



Tommy Heated Dryer

MANUAL

9/28/2026

TOMMY CAR WASH SYSTEMS | 648 S Point Ridge, HOLLAND, MI, 49423

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Section 1: Order of Operations

1.1 – Normal Operation

- A. Power ON
 - a. Close Main Disconnect switch(s) (Overload and/or Disconnect)
 - b. Power On light "LT-1" will illuminate
- B. Safety Switch Interlocks
 - a. Circuit Breaker "CB" must be in the ON position
 - b. Tommy supplied relay must be energized and fuse intact
 - c. Motor Starter Overload "OL1" must not be tripped
 - d. Fan Motor Contactor coil "M1" will energize
 - e. Fan Motor Contactor contact 'M1' will close
 - f. Fan On light "LT-6" will illuminate
 - g. Burner Enable Jumper remains installed between terminals 6 & 7
 - h. High Temperature Limit 'HTL' switch must not be tripped
 - i. HTL Closed light "LT-8" will illuminate
 - j. Air Flow Switch 'AFS' will close
 - k. AFS Closed light "LT-9" will illuminate
- C. Burner Enable
 - a. Fenwal Burner Control "FSG" will energize
 - b. Safety and Blocking Gas Solenoid Valves will energize
 - c. Modulating Gas Valve will energize (if High Fire switch is ON)
 - d. Ignition Transformer of the "FSG" will energize to produce a spark at the Spark Igniter 'SPK'
 - e. Flame Detection Rod "FDR" senses flame, heater operates normally
- D. Unit Off
 - a. Tommy supplied relay contact opens
 - b. Burner shuts off

1.2 – Shutdown Operation

- A. Power OFF
 - a. Main Disconnect in the OFF position (Overload and/or Disconnect)
 - b. Tommy supplied Heated Dryer output relay is set to OFF on the controller

