



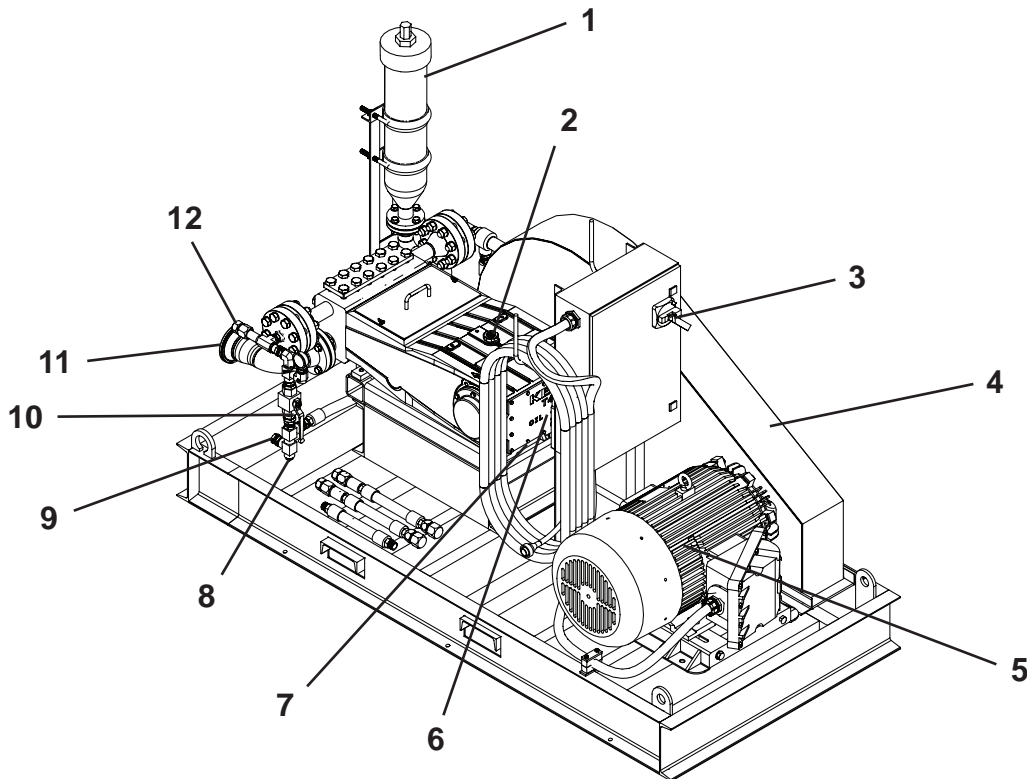
High Pressure Jetting Pump FA63152F & FA63304F Operation & Maintenance Instruction Part No. 050180A

The High Pressure Jetting Pump provides high velocity jetting water to the MTBM cutter face to break down clay and silty soil, clean the crushing chamber and assist with soil intake and flow.

This High Pressure Jetting Pump instruction includes:

- | | |
|-------------------------------------|---------------------------------------|
| I. Terminology (page 1) | VIII. Troubleshooting (page 26) |
| II. Decals (page 2) | IX. Electrical Schematic (page 27) |
| III. Setup & Operation (page 3) | X. Specifications (page 28) |
| IV. Cold Weather Operation (page 7) | XI. Warranty (page 29) |
| V. Transporting (page 8) | XII. Identification Numbers (page 29) |
| VI. Maintenance (page 10) | XIII. Drawing FA63152F (page 30) |
| VII. Storage (page 25) | XIV. Drawing FA63304F (page 34) |

I. Terminology



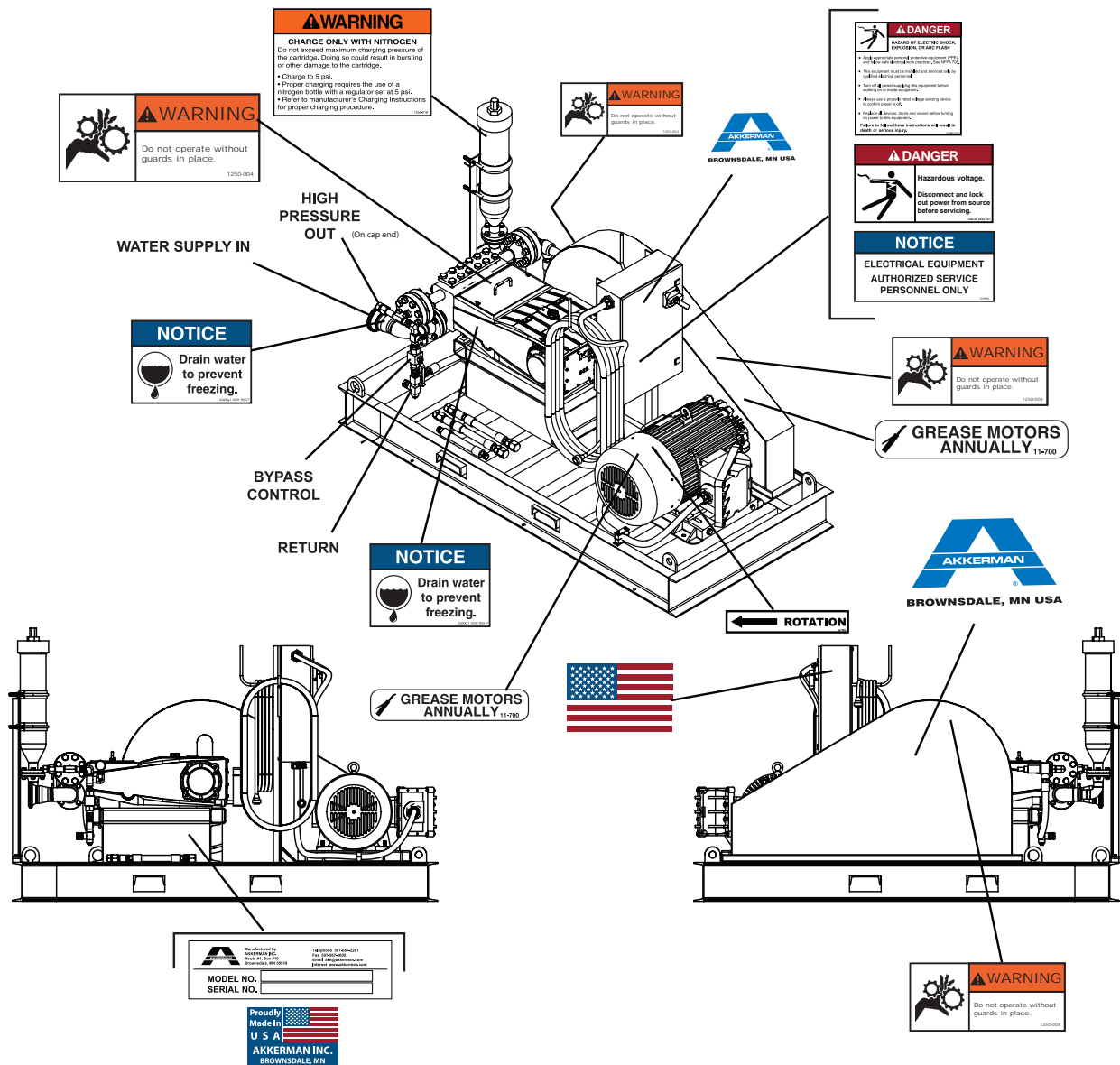
- | | |
|-------------------------|-----------------------|
| 1. Dampener | 7. Gearbox Oil Drain |
| 2. Breather / Oil Fill | 8. Drain Plug |
| 3. Main Power Switch | 9. Return Line |
| 4. Belt Guard | 10. Bypass Control |
| 5. Electric Motor 75 HP | 11. Water Supply IN |
| 6. Oil Level Gauge | 12. High Pressure OUT |

II. Decals

Keep all decals clean and readable. Use soft cloth, water, and a mild soap to clean the decals if they are too dirty to read. **DO NOT** clean decals with solvent. Solvent can damage them. Replace safety decals immediately if they are damaged, missing, or hard to read.

Serious injury or property damage can occur if safety instructions are not followed. Contact your Akkerman Aftermarket Support representative for free replacement safety decals.

If a part is replaced that has a safety decal on it, apply a new safety decal to the replacement part. Before applying a new decal, be sure the surface is clean and dry.



III. Setup and Operation

⚠ WARNING Follow all OSHA safety protocols. Do not operate this equipment until you read, study, and understand this instruction, your Microtunneling System Operator's Manual and any other equipment manuals. A daily inspection of the equipment must be performed to prevent severe personal injury or death and equipment damage.

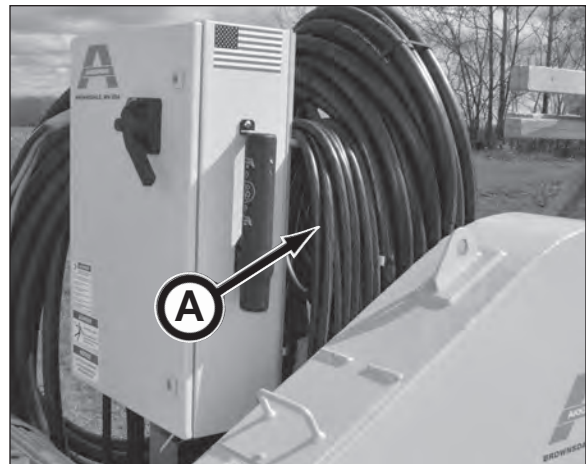
1. Place high pressure jetting pump on the job site a safe distance from the launch shaft but close enough to the control container.



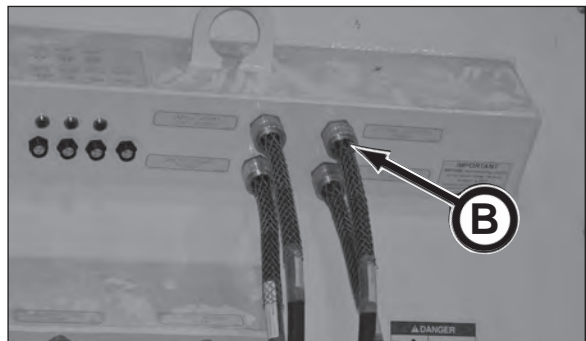
⚠ DANGER Hazardous Voltage! Disconnect and lockout tagout power from source before connecting high pressure jetting pump power cable to generator and jetting pump control power cable to control container. Failure to do so WILL cause serious injury or death.



2. With power shut down and in lockout tagout, connect jetting control power cable (A) to control container jetting control power cable connection (B) on bulkhead.



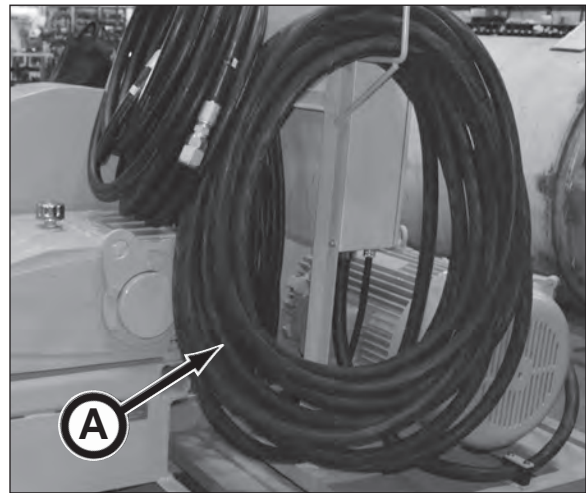
IMPORTANT: BEFORE connecting or disconnecting jetting pump power cable, be sure the main power is in lockout tagout and the 480V main disconnect breaker in the control container is OFF.



