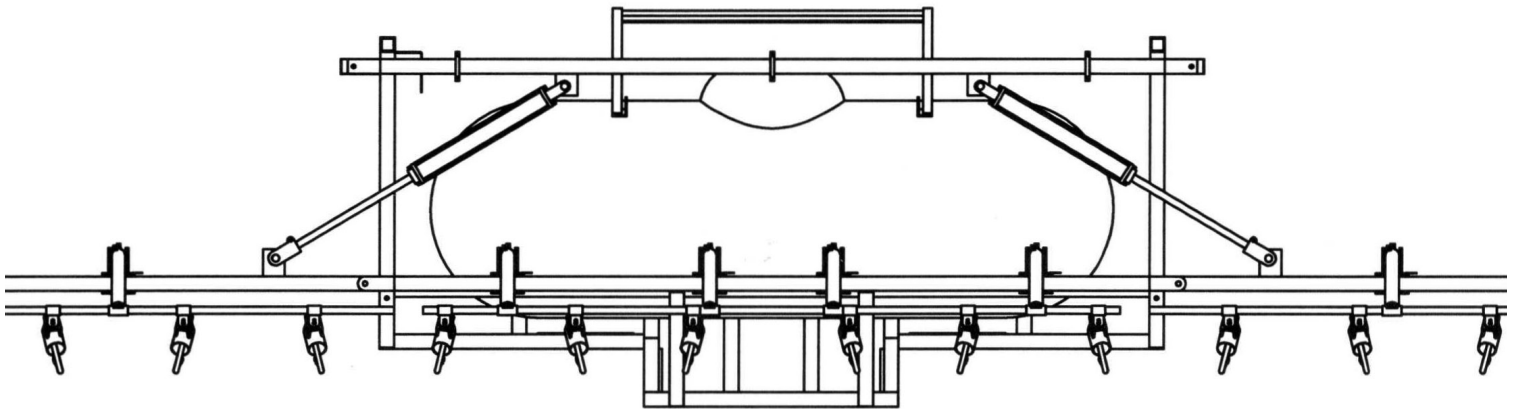




Red Dragon Potato Vine Flamer Unit



Owners Manual

(For Unit Numbers 2-PVF, 4-PVF, 6-PVF, and 8-PVF)

Table of Contents

Potato Vine Flamer Parts List	Page 1
Assembly Instructions.....	Pages 2-4
Check List For Daily Start Up	Page 5
Assembly Diagram A.....	Page 6
Assembly Diagram B.....	Page 7
Assembly Diagram C.....	Page 8
Assembly Diagram D.....	Page 9
Assembly Diagram E	Page 10
Assembly Diagram F	Page 10
Torch Bar/Torch Layout Assembly Diagrams	Page 11
8 Row Unit Control Head Assembly Diagram	Page 12
6 Row Unit Control Head Assembly Diagram	Page 13
4 Row Unit Control Head Assembly Diagram	Page 14
2 Row Unit Control Head Assembly Diagram	Page 14
LP-Gas Hose Assembly Diagram	Page 15
Control Switch Assembly Drawing	Page 16
Proper Purging of LP-Gas Cylinder.....	Page 16
Vacuum Pre-Purged Domestic Tanks.....	Page 18
If You Have Questions	Page 19
Trouble Shooting Tips.....	Page 19

Red Dragon Potato Vine Flamer Unit Parts List

(For Unit Numbers 2-PVF, 4-PVF, 6-PVF, and 8-PVF)

√ Off List	Part Number	Part Description	QTY 2-PVF	QTY 4-PVF	QTY 6-PVF	QTY 8-PVF
	RU-1	Tank Valve Guard	1	1	1	1
	RU-2	Standard Frame	1	1	1	1
	RU-3	36" Frame Stand	2	2	2	2
	RU-4	31" Frame Stand	2	2	2	2
	G-20	Retaining Pins For RU-3 & RU-4	4	4	4	4
	325	Hydraulic Cylinders	0	0	0	2
	HR400	Hydraulic Hose Assembly	0	0	0	1
	RUR-12	Right Boom Extension	0	0	1	0
	RUL-12	Left Boom Extension	0	0	1	0
	RUR-13	Right Boom Arm	0	0	0	1
	RUL-13	Left Boom Arm	0	0	0	1
	V-326	Ball Valve	4	8	12	16
	RU-11	Tool Bar Bracket W/ 7/16" x 3 1/2" Bolts	2	4	6	8
	PRU-5	Tool Bar Leg W/ Brass Crosses, Flares, Ball Valves	2	4	6	8
	100-117-012	1/4" x 6" Nipple w/Flare	8	16	24	32
LT 2 1/2 - 12LPS		Standard Liquid Spay Torch	4	8	12	16
LT-6		LPS Bracket on Torch	4	8	12	16
		9' Torch Bars	1	0	0	0
		6' Torch Bars	0	2	0	0
		8' Torch Bars	0	0	2	3
100-118-064-71		Tank Cable	2	2	2	2
	HP2SS	1/4" LPG Hose 2'	8	16	24	32
	HP65T	1/4" LPG Hose 5.5'	4	4	4	4
	HP8S	1/4" LPG Hose 8'	0	4	0	4
	HP14S	1/4" LPG Hose 14'	0	0	4	4
	HP10TS	1/4" LPG Hose 10'	0	0	4	4
	CS601-PV	Control Box W/ Switches	1	1	1	1
	PC 12 WP	Control Assembly	1	0	0	0
	PC 14 WP	Control Assembly	0	1	0	0
	PC 16 WP	Control Assembly	0	0	1	0
	PC 18 WP	Control Assembly	0	0	0	1
		Assembly Packet	1	1	1	1
		Packet Includes:				
		Slick-Tite Thread Compound				
		Zip Ties				
	L2001*	Spark Lighter	1	1	1	1
		T-Wrench	1	1	1	1
	HP303	Hitch Pin	1	1	1	1
	HP403	3-Point Hitch Pin	2	2	2	2
		Instruction/Operation Manual	1	1	1	1
VT 2 1/2-24 CE		Complete Vapor Torch Kit for Lighting Burners	1	1	1	1
LD-1		Leak Detector	1	1	1	1

Red Dragon Potato Vine Flamer Unit

Assembly Instructions

(For Unit Numbers 2-PVF, 4-PVF, 6-PVF, and 8-PVF)

IMPORTANT!

Always start with a clean LP-Tank & use a fuel strainer!

NOTE: All “Right” Side or “Left” Side indications are made as if facing the tool bar side of tank frame. All “Front” indications refer to the 3-point adaptor side of tank frame. All “Back” indications refer to the tool bar side of tank frame.

1. Unpack all parts and check against parts list. Refer to illustrations for part numbers and positions.
2. Attach your tractor to the three point hitch and raise the fuel tank frame (RU-2) to a raised position. Lower the fuel tank frame leg stands (RU-3 *rear* and RU-4 *front*) to the storage position (extended downward) and pin with retaining pins (G-20). Lower the frame so it will rest on the legs.
(See Assem. Diagram A, Pg. 6)
3. When installing the fuel tank to the frame, position the tank so it will be centered.
4. Place valve protector on fuel tank and secure by using the two cables. Install bolt ends of cable into the holes on front of the tank frame and secure with 1/2” lock-nuts. Run cables up through the cable brackets on the valve guard and down the back side of the tank through the cable holes on the back side of the tank frame. Secure with 1/2” lock-nuts. Tighten the cables as needed.
(See Assem. Diagram B, Pg. 7)
5. Extension/Boom Assembly for 6 and 8 Row Units (2 and 4 Row Units Require Frame Only)

Six Row Unit

Slide extensions (RU-12), into the toolbar of the frame and bolt with 5/8” x 4” bolts through boom tabs and extension and tighten with lock nuts.

