PARKER ADVANTAGE SHEET
INDIRECT FIRED WATER HEATER
WH300 TO WH3000, ATMOSPHERIC GAS FIRED

The Parker Indirect Gas Fired Water Heater was specifically designed to provide the industry a superior quality water heater with the definite advantages for longer life and more economical operation made possible through the proven indirect heating principle. The heater is recommended for all types of water heating applications requiring up to 180^0F temperature. It has proven particularly successful for laundries, restaurants, apartments, motels, hotels, swimming pools, clubs, food processing and the many types of commercial and industrial plants requiring a volume of higher temperature hot water.

The indirect heating method is accomplished in the Parker by circulating the supply water from a storage tank through an integral mounted copper tube heat exchanger so that it does not come in contact with the boiler water or high furnace temperatures. The problems of rust and corrosion are eliminated and the possibilities of scaling are minimized through this indirect principle which provides continued low operating cost and long life service.

Operational and constructional advantages offered by the Parker Indirect Fired Water Heater include:

1. **SCALE FORMATION PRACTICALLY ELIMINATED:** This is made possible by low intensity heat transfer between the sealed-in treated water that never contacts the supply water, which circulates at high velocity inside the exchanger tubes. Supply water is never subject to the direct high intensity furnace temperatures. Cold water entering the system may be injected directly into the heater without condensate dripping into the furnace area.

2. **ELIMINATION OF RUST AND CORROSION:** Supply water is in contact with brass or copper only. The exchanger is finned copper tubing with brass tube sheet and bonnet.

3. **CONTINUOUS HIGHER OPERATION EFFICIENCY:** A higher combustion efficiency is obtained since the cold water is not circulated into the higher temperature furnace area. A high temperature furnace area assumes that all hydrocarbons will be released from the gas during the combustion process for maximum combustion efficiency. The original high operating efficiency is retained with the indirect principle, even after years of service which result in lower operating costs.

4. **INCREASED LIFE AND REDUCED REPAIR COST:** The life of the heat exchanger is far longer than the tubes of a direct fired system and can be replaced at a small percentage of the cost. The indirect heating principle definitely decreases the maintenance cost of cleaning and upkeep.

5. **SIMPLICITY:** The heater is designed for operation by inexperienced personnel with a minimum of attention.

6. **SAFETY:** The entire heater construction is in accordance with the A.S.M.E. Code. The finest of controls are used for dependable safe operation. The internal heater construction is all welded steel with each tube welded to the upper and lower headers. Problems of warping and leakage are eliminated.

7. **HEAVY INSULATED CABINET:** The cabinet consists of two thicknesses of heavy 16-gauge steel, well insulated with 1-1/2" thick high temperature thermal fiber insulation. This reduces radiation loss to a minimum and protects against fire hazards. Cabinets are finished with an attractive baked enamel, and heat resistant finish for long life protection.

8. **FURNISHED ASSEMBLED:** All boilers are furnished assembled with electrical controls wired to the boiler control panel. Each boiler is hydrostatically tested in compliance with the A.S.M.E. Code. All boilers are factory fire tested before shipment to meet the highest standards in all phases of mechanical and operating efficiencies. Installation costs are held to a minimum since the boilers are so completely furnished.

9. **CONTROLS:** All Parker Hot Water Boilers are furnished with first line quality automatic controls to assure safe and fully automatic operation. Each unit comes standard equipped with an enclosed boiler control panel, flame safeguard with manual reset, manual reset low water cutoff, operating temperature control, manual reset high limit control, dual fuel shutoff valves, and water safety relief valve. All models are furnished with a gas pressure regulator. Additional controls may be added as required by local codes or job specifications.

10. **CODES:**

ASME H or ASME S NATIONAL BOARD

All Heaters are built in accordance with the A.S.M.E. Power & Heating Boiler Codes, Sections I & IV. Heaters are normally furnished with the A.S.M.E. certification mark with an “H” designator and Trim. Heaters for higher working pressures or temperatures are furnished with the A.S.M.E. certification mark with an “S” designator and Trim. All Heaters are inspected and registered with the National Board of Boiler and Pressure Vessel Inspectors.

All individual gas and electrical controls are AGA Certified or UL Listed.

The standard natural gas fired hot water boiler is furnished as an Underwriters Laboratories, Inc. Listed Gas Fired Boiler Assembly and displays this symbol on the nameplate.
Canadian models are C-ETL or ETL Listed Industrial and Commercial Gas Fired Packaged Boilers certified to Can1-3.1 and UL 795.

