MIURA

MIURA'S EX SERIES STEAM BOILERS

SAVE GAS/OIL COSTS AND NATURAL RESOURCES

The new, BL Micro Controller Boiler Control System

Miura Gas/Oil-Fired EX Series High Pressure Steam Boiler

Miura Steam is Engineered for Greater Efficiency, Lower Costs.

Discover The EX Series Advantages…

MIURA'S GAS/OIL SERIES HIGH PRESSURE STEAM BOILERS SAVE 20% FUEL COSTS* and CONSERVE RESOURCES.

* on average

EX SERIES

Miura is known world-wide for our commitment to protecting the environment and our innovative and efficient boiler designs. Our EX Gas/Oil Series High Pressure Steam Boiler is the most versatile industrial steam boiler in the world. The EX design minimizes carryover and produces dry 99+% saturated steam in 5 minutes or less from a cold start. Faster start-up means less fuel used, greater savings, and more responsible use of precious natural resources.

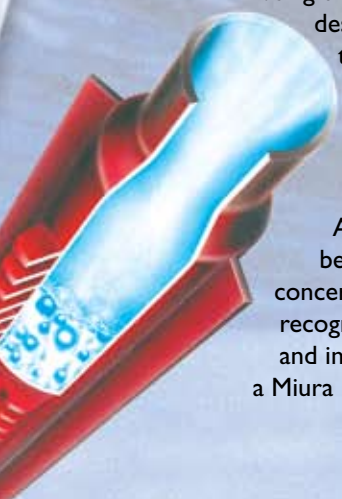
- *Dual fuel fired Natural Gas, Propane or #2 Fuel Oil*
- *High pressure options available (300 MAWP, 250 MAWP or 170 MAWP)*
- *Hot water boilers are available depending on models (refer to a Miura hot water boiler catalog for details)*
- *NOx rating is available as low as 30ppm depending on model*

ADDITIONAL BENEFITS

Water to Steam in 5 minutes

Miura Boilers produce steam in 5 minutes using their exclusive floating header design, a revolutionary advance that results in our customers using substantially less gas and oil. On average our customers save 20% of their fuel costs.

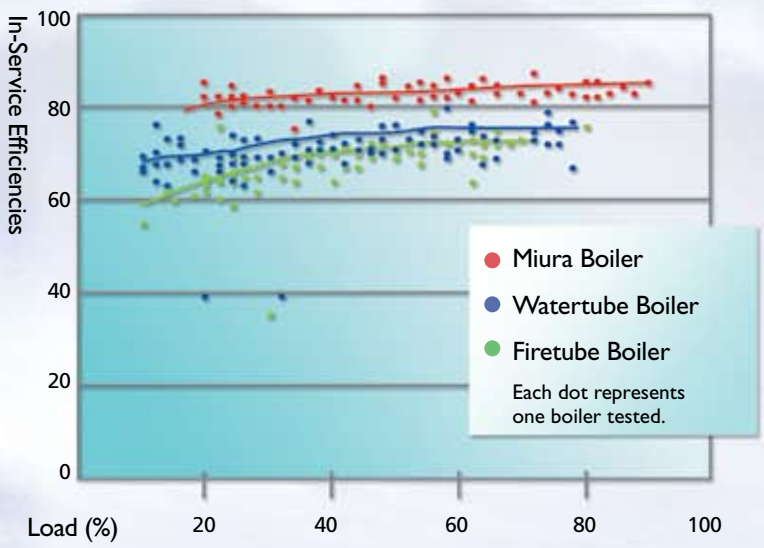
As the cost of oil and gas becomes an ever-increasing concern, forward-thinking companies recognize the value and importance of owning a Miura Boiler.



In Multiple Installations units can be turned on/off as needed

Miura customers whose needs require a multiple installation system (MI), also enjoy saving money while saving the planet, since Miura boilers can be turned on/off as required. This unique advantage lets users meet peak demand hours, while operating at greater efficiency throughout the day and reducing system wear and tear.

SUPERIOR FUEL SAVINGS



Highest In-Service Efficiencies in the industrial boiler industry.

Based on today's fuel costs, the average dollar savings Miura customers enjoy in steam production is approximately 20% over other boiler designs. At 10% to 40% fuel savings, Miura can save about $200,000 per year in fuel for a typical 600 BHP steam system with the price of natural gas at $0.90/therm.

The chart (left) compares in-service efficiencies of Miura boilers with both firetube and watertube boilers. Miura's design results in optimal heating surface transfer with minimal water content for fuel-to-steam efficiencies of 85%. Although typical firetube designs can deliver up to 83% fuel-to-steam, studies comparing actual efficiencies have shown Miura averages 10% to 40% in fuel savings over standard firetube designs.