(See Assem. Diagram C, Pg. 8)

Eight Row Unit

Lift boom arms (RU-13 for 8-Row Unit) with tabs up and 45 degree braces toward the front to align with boom tabs and bolt with 5/8” x 4” bolts, and lock-nuts. **CAUTION: DO NOT over-tighten or the boom arms may not raise and lower smoothly. (See Assem. Diagram D, Pg. 9)**

Using 7/16” x 3” bolts, and lock-nuts, mount pull arm clevis assemblies to top supports. Bolt idler pull arm assemblies (marked right and left) to clevis arms and then to boom arms. **(See Assem. Diagram D, Pg. 9)**

Pin the base of the hydraulic cylinders (325) into the hydraulic cylinder mounting tab on the frame. Pin the other end of the cylinder to the boom tab. **(See Assem. Diagram D, Pg. 10)**

6. Lay out the tool bar brackets (RU-11). Mark on the tool bar, your field rows (up to 36” on center). As you face the tool bar the U-shaped tool bar bracket is placed on the tool bar so the bolt holes are towards you. Bolt with 7/16” x 3 1/2” bolts, lock-washers, and nuts in the anticipated position. Some adjustment may be required in the field. **(See Assem. Diagram E, Pg. 10)**

7. Lay out the legs (PRU-5). Place the leg in the yoke of the tool bar bracket (RU-11). Align the bolt hole in the leg with the front bolt hole in the yoke. Slide 7/16" x 3 1/2" bolt through and tighten with lock-washer and nut. **DO NOT OVER TIGHTEN!**
(See Assem. Diagram E, Pg. 10)
8. Slide the torch bar or bars through first leg (PRU-5) ring bracket and slide bar through two torches. Repeat this until the bar is through the designated number of legs. Install a torch on each end of torch bar. Do not tighten torch bracket set screws until you have the torches at the spacing you require and at the angle you require. (See Assem. Diagram G, Pg. 11 For Torch Bar(s) Layout)
9. Mount the control head assembly to the control head mounting bracket on the top left side of the frame and mount the manifold assembly to the center control manifold mount on the back of the frame.
(See Assem. Diagrams A, B & D Pg. 6-9)
10. Number the outlet ports of the control heads starting from the left most port being #1.
(See Control Head Assem. Diagram & Hose Assem. Diagram, Pgs 12 - 15)
11. Attach hoses as follows, using pipe compound or Teflon® Tape. (See Hose Assem. Diagram, Pg 15)

Burner Supply Hose Lengths in Feet

Position	2-PVF	4-PVF	6-PVF	8-PVF
1	5.5	8	14	14
2	5.5	8	14	14
3	NA	5.5	10	10
4	NA	5.5	10	10
5	NA	NA	5.5	8
6	NA	NA	5.5	8
7	NA	NA	NA	5.5
8	NA	NA	NA	5.5

12. Route hoses to legs in sequence. Number one port would be the left most torch position. Attach hoses to flared brass crosses on legs (no teflon® tape or pipe compound needed). Main inlet hoses to the top cross and pilot inlet hoses to bottom crosses.
(See Control Head Assem. Diagram & Hose Assem. Diagram, Pgs 12 - 15)
13. Install 2 foot hoses (HP-2SS) from the brass cross outlets on the leg (PRU-5) using pipe compound or teflon® tape to the brass flare on the torch (no pipe compound or tape needed). Repeat for each torch making sure the hose from the main crosses go to the spray inlet and the crosses from the pilot go to the pilot torches.
14. There will be a 1/2" strainer (S-714) and a 1/2" master solenoid (S-122) with a 5' hose connected together that connects to the fuel supply. The hose will connect to the control head mount on the left side of the frame.

15. Make sure switches are turned “OFF” on control box and that regulators are closed.

All procedures from this point should be done outside, in a well ventilated area.

16. Open supply tank slowly one turn. Check for leaks up to the first solenoid with soapy water or a leak detector solution. If a leak is detected, shut off gas and repair. Check again until no leaks are present.
17. Shut off gas and hook-up shut down switch (CS-601) to a 12 volt battery. White wire to ground and black to positive. Run wires down to solenoids. Shorter wire to the master solenoid by the strainer and the longer ones to the solenoid on the control head.
18. Make sure rocker switches are in off position. Open tank one turn. Press master switch button (Red). Red light should come on. Test for leaks up to regulators. Adjust pilot regulator to 15 PSI. Test all pilot fittings. Adjust main regulator to 15 P.S.I. Turn main green rocker switch ON. Test for leaks through the entire system. Correct leaks if any are present. Adjust to working pressure. Test for leaks again. Shut off tank.

WARNING

**Use Extreme Caution - Do Not Operate this unit when leaks are present.
Use only in well ventilated areas. Do Not Operate this unit when any
flammables are present.**

**Flames produced by this unit can reach 2,000° and may cause serious
burns and possibly death.**

Check List for Daily Start Up

WARNING!

Use Extreme Caution — flames from this unit can cause serious injury or death.
Do Not Operate this unit when leaks are present. Operate only in well ventilated areas.

1. Fuel Tank Valve OFF
2. Regulator(s) OFF
3. Control Switch..... OFF

LEAK TEST

4. Fuel Tank Valve ON
CHECK FOR LEAKS FROM FUEL TANK TO SOLENOID
5. Press Red Master Switch On
6. Leak Test All Fittings to Regulators
7. Adjust Regulator(s) to 15 PSI
Check All Connections and Components for Leaks On Pilot Assemblies. Correct Leaks.
8. Move Main Green Rocker Switch to ON
9. Check for Leaks Throughout System
10. Correct ALL Leaks Malfunctioning Equipment
11. Cycle Control Switch Several Times
12. Fuel Tank Valve OFF
13. Allow ALL Fuel to Burn Out of Lines and Controls when shutting down.
14. Move Control Switch to OFF

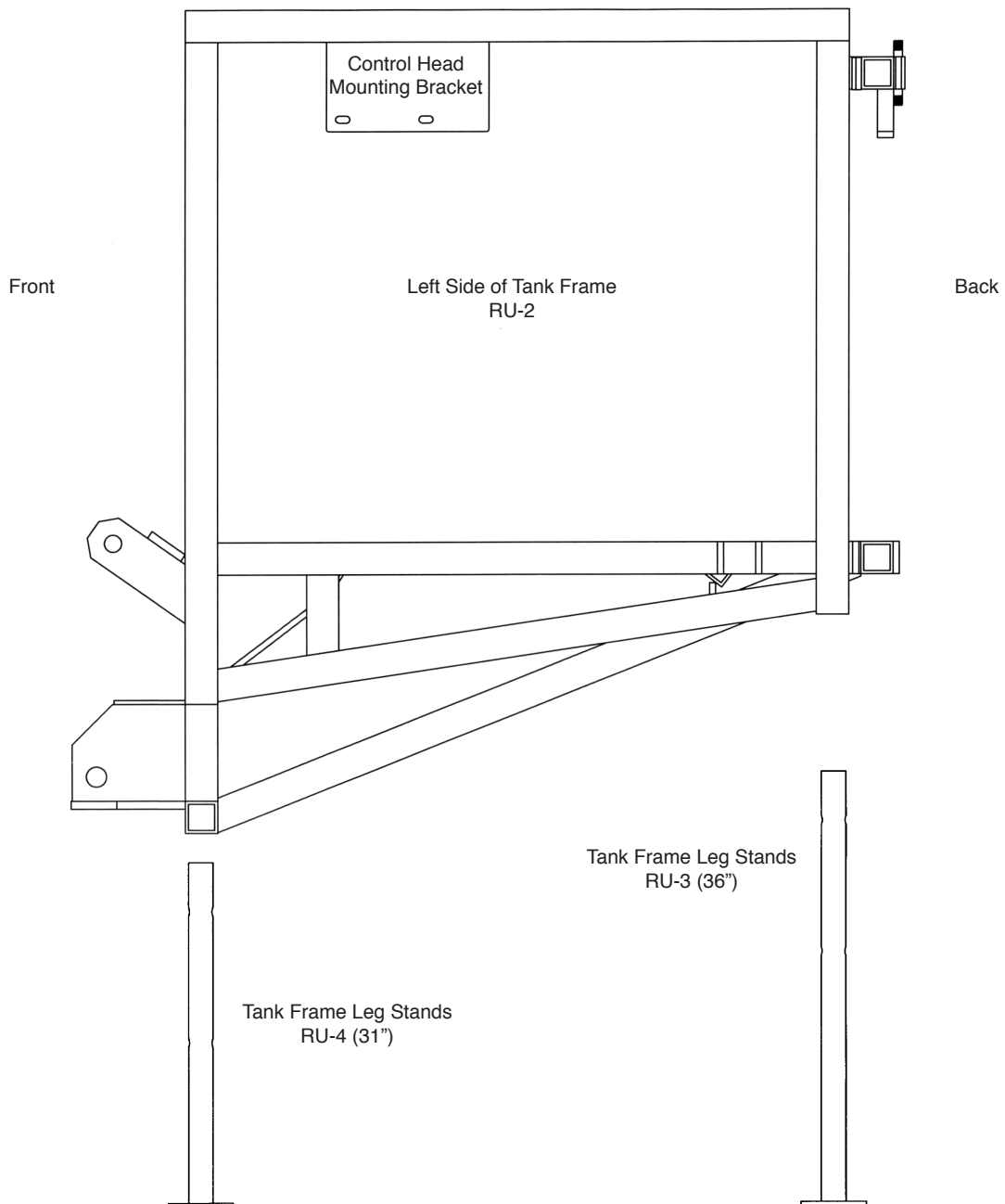
WARNING!