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LISTED

TRIM & DESCRIPTION PARKER INDIRECT FIRED WATER HEATERS
ATMOSPHERIC GAS FIRED MODELS WH300 TO WH3000

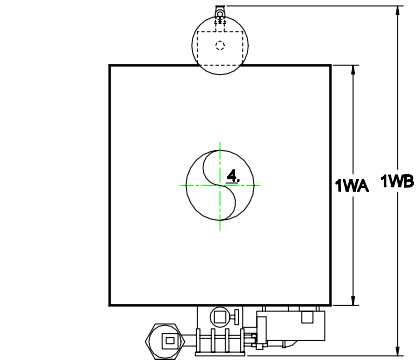
MODEL		WH300	WH395	WH490	WH600	WH730	WH970	WH1210	WH1410	WH1900	WH2270	WH2650	WH3000
SPECIFICATIONS:													
B.T.U. Input		300M	395M	490M	600M	730M	970M	1210M	1410M	1900M	2270M	2650M	3000M
B.T.U. Ouput		240M	316M	392M	480M	584M	776M	968M	1128M	1520M	1816M	2120M	2400M
OUTPUT	G.P.H. 60ºF Rise	480	632	793	958	1167	1550	1935	2253	3037	3628	4237	4797
	G.P.H. 100ºF Rise	288	379	470	575	700	930	1161	1352	1822	2177	2542	2878
GAS INLET	STD. Natural Gas	3/4"	3/4"	1"	1"	1"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2"
	HI. Pressure NG & Propane	3/4"	3/4"	3/4"	3/4"	3/4"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
VENT STACK	Draft Hood	8"	10"	10"	12"	12"	14"	16"	16"	20"	22"	22"	24"
	Barometric Damper	6"	8"	8"	8"	10"	12"	12"	14"	16"	16"	18"	18"
Circulating Line Size		1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"
Recommended Flow Rate-GPM		31	39	39	47	47	54	54	54	101	101	117	110
Standard Type of Firing		OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON	OFF-ON
HEATER Electrical Service		115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph	115V 1Ph
PUMP Electrical Service		115V 1/3 HP	115V 1/3 HP	115V 1/3 HP	115V 1/3 HP	115V 1/3 HP	115V 1/2 HP	115V 1/2 HP	115V 1/2 HP	230V 3Ph 1 HP	230V 3Ph 1 HP	230V 3Ph 1 HP	230V 3Ph 1 HP
Shipping Weight – Heater Only		715#	885#	895#	1205#	1485#	1720#	1920#	2250#	2645#	3450#	3925#	4380#
HEATER & ACCESSORIES: 1. Parker Indirect Fired Water Heater	GROUP TRIM	AB	AB	AB	AB	AB	AC	AC	AC	AD	AD	AE	AE
2. Circulating Pump	MODEL-SIZE-HP	3GB5-1.5F – 1-1/2" - 1/3 HP					5GB5-1.5F – 1-1/2" - 1/2 HP			3104G6-2-5.88 – 2" - 1 HP 3 PH			
3. Tank T & P Gage	MODEL	PT1088LBM200 – 3-1/2" T & P GAGE BACK MOUNTED 80-320F											
4. Tank T & P Relief Valve	SIZE	(1) 40XL4-1-125 1X1"						(1) N240X6-1-125 1X1"			(2) N240X6-1-125 1X1"		
5. Storage Tank	CAPACITY	162 Gal	256 Gal	256 Gal	256 Gal	372 Gal	379 Gal	379 Gal	532 Gal	710 Gal	1260 Gal	1260 Gal	1260 Gal
	MODEL (Dia. x Shell)	TSV2472	TSV3072	TSV3072	TSV3072	TSV3660	TSV3672	TSV3672	TSV4272	TSV4872	TSV54108	TSV54108	TSV54108
	OVERALL HEIGHT	96"	99"	99"	99"	90"	102"	102"	105"	112"	152"	152"	152"
STANDARD WORKING PRESSURE - PSI		150	125	125	125	125	125	125	125	125	125	125	125
	UNLINED SHIPPING WEIGHT	440#	555#	555#	555#	775#	880#	880#	1050#	1300#	2340#	2340#	2340#

DESCRIPTION: Parker complete packaged Indirect Gas Fired Water Heater with built-in flange mounted finned copper tube heat exchanger, bronze bonnet and tube sheet, heavy 1-5/16" O D. steel tubes welded to headers for 125 PSI W.P. Assembled in heavy steel insulated cabinet with controls mounted and wired. Each unit factory fire tested. Recommended for supply water heating. Requires storage tank, circulator and trim. Swim Pool Heater available with pool temperature control.

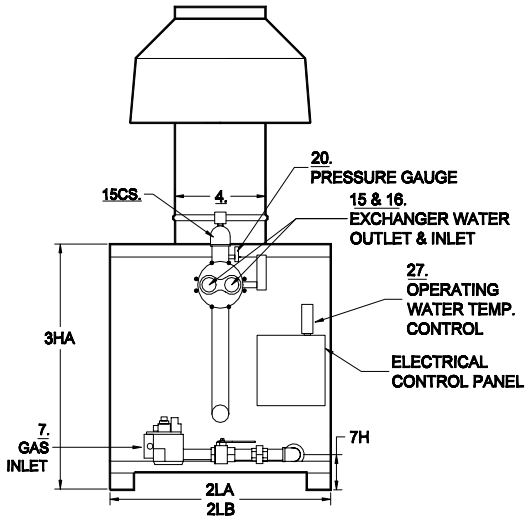
TEMPERATURE & WORKING PRESSURE: All standard models are furnished with safety relief valve set for 125 PSI. High limit control for 240° and supply water temperature control up to 180°. Supply water temperature heating over 180° requires additional charge, consult Factory.