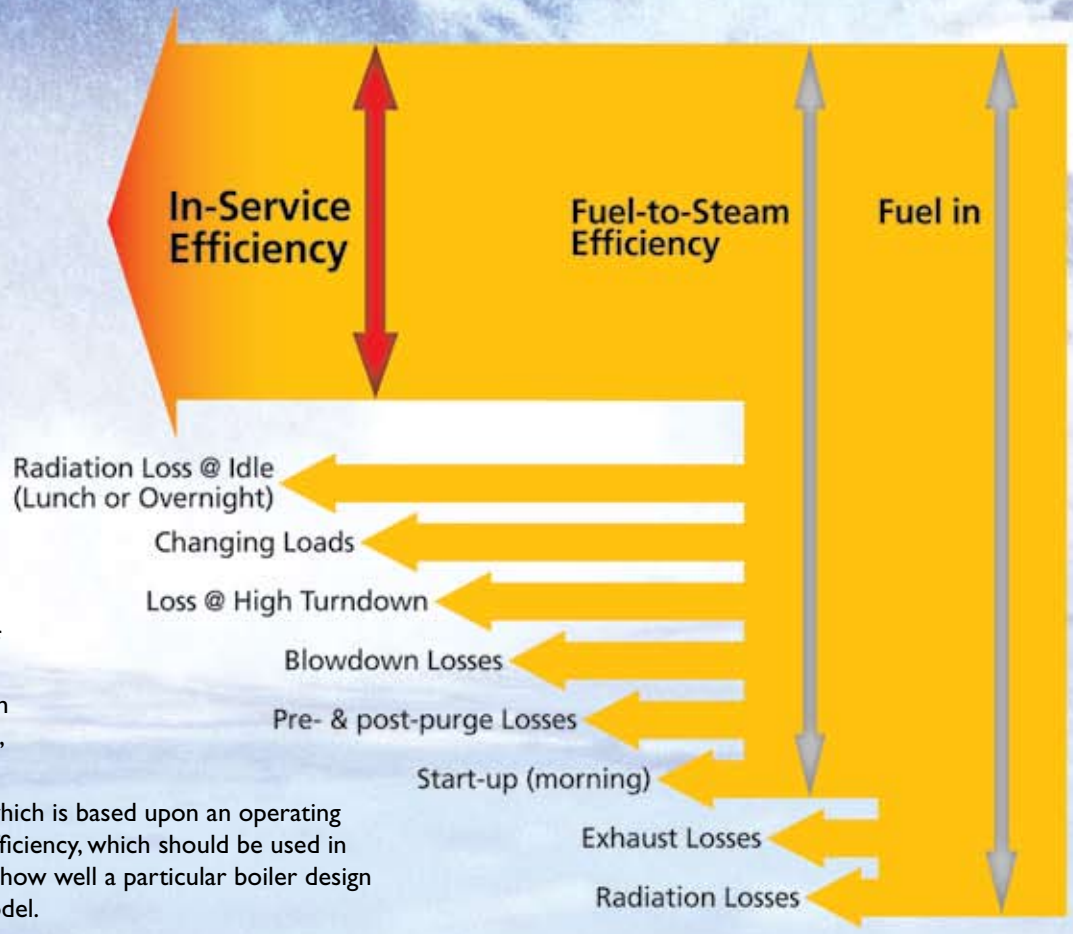
HIGH IN-SERVICE EFFICIENCY

A Standard of Excellence that sets Miura apart from other Process Steam Boiler manufacturers

In-Service Efficiency is a measure of overall performance, no matter your load profile. High In-Service Efficiency is the level of performance every Miura customer can expect. This standard of excellence has been established based on taking all factors of the boilers operation into account (see chart).

For a further explanation, let's review the common Definitions of Efficiency as related to the Boiler…

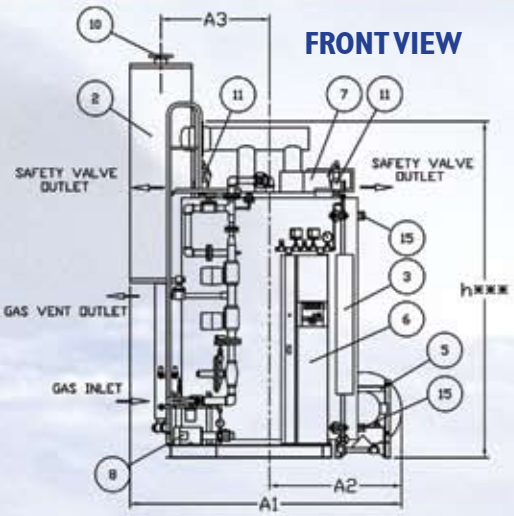
Miura has developed the term "In-Service Efficiency" to describe • Combustion Efficiency • Thermal Efficiency • Fuel-to-Steam Efficiency and defines it as follows: The resulting efficiency of a boiler when the total operation cycles are taken into account such as day, night, weekends, high loads, low loads, standby loads.



It is a comprehensive efficiency which is based upon an operating model and is the "bottom line" efficiency, which should be used in any boiler comparison. It reflects how well a particular boiler design handles a particular operating model.