Section 2: Electrical

2.1 - Electrical Enclosure Parts Location

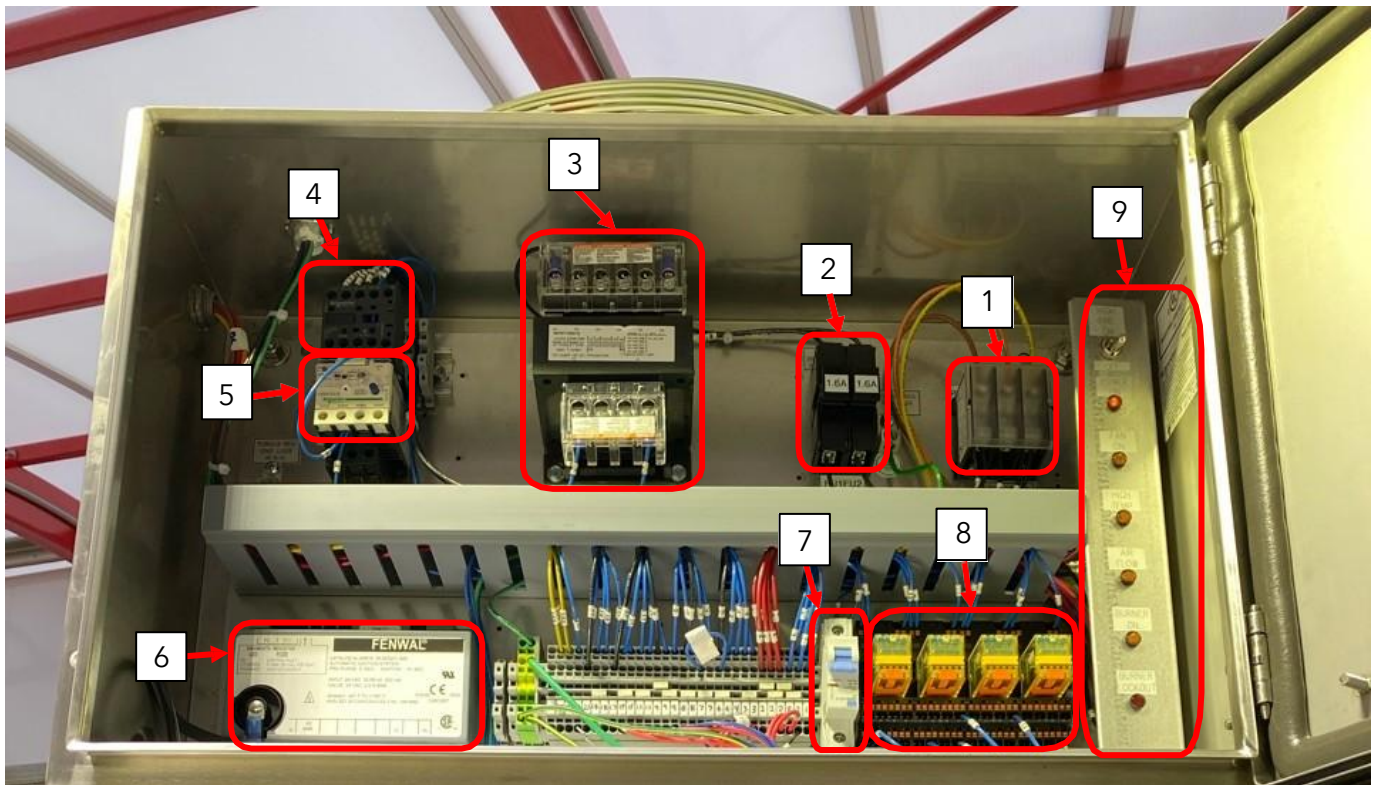


Figure 1 - Electrical Enclosure Parts Location

Item Number	Description	TCWS PN
1	Power Distribution Block	Factory Part
2	Fuses	P-HD-1022
3	Control Power Transformer	P-HD-1012
4	Motor Contactor	P-HD-1004
5	Overload Relay	P-HD-1005
6	Fenwal Direct Spark Ignition Control	P-HD-1011
7	6A Circuit Breaker	P-HD-1027
8	Relay base & relays	P-HD-1007 (base) P-HD-1006 (relay)
9	Diagnostic Panel	See Figure 2

2.2 – Diagnostic Panel

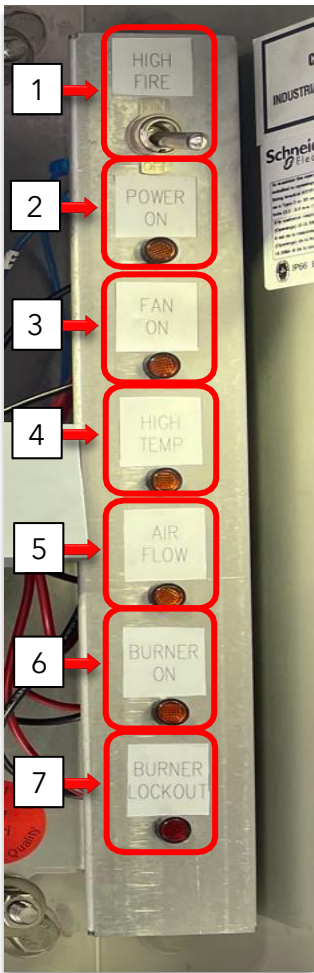


Figure 2 – Diagnostic Panel

Item Number	Description	Function
1	High Fire Switch	If the switch is UP, the unit will be in High Fire mode. If the switch is DOWN, the unit will be in Low Fire mode.
2	Power ON	Light ON: 480v Transformer is powered and sending out 24vac
3	Fan ON	Light ON: Fan Motor Contactor is closed and fan is running
4	High Temp	Light ON: High Temperature Limit switch is not tripped
5	Air Flow	Light ON: Air Flow pressure is being met at the switch
6	Burner ON	Light ON: Fenwal Burner Control is powered and attempting to light burner
7	Burner Lockout	Light ON: Fenwal Burner Control fault. See pg. __ for fault indicators

Section 3: Gas

3.1 – External Gas Gauge Assembly



Figure 7 - External Gas Gauge Assy (P-HD-1021)

The heated dryer ships with an external ball valve with an incoming gas pressure gauge. This assembly (P-HD-1021) ships loose with the heated dryer. It should either be in a box or inside the gas train cabinet during shipment.

This assembly allows gas pressure to be shut off to the individual unit, as well as measure the incoming gas pressure to the unit. The pressure gauge has units of inches of water column (I.W.C or " WC). This is a standard unit of measure for gas applications.