TRIM & DESCRIPTION PARKER INDIRECT FIRED WATER HEATERS ATMOSHPERIC GAS FIRED MODELS WH300 TO WH3000

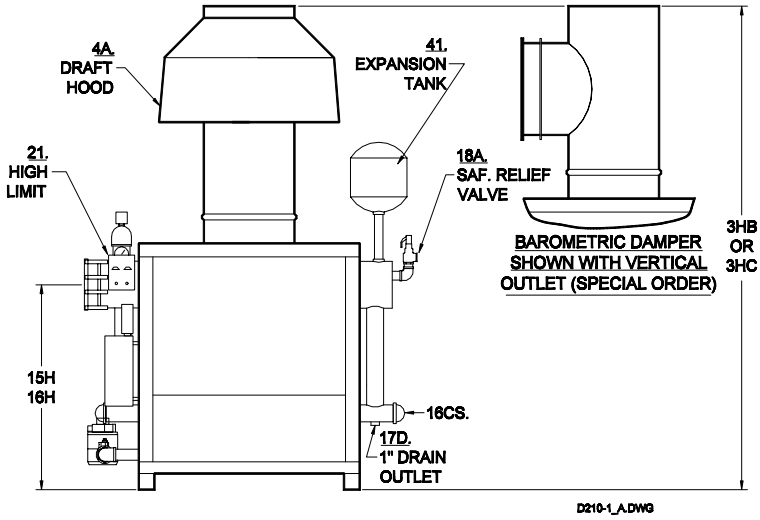
CODES:	All models are built in accordance with the A.S.M.E. Power and Heating Boiler Codes stamped "H" and registered with the National Board of Boiler and Pressure Vessel Inspectors. The standard natural gas fired model is listed by Underwriters' Laboratories, Inc. and displays the Listing Label as a complete Gas Fired Boiler Assembly. All controls and trim are in compliance with UL Standard 795.
GROUP TRIM:	
Trim A:	Draft hood, safety relief valve, temperature and pressure gage, Warrick probe manual reset low water cutoff, off-on firing, dual aquastat high limit control with manual reset, aquastat for supply operating water temperature control, two main gas cocks, gas pressure regulator, dual electric gas valves, 100% electronic flame safety with electric ignition and manual reset control panel and expansion tank.
Trim B:	WH300 to WH730: 115 V, 60 Hz, 1Ph for heater and pump. Honeywell S8610H Intermittent Pilot Module instant response with electric ignition. Combination gas control (main and pilot gas cock; primary and secondary electric gas valves; and pressure regulator).
Trim C:	Standard WH970 to WH1410: 115V, 60 Hz, 1Ph for heater and pump. Electronic flame safeguard (Fireye M Series or Honeywell RM7890) instant response with electric ignition and intermittent pilot.
Trim D:	Standard WH1900 to WH2270: 115V, 60 Hz, 1 Ph for heater. Separate 230V, 60 Hz, 3Ph recommended for pump. Electronic flame safeguard (Fireye M Series or Honeywell RM7890)
Trim E:	Standard WH2650 to WH3000: Same as Trim D except high and low gas pressure switches, positive close motorized gas valve, Parker-Lite 5 Light Sequence Indicator System
CALIFORNIA CODE TRIM:	All models require second low water cutoff and water gage fixtures for expansion tank.
STANDARD ACCESSORIES FOR SUPPLY WATER HEATING:	
1. Circulating Pump:	The circulator must be high duty model, equivalent to Burks G Series Centrifugal Pump and not smaller than the size shown. If standard circulators used, size must be increased. Circulating lines to the storage tank must be minimum size shown on front.
2. Tank T & P Gage:	Combination temperature-pressure gage recommended on upper part of tank or hot water outlet.
3. Tank T & P Relief Valve:	Combination temperature-pressure relief valve should be installed on all tanks.
4. Storage Tank:	All storage tanks are A.S.M.E. Code approved for pressure shown and registered with the National Board. The tank should never be less than the size shown and it is important to select a heater to handle the maximum hourly load demand. On domestic water heating or installations for large intermittent demands (such as laundries with large washers), tank should not be less than two-thirds hourly load. Parker cement lining is recommended on all tanks.
FUEL:	
Natural Gas:	Burners standard for natural gas 950 to 1150 BTU content. Boiler rated at 4" W.C. gas pressure at burner. Required gas pressure at inlet: Minimum: 7" W.C.; Maximum: 14" W.C. (1/2 PSI). For lower inlet pressures, consult factory. Higher inlet pressures require addition of high gas pressure trim.
Propane Gas:	Propane Gas Burners are for 2500 to 3200 BTU Content Gas. Propane Gas Fired Boilers are ETL Listed and the controls and trim are in compliance with UL Standard 795. They require higher gas pressure and additional charge. All boilers are rated for 18" W.C. gas pressure at the burner. Required gas pressure at inlet: Minimum: 1 PSI; Maximum: 5 PSI.
NOTES:	
1. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.	
2. Off-On firing is standard on all sizes. Two stage firing is available at additional charge. Modulating firing is available only on natural gas fired models at additional charge.	