Flaming should be confined to days when the wind velocity does not exceed 10 miles per hour. Care should be taken when flaming with the wind so as not to damage the hose and control assembly.

Assembly Diagrams

Diagram A

Left Side View

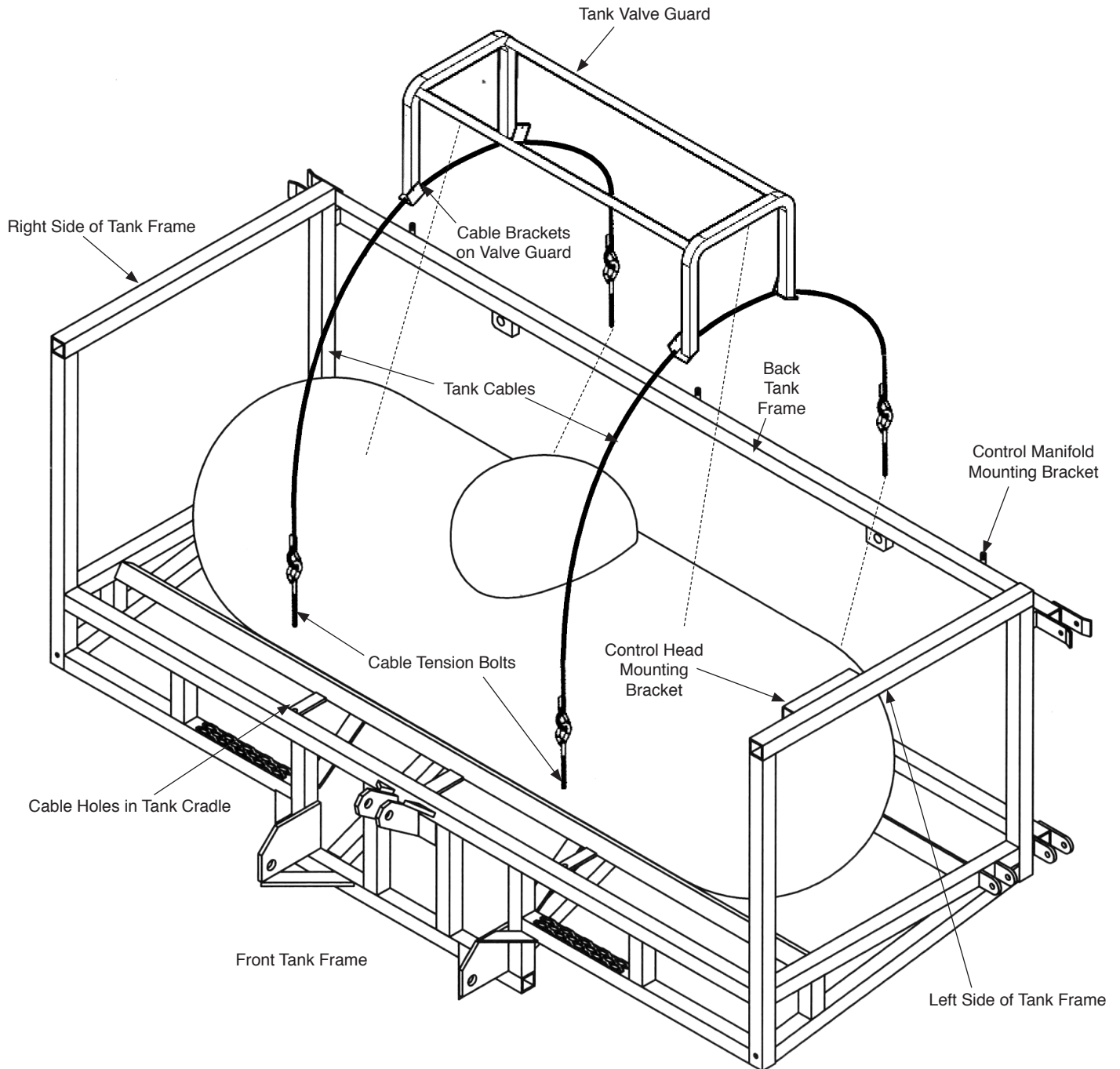


NOTE: All FRONT indications refer to the 3-point adaptor side of tank frame. All BACK indications refer to the tool bar side of tank frame.

All RIGHT side or LEFT side indications are made as if facing the BACK side of tank frame.