On the inside of the gas train cabinet door (lower cabinet), the incoming pressure requirements will be listed. The minimum gas pressure requirement is 8.5" W.C. The maximum incoming pressure is 1 psi or roughly 28" W.C.

3.2 – Gas Enclosure Parts Location

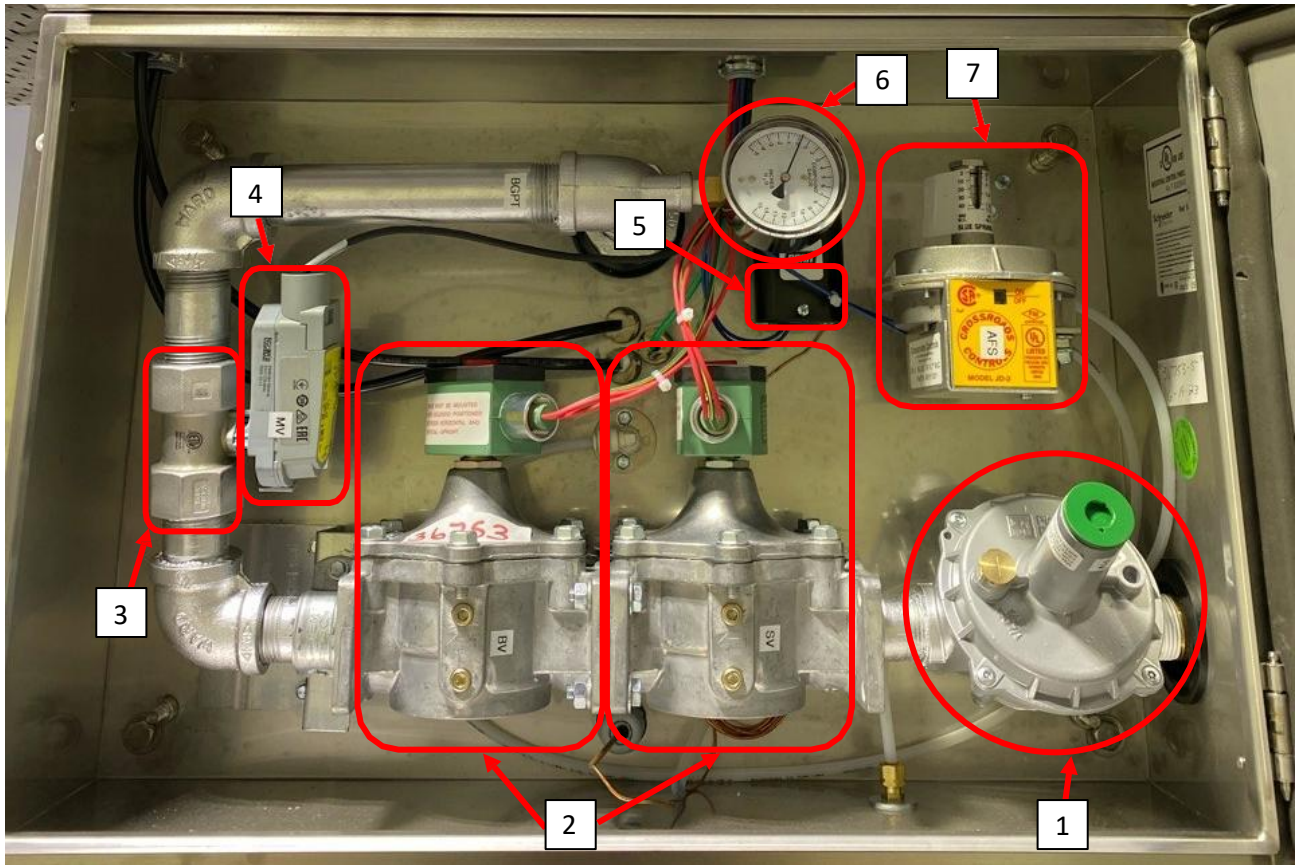


Figure 3 - Gas Enclosure Parts Location

Item Number	Description	TCWS PN
1	Internal Gas Regulator	P-HD-1000
2	Gas Solenoid Valves (2x)	P-HD-1020
3	Modulating Gas Valve	P-HYD-2171
4	Modulating Gas Actuator	P-HYD-2172
5	High Temp Limit Switch	P-HD-1010
6	Pressure Gauge -6" WC to +10" WC	P-HD-1013
7	Airflow Switch	P-HD-1008