TOP VIEW



FRONT VIEW



SIDE VIEW

NO.	MODEL NO.	WH300	WH395	WH490	WH600	WH730	WH970	WH1210	WH1410
A	BTU Input 1000's BTU/HR.	300	395	490	600	730	970	1210	1410
B	BTU Output 1000's BTU/HR.	240	316	392	480	584	776	968	1128
C	Heating Surface SQ. FT.	41.5	55	55	66.5	77	103.5	127.5	160
D	Output - 60 Degree Rise G.P.H.	480	632	783	958	1167	1550	1935	2253
E	Output - 100 Degree Rise G.P.H.	288	379	470	575	700	930	1161	1352
1WA	Width of Cabinet Only IN.	16	21	21	24	27	34	41	49
1WB	Width Overall Including Controls IN.	33	37	37	41	44	52	59	67
2LA	Length of Cabinet Only IN.	39	39	39	39	39	39	39	39
2LB	Length Overall IN.	39	39	39	39	39	39	39	39
3HA	Height of Cabinet Only IN.	41	41	41	41	41	41	42	42
3HB	Height Overall Including Draft Hood - (Standard) IN.	71	73	73	75	75	77	82	82
3HC	Height Overall Inclu. Baro. Damper (Vert. Outlet/Horizont. Outlet) - (Spec.Order) IN.	57/54	60/58	60/58	60/58	63/60	67/63	68/64	70/68
4A	Vent Stack Diameter with Draft Hood-(Standard) IN.	8	10	10	12	12	14	16	16
4B	Vent Stack Diameter with Barometric Damper IN.	6	8	8	8	10	12	12	14
7A / 7A1	Std. Nat. Gas Inlet Size/Supply Press; Max: 14" WC; Min.:7" WC IN.	3/4	3/4	1	1	1	1-1/2	1-1/2	1-1/2
7A2	Nat. Gas Manifold Pressure at Burner IN. WC	4	4	4	4	4	4	4	4
7B	Hi Press. Nat. & Propane Gas Inlet Size/(Supply Press. 1-5 PSI) IN.	3/4	3/4	3/4	3/4	3/4	1-1/2	1-1/2	1-1/2
7B1	Propane Manifold Pressure at Burner IN. WC	18	18	18	18	18	18	18	18
7H	Gas Inlet Height From Floor IN.	5	5	5	5	5	5	6	6
15&16	Exchanger Water Outlet and Inlet Size IN.	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	2	2	2
15H&16H	Exchanger Water Outlet and Inlet Height From Floor IN.	34	34	34	34	34	34	35	35
15&16CS	Outlet & Inlet Size for Closed System Heating IN.	2	2	2	2	2	2	2-1/2	2-1/2
18AHP	Safety Relief Valve Drain Size- 125 PSI OUTLET IN.	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
18ALP	Safety Relief Valve Drain Size- 30 PSI OUTLET IN.	3/4	1	1	1	1	1¼	1¼	1½
J	Water Capacity GAL.	8.5	11	11	13	15	19	21	25
K	Net Weight of Boiler LBS.	625	790	790	1095	1360	1590	1780	2100
L	Domestic Crated Shipping Weight of Boiler LBS.	715	885	895	1205	1485	1720	1920	2250

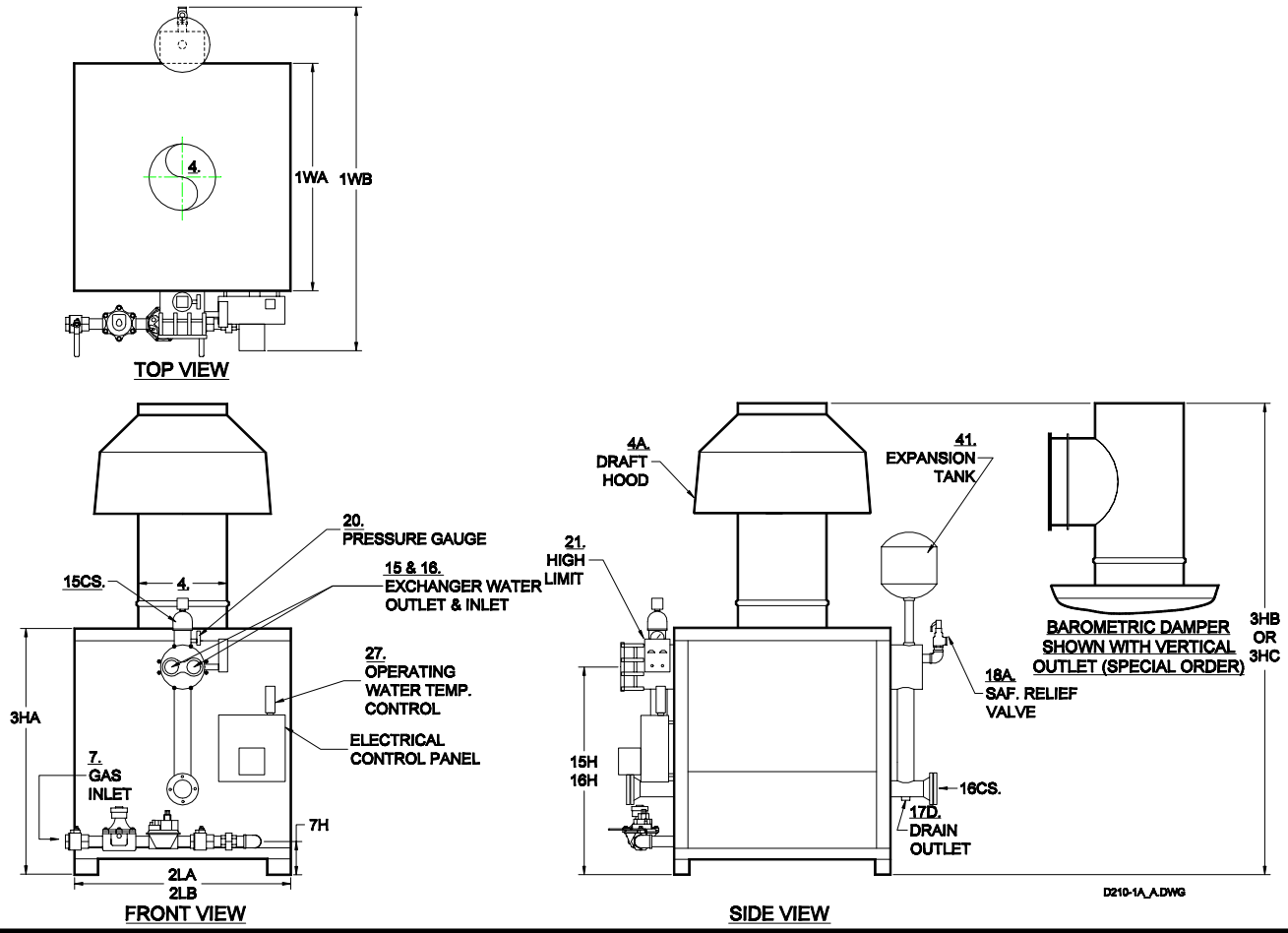
MINIMUM LISTED CLEARANCES TO COMBUSTIBLE CONSTRUCTION:	12" Cabinet Sides & Rear	48" Cabinet Top	6" Draft Hood Vent Connector	12" Baro. Damper Chimney Connector