Assembly Diagrams

Diagram B

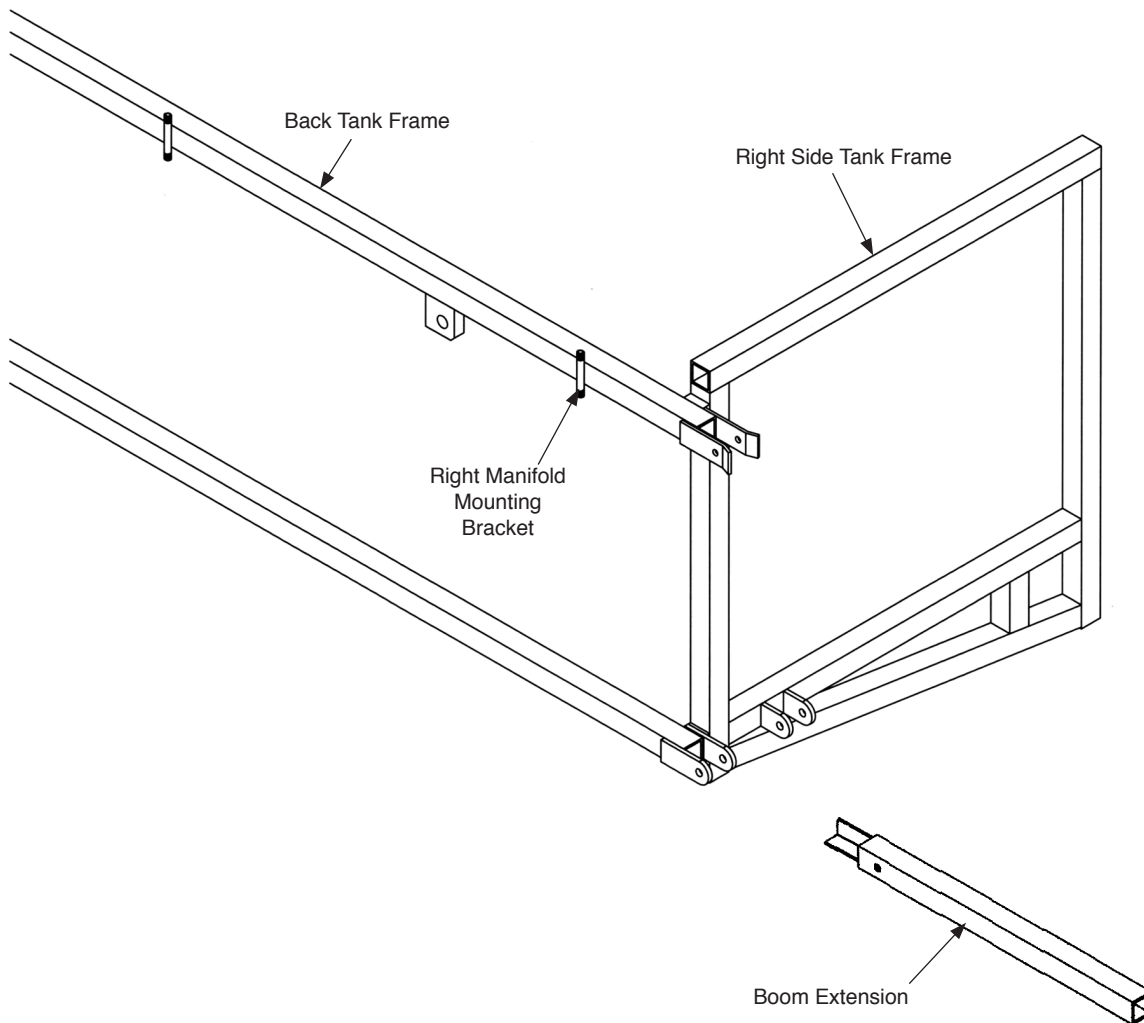


Assembly Diagrams

Diagram C

This Drawing Pertains To 6-Row Units Only

Right Rear View



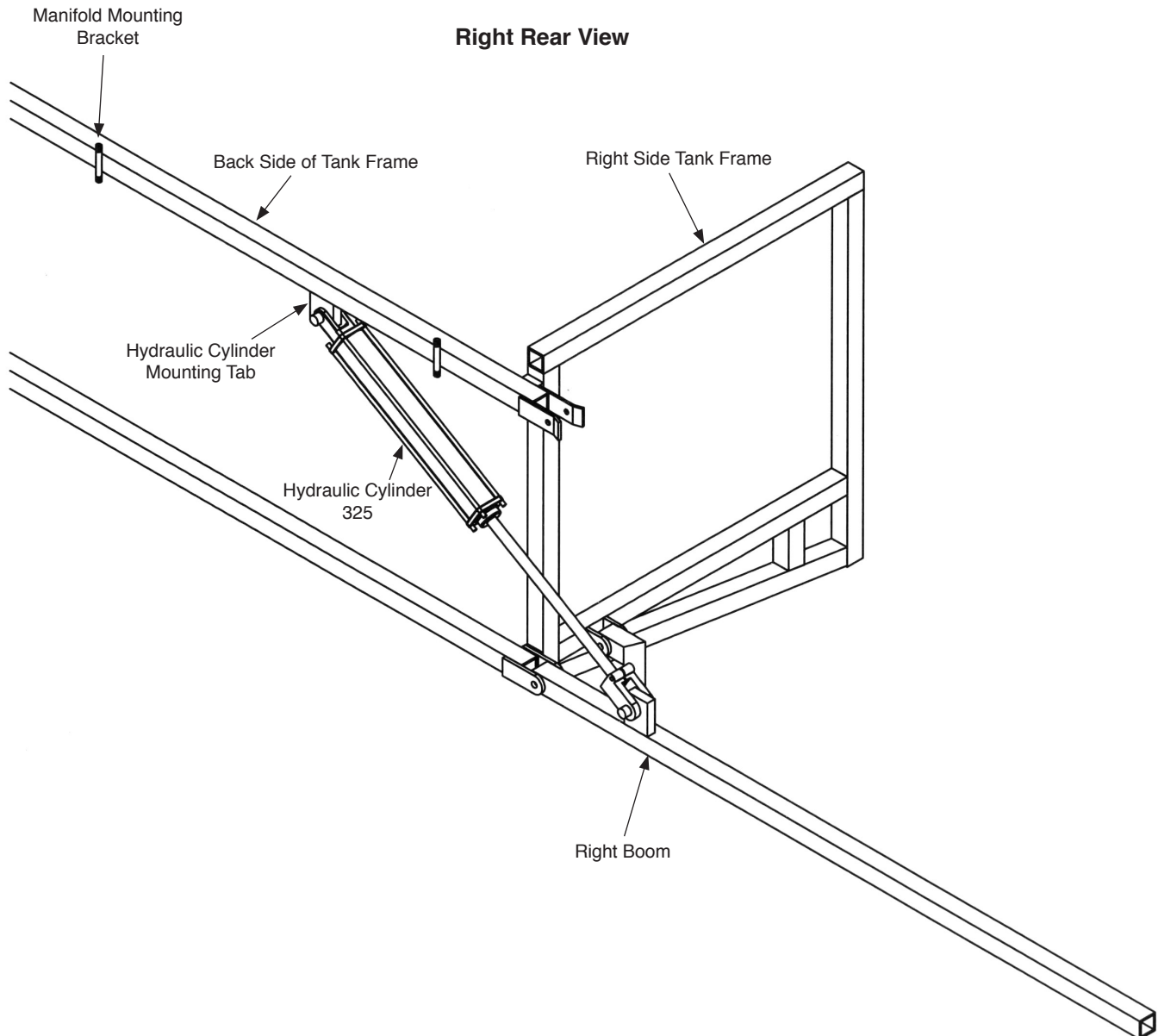
NOTE: All FRONT indications refer to the 3-point adaptor side of tank frame. All BACK indications refer to the tool bar side of tank frame.

All RIGHT side or LEFT side indications are made as if facing the BACK side of tank frame.

Assembly Diagrams

Diagram D

This Drawing Pertains To 8-Row Units Only

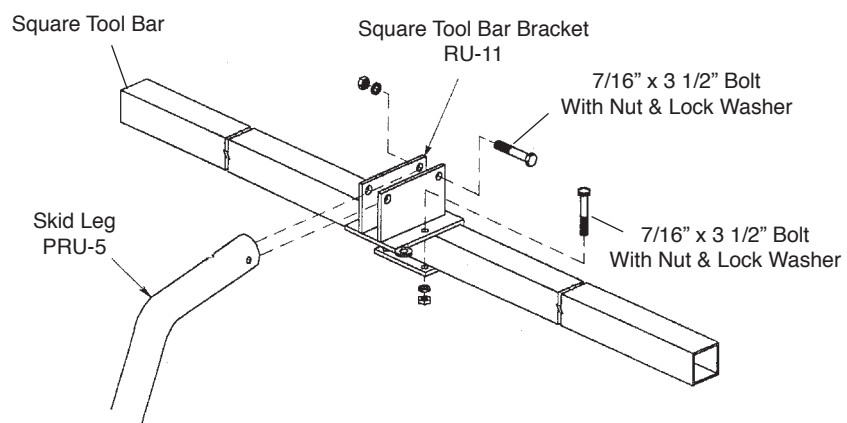


NOTE: All FRONT indications refer to the 3-point adaptor side of tank frame. All BACK indications refer to the tool bar side of tank frame.

All RIGHT side or LEFT side indications are made as if facing the BACK side of tank frame.