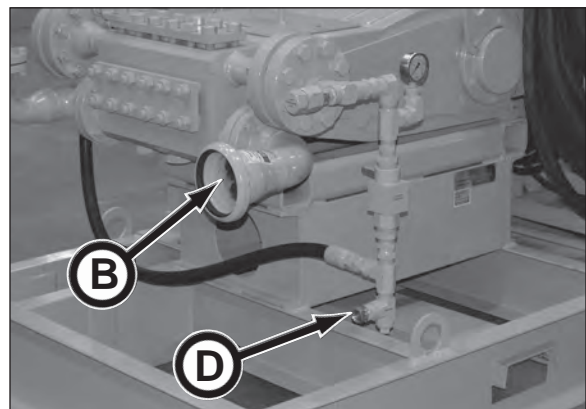
(continued on next page)

3. Connect power cable (A) to generator or other power source.

Connect to a 460V, 3 Phase power supply with a Branch Circuit Current Protection of 150 amps.

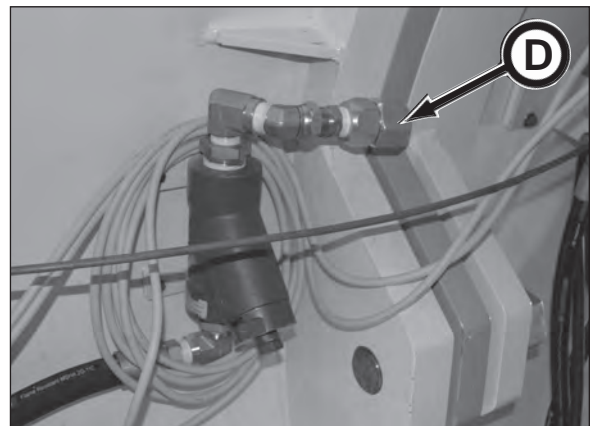
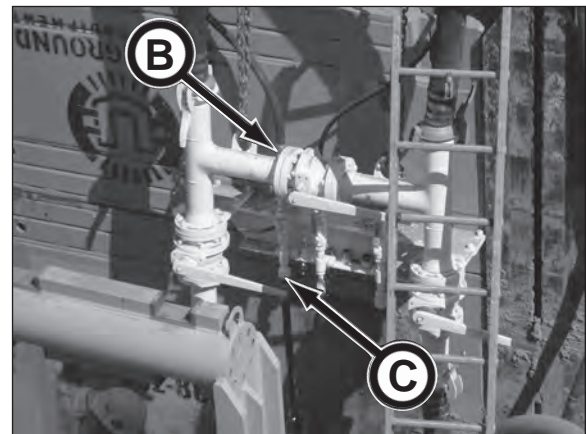
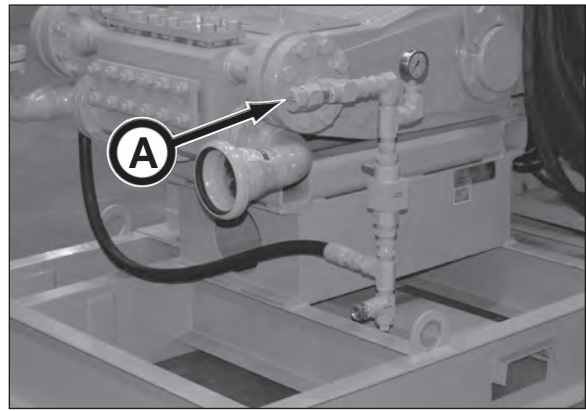


4. Connect supply hose to jetting pump Water Supply IN connection (B) and the other end to the supply connection on the supply tank (C).
5. Connect return hose to jetting pump Return Line connection (D) and the other end to the return connection on the supply tank (C).



(continued on next page)

6. Connect the high pressure jetting hose to jetting pump High Pressure OUT connection (A) and the other end to the high pressure jetting connection on the slurry pit valve assembly (B). A high pressure jetting hose from the slurry pit valve assembly high pressure jetting connection (C) to the jetting strainer assembly (D) is required.
7. Connect all other equipment (slurry plant, slurry pumps, bentonite pump, etc.), ventilation lines and communication cables as needed for the microtunneling project (refer to your Microtunneling Operator's Manual).



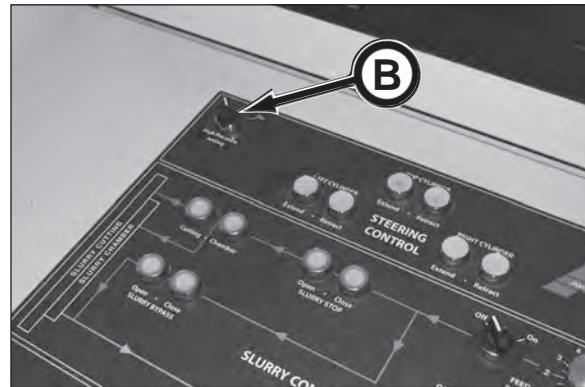
8. Verification must be received from all personnel on the job site that it is acceptable to turn the power on at the job site.
9. Start up equipment as detailed in the Microtunneling System Operator's Manual. (Refer to section 6, Operation, System Start-Up in your Microtunneling System Operator's Manual.)



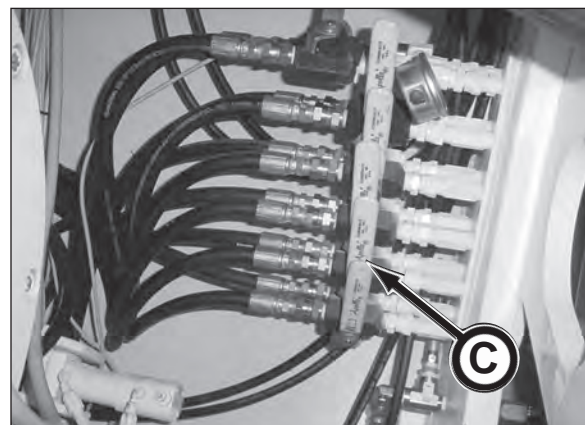
10. To provide power to the high pressure jetting pump, flip the 480V main disconnect switch (A) to the ON position.



11. To operate the high pressure jetting pump, turn the high pressure jetting pump switch (B) on the control container control console to the ON position.



12. Control the high pressure jetting pump as needed with the ball valves (C) in the MTBM.



IV. Cold Weather Operation

Freezing temperatures during the tunneling process, creates the necessity to prepare the site and equipment for the cold weather. Failure to do so will cause damage to components and supporting equipment.

There are various methods of keeping equipment from freezing:

- Tent working areas with a heating system when possible.
- When working with water (including bentonite), it needs to be constantly circulated to prevent freezing. Otherwise the equipment must be drained and/or treated with an RV anti-freeze solution to prevent freezing.
- If slurry pumps, bentonite pump and/or water cooling pumps will be shut off for a considerable length of time and the temperature is at or below freezing, the fluids must be drained or treated with RV anti-freeze. Refer to pump manufacturer for more information.
- Water tanks must be drained or treated with RV anti-freeze.
- Drain hoses to prevent freezing and keep low areas properly drained to prevent freezing damage.
- Motors with water jackets must be flushed including water lines and add RV anti-freeze.
- For diesel engines, use a diesel conditioner as well as a non-gelling winter fuel.
- For all equipment, use proper lubricant based on ambient temperature to prevent damage.
- Use compressed air to purge a system of water. Be sure the discharge valve is open before doing so.
- Install heaters for hydraulic systems.
- Maintain a continuous slurry bypass can prevent overnight freezing.
- A spoil (muck) dump needs to be located carefully since the wet loose material will freeze forming a pointed pile instead of a mound.



If systems were shut down for freezing weather, be sure to start systems slowly and let them run for at least five minutes to allow for warm up and in the case of a pump, to displace any surface ice that may have accumulated in the fluid before going back to full operation mode.

Remember it is also critical to keep the work site safe and employees comfortable during the freezing weather. Good training, supervision, proper clothing and limiting personal exposure to the weather is essential for keeping personnel and equipment safe on the job site.

V. Transporting

⚠ WARNING Suspended load may fall and cause severe personal injury or death.

Do not enter area under or around a load.



Transporting Guidelines

1. Know the local, state, and federal transportation regulations.
2. Obtain required permits for transporting.
3. Remove any obstacles from the trailer floor.
4. Clean debris from equipment.
5. Load and unload on level ground.
6. If lifting equipment with a hoist or other lifting device, the equipment lifting eyes and sling must be inspected for damage before lifting. If damaged, replace.
7. Securely fasten equipment to trailer floor.
8. Secure all loose items in control container.

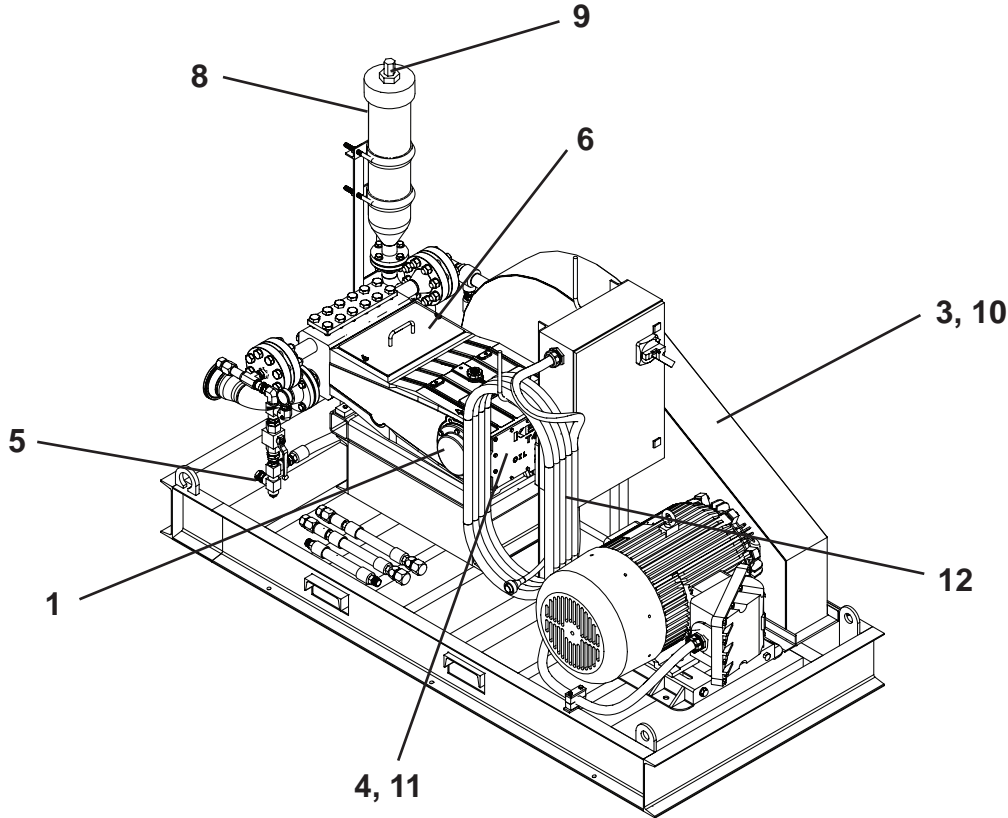
NOTES

VI. Maintenance

MAINTENANCE CHARTS - HIGH PRESSURE JETTING PUMP

NOTICE

Use the item number in the chart to refer to the detailed maintenance procedures starting on the next page.



