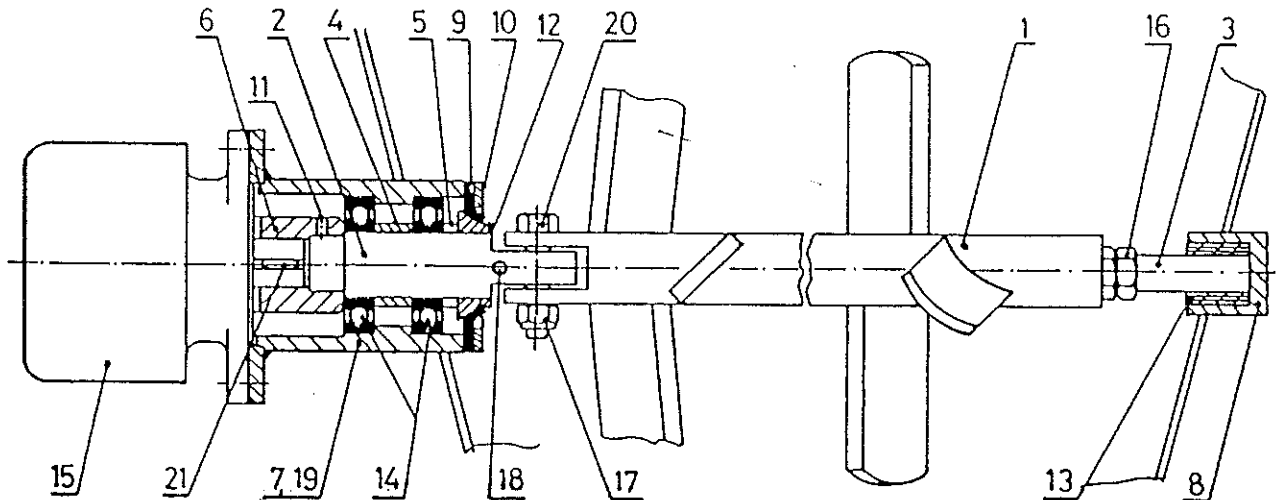
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	SWING TUBE HYDRAULIC CYLINDER	74531	1
2	BELL CRANK	70127	1
3	CLEVIS	70143	1
4	CLEVIS PIN	70142	1
5	FUEL CAP (NOT SHOWN)	74710	1
6	REAR JACK STAND	73623	2
7	JACK PIN	70051	2

CYLINDER END CAPS - FRONT ENCLOSURE



<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>	<u>QTY/MCH</u>
1	CHECK VALVE	74580	4
2	HYDRAULIC CYLINDER ASSEMBLY	70985	2
3	OIL COOLER CORE	72781	1

## AGITATOR ASSEMBLY



<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART#</u>
1	AGITATOR SHAFT WITH PADDLES	72851
2	SHAFT	70224
3	IDLER SHAFT	70214
4	SPACER LONG	70215
5	SPACER SHORT	70216
6	MOTOR COUPLING	70225
7	BEARING HOUSING	70223
8	IDLER BEARING HOUSING	70210
9	SEAL	70212
10	SEAL FLANGE	70211
11	SET SCREW	80374
12	WEAR RING	71018
13	IDLER BEARING	70219
14	BEARING SINGLE ROW BALL	71019
15	HYDRAULIC MOTOR	74529
16	HEX NUT M 20	80030
17	HEX NUT SELF-LOCKING 1/2-13	80019
18	SPRING PIN 3/16 x 1-3/4	80298
19	GREASE FITTING	80516
20	HEX HEAD CAP SCREW 1/2-13 x 2-1/2	80156
21	KEY	30216

## **PARTS INFORMATION, WARRANTY & SERVICE**

### **General**

Reed is continually improving its product range, therefore, specifications are subject to change without prior notice.

### **Parts**

The parts section contains a breakdown by part number of all the replaceable parts used in a particular concrete pump. The drawings shown in the parts section are intended to aid understanding of the construction of the product and to assist in ordering parts. They are also helpful in determining the sequence of assembling various parts when making adjustment and repairs.

### **Placing orders for parts**

The satisfactory ordering and receiving of parts is greatly dependent upon specific and correct information supplied by the owner. Many unnecessary errors and delays may be eliminated by conforming to the following instructions:

- Your parts order should state:
1. The exact model and serial number of the machine. See name plate on frame assembly.
  2. Your company order #.
  3. Part number, description and quantity required.
  4. Write the order clearly using a typewrite if possible.
  5. State your company name, address and zip code
  6. Specify shipping instructions.