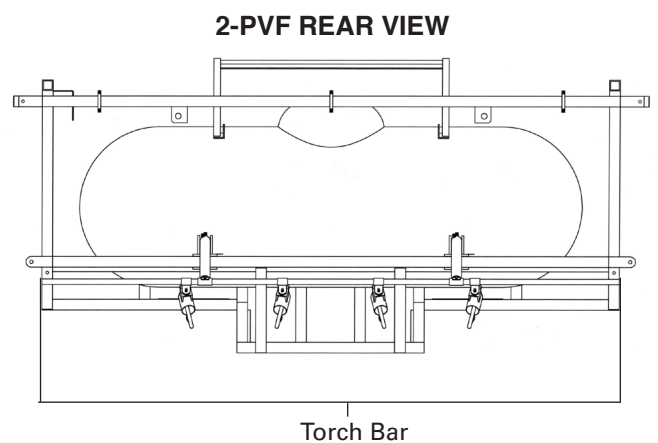
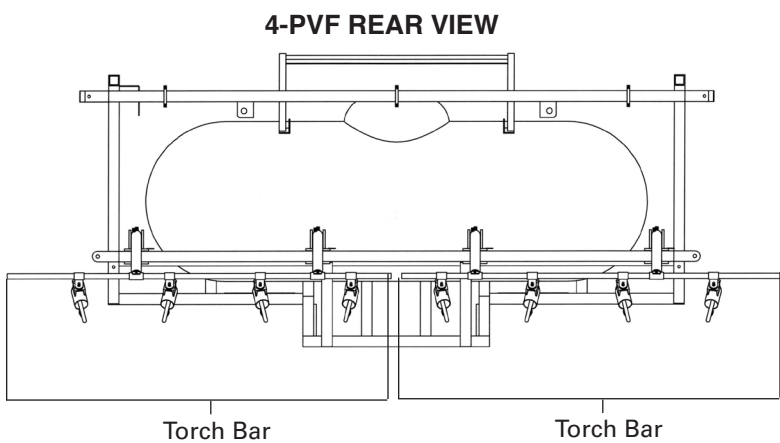
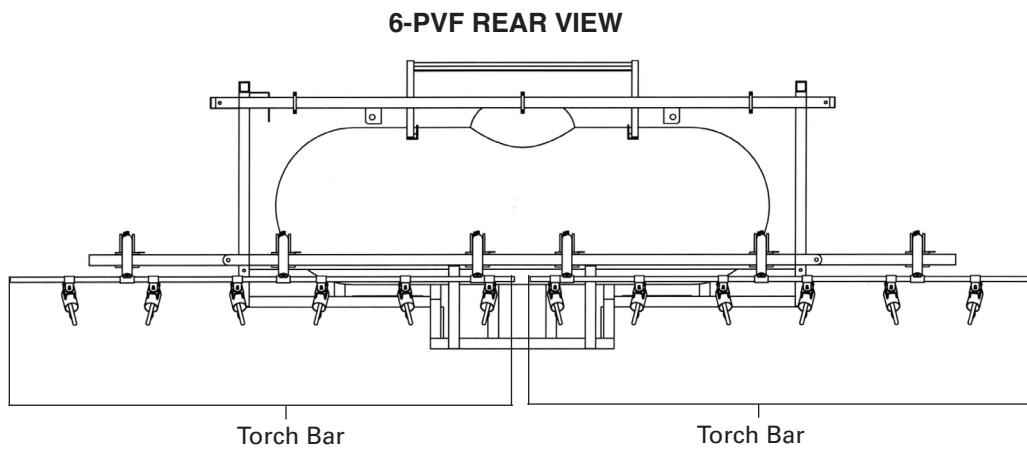
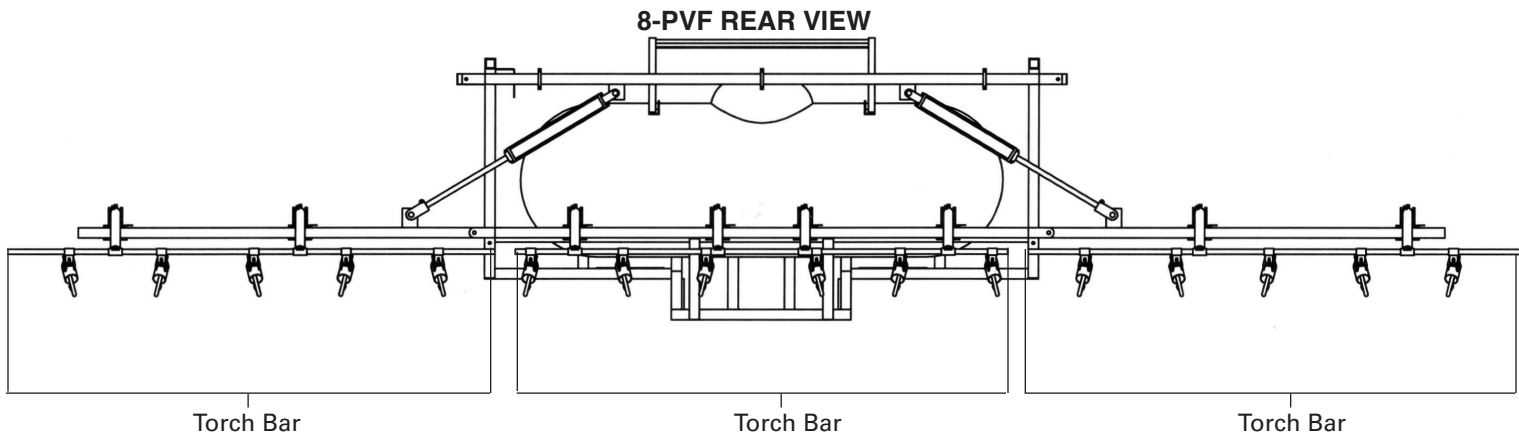
Assembly Diagrams

Diagram E



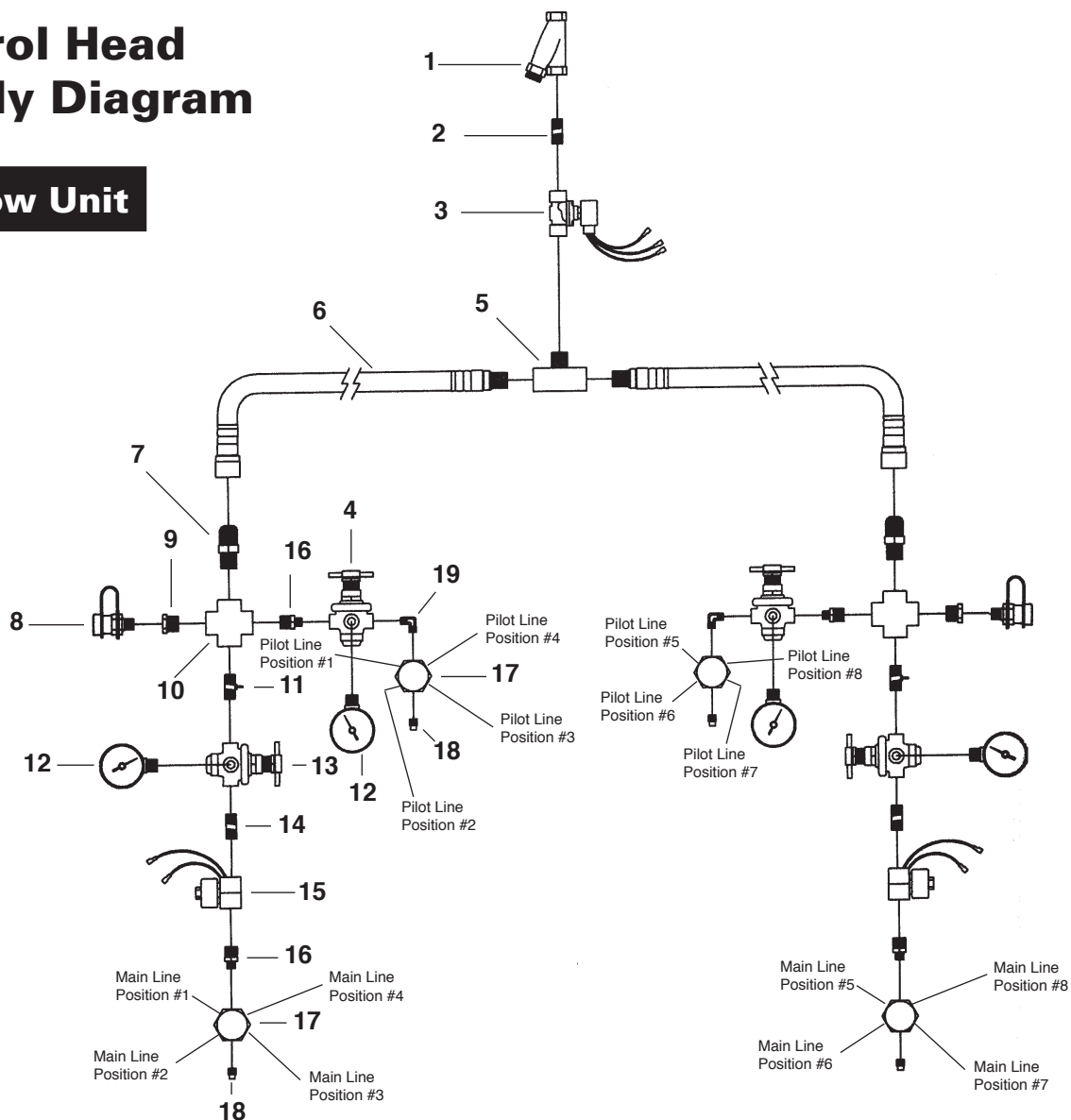
Torch Bar/Torch Layout Assembly Diagrams