PRIOR TO EACH DRIVE LAUNCH

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
1.	Crankcase	Rotation		
*2.	Strainer	Clean	See maintenance detail.	
3.	Belt Tension	Check	Adjust if needed.	
4.	Gear Box**	Check Oil Level	Add oil if necessary.	80W-90 gear oil
5.	Jetting Pump	Drain	In freezing weather.	
6.	Piston Gland	Lubricate	Lubricate with 2 shots.	Mobil XHP222
*7.	Cables	Inspect Power Cables	If damaged or worn, replace.	
8.	Dampener	Bleed Fluid		

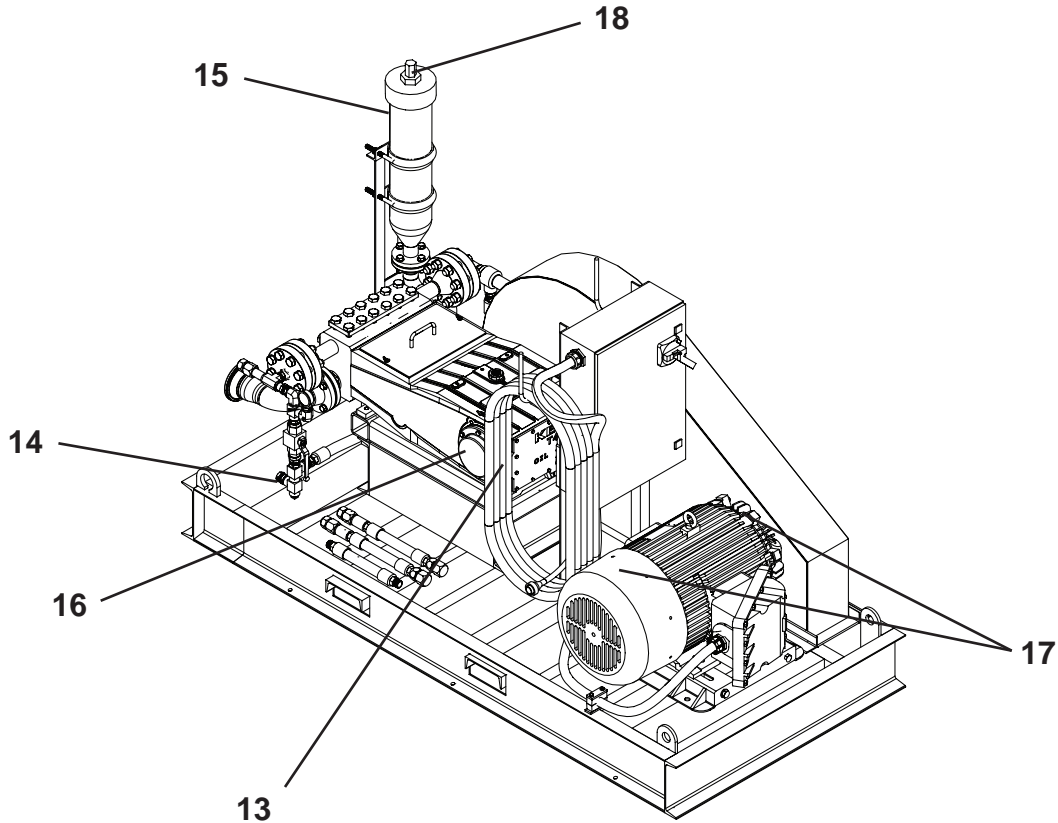
DAILY OR EVERY 10 HOURS OF OPERATION

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
9.	Jetting Pump	Flush & Drain	In freezing weather.	
10.	Jetting Pump	Check Belt Tension	See maintenance detail.	
11.	Jetting Pump	Check Gear Box Oil	Add oil if necessary.	80W-90 gear oil
12.	Cables	Inspect Power Cables	If damaged or worn, replace.	

* Not Shown

** Inspect gear box oil quality. If contamination is present, drain and fill with new oil.

NOTICE Use the item number in the chart to refer to the detailed maintenance procedures starting on the next page.



COMPLETION OF EACH DRIVE

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
13.	Jetting Pump	Inspect, Flush & Clean	Inspect, flush and clean	
14.	Jetting Pump Comp.	Flush & Drain	Flush and drain water.	
15.	Dampener	Bleed Fluid		

EVERY 500 HOURS OF OPERATION

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
16.	Gear Box	Drain & Fill	Drain and fill with new oil	80W-90 gear oil

ANNUALLY

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
17.	Electric Motor	Lubricate Motor Bearings	Two shots	Mobil XHP222

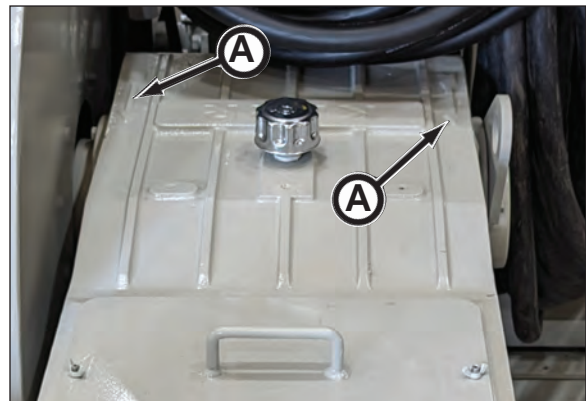
AS REQUIRED

ITEM	COMPONENT	SERVICE	REQUIREMENT	MATERIAL
18.	Dampener	Nitrogen Charge	5 psi	Nitrogen

PRIOR TO EACH DRIVE LAUNCH

1. CHECK CRANKCASE ROTATION

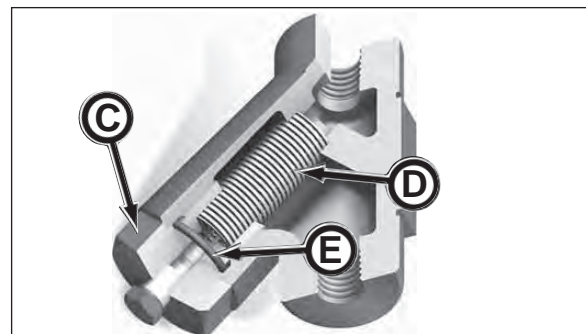
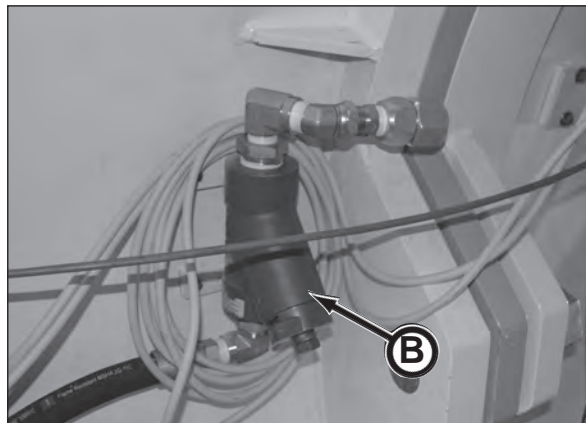
Before placing pump in operation, check that crankshaft rotation agrees with the arrows (A) cast on top of the pump frame by briefly jogging the electric motor on and off. Crankcase rotation must be clockwise as viewed from the right side of pump.



2. CLEAN HIGH PRESSURE JETTING STRAINER SCREEN (MTBM)

With the water cooling tank and the high pressure jetting pump shut down, gain access to the high pressure jetting strainer (B) in MTBM.

1. Remove cap (C).
2. Remove strainer screen (D). Clean strainer or if needed, replace with new.
3. Install screen. Be sure it is properly seated in strainer body.
4. Inspect oring for (E) cracking or damage. Replace with new if needed.
5. Install oring. Be sure it is properly seated on cap.
6. Reinstall cap.



Strainer Cutaway Illustration

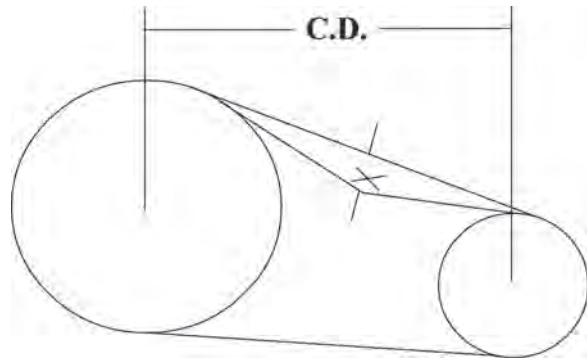
3. CHECK BELT ALIGNMENT & TENSION

A belt will provide years of reliable service if it is properly tensioned and aligned.

1. Remove belt cover (A).
2. Belt Alignment
Use a straight edge across the rim of the sheaves to detect and correct for misalignment.
3. Belt Tension
Insufficient tension results in slippage, burning, squealing and shortened belt life. Overtightening imposes excessive loads on pump and motor bearings and can cause early shaft fatigue failure.

Using a small spring scale, apply 17 - 30 lb (new belt) or 13 - 23 lb (used belt) force at center distance (C.D.), adjust motor position to provide 7/16" deflection at center distance.

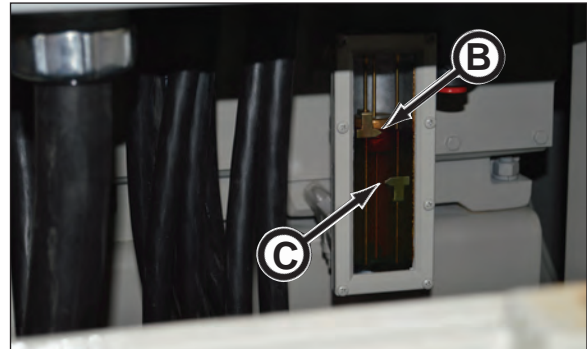
4. Replace belt cover.



4. CHECK GEARBOX OIL LEVEL

NOTICE Inspect gearbox oil quality. If any contamination is present in sampling, drain and fill with new oil.

1. Check the gearbox oil level. The oil level should be at the full mark indicator (B). Never allow the oil level to go below the low mark indicator (C).



2. If needed, remove breather and add a high quality SAE 80W-90 gear oil (P/N P0126-024) to bring oil level to the full mark indicator.

Gearbox oil capacity (approx.) 5.5 gal (21 L)



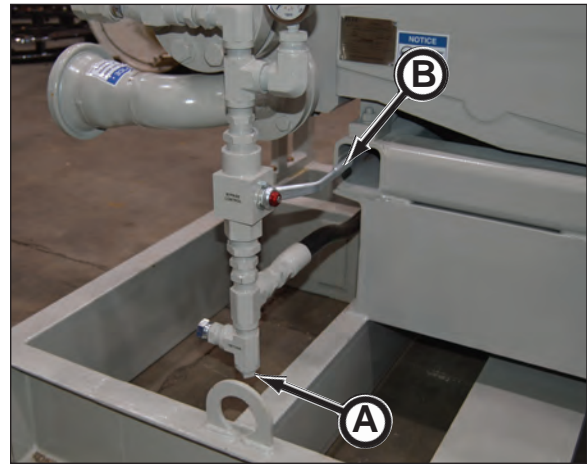
3. Replace breather.



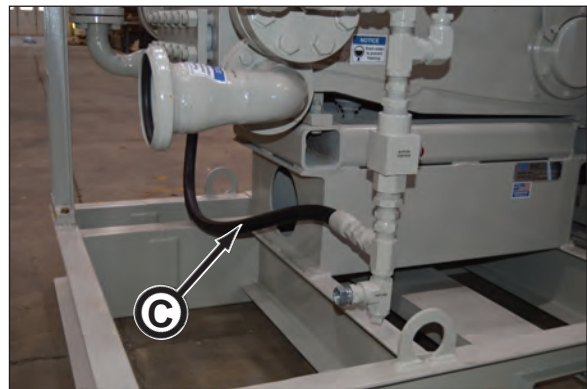
5. DRAIN JETTING PUMP

In freezing temperatures, the jetting pump must be drained of water.

1. Remove drain plug (A).
2. Open bypass valve (B) to allow water to drain from pump.
3. Cycle bypass valve multiple times to be sure water in ball valve is removed.