3.3 – Burner Components (Bottom-Up View)

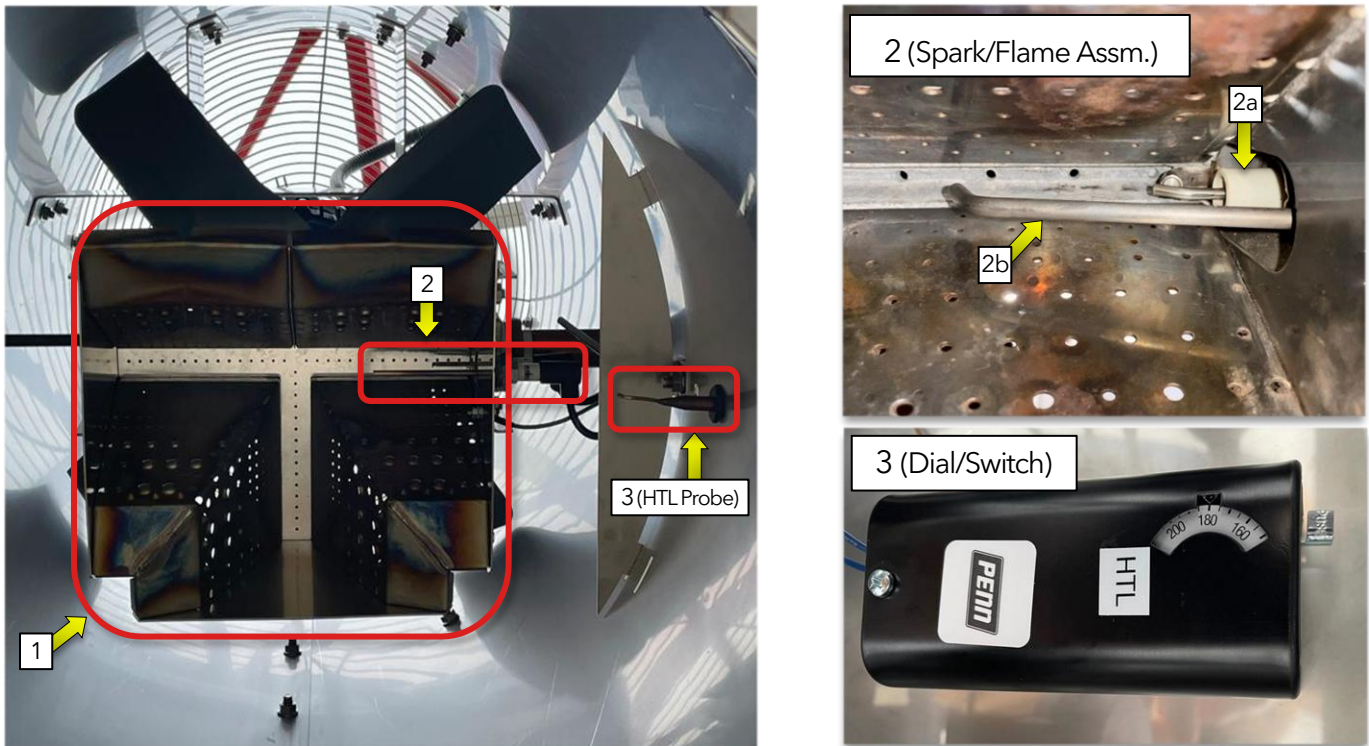


Figure 6 - Burner Parts Location

Item Number	Description	TCWS PN
1	Burner	P-HD-1014
2	Spark & Flame Rod Assembly (w/ mounting base)	P-HD-1009
2a	Spark Igniter (Brute style)	P-HD-1028
2b	Flame Rod	P-HD-1036
3	High Temp Limit Switch (w/ wire Probe)	P-HD-1010
4	Propeller (CW)	P-HD-1002 (behind burner)
5	3.0 HP Electric Motor	P-HD-1003 (cannot see in image - behind propeller)
6	Inlet Guard	P-HD-1019 (guard on inlet of drum)