Diagram G



Control Head Assembly Diagram

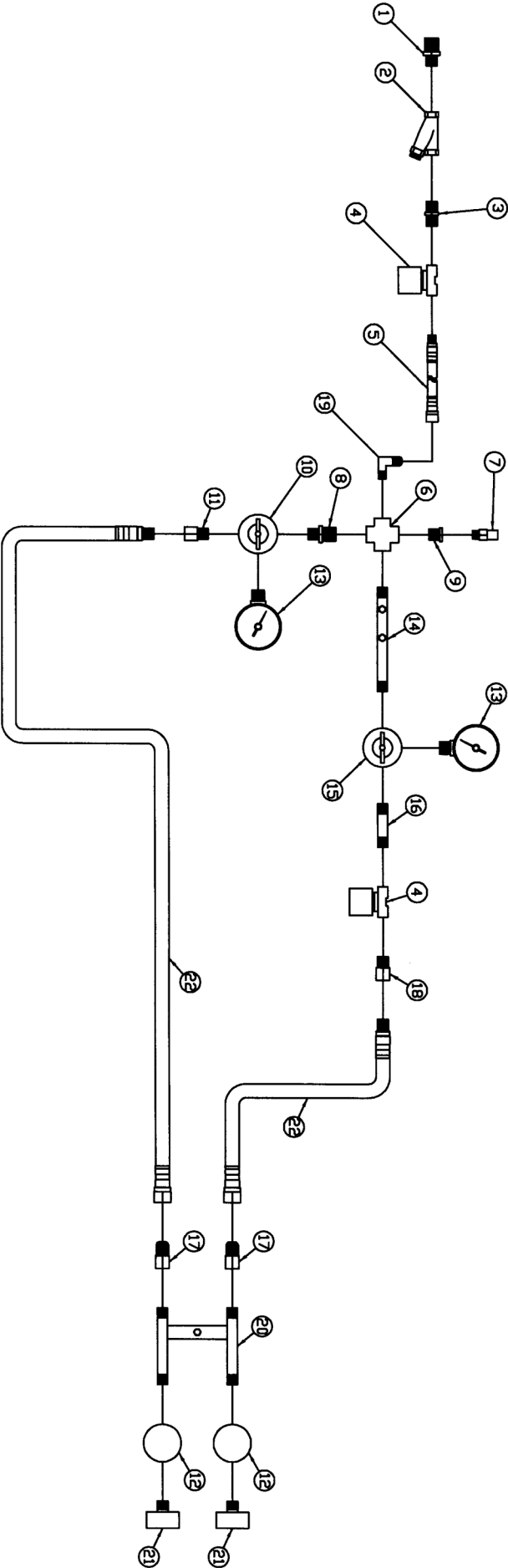
8 Row Unit



No.	Part No.	Description
1.	S-716	3/4" Fuel Strainer
2.	100-117-305	3/4" x 2.5" Nipple
3.	S-119	3/4" 12 Volt Solenoid
4.	R-499	Regulator
5.	28-028	3/4" Branch Tee
6.	H1004	1/2" x 5' Hose (3/4" Male x 1/2" Swivel)
7.	10-269	1/2" Flare x 1/2" Male Fitting
8.	H-250	Safety Pop-off Valve
9.	28-106	1/2" Male x 1/4" Female Bushing
10.	28-044	1/2" Female Cross
11.	100-117-204	1/2" x 2" Nipple with 5/16" Bolt
12.	G-24	1/4" Pressure Gauge
13.	R-1584	Regulator
14.	100-117-204	1/2" x 2" Nipple
15.	S-122	1/2" 12 Volt Solenoid
16.	28-223	1/2" x 1/4" Hex Nipple
17.	MB-6	6 Way Brass Manifold
18.	M-109AL	Plug
19.	28-267	1/4" x 1/4" Male Elbow

Control Head Assembly Diagram

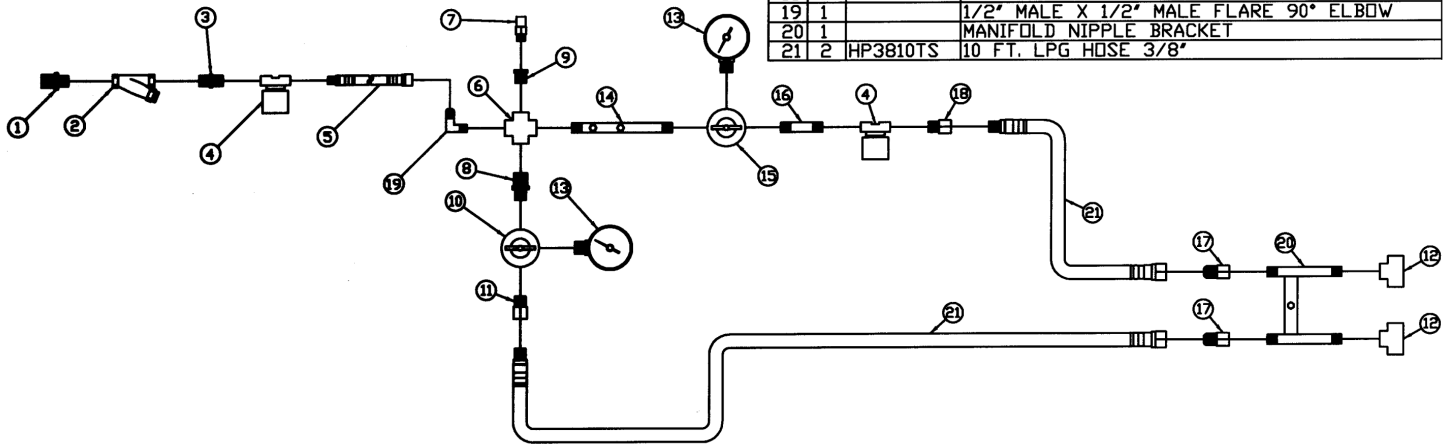
6 Row Unit



NO.	QTY	PARTS NO.	DESCRIPTION
1	1	3/4" MALE X 1/2" MALE REDUCER	
2	1	S714	1/2" FUEL STRAINER
3	1		1/2" HEX NIPPLE
4	2	S-122	12 V. SOLENOID 1/2"
5	1	HP1/2-5TS	1/2" 5 FT. LPG HOSE (MALE X FEMALE SWIVEL)
6	1		1/2" BRASS CROSS
7	1	H-400	PRESSURE RELIEF VALVE
8	1		1/2" MALE X 1/4" MALE REDUCER
9	1		1/2" MALE X 1/4" FEMALE REDUCER
10	1	R-499	40-100 PSI LP GAS REGULATOR
11	1		3/8" FEMALE X 1/4" MALE REDUCER
12	2	MB-6	1/4" BRASS MANIFOLD BLOCK
13	2	G-25	0-300 PSI PRESSURE GAUGE
14	1		1/2" X 12" NIPPLE W/ BOLTS
15	1	R-1584H	45-125 PSI LP GAS REGULATOR
16	1		1/2" X 2-1/2" NIPPLE
17	2		1/4" FEMALE X 3/8" MALE FLARE
18	1		1/2" MALE X 3/8" FEMALE REDUCER
19	1		1/2" MALE X 1/2" MALE FLARE 90° ELBOW
20	1		MANIFOLD NIPPLE BRACKET
21	2		1/4" MALE BRANCH TEE
22	2	HP3810TS	10 FT. LPG HOSE 3/8"