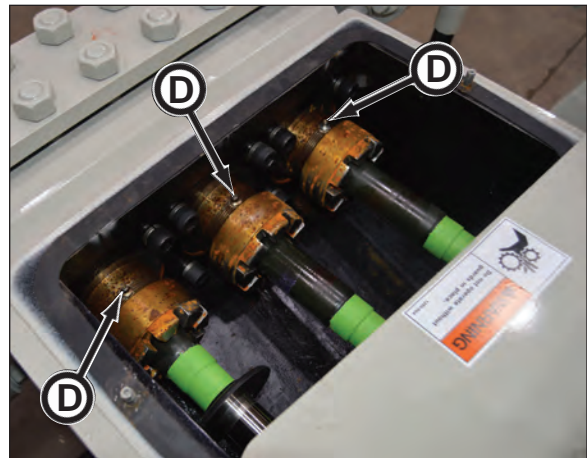


4. Be sure water is removed from hoses (C).
5. Replace drain plug.



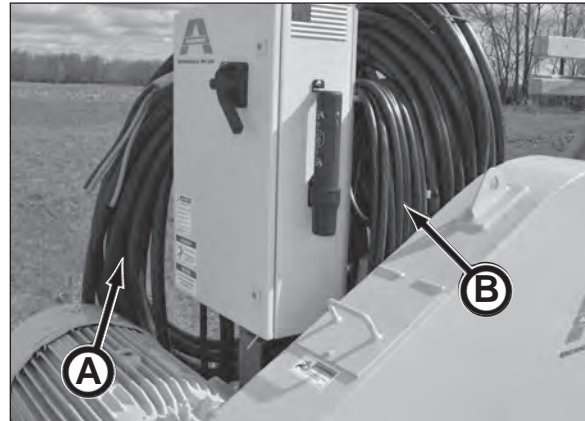
6. LUBRICATE PISTON GLANDS

Lubricate each piston gland (D) with two shots of Mobilgrease XHP222 or equivalent.



7. INSPECT CABLES

Inspect jetting pump generator cable (A) and jetting power cable (B) for cracking, fraying or other damage. Replace as needed.



8. BLEED FLUID FROM DAMPENER

Bleed fluid (air and water) from dampener by opening bleeder valve. Close bleeder valve once air and water are removed.

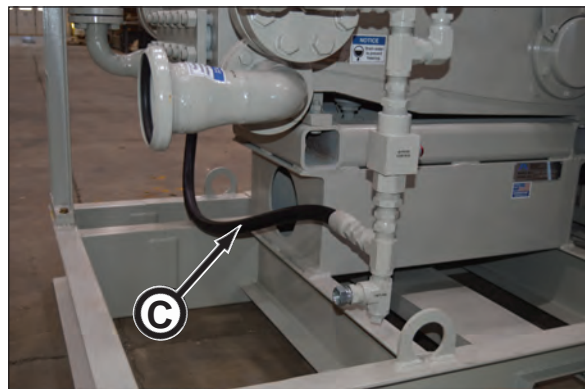
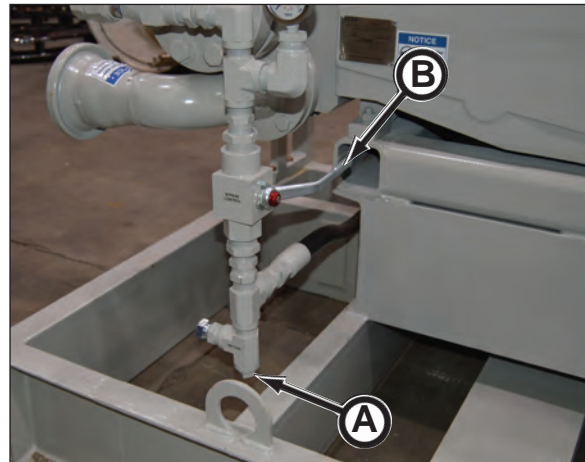


DAILY OR EVERY 10 HOURS OF OPERATION

9. FLUSH & DRAIN JETTING PUMP COMPONENTS

In freezing weather, flush and drain pump and all fluid lines. Failure to do so will cause damage to pump components.

1. Remove drain plug (A).
2. Open bypass valve (B) to allow water to drain from pump.
3. Cycle bypass valve multiple times to be sure water in ball valve is removed.
4. Be sure water is removed from hoses (C).
5. Replace drain plug.
6. Be sure all fluid lines are drained.



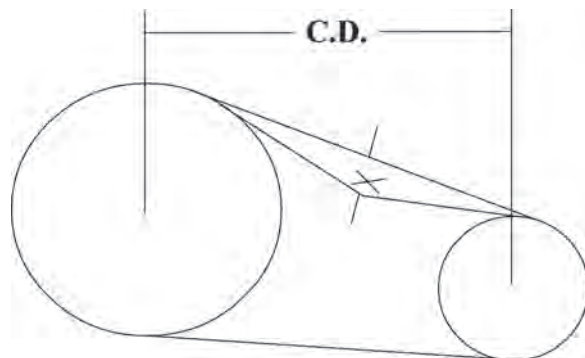
10. CHECK JETTING PUMP BELT ALIGNMENT & TENSION (PUMP MODEL APLEX SC-115)

A belt will provide years of reliable service if it is properly tensioned and aligned.

1. Remove belt cover (D).
2. Belt Alignment
Use a straight edge across the rim of the sheaves to detect and correct for misalignment.
3. Belt Tension
Insufficient tension results in slippage, burning, squealing and shortened belt life. Overtightening imposes excessive loads on pump and motor bearings and can cause early shaft fatigue failure.

Using a small spring scale, apply 17 - 30 lb (new belt) or 13 - 23 lb (used belt) force at center distance (C.D.), adjust motor position to provide 7/16" deflection at center distance.

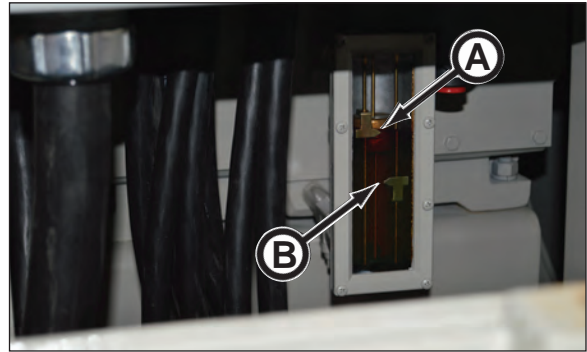
4. Replace belt cover.



11. CHECK GEARBOX OIL LEVEL

NOTICE Inspect gearbox oil quality. If any contamination is present in sampling, drain and fill with new oil.

1. Check the gearbox oil level. The oil level should be at the full mark indicator (A). Never allow the oil level to go below the low mark indicator (B).



2. If needed, remove breather and add a high quality SAE 80W-90 gear oil (P/N P0126-024) to bring oil level to the full mark indicator.

Gearbox oil capacity (approx.) 5.5 gal (21 L)

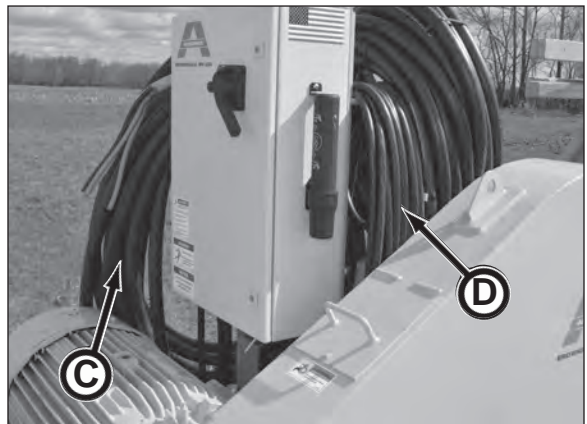


3. Replace breather.



12. INSPECT CABLES

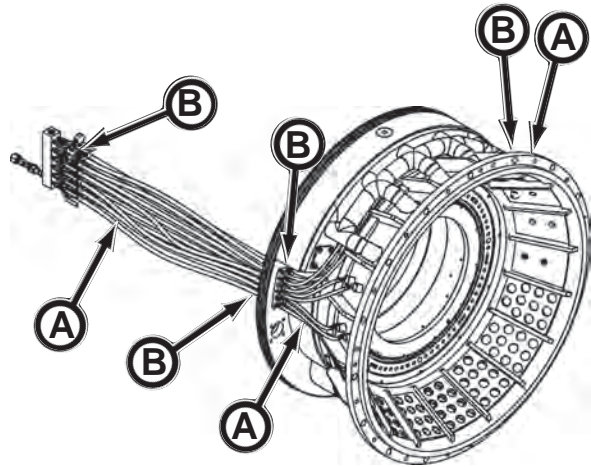
Inspect jetting pump generator power cable (C) and jetting power control cable (D) for cracking, fraying or other damage. Replace as needed.



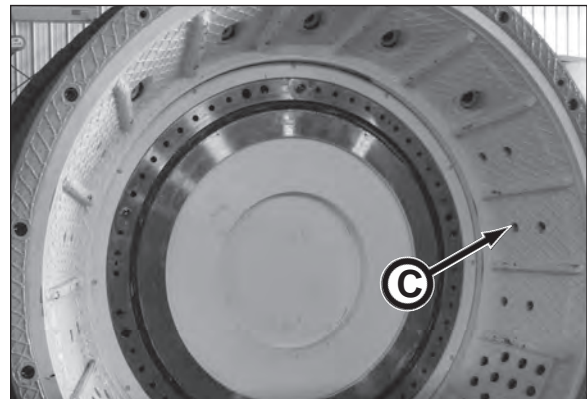
COMPLETION OF EACH DRIVE

13. INSPECT, FLUSH & CLEAN HIGH PRESSURE JETTING SYSTEM

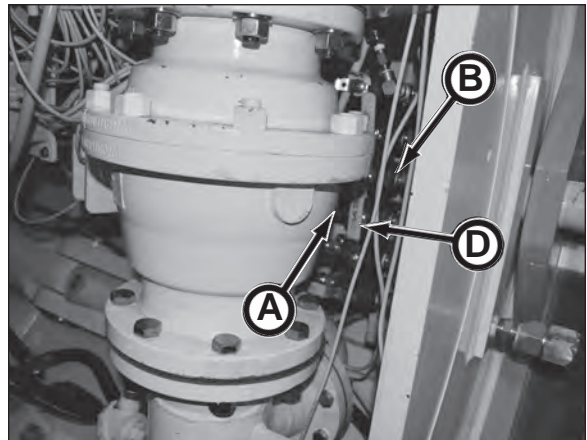
1. Flush and clean high pressure system; all jetting hoses (A) and fittings (B) to remove rust flakes and sediment within the jetting system.
2. Inspect for cracks, wear or damage. Replace as needed.



3. On crushing cone, check jetting nozzles (C), hoses, lines and fittings for damage. Replace as necessary.

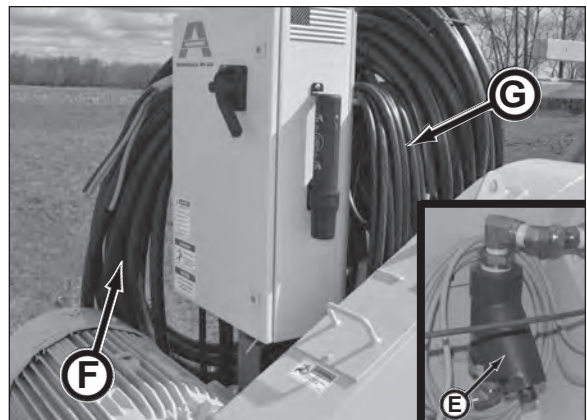


4. Check jetting shut off valves (D) for proper operation. Repair or replace as needed.



5. Clean strainer screen in high pressure jetting strainer assembly (E) and drive motor cooling assembly (if used) (not shown).