3.4 – High Temperature Limit Switch



Figure 4 - High Temp Limit Switch w/ manual reset

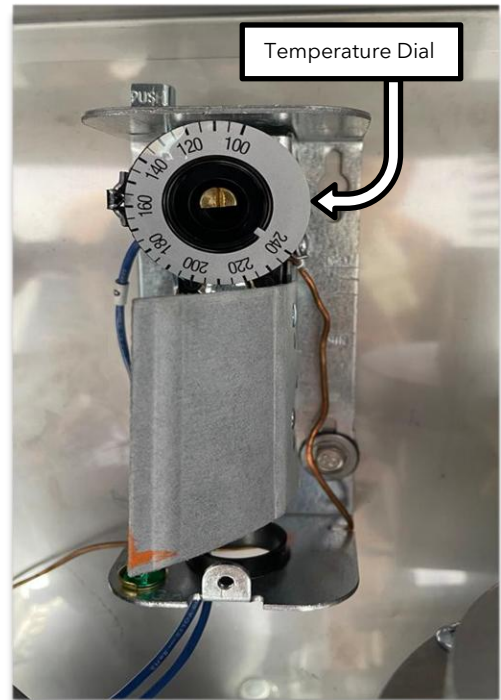


Figure 5 - High Temp Limit Switch Temperature Dial

Resetting the High Temperature Limit Switch:

The high temperature limit switch is a safety switch that will trip when the temperature of the heated dryer reaches the dial's set point. This switch will prevent the Heated Dryer from overheating and causing damage.

If the switch trips, it will need to be reset in order for the Heated Dryer to operate properly again. To reset it, push the "Manual Reset" lever shown in *Figure 4*.

Adjusting the Set Point: Do Not Adjust the Dial Above 180°F.

To adjust the Temperature set point, remove the cover by taking out the "Removeable Screw" shown in *Figure 4*. Then, using a flathead-screwdriver, turn the brass screw of the "Temperature Dial", shown in *Figure 5*, clockwise to increase the setpoint or counterclockwise to decrease the setpoint.

Section 4: High & Low Fire Adjusting

4.1- Adjusting Low Fire w/ Modulating Gas Actuator

Tools Required:

- Small Flat-head Screwdriver or pick

Step 1:

- Verify incoming gas pressure is between 8.5" W.C. and 28" W.C.
- Open gas enclosure

Step 2:

- Remove the Modulating Gas Actuator (MGA) by carefully pulling it off the Modulating Gas Valve (MGV).
- Once off, record the current position of the clip before proceeding to adjust (*Figure 2*).
- Then, turn the MGA around so the "Adaption" button is facing you.



Figure 1 - Modulating Gas Actuator

Step 3:

- With the small flat-head screwdriver, press the Adaption button for 1 second (*Figure 3*).
- Turn the MGA back around so the adjustment clip is facing down towards you.

Step 4:

- The modulating lever will move all the way to the right then back to the left.
- Before the modulating lever moves back to the left towards 'N', carefully remove the adjustment clip using your fingernails, being careful not to drop the clip (*Figure 4*).

Step 5:

- Adjusting the Clip:
 - Setting the clip towards the 'N' will decrease the low fire gas pressure
 - Setting the clip towards the '1' will increase the low fire gas pressure
 - Ideal low fire gas pressure is 0.2"- 0.5" W.C. which can be achieved by setting the clip between the 4.5-6.5 marker (*Figure 5*).
- (Failure to set low fire between this range can cause inconsistent lighting)*

Step 6:

- After adjustments, set the clip back into place fitting it in the desired grooves so it is flush against the actuator, then push on the bottom end of the clip to lock it into place (*Figure 6*)

Step 7:

- Once set, you can now reseal the actuator back onto the Modulating Gas Valve and test the unit for flame. The ideal flame length can be seen in (*Figure 8*)