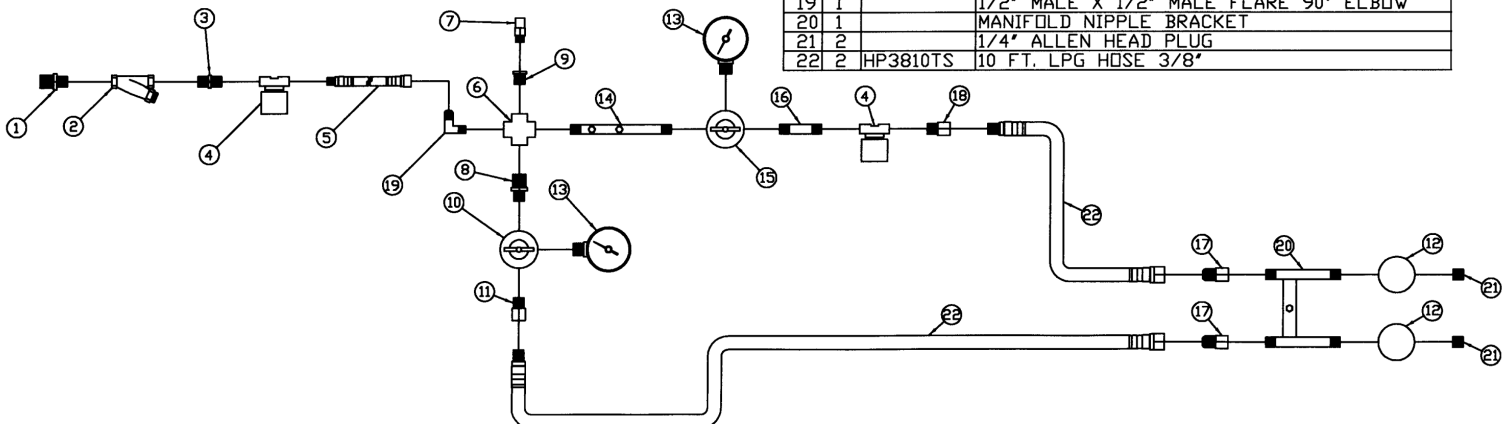
Control Head Assembly Diagrams

2 Row Unit



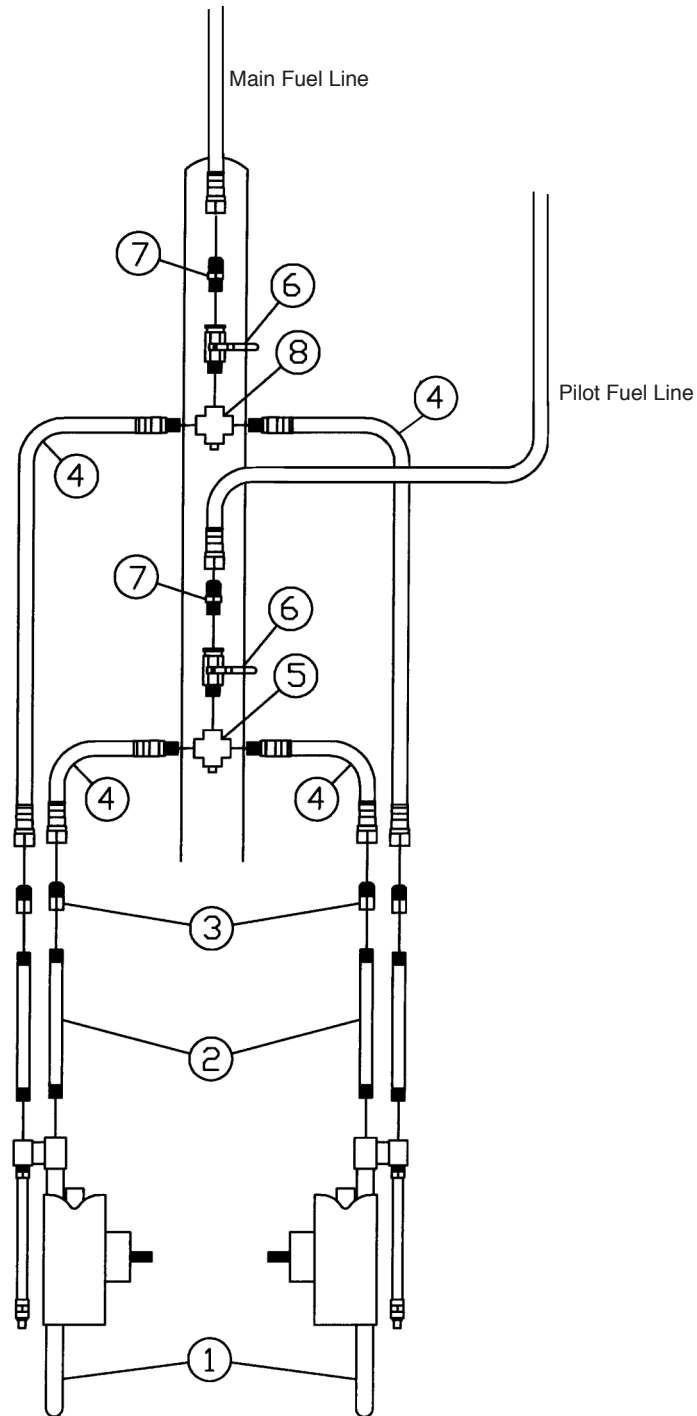
NO.	QUAN	PARTS NO.	DESCRIPTION
1	1		3/4" MALE X 1/2" MALE REDUCER
2	1	S714	1/2" FUEL STRAINER
3	1		1/2" HEX NIPPLE
4	2	S-122	12 V. SOLENOID 1/2"
5	1	HP1/2-5TS	1/2" 5 FT. LPG HOSE (MALE X FEMALE SWIVEL)
6	1		1/2" BRASS CROSS
7	1	H-400	PRESSURE RELIEF VALVE
8	1		1/2" MALE X 1/4" MALE REDUCER
9	1		1/2" MALE X 1/4" FEMALE REDUCER
10	1	R-499	40-100 PSI LP GAS REGULATOR
11	1		3/8" FEMALE X 1/4" MALE REDUCER
12	2	F-522	1/4" TEE
13	2	G-25	0-300 PSI PRESSURE GAUGE
14	1		1/2" X 12" NIPPLE W/ BOLTS
15	1	R-1584H	45-125 PSI LP GAS REGULATOR
16	1		1/2" X 2-1/2" NIPPLE
17	2		1/4" FEMALE X 3/8" MALE FLARE
18	1		1/2" MALE X 3/8" FEMALE REDUCER
19	1		1/2" MALE X 1/2" MALE FLARE 90° ELBOW
20	1		MANIFOLD NIPPLE BRACKET
21	2	HP3810TS	10 FT. LPG HOSE 3/8"

4 Row Unit



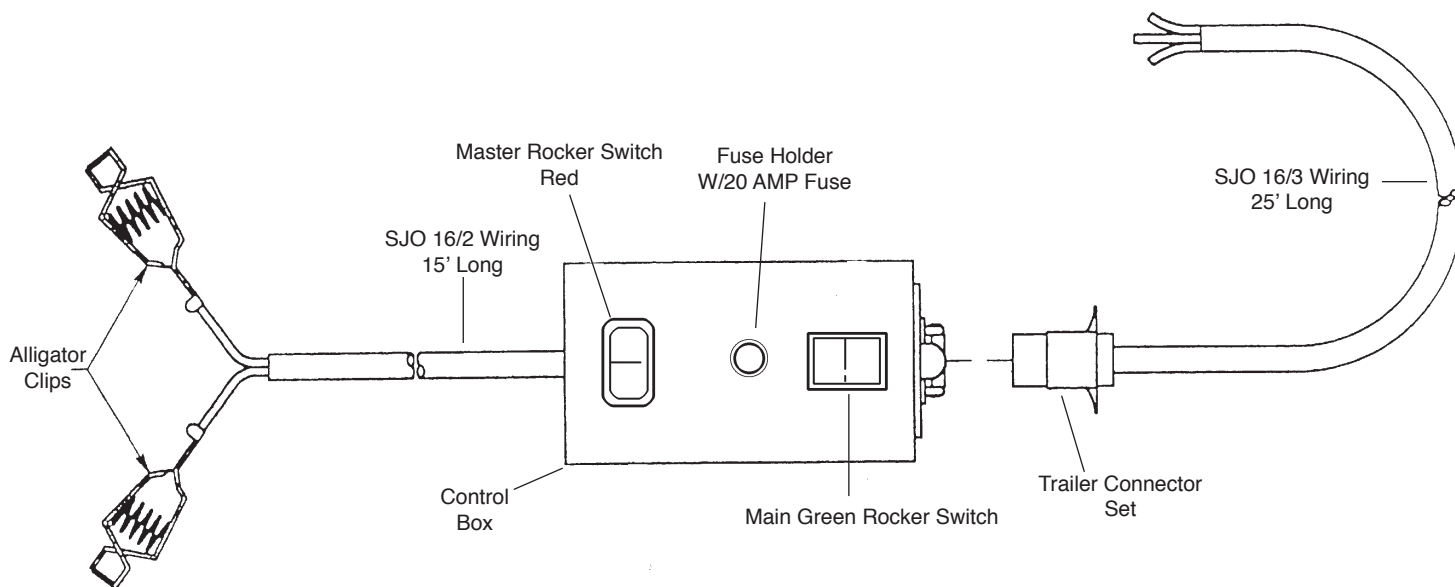
NO.	QUAN	PARTS NO.	DESCRIPTION
1	1		3/4" MALE X 1/2" MALE REDUCER
2	1	S714	1/2" FUEL STRAINER
3	1		1/2" HEX NIPPLE
4	2	S-122	12 V. SOLENOID 1/2"
5	1	HP1/2-5TS	1/2" 5 FT. LPG HOSE (MALE X FEMALE SWIVEL)
6	1		1/2" BRASS CROSS
7	1	H-400	PRESSURE RELIEF VALVE
8	1		1/2" MALE X 1/4" MALE REDUCER
9	1		1/2" MALE X 1/4" FEMALE REDUCER
10	1	R-499	40-100 PSI LP GAS REGULATOR
11	1		3/8" FEMALE X 1/4" MALE REDUCER
12	2	MB-6	1/4" BRASS MANIFOLD BLOCK
13	2	G-25	0-300 PSI PRESSURE GAUGE
14	1		1/2" X 12" NIPPLE W/ BOLTS
15	1	R-1584H	45-125 PSI LP GAS REGULATOR
16	1		1/2" X 2-1/2" NIPPLE
17	2		1/4" FEMALE X 3/8" MALE FLARE
18	1		1/2" MALE X 3/8" FEMALE REDUCER
19	1		1/2" MALE X 1/2" MALE FLARE 90° ELBOW
20	1		MANIFOLD NIPPLE BRACKET
21	2		1/4" ALLEN HEAD PLUG
22	2	HP3810TS	10 FT. LPG HOSE 3/8"