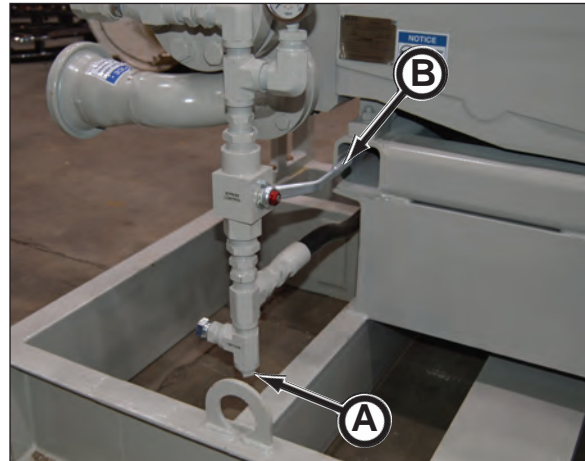
6. Check high pressure jetting pump power cable (F) and power control cable (G) for cracking, wear or damage. Replace as needed.



14. FLUSH & DRAIN JETTING PUMP COMPONENTS

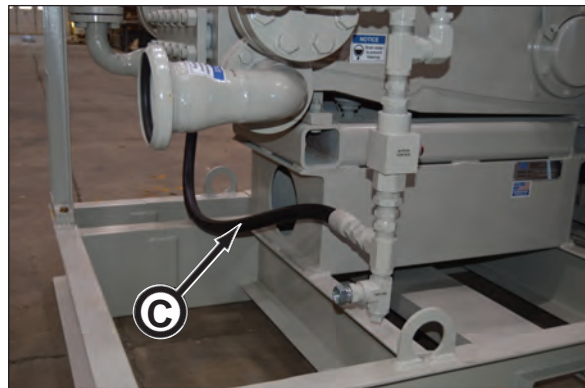
In freezing weather, flush and drain pump and all fluid lines. Failure to do so will cause damage to pump components.

1. Remove drain plug (A).
2. Open bypass valve (B) to allow water to drain from pump.
3. Cycle bypass pressure multiple times to be sure water in ball valve is removed.



4. Be sure water is removed from hoses (C).
5. Replace drain plug.
6. Be sure all fluid lines are drained.

NOTICE If necessary, in freezing weather, drain and flush with RV antifreeze.



15. BLEED FLUID FROM DAMPENER

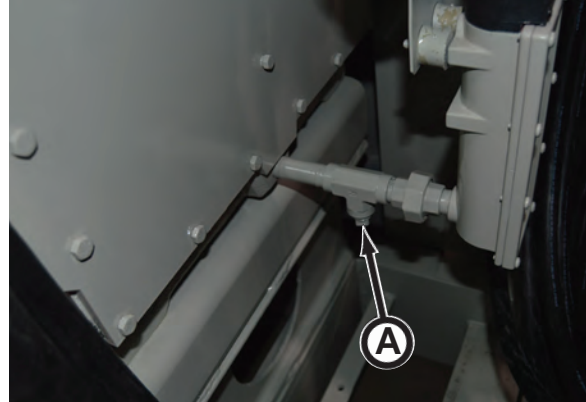
Bleed fluid (air and water) from dampener by opening bleeder valve. Close bleeder valve once air and water are removed.



EVERY 500 HOURS OF OPERATION

16. DRAIN & FILL GEARBOX

1. With a catch pan under the gearbox drain plug (A), remove drain plug.
2. Once oil is drained, replace drain plug and remove catch pan and dispose of the oil properly.

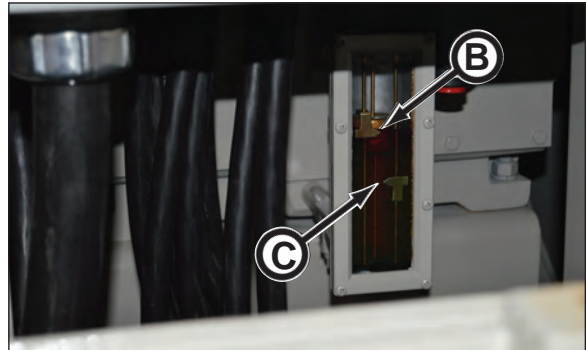


3. Clean and dry area around breather. Remove breather and add a high quality SAE 80W-90 gear oil (P/N P0126-024) to bring oil level to the full mark indicator.

Gearbox oil capacity (approx.) 5.5 gal (21 L)



4. Check the gearbox oil level. The oil level should be at the full mark indicator (B). Never allow the oil level to go below the low mark indicator (C).



5. Replace breather.



ANNUALLY

17. LUBRICATE ELECTRIC MOTOR BEARINGS

1. Wipe the motor bearing lubrication fittings (A) clean. There are two lubrication fittings on the motor.
2. Lubricate motor bearings with one shot of Mobilgrease® XHP222 Premium Lubricating Grease or equivalent. Lubricate annually thereafter.



AS REQUIRED

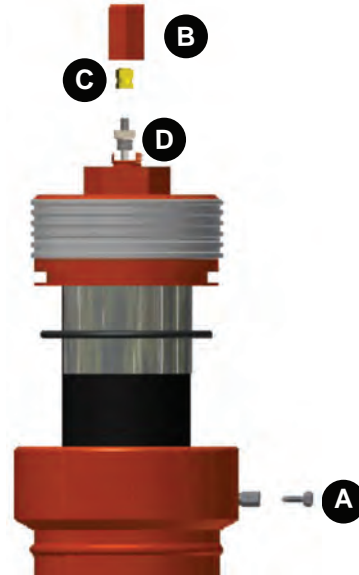
18. CHARGE DAMPENER WITH NITROGEN

⚠ WARNING CHARGE ONLY WITH NITROGEN.

Do not exceed maximum charging pressure of the cartridge. Doing so could result in bursting or other damage to the cartridge.

Dampener Parts

- A - Bleeder Valve
- B - Loading Valve Protection Cap
- C - Loading Valve Dust Cap
- D - Safety Nut



Charging Procedure

1. With pump shutdown, open discharge bleeder valve.

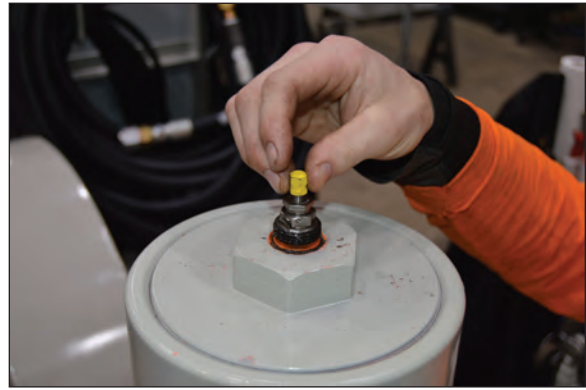


2. Remove loading valve protection cap.



(continued on next page)

3. Remove dust cap from loading valve port.



4. Attach charging hose to loading valve port and loosen safety nut with three full turns.



5. Using NITROGEN ONLY, open nitrogen tank and charge the cartridge through loading valve to 5 psi. Close nitrogen tank.



6. Remove charging hose.



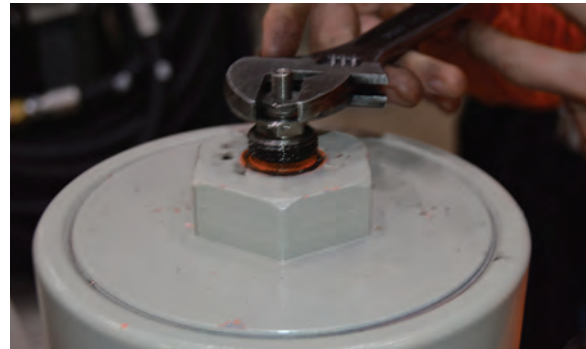
(continued on next page)

NOTICE

If needed, use a standard tire pressure gauge to read the pressure in the cartridge or to release excess pressure.



7. Retighten safety nut.



8. Replace dust cap on loading valve port.



9. Replace loading valve protection cap.



10. Close bleeder valve.



VII. Storage

PREPARING FOR STORAGE

1. Clean equipment thoroughly.
2. Repair worn or damage parts.
3. Repaint equipment where necessary.
4. Remove supply and return hoses. Remove drain plug from pump. Flush and drain pump and all fluid lines. With water completely drained, replace plugs. If necessary, flush equipment with RV antifreeze to prevent freezing.
5. Inspect power cables for damage. Clean connections with electric contact cleaner and blow dry with compressed air. Use industrial strength bags to cover all cable connection ends, then tape the bags to the cable to prevent contamination.
6. Coil power cables neatly on the jetting pump power cable hangers.
7. If possible, store equipment under cover and out of the weather in a ventilated area.

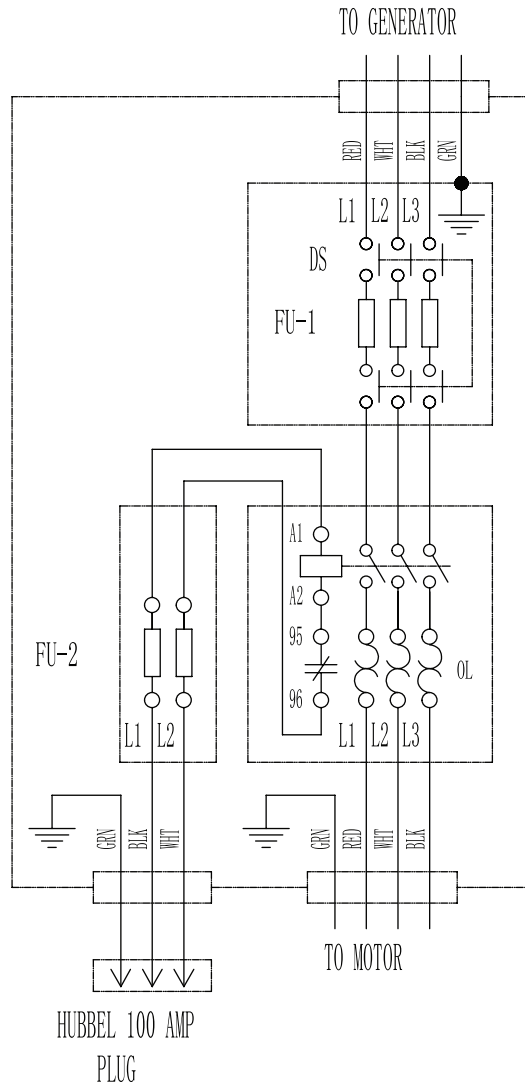
REMOVING FROM STORAGE

1. Clean equipment thoroughly.
2. Check to make sure all decals including safety decals are clean and readable.
3. Check condition of wires and cables. Repair or replace as necessary.
4. Check for leaks. Repair or replace as necessary.
5. Check condition of all hoses and connections. Tighten, repair or replace with new as needed.
6. Review this instruction for the jetting pump operation and maintenance.