EX SERIES SPECIFICATIONS

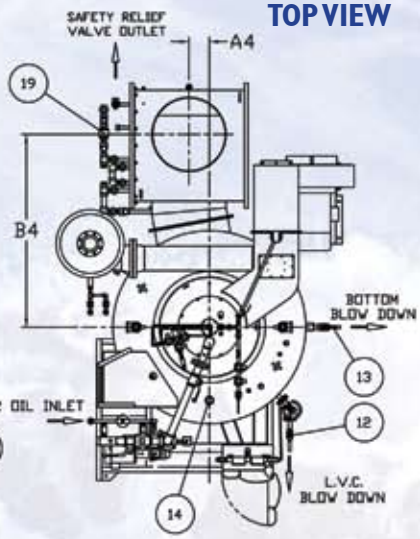
FRONT VIEW



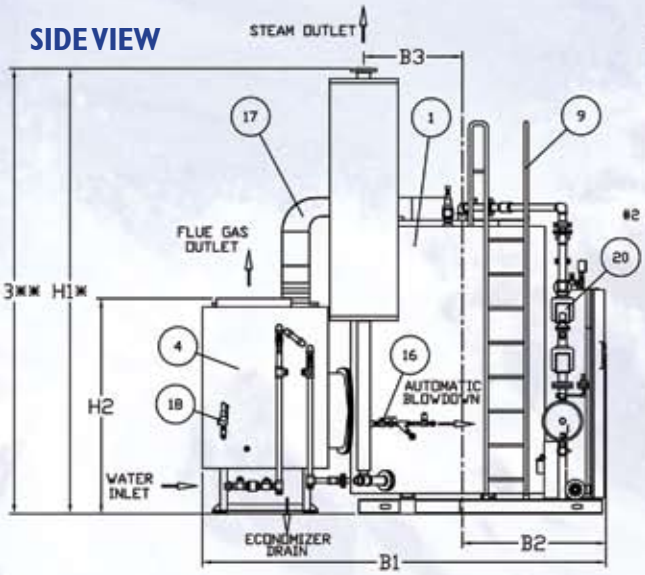
(Inches)

	A1	A2	A3	A4	B1	B2	B3	B4	H1*	H2	H3**	h
EX-100 SGO	81 ½	38	28 ½	8 ½	108 ½	41	12	55 ½	99	69 ½	96	87 ½
EX-150 SGO	90	48 ½	32	6 ½	130	52 ½	30	65	120	78	117 ½	103
EX-200 SGO	90	48 ½	32	6 ½	130	52 ½	30	65	120	78	117 ½	103
EX-250 SGO	94	50	32	6 ½	135 ½	52 ½	32	68	145 ½	74	145 ½	119 ½
EX-300 SGO	105 ½	51 ½	42	7 ½	142	55 ½	29 ½	68	156 ½	75 ½	156 ½	130 ½
EX-300 SGOF	114	59 ½	42	7 ½	140 ½	55	29 ½	68	156 ½	87	156 ½	130 ½

TOP VIEW

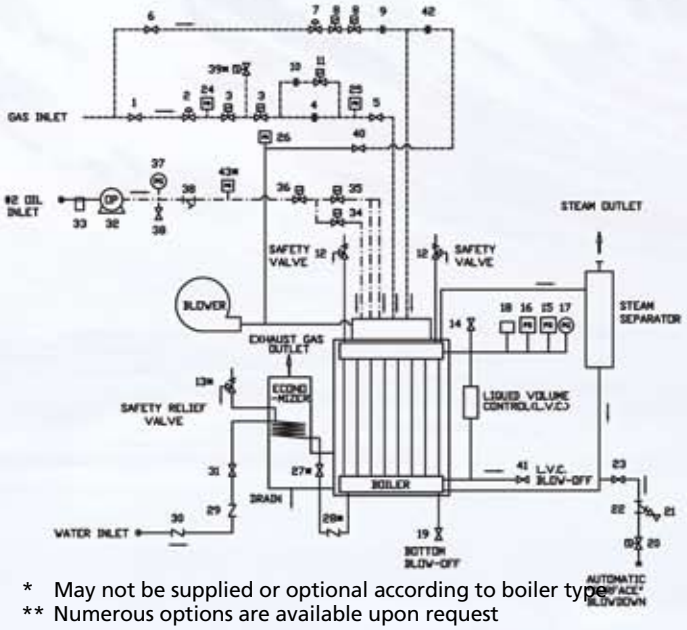


SIDE VIEW



NO.	NAME OF PART
1	BOILER VESSEL
2	STEAM SEPARATOR
3	LIQUID VOLUME CONTROLLER
4	ECONOMIZER
5	BLOWER
6	CONTROL BOX
7	WIND BOX
8	OIL PUMP
9	LADDER
10	STEAM OUTLET FLANGE
11	MAIN SAFETY VALVE(S)
12	MANUAL BLOW DOWN
13