Recommended Clearances for Access: Inspection Doors 18";Front (Cabinet Width 1WA + 10" For Exchanger Removal); Controls 24"; Electrical Panel 30"; Additional Space may be required by Local Codes

Note: All of the above dimensions are for a standard trim model. Due to continuous improvements, specifications are subject to change without notice.

SPEC. SHEET D-210-1
7D

PARKER INDIRECT FIRED WATER HEATER
WH1900 TO WH3000 - ATMOSPHERIC



NO.		MODEL NO.	WH1900	WH2270	WH2650	WH3000
A	BTU Input	1000's BTU/HR.	1900	2270	2650	3000
B	BTU Output	1000's BTU/HR.	1520	1816	2120	2400
C	Heating Surface	SQ. FT.	208	251	287	331
D	Output - 60 Degree Rise	G.P.H.	3037	3628	4237	4797
E	Output - 100 Degree Rise	G.P.H.	1822	2177	2542	2878
1WA	Width of Cabinet Only	IN.	40	46	52	59
1WB	Width Overall Including Controls	IN.	63	71	75	82
2LA	Length of Cabinet Only	IN.	54	54	54	54
2LB	Length Overall	IN.	54	54	54	54
3HA	Height of Cabinet Only	IN.	53	53	53	53
3HB	Height Overall Including Draft Hood - (Standard)	IN.	97	99	99	101
3HC	Height Overall Including Baro. Damper (Vert. Outlet/Horizont. Outlet) - (Special Order)	IN.	83 / 82	83 / 82	87 / 84	87 / 84
4A	Vent Stack Diameter with Draft Hood - (Standard)	IN.	20	22	22	24
4B	Vent Stack Diameter with Barometric Damper	IN.	16	16	18	18
7A/ 7A1	Std. Nat. Gas Inlet Size / Supply Press; Max: 14" WC; Min.: 7" WC	IN.	2	2	2	2
7A2	Nat. Gas Manifold Pressure at Burner	IN. WC	4	4	4	4
7B	Hi Press. Nat. & Propane Gas Inlet Size (Supply Press. 1-5 PSI)	IN.	1-1/2	1-1/2	1-1/2	1-1/2
7B1	Propane Manifold Pressure at Burner:	IN. WC	18	18	18	18
7H	Gas Inlet Height From Floor	IN.	5	5	5	5
15&16	Exchanger Water Outlet and Inlet Size	IN.	2-1/2	2-1/2	2-1/2	2-1/2
15H&16H	Exchanger Water Outlet and Inlet Height From Floor	IN.	44	44	44	44
15&16CS	Outlet & Inlet Size for Closed System Heating	IN.	3	3	3	3
17D	Drain Opening	IN.	1-1/4	1-1/2	1-1/2	1-1/2
18AHP	Safety Relief Valve Drain Size- 125 PSI	OUTLET IN.	1	1	1	1-1/4
18ALP	Safety Relief Valve Drain Size- 30 PSI	OUTLET IN.	1-1/2	2	2	2
J	Water Capacity	GAL.	30	35	40	50
K	Net Weight of Boiler	LBS.	2695	3150	3575	3940
L	Domestic Crated Shipping Weight of Boiler	LBS.	2945	3450	3925	4380

MINIMUM LISTED CLEARANCES TO COMBUSTIBLE CONSTRUCTION:	12" Cabinet Sides & Rear	48" Cabinet Top	6" Draft Hood Vent Connector	12" Baro. Damper Chimney Connector

Recommended Clearances for Access: Inspection Doors 18"; Front (Cabinet Width 1WA + 10" For Exchanger Removal); Controls 24"; Electrical Panel 30"; Additional Space may be required by Local Codes

Note: All of the above dimensions are for a standard trim model. Due to continuous improvement, specifications are subject to change without notice

INSTALLATION INSTRUCTIONS
PARKER INDIRECT WATER HEATER WITH STORAGE TANK AND ACCESSORIES

THIS INSTRUCTION SHEET COVERS THE RECOMMENDED INSTALLATION OF THE HEATER WITH STORAGE TANK AND ACCESSORIES. FOR DETAILED INSTALLATION INSTRUCTIONS ON THE HEATER, SEE INSTRUCTION SHEET 210.