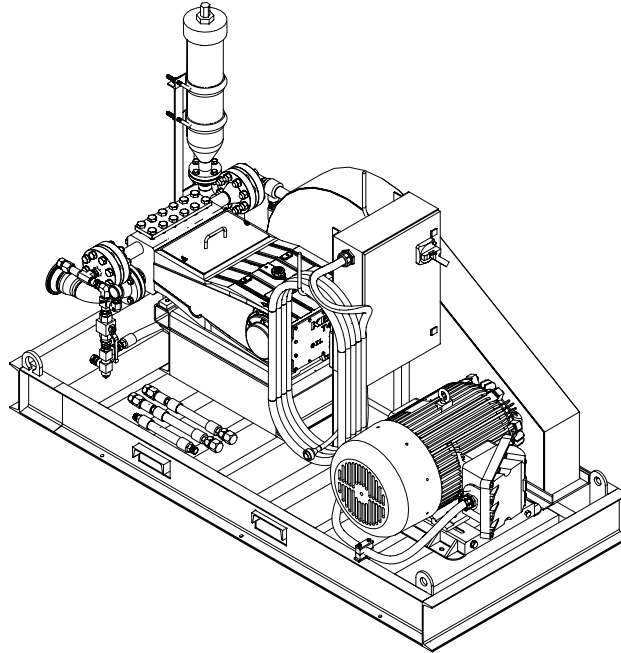
VIII. Troubleshooting

Problem	Cause	Solution
No jetting flow from pump.	Main drive motor is Off.	Turn cooling pump on or rotate cutter head.
	No power.	Connect jetting pump to power source. Turn main power switch ON. Replace damaged cables.
	An E-Stop button(s) is pushed in.	Pull out ALL E-Stop buttons.
	Power control cable from pump is not connected to Jetting Control Pump on control container bulkhead.	Connect cable from jetting pump to control container bulkhead connection.
	Supply hose from cooling tank not connected to pump.	Connect supply hose.
	Blockage in jetting strainer or supply hose.	Remove blockage in strainer or hose.
	HP Jetting shutoff valve on slurry pit valve is closed.	Open valve.
	No water in cooling tank.	Refill cooling tank with water.
Pump flows are inconsistent.	External power source (generator) output is erratic.	Inspect and troubleshoot generator.

IX. Electrical Schematic



X. Specifications



Dimensions (width x length x height) 50.75 x 109.4375 x 70 in. (959 x 921 x 375 mm)

Weight 5,250 lbs. (2,381 kg)

Main Pump Data

Rated Input HP Speed (Maximum) 112.5 HP@ 326 rpm
 Rated Continuous Speed (Maximum) 385 rpm
 Speed (Minimum) 100 rpm
 Oil Capacity (SAE 80W-90 Gear Oil) 5.5 gal (21 L)

Liquid Data

Plunger Size Diameter Range 1.75 in. (44 mm)
 Rated Discharge Pressure (Maximum) 3,772 psi
 Displacement
 U.S. Gallons Per Revolution12 gal/rev
 U.S. GPM @ Rated RPM 38.9 gpm

Belt Tension

New Belt 17-30 lb.
 Used Belt 13-23 lb.
 Center Distance Span (approx.) 40.13 in. (257 mm).

Electric Motor 75 HP (56 kW)

Power

Recommended Operating Power:
 460V, 60 Hz, 3 Phase Power Supply with Branch Circuit Current Protection of 150 Amp

Fluid Capacity

Gearbox Oil SAE 80W-90 gear oil 5.5 gal (21 L)

Akkerman Inc. reserves the right to improve its product without notice or obligation.

XI. Warranty

Akkerman warrants that all equipment manufactured by it be free from defects due to workmanship or material when normally used and serviced for a period of 90 days from the date of shipment by Akkerman. Normal wear and tear to the equipment, including, but not limited to, wear on the cutter face tooling, hydraulic filters, augers, casings, slurry line and seals is not covered by this warranty. Akkerman does not warrant that the equipment meets the requirements of any particular safety code or rule governing equipment classification. If the Customer has questions about local safety codes, rules or ordinances, authorities local to the project should be consulted.

In order to be considered as a potential warranty claim, the component in question must be returned to Akkerman (freight prepaid) for factory inspection and analysis, and determination of warranty applicability. No warranty is provided for electronics or electrical components of any kind. The validity of all warranty claims are subject to the discretion and determination of the Akkerman Aftermarket Support Department. All such determinations are final.

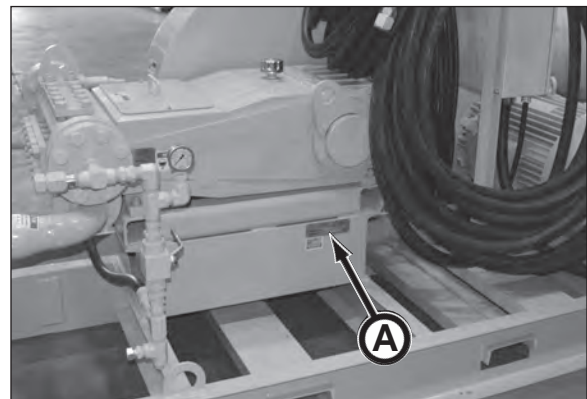
XII. Identification Numbers

Model and serial numbers are required when ordering parts or requesting service information. Record your model and serial number below.

High Pressure Jetting Pump (A)

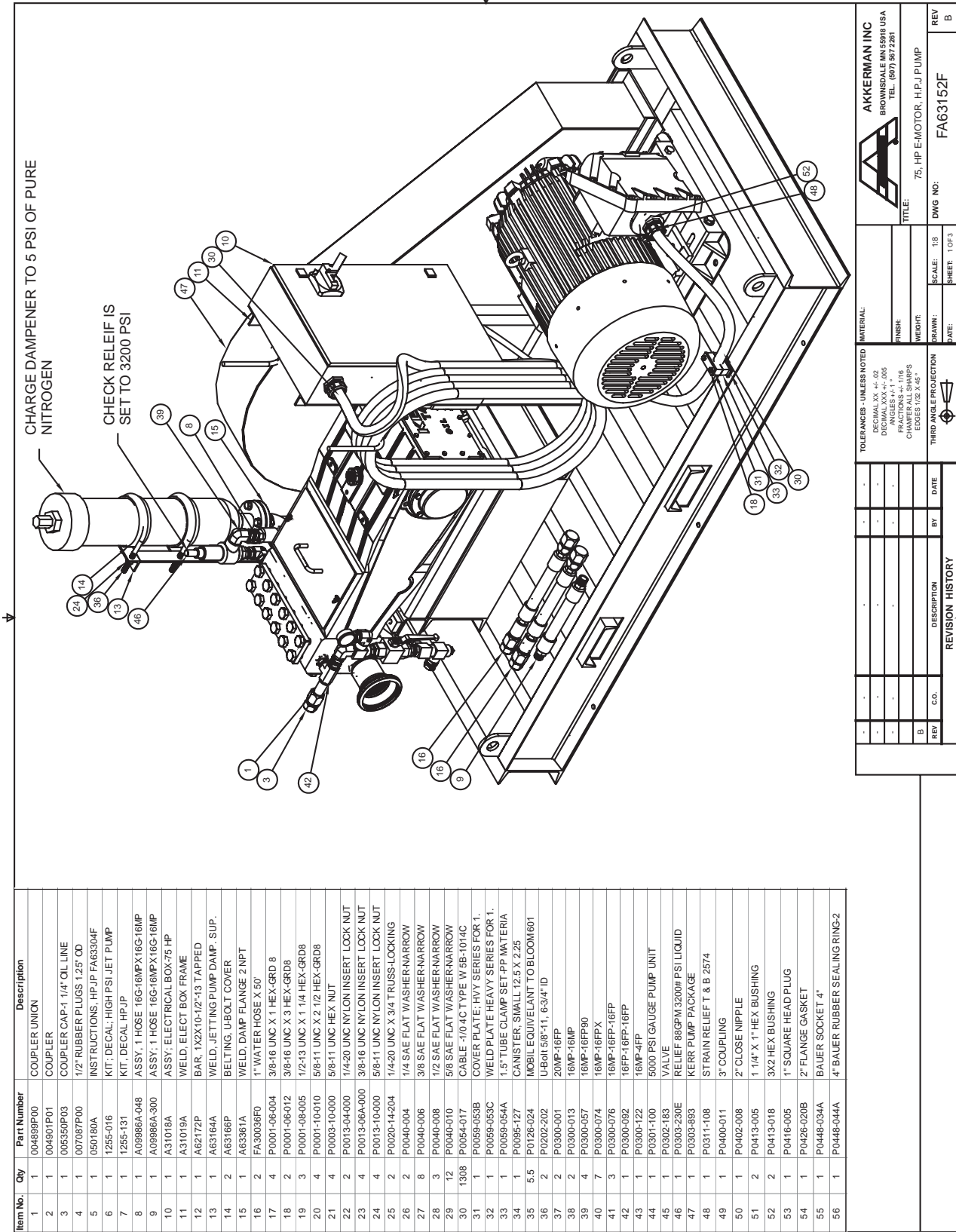
Model Number _____

Serial Number _____



XIII. Drawing FA63152F

HIGH PRESSURE JETTING PUMP, FA63152F



Item No.	Qty	Part Number	Description
1	1	004899P00	COUPLER UNION
2	1	004901P01	COUPLER
3	1	006350P03	COUPLER CAP-1 1/4" OIL LINE
4	1	007087P00	1/2" RUBBER PLUGS 1.25" OD
5	1	050180A	INSTRUCTIONS: HPJP FA63304F
6	1	1255-016	KIT: DECAL: HIGH PSI JET PUMP
7	1	1255-131	KIT: DECAL: HPJP
8	1	A09866A-048	ASSY, 1 HOSE 16G-16MPX16G-16MP
9	1	A09866A-300	ASSY, 1 HOSE 16G-16MPX16G-16MP
10	1	A31018A	ASSY: ELECTRICAL BOX-75 HP
11	1	A31019A	WELD, ELECT BOX FRAME
12	1	A6272P	BAR, 1X2X10-1/2-13 TAPPED
13	1	A63164A	WELD, JETTING PUMP DAMP. SUP.
14	2	A63766P	BELTING, UBOLT COVER
15	1	A63361A	WELD, DAMP FLANGE 2 NPT
16	2	FA30036FD	1" WATER HOSE X 50'
17	4	P0001-06-004	3/8-16 UNC X 1 HEX-GRD 8
18	2	P0001-06-012	3/8-16 UNC X 3 HEX-GRD8
19	3	P0001-08-005	1/2-13 UNC X 1 1/4 HEX-GRD8
20	4	P0001-10-010	5/8-11 UNC X 2 1/2 HEX-GRD8
21	4	P0003-10-000	5/8-11 UNC HEX NUT
22	2	P0013-04-000	1/4-20 UNC NYLON INSERT LOCK NUT
23	4	P0013-06A-000	3/8-16 UNC NYLON INSERT LOCK NUT
24	4	P0013-10-000	5/8-11 UNC NYLON INSERT LOCK NUT
25	2	P0020-14-204	1/4-20 UNC X 3/4 TRUSS-LOCKING
26	2	P0040-004	1/4 SAE FLAT WASHER-NARROW
27	8	P0040-006	3/8 SAE FLAT WASHER-NARROW
28	3	P0040-008	1/2 SAE FLAT WASHER-NARROW
29	12	P0040-010	5/8 SAE FLAT WASHER-NARROW
30	1308	P0054-017	CABLE -1/0.4C TYPE W 5B-1014C
31	1	P0059-053B	COVER PLATE: HVY SERIES FOR 1,
32	1	P0059-055C	WELD PLATE HEAVY SERIES FOR 1,
33	1	P0059-055A	1.5" TUBE CLAMP SET-PP WATER
34	1	P0095-127	CANISTER, SMALL 12.5 X 2.25
35	5.5	P0202-202	MOBILE EQUIVELANT TO BLOOM601
36	2	P0300-001	U-BOLT 5/8"-11, 6-3/4" ID
37	2	P0300-013	20MP-16FP
38	4	P0300-057	16MP-16FP90
39	4	P0300-074	16MP-16FPX
40	7	P0300-076	16MP-16FP-16FP
41	3	P0300-076	16MP-16FP-16FP
42	1	P0300-092	16FP-16FP-16FP
43	1	P0300-122	16MP-4FP
44	1	P0301-100	5000 PSI GAUGE PUMP UNIT
45	1	P0302-183	VALVE
46	1	P0303-230E	RELIEF 88GPM 3200# PSI LIQUID
47	1	P0303-893	KERR PUMP PACKAGE
48	1	P0311-108	STRAIN RELIEF T & B 2574
49	1	P0400-011	3" COUPLING
50	1	P0402-008	2" GLOBE NIPPLE
51	2	P0413-005	1 1/4" X 1" HEX BUSHING
52	2	P0413-018	3X2 HEX BUSHING
53	1	P0416-005	1" SQUARE HEAD PLUG
54	1	P0426-020B	2" FLANGE GASKET
55	1	P0448-034A	BAUER SOCKET 4"
56	1	P0448-044A	4" BAUER RUBBER SEALING-RING-2