Figure 2 - Starting setpoint



Figure 3 - Adaption Button

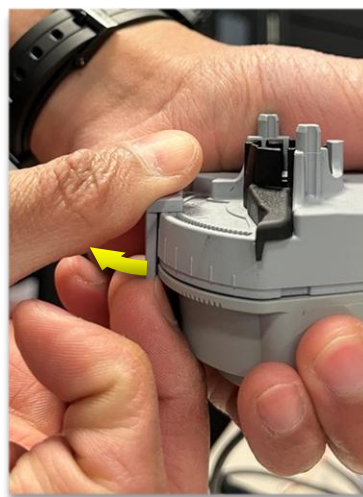


Figure 4 - Removing the Clip



Figure 5 - Setting the Clip

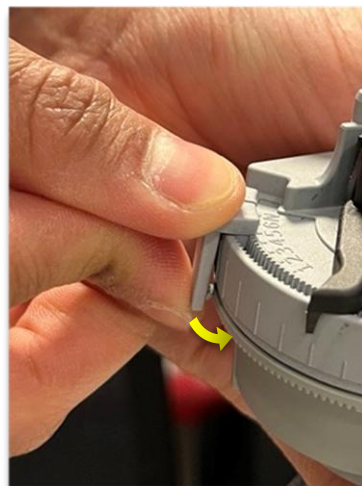


Figure 6 - Locking the Clip in Place



Figure 7 - Repositioned Clip



Figure 8 - Ideal Low Fire Flame Length

4.2- Adjusting HIGH FIRE (Winter Mode) Gas Pressure

Tools Required:

- Flathead Screwdriver, Allen Key, and MCC Cabinet Key
- GWC Wash Controller iPad

Step 1:

- Verify gas is turned on to the unit by confirming the external gas valve is in the Open position.
- Incoming gas pressure should be at least 8.5" W.C to 28" W.C (ideal pressure is 11-15" W.C).

Step 2:

- Open gas enclosure door using MCC cabinet key or the flathead screwdriver
- Remove the cap from the gas regulator with the screwdriver or Allen Key or by hand if feasible.
- Under the cap is the adjustment screw for regulating gas pressure during HIGH fire.

Step 3:

- Adjusting the Regulator:
 - Turning it inward raises gas pressure.
 - Turning it outward lowers gas pressure.
- With the Heated Dryer on in HIGH fire, adjust the adjustment screw until the Internal Gas Gauge reaches between 1.5 and 2.5" of W.C. (Figure 9).
(Ideal gas pressure for High fire is between 1.5 - 2.5" of W.C depending on site's preferences).

Step 4:

- Once the unit is at the desired gas pressure, turn the unit back into *Auto* mode.
- Install the regulator cap on the regulator and close the gas enclosure door.

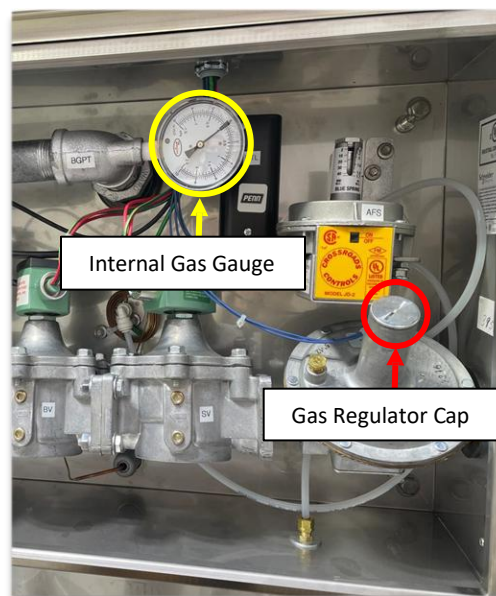


Figure 9 - Gas Gauge and Regulator to be adjusted

Section 5: Troubleshooting

5.1 – Common Issues

Issue	Possible Cause	Possible Remedy
A. Burner not operating	1. See problems "B" through "D"	1. See problems "B" through "D"
	2. High temp limit switch flipped	2. Check and/or replace
	3. Gas turned off to unit	3. Verify gas valve is turned on
	4. Failed air flow switch	4. Check and/or replace
	5. Loose wiring connection at air flow switch	5. Check and tighten
	6. Failed control transformer	6. Check and/or replace
	7. Failed or malfunctioning main gas valve (s)	7. Check and/or replace
	8. Airflow too low, low airflow switch is open	8. Check for reason of insufficient airflow and correct
B. Power Failure	9. Disconnect not turned on	9. Turn to disconnect
	10. Blown fuse	10. Check and/or replace
	11. Main to unit disconnect not on	11. Turn on power at main
C. Motor not operating	12. Disconnect not turned on	12. Turn to disconnect
	13. Blown fuses	13. Check and replace
	14. Main to unit disconnect not on	14. Turn on power at main
	15. Failed motor	15. Check and/or replace
	16. Loose wiring to motor	16. Check and/or replace
	17. Motor overloaded	17. Check for proper speed
	18. Improper supply voltage	18. Check and correct
D. Fan not operating	19. Motor overheating	19. Check firing rate of unit
	20. See problems "B" and "C"	20. See problems "B" and "C"
E. Flame will not light	21. Bearings seized	21. Check and/or replace
	22. Inadequate signal to safeguard control	22. Check micro-Amps or VDC from flame sensor