STORAGE TANK: A STORAGE TANK WITH CIRCULATING PUMP IS REQUIRED ON ALL HOT WATER SUPPLY SYSTEMS. THE HEATER SELECTED SHOULD HAVE A CAPACITY OF NOT LESS THAN THE MAXIMUM HOURLY LOAD. THE STORAGE TANK SHOULD BE ADEQUATELY SIZED FOR THE PARTICULAR INSTALLATION AND NOT LESS THAN THE SIZE SHOWN ON PRICE SHEET 210. ON JOBS REQUIRING LARGE INTERMITTENT DEMANDS, SUCH AS LAUNDRIES WITH LARGE WASHERS, THE STORAGE TANK CAPACITY SHOULD NEVER BE LESS THAN TWO THIRDS OF THE HOURLY LOAD. THE TANK SHOULD BE CODE APPROVED FOR A WORKING PRESSURE NOT LESS THAN 100 PSI AND NEVER LESS THAN THE WORKING PRESSURE CARRIED ON THE SYSTEM.

23. CIRCULATING PUMP: A HIGH DELIVERY CENTRIFUGAL MODEL CIRCULATING PUMP IS REQUIRED ON ALL INSTALLATIONS OF EQUIVALENT HEAD AND CAPACITY TO THE BURKS GB SERIES AS SPECIFIED ON TRIM SHEET 210. THE PUMP SIZE SHOULD NOT BE SMALLER THAN 1-1/4: ON HEATERS WH-300 TO WH-730, 1-1/2" ON HEATERS WH-970 TO WH-1410, AND 2" ON HEATERS WH-1900 TO WH-3000. (IF A STANDARD OR HIGH VELOCITY CIRCULATING PUMP IS USED, PUMP AND CIRCULATING LINES SHOULD BE INCREASED TO EQUIVALENT HEAD AND CAPACITY.)

THE CIRCULATING LINES 15 AND 16 SHOULD BE ONE SIZE LARGER THAN THE PUMP OR 1-1/2" ON HEATERS WH-300 TO WH-730, 2" ON HEATERS WH-970 TO WH-1410, AND 2-1/2" ON HEATERS WH-1900 TO WH-3000. SHUTOFF VALVES SHOULD BE INSTALLED ON CIRCULATING LINES 15 AND 16 AS SHOWN SO THAT THE PUMP OR HEAT EXCHANGER CAN BE SERVICES WITHOUT DRAINING THE TANK. IF EITHER CIRCULATING LINE IS OVER 25' PIPE LENGTH OR HAS MORE THAN 5 ELLS, INCREASE TO NEXT LARGER SIZE LINE.

INSTALL PUMP ON THE WATER INLET LINE 16 WITH FLOW ARROW TOWARD HEATER AS SHOWN WITH A MINIMUM OF 2' OF STRAIGHT PIPE ON SUCTION SIDE. CAUTION: CIRCULATOR MUST BE INSTALLED WITH OIL CUPS UPWARDS. PIPING MUST BE CAREFULLY ALIGNED AS MISALIGNMENT WILL CAUSE DAMAGE TO THE PUMP BODY. PUMP MUST RUN CONTINUOUSLY AND NOT CYCLE WITH ANY CONTROLS.

WHEN HOT WATER SERVICE LINE IS OF CONSIDERABLE DISTANCE OR TEMPERATURE IS CRITICAL, A SMALL CIRCULATOR SHOULD BE INSTALLED ON THE RETURN LINE AND CONNECTED BACK TO THE LOWER PORTION OF THE STORAGE TANK.

25. TANK TEMPERATURE GAUGE: SHOULD BE INSTALLED IN THE UPPER PORTION OF THE TANK FOR PURPOSE OF INDICATING THE TEMPERATURE OF THE STORAGE TANK WATER.

27. OPERATING WATER TEMPERATURE CONTROL: IS STANDARDLY FURNISHED FACTORY WIRED ON THE HEATER INSIDE OF THE ELECTRICAL CONTROL PANEL. THE SENSING BULB MUST BE MOUNTED IN THE WELL FURNISHED AND INSTALLED ON THE CIRCULATING INLET LINE 16 ON THE HEATER SIDE OF THE PUMP AS SHOWN. THE PUMP MUST RUN CONTINUOUSLY AND NOT CYCLE WITH THE OPERATING WATER TEMPERATURE CONTROL. SET THIS TEMPERATURE CONTROL FOR THE DESIRED WATER TEMPERATURE.

28. TANK PRESSURE RELIEF VALVE: REQUIRED ON ALL STORAGE TANK INSTALLATIONS FOR THE PURPOSE OF RELIEVING EXCESSIVE TANK WATER PRESSURE. THE VALVE SHOULD BE OF ADEQUATE SIZE TO RELIEVE THE FULL HEATING CAPACITY OF THE HEATER. THE RELIEF VALVE SETTING MUST NOT EXCEED THE WORKING PRESSURE OF THE TANK OR SYSTEM. OUTLET MUST BE PIPED FULL SIZE TO A SAFE OPEN DRAIN. IF PIPED UPWARD, A SMALL DRAIN LINE MUST BE PROVIDED AT THE LOW POINT. THE RELIEF VALVE DRAIN LINE SHOULD BE PROPERLY SUPPORTED TO PREVENT ANY STRAIN OR DAMAGE TO THE VALVE BODY. SOME CODES REQUIRE COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVES ON DOMESTIC HOT WATER SUPPLY AND THIS SHOULD BE SPECIFIED AND FURNISHED AT ADDITIONAL CHARGE WHEN REQUIRED.