AKKERMAN INC
BROWNSDALE MN 55918 USA
TEL: (907) 897.2281

TITLE: 75-HP E-MOTOR, HPJP PUMPDWG NO: FA63152FREV: B

MATERIAL: TOLERANCES - UNLESS NOTED
DECIMAL XX.XX ±.005
ANGLES ±.1°
CHAMFER ALL SHARPS
EDGES 1/32 X 45°

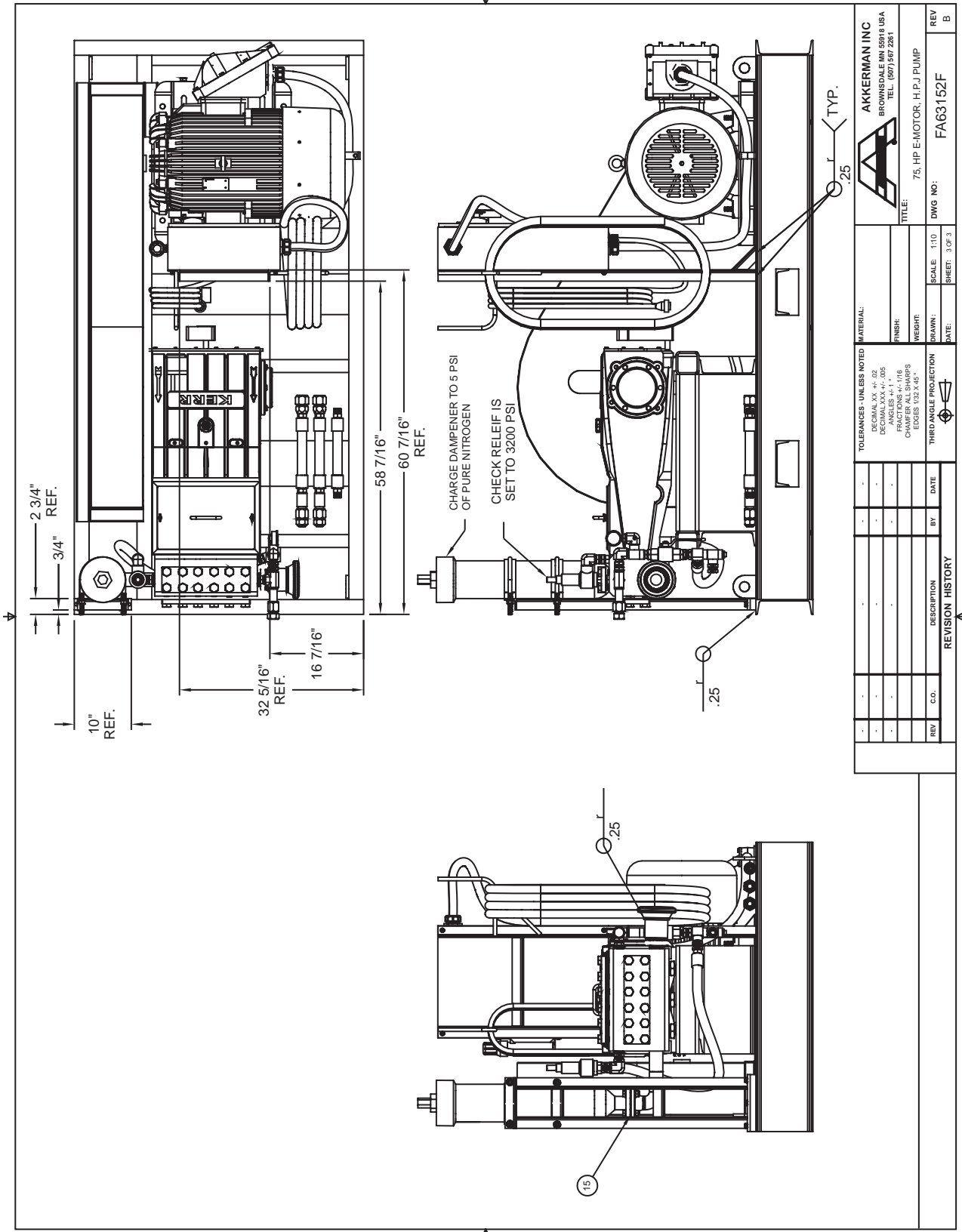
FINISH: -
WEIGHT: -
DRAWN: -
DATE: -

SCALE: 1:8
SHEET: 1 OF 3

REV	CO.	DESCRIPTION	BY	DATE
B				

REVISION HISTORY	
REV	DESCRIPTION

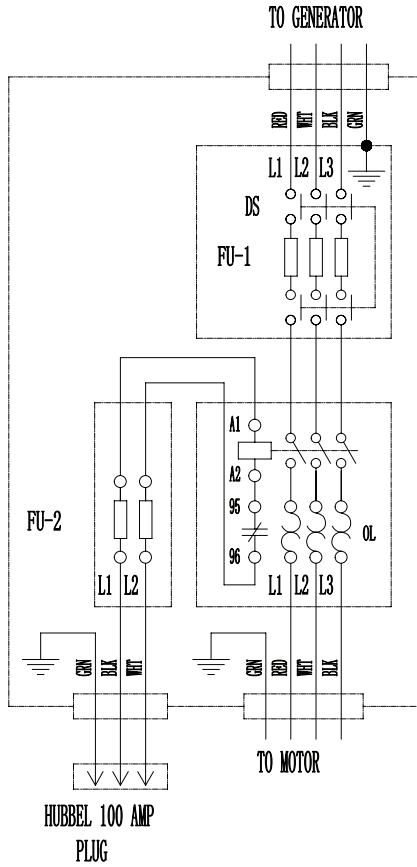
HIGH PRESSURE JETTING PUMP, FA63152F

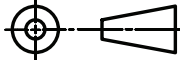



AKKERMAN INC BROWNSDALE MN 55918 USA TEL. (807) 587 2261		DNG NO: FA63152F REV B
TOLERANCES - UNLESS NOTED DECIMALS .XX DECIMALS .XXX ±.005 ANGLES ±.1° FINISH: RA 1.6 CHAMFER ALL SHARPS EDGES .032 X 45°		SCALE: 1:10 SHEET: 3 OF 3
MATERIAL: FINISH: WEIGHT: DRAWN: DATE:		THIRD ANGLE PROJECTION
REV	C.O.	DESCRIPTION
BY	DATE	REVISION HISTORY

HIGH PRESSURE JETTING PUMP SCHEMATIC, FA63152F

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124



THIRD ANGLE PROJECTION 					TOLERANCES UNLESS NOTED DECIMAL XX +/- .02 DECIMAL XXX +/- .005 ANGLES +/- 1 DEG FRACTIONS +/- 1/16 CHAMFER ALL SHARPS EDGES 1/32 X 45 DEG ANGLES +/- 30		 AKKERMAN INC BROWNSDALE MN 56010 USA TEL. (807) 867 2281		
	REV	C.O.	DESCRIPTION	BY	DATE	SCALE: NA	DRAWN:	TITLE	75, HP E-MOTOR, H.P.J PUMP
REVISION HISTORY					SHEET	DATE:	MATERIAL	DWG NO	REV
								FA63152F_SCH	B