	23. Loose wires from flame sensor	23. Check and correct
	24. Dirty flame rod	24. Clean and/or replace
	25. Moisture on flame rod leads	25. Check and dry leads. Use di-electric grease inside boot
	26. Defective flame rod	26. Check and/or replace
	27. Defective flame safeguard controller	27. Check and/or replace
	28. Short in flame sensor leads	28. Check and/or replace
F. Unable to achieve HIGH fire	29. Low gas supply pressure	29. Check and adjust
G. Unable to achieve LOW fire	30. Modulating controls improperly set	30. Consult Fenwal 35-605201-005 Manual. Contact vendor.
	31. Faulty amplifier or modulating valve	31. Check and/or replace
H. No gas flow	32. Manual gas valve(s) closed	32. Open manual gas valve(s)
	33. See Problem "A"	33. See Problem "A"
I. Unable to achieve desired discharge temperature	34. Improper gas supply pressure	34. Check and correct
	35. Faulty amplifier or proportioning motor	35. Consult Fenwal 35-605201-005 Manual. Contact vendor.

Section 6: Spare Parts

6.1- Spare Parts List

Description	Tommy PN	Manufacture PN
Modulating valve	P-HYD-2171	SV-1.0NN
Modulating valve actuator	P-HYD-2172	ACT-10.0
Regulating valve w/ red spring	P-HD-1000	RV61-1IN
Pressure Gauge 0-30" WC	P-HD-1001	030DGT
Propeller (CW)	P-HD-1002	MS-23-1/2-11.5XHD
Motor 3.0 HP 460/3 PREM TEFC	P-HD-1003	00318ET3E182T-W22
Motor Contactor	P-HD-1004	LC1K0610B7
Overload Relay	P-HD-1005	LR2K0312
Burner on Relay - CR3, CR12	P-HD-1006	RU4S-A24
Relay Base	P-HD-1007	SU4S-21L
Air Flow Switch - Blue Spring	P-HD-1008	JD-2
Spark & Flame Rod Assembly (w/ mounting base)	P-HD-1009	1200350
High Temp Limit Switch	P-HD-1010	A19ADB-38C
Fenwal Direct Spark Ignition Control	P-HD-1011	35-605201-005
T1 Transformer - 100VA	P-HD-1012	9070T100D19
Pressure Gauge -6" to +10" WC	P-HD-1013	LPG4-D9022N
Midco HMA-2A Burner Section - 18" Tee	P-HD-1014	1080810
Midco Inlet Flange - 1-1/2" w/ Pilot	P-HD-1015	1030250
Midco Blank Plate	P-HD-1016	1120255
Air Circulation Inlet Guard - 27" dia	P-HD-1019	2ATB9
ASCO RedHat 1" 2-Way Normally Closed Gas Solenoid Valve (12VDC)	P-HD-1020	8214G251
Heated Dryer Gas Gauge Assembly	P-HD-1021	Gas Gauge Assembly
Primary Fuses	P-HD-1022	KLDR01.6
6A Circuit Breaker	P-HD-1027	UMBW-1C1-6
Spark Igniter (Brute style)	P-HD-1028	1342-03
Flame Rod	P-HD-1036	1341-90
Ind. Light - 24V AMB w/ 30" WL	NA	1813-X-20-20320
Ind. Light - 24V RED w/ 30" WL	NA	1813-X-20-20310
High Fire ON/OFF switch	NA	90-0003

Compatibility List

This document pertains to the following parts:

- E-HD-2020-US-NG
- E-HD-2020-US-PRO
- E-HD-2020-CA-NG
- E-HD-2020-US-NG-K
- E-HD-2020-US-PRO-K
- E-HD-2020-CA-NG-K
- E-HD-2020-US-NG-R-K
- E-HD-2020-US-PRO-R-K
- E-HD-2020-CA-NG-R-K