29. SERVICE WATER INLET: SHOULD BE CONNECTED DIRECTLY INTO CIRCULATING LINE 16 ON THE TANK SIDE OF THE PUMP AS SHOWN. A SHUTOFF VALVE AND CHECK VALVE SHOULD BE INSTALLED ON THE INLET LINE. IT IS IMPORTANT TO INSTALL THE PROPER TRIM ON THE WATER INLET TO CONFORM TO LOCAL CODE AS MANY AREAS REQUIRE A SPECIAL BACKFLOW PREVENTOR.

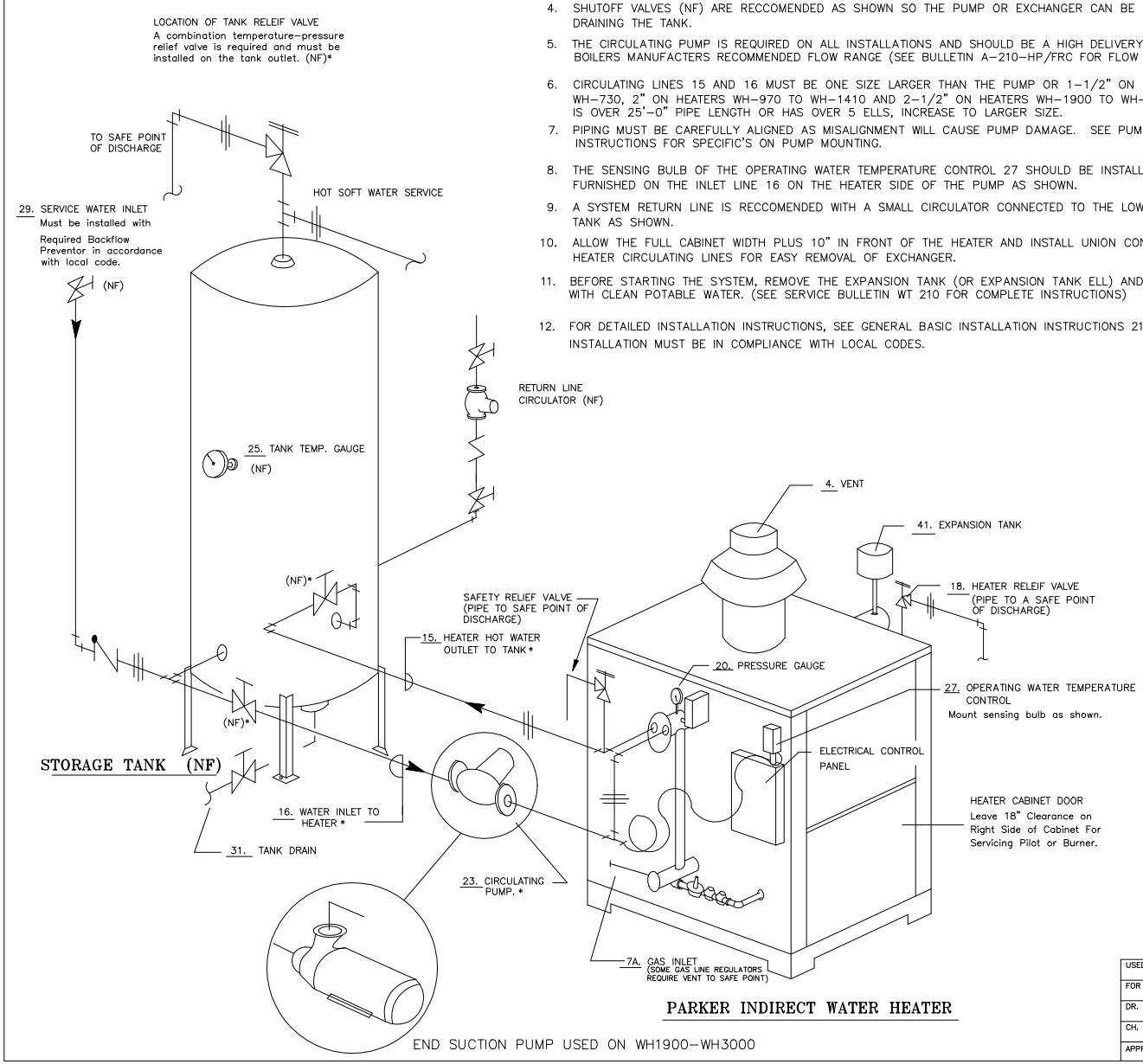
31A. TANK DRAIN VALVE: (NOT FURNISHED) SHOULD BE INSTALLED AT THE BOTTOM OF THE TANK AS SHOWN AND CONNECTED TO A SAFE OPEN DRAIN. TANK SHOULD BE FLUSHED REGULARLY AND DRAINED WHEN WATER IS DIRTY.

DUAL TEMPERATURE INSTALLATIONS: FOR INSTALLATIONS REQUIRING TWO TEMPERATURES OF HOT WATER, REFER TO INSTALLATION DRAWING 211 INST 2.

DUAL HEATER INSTALLATIONS WITH SINGLE STORAGE TANK: FOR TWO OR MORE HEATERS CONNECTED TO A SINGLE TANK, A SEPARATE CIRCULATING PUMP MUST BE USED FOR EACH HEATER AND NOT LESS THAN THE SIZE SPECIFIED ABOVE. WHEN TWO HEATERS ARE USED, THE MAIN CIRCULATING LINES 15M AND 16M MUST BE INCREASED ON SIZE LARGER THAN THE INLET AND OUTLET SIZE PROVIDED ON THE HEAT EXCHANGER CONNECTIONS 15 AND 16. IF THE TOTAL LENGTH OF EITHER CIRCULATING LINE IS ABOVE 30' PIPE LENGTH OR HAS MORE THAN 8 ELLS, INCREASE TO THE NEXT LARGER SIZE. THE LINES MUST BE CONNECTED WITH SHUTOFF VALVES ON THE INLET AND OUTLET CIRCULATING LINES OF EACH HEATER SO THAT EITHER HEATER CAN BE OPERATED INDEPENDENTLY. REFER TO INSTALLATION DRAWING 211 INST 3.