XIV. Drawing FA63304F

HIGH PRESSURE JETTING PUMP, FA63304F

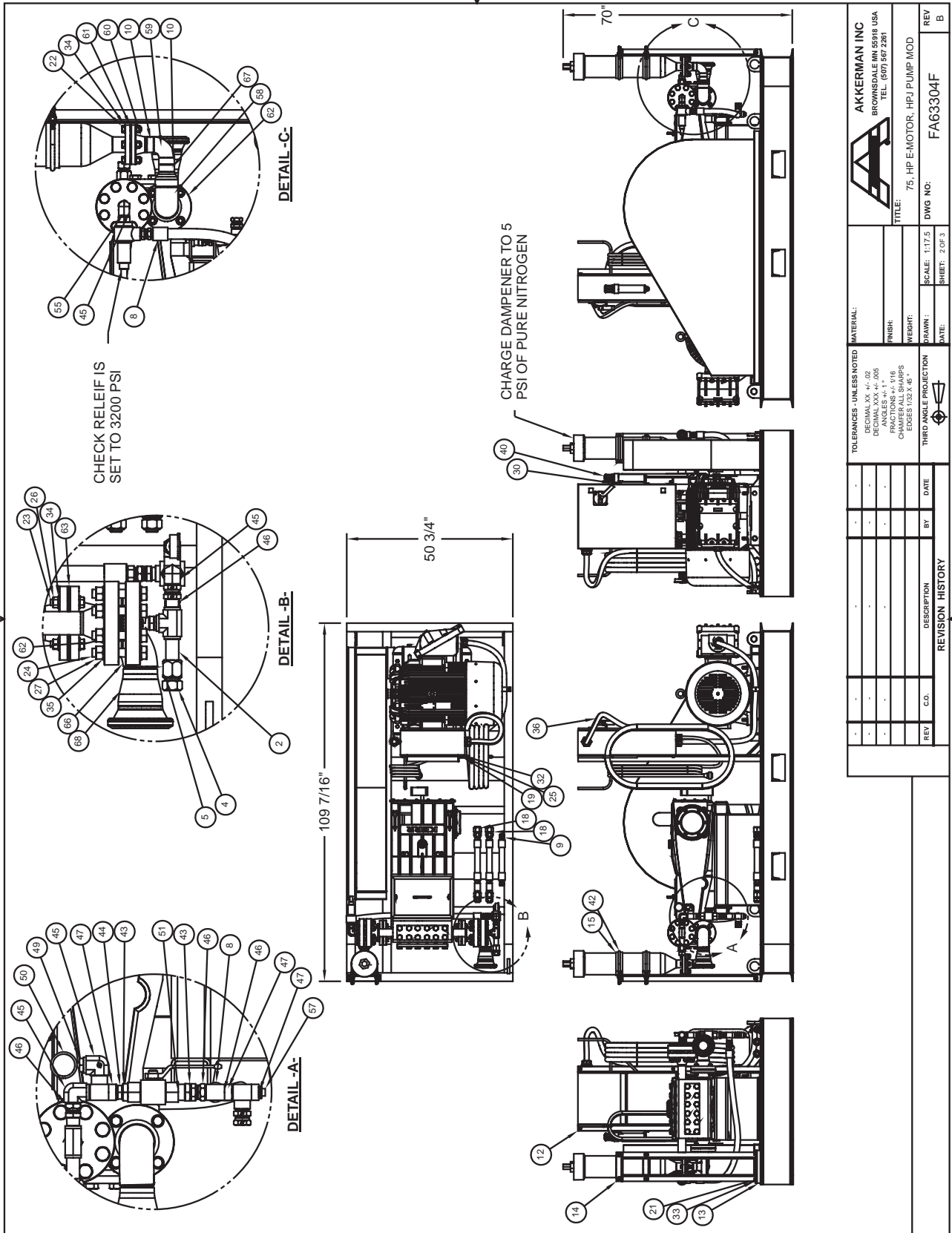
Item No.	Qty	Part Number	Description	Item No.	Qty	Part Number	Description
1	2	003529P04	LIFT EYE SWITCHING ASSY-1448	56	1	P0413-018	3X2 HEX BUSHING
2	1	004898P00	COUPLER UNION	57	1	P0416-005	1" SQUARE HEAD PLUG
3	1	004901P01	COUPLER	58	1	P0418-008	3" WELDING SCH 40 SHORT 90 DEG ELBOW
4	1	005350P03	COUPLER CAP-1 1/4" OIL LINE	59	1	P0418-020	2" STD SR WELD 90 ELBOW SCH 40
5	1	007087P00	1/2" RUBBER PLUGS 1.25" OD	60	1	P0426-020	2" WELDING NECK FLANGE
6	1	007180A	INSTRUCTIONS, HP, JP, FA63304F	61	1	P0426-020B	2" FLANGE GASKET
7	1	1285-131	KIT, DECAL HP, JP	62	2	P0426-030	3" WELDED FLANGE NECK 3W/ENF
8	1	A0986A-062	ASSY, 1 HOSE 16G-16MP X 16G-16MP	63	2	P0426-030B	3" PIPE SIZE STD FLANGE GASKET
9	1	A0986A-300	ASSY, 1 HOSE 16G-16MP X 16G-16MP	64	2	P0426-122	CAP FLANGE, CLASS 1500 2" PIPE
10	2	A11920P	PIPE, 2" SCH 40 X 1.00	65	2	P0438-030	2" METALLIC GASKET, CLASS 1500
11	1	A31018A	ASSY, ELECTRICAL BOX-75 HP	66	1	P0438-030A2	3" 90 DEG LONG SCH 40 WELD
12	1	A31019A	WELD, ELECT BOX FRAME	67	1	P0438-40A3	4 X 3 Adapter
13	1	A62172P	BAR, 1X2X10-1/2" X 13 TAPPED	68	1	P0448-034A	BAUER SOCKET 4"
14	1	A63164A	WELD, JETTING PUMP DAMP. SUP.	70	1	P0448-044A	4" BAUER RUBBER SEALING RING-2
15	2	A63166P	BELTING, U-BOLT COVER				
16	3	A63328P	C-CHANNEL, 10X15.3X50.750				
17	1	A63329P	1" WATER HOSE X 50'				
18	2	FA30038F0	3/8-16 UNC X 1 HEX-GRD 8				
19	4	P0001-06-004	3/8-16 UNC X 3 HEX-GRD8				
20	2	P0001-06-012	1/2-13 UNC X 1 1/4 HEX-GRD8				
21	3	P0001-06-005	5/8-11 UNC X 2 1/2 HEX-GRD8				
22	4	P0001-10-010	7/8-9 UNC X 5 HEX-GRD8				
23	8	P0001-10-012	3/8-16 UNC HEX NUT				
24	16	P0001-14-020	5/8-11 UNC HEX NUT				
25	4	P0003-06-000	7/8-9 UNC HEX NUT				
26	12	P0003-10-000	1/4-20 UNC NYLON INSERT LOCK NUT				
27	16	P0003-14-000	5/8-11 UNC NYLON INSERT LOCK NUT				
28	2	P0013-04-000	1/4-20 UNC X 3/4 TRUSS-LOCKING				
29	4	P0013-10-000	1/4 SAE FLAT WASHER-NARROW				
30	2	P0020-14-204	1/2 SAE FLAT WASHER-NARROW				
31	2	P0040-004	3/8 SAE FLAT WASHER-NARROW				
32	8	P0040-006	1/2 SAE FLAT WASHER-NARROW				
33	3	P0040-008	7/8 SAE FLAT WASHER-NARROW				
34	28	P0040-010	CABLE -1/0 4C TYPE W 5B-1014C				
35	32	P0040-014	COVER PLATE, Hvy SERIES FOR 1.				
36	1308	P0054-017	WELD PLATE HEAVY SERIES FOR 1.				
37	1	P0059-053B	1.5" TUBE CLAMP SET-PP MATERIAL				
38	1	P0059-053C	CANISTER, SMALL 12.5 X 2.25				
39	1	P0059-054A	MOBIL EQUIVELANT TO BLOOM 601				
40	1	P0095-127	U-Bolt 5/8"-11, 63/4" ID				
41	55	P0126-024	20MP-16FP				
42	2	P0202-202	16MP-16MP				
43	2	P0300-001	16MP-16MP				
44	2	P0300-013	16MP-16FP				
45	3	P0300-057	16MP-16FP				
46	5	P0300-074	16MP-16FP				
47	3	P0300-076	16MP-16FP				
48	1	P0300-092	16FP-16FP-16FP				
49	1	P0300-122	16MP-4FP				
50	1	P0301-100	5000 PSI GAUGE PUMP UNIT				
51	1	P0302-183	VALVE				
52	1	P0303-230E	RELIEF 88GPM/3200# PSI LIQUID				
53	1	P0303-883	KERR PUMP PACKAGE				
54	1	P0311-108	STRAIN RELIEF T & B 2574				
55	2	P0413-005	1 1/4" X 1" HEX BUSHING				

CHARGE DAMPENER TO 5 PSI OF PURE NITROGEN

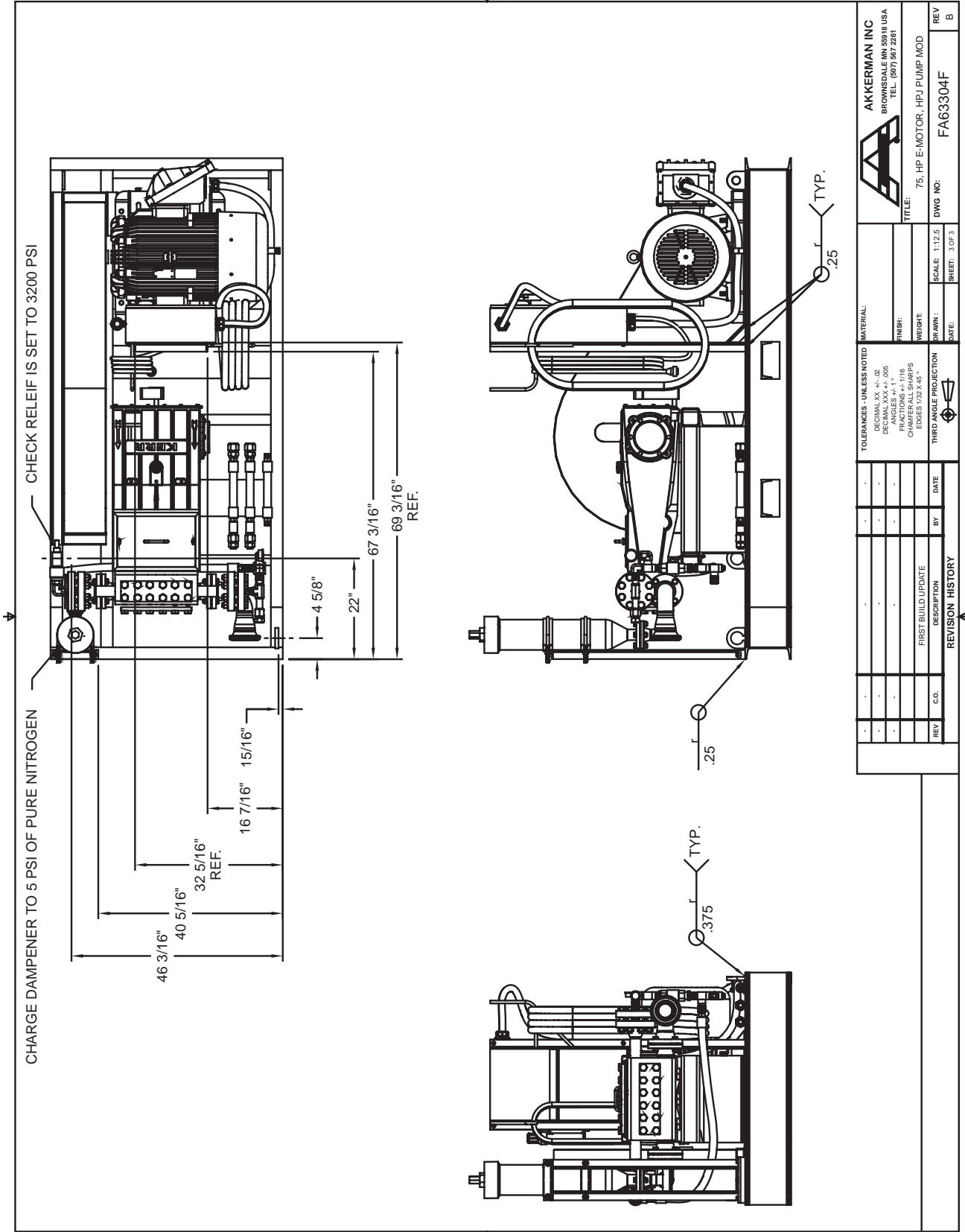
CHECK RELIEF IS SET TO 3200 PSI

AKKERMAN INC BROWNSDALE MN 55918 USA TEL: (907) 987-2861		SCALE: 1:10	DWG NO: FA63304F	REV B
TITLE: 75 HP E-MOTOR, HP-J PUMP MOD		SHEET: 1 OF 3		
TOLERANCES - UNLESS NOTED:	MATERIAL:	DATE:		
DECIMAL XX, X, .05		BY:		
ANGLES 45, 15		DISCUSSION:		
CHAMFER ALL SHARPS		REVISION HISTORY:		
EDGES 1/32 X 45°				
THIRD ANGLE PROJECTION				

HIGH PRESSURE JETTING PUMP, FA63304F

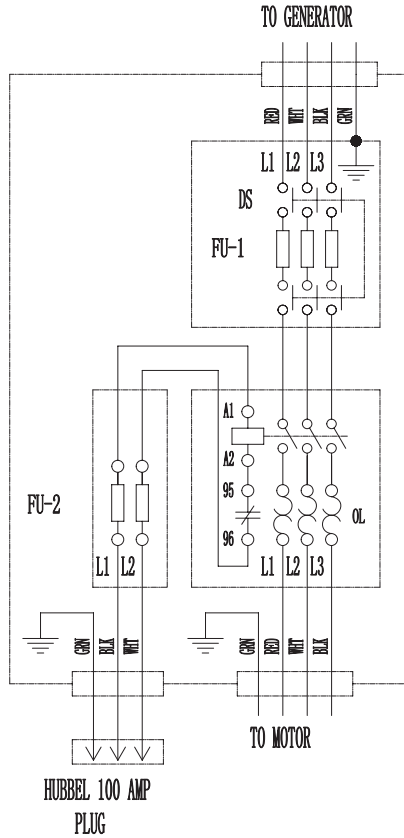


HIGH PRESSURE JETTING PUMP, FA63304F



HIGH PRESSURE JETTING PUMP SCHEMATIC, FA63304F

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124



<p>THIRD ANGLE PROJECTION</p>	REVISION HISTORY				TOLERANCES UNLESS NOTED DECIMAL XX +/- .02 DECIMAL XXX +/- .005 ANGLES +/- 1 DEG FRACTIONS +/- 1/16 CHAMFER ALL SHARPS EDGES 1/32 X .45 DEG ANGLES +/- 30		<p>AKKERMAN INC BROWNSDALE MN 56018 USA TEL. (507) 987 2381</p>	
	REV	C.O.	DESCRIPTION	BY	DATE	SCALE: NA	DRAWN:	TITLE
							DWG NO	REV
							FA63304F_SCH	B



Akkerman Inc. • 58256 266th Street • Brownsdale, MN USA 55918
Phone: (507) 567-2261 • Toll Free: (800) 533-0386 • Fax: (507) 567-2605
email: akk@akkerman.com • web site: www.akkerman.com

Akkerman Inc. reserves the right to improve its products without notice or obligation.