LP-Gas Hose Assembly Diagram Example (Position #1 on a 4 Row Unit)



NO.	PARTS NO.	DESCRIPTION
1	LT2 1/2-12LPS	LIQUID SPRAY TORCH
2	100-117-012	1/4" X 6" NIPPLE
3		1/4" FEMALE X 3/8" MALE FLARE
4	HP2SS	1/4" 2 FT. STAINLESS STEEL LPG HOSE
5		BOTTOM CROSS (PILOT LINE)
6	V-326	1/4" BALL VALVE
7		1/4" MALE X 3/8" MALE FLARE
8		TOP CROSS (MAIN LINE)

Control Switch Assembly Drawing



Proper Purging Of LP-Gas Container

The Importance of Purging

A very important step which must not be overlooked by LP-Gas distributors is the importance of properly purging new LP-Gas containers. Attention to this important procedure will promote customer satisfaction and greatly reduce service calls on new installations. Consider the following:

- Both ASME and DOT specifications require hydrostatic testing of vessels after fabrication. This is usually done with water.
- Before charging with propane, the vessel will contain the normal amount of air.

Both Water and Air are Contaminants

They seriously interfere with proper operation of the system and the connected appliances. If not removed, they will result in costly service calls and needless expense far exceeding the nominal cost of proper purging.

Neutralizing Moisture

Even if a careful inspection (using a pen flashlight) reveals no visible moisture, the container must still be neutralized, since dew may have formed on the walls; additionally, the contained air may have relative humidity up to 100%.

IMPORTANT - If a tank is allowed to run completely out, alcohol must be added when refilled. Propane is -44° F. If the ambient air temperature is higher, there will be a thermal transfer of latent heat, hot to cold, until the temperature equalizes. This will cause icing in the system if not neutralized with methanol.

Proper Purging of LP-Gas Container Cont.

A rule of thumb for neutralizing moisture in an ASME container calls for at least 1 pint of genuine absolute anhydrous methanol* (99.85% pure) for each 100 gallons of water capacity of the container. On this basis, the minimum volumes (US measurements) for typical containers would be as shown to the right:

Container Type	Minimum Volume Methanol Required
100 LB ICC Cylinder	1/8 pt. (2 fl. oz.)
500 gal. tank	5 pts. (2-1/2 qts.)
1000 gal. tank	10 pts. (1-1/4 gal.)
2000 gal. tank	20 pts. (2-1/2 gal.)

IMPORTANT - Avoid substitutes - they will not work. The secret of the effectiveness of methanol over all other alcohols is its high affinity for water plus a boiling point lower than all other alcohols, and most important: a boiling point lower than water.

The Importance of Purging Air

If the natural volume of atmosphere in the vessel is not removed before the first fill, these problems will result:

- Installations made in the spring and summer will experience excessive and false container pressures. This will cause the safety relief valve to open, blowing off the excess pressure.
- The air mixture present in the vapor space will be carried to the appliances. This may result in as many as 5 or more service calls from pilot light extinguishment.
- If a vapor return equalizing hose is not used, the contained air will be compressed above the liquid level, resulting in slow filling.
- If a vapor equalizing hose is used, the air and any moisture it contains, will be transferred from the storage tank to transport.

Additionally, if atmospheric air is properly purged from the storage tank;

- transfer will be faster,
- the pump will not stall,
- less energy will be required to fill the container.

Never Purge With Liquid

The wrong way of course is the easiest way. Never purge a container with liquid propane. To do so causes the liquid to flash into vapor, chilling the container, and condensing any moisture vapor on the walls where it remains while the pressure is being blown down. Additionally, less than 50% or as little as 25% of the air will be removed by this easy but wrong method.

Vacuum Pre-Purged Domestic Tanks

Read This Before Initial LP-Gas Filling of a Vacuum Pre-Purged Domestic Tank

This new container has been vacuum purged of air in accordance with the NPGA Safety Bulletin #133-89 (a). The service valve, vapor return valve and the fill valve have been equipped with tamper evident seals to indicate if the valve(s) have been opened. If the tamper evident seals have been violated, THE CONTAINER MUST BE REPURGED in accordance with NPGA Safety Bulletin #133-89 (a). (See Proper Purging)

Failure to properly purge a container can result in increased pressure, improper burning fuel mixture and odorant fade. Any of these conditions can result in personal injury, property damage or death.

Vacuum Verification Process:

To verify that a vacuum is present, remove the plastic wrap from the service valve, verify that the service valve hand wheel is close. Connect a vacuum pressure gauge to the service valve outlet connection and open the hand wheel. Visually check the vacuum pressure gauge dial for the presence of a vacuum. Close the service valve and disconnect the vacuum gauge. If the vacuum is not in accordance with NPGA Safety Bulletin #133-89 (a), THE CONTAINER MUST BE REPURGED.

Methanol Injection Process:

Inject methanol into the container through the service valve (before filling the container with LP-Gas) using the service valve outlet connection. Attach the POL connection to the service outlet connection. The POL connection should have a low pressure rubber hose extend into a container of methanol.

Slowly open the service valve to allow the vacuum in the vessel to pull the methanol into the vessel. The container of methanol should NOT be allowed to run dry and pull air into the vessel.

- The presence of a vacuum in the container does not eliminate the need for the introduction of methanol into the container.
- The rule of thumb for neutralizing moisture in an ASME container is to introduce at least one pint of genuine absolute anhydrous methanol (99.85% pure) for each 100 gallon of water capacity of the container.

LP-Gas Injection Process:

After the completion of the methanol injection process, connect a hose from a source of LPG to the POL connection of the service valve. This hose can be used to inject either liquid or vapor product into the vessel. The appropriate amount of LPG to neutralize the vacuum pressure in the container will vary depending on the volume of the vessel. If liquid is used, 1 to 4 gallons of LPG is required for all vessels up to 1000 wg. If vapor is used, wait until there is no longer an audible transfer of vapor from the source of the LPG to the vessel.

Filling Process:

After the completion of the LP-Gas injection process, close the service valve and disconnect the POL connection. Remove the plastic wrap from the filler connection, remove the yellow cap and connect your filler hose to the vessel and proceed to fill in the normal manner.

If You Have Questions

Installation Problems:

If you have problems, questions, or feel you are missing a part during installation, please call Flame Engineering toll free at 1-800-255-2469 and our trained staff will gladly help you.

Operation Problems:

If you have problems during operation, please check the following trouble shooting guidelines first. If you use this guide and still have problems call Flame Engineering and our staff will try to help remedy the situation.

Trouble Shooting Tips (Read This First Before Calling the Factory)

START WITH A NEW CLEAN TANK

Always begin with a clean, purged, liquid tank, capable of delivering liquid to the torches. **DO NOT** use a vapor withdrawal tank. Use clean fuel to avoid line/torch blockage.

IF YOU EXPERIENCE FLAME OUT

Check the fuel strainer if you are experiencing flame out. Clean accordingly. If tank debris is found in strainer or torches shortly after use, begin again with a new, clean, scrubbed and purged tank. (See Your LP-Gas Dealer) Have you added methonal? (1 pt per hundred gal) If your tank runs out of propane, a thermal transfer of latent heat will occur. heat transfers from hot to cold. Inside the tank it is -44°, outside ambient air is much higher, so warm moist air will transfer until temperature is equalized. You can also get moisture from the bulk tank hose or tank. it is recommended that whenever there is a flow problem, add methonal. Adding methanol every 3-4 tanks is a good plan.

IF YOU ARE GETTING A LOW FLAME

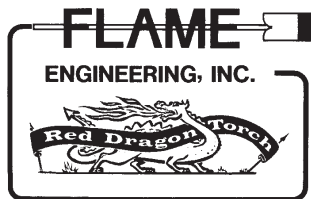
Check torch orifices for blockage. Clean thoroughly if necessary.

IF YOU HAVE AN OLD TANK

Older tanks may require cleaning as mentioned above. Through time, debris settles at bottom of the tank, where liquid is to be withdrawn through the wet leg and can cause blockage to torches. See your LP-Gas dealer for suggestions.

IF NO FUEL IS GETTING THROUGH TO THE TORCHES

Check electrical connections to the battery, then solenoids and make certain all valves are free and clear of tank debris.



PVFUNIT3-2011