IMPORTANT INSTRUCTIONS

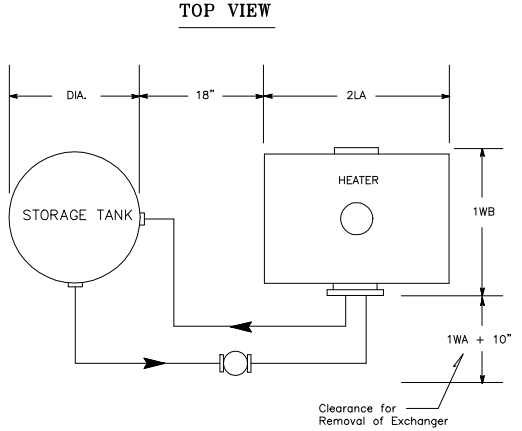
1. THE COLD WATER ENTERING THE SYSTEM SHOULD BE CONNECTED INTO THE WATER INLET LINE 16 ON THE SUCTION SIDE OF THE CIRCULATING PUMP AS SHOWN.
2. CIRCULATING LINES 15 AND 16 MUST BE CONNECTED TO OPENINGS PROVIDED NEAR BOTTOM OF TANK. INSTALL PUMP ON WATER INLET LINE 16 WITH FLOW ARROW TOWARD HEATER AS SHOWN WITH A MINIMUM OF 2'-0" STRAIGHT PIPE RUN ON SUCTION SIDE.
3. WATER INLET 16 AND OUTLET 15 MAY BE REVERSED AT HEAT EXCHANGER FOR PIPING CONVENIENCE.
4. SHUTOFF VALVES (NF) ARE RECCOMENDED AS SHOWN SO THE PUMP OR EXCHANGER CAN BE SERVICED WITHOUT DRAINING THE TANK.
5. THE CIRCULATING PUMP IS REQUIRED ON ALL INSTALLATIONS AND SHOULD BE A HIGH DELIVERY MODEL TO MEET THE BOILERS MANUFACTERS RECOMMENDED FLOW RANGE (SEE BULLETIN A-210-HP/FRC FOR FLOW RATES)
6. CIRCULATING LINES 15 AND 16 MUST BE ONE SIZE LARGER THAN THE PUMP OR 1-1/2" ON HEATERS WH-300 TO WH-730, 2" ON HEATERS WH-970 TO WH-1410 AND 2-1/2" ON HEATERS WH-1900 TO WH-3000. IF EITHER LINE IS OVER 25'-0" PIPE LENGTH OR HAS OVER 5 ELLS, INCREASE TO LARGER SIZE.
7. PIPING MUST BE CAREFULLY ALIGNED AS MISALIGNMENT WILL CAUSE PUMP DAMAGE. SEE PUMP MFG.'S INTALLATION INSTRUCTIONS FOR SPECIFIC'S ON PUMP MOUNTING.
8. THE SENSING BULB OF THE OPERATING WATER TEMPERATURE CONTROL 27 SHOULD BE INSTALLED IN THE WELL FURNISHED ON THE INLET LINE 16 ON THE HEATER SIDE OF THE PUMP AS SHOWN.
9. A SYSTEM RETURN LINE IS RECCOMENDED WITH A SMALL CIRCULATOR CONNECTED TO THE LOWER PORTION OF THE TANK AS SHOWN.
10. ALLOW THE FULL CABINET WIDTH PLUS 10" IN FRONT OF THE HEATER AND INSTALL UNION CONNECTIONS IN THE HEATER CIRCULATING LINES FOR EASY REMOVAL OF EXCHANGER.
11. BEFORE STARTING THE SYSTEM, REMOVE THE EXPANSION TANK (OR EXPANSION TANK ELL) AND FILL THE HEATER WITH CLEAN POTABLE WATER. (SEE SERVICE BULLETIN WT 210 FOR COMPLETE INSTRUCTIONS)
12. FOR DETAILED INSTALLATION INSTRUCTIONS, SEE GENERAL BASIC INSTALLATION INSTRUCTIONS 210. ENTIRE INSTALLATION MUST BE IN COMPLIANCE WITH LOCAL CODES.



PARKER INDIRECT WATER HEATER

END SUCTION PUMP USED ON WH1900-WH3000

TOP VIEW



	SHUTOFF VALVE
	CHECK VALVE
	UNION
	TEE
(NF)	NOT FURNISHED
(NF)*	NOT FURNISHED UNLESS PURCHASED WI/SYSTEM

A211INST1.DWG

USED ON PARKER INDIRECT HEATER		PART NAME PIPING SCHEMATIC	
FOR HOT WATER SYSTEM WITH PARKER DIRECT HEATER, STORAGE TANK AND ACCESSORIES			
DR. MJL	DATE 7/21/94	PARKER BOILER CO.	SCALE NONE
CH.		5930 BANDINI BLVD.	SUPERCEDES NO. 1/20/94
APPROVED		LOS ANGELES, CALIF. 90040	DWG. NO. A-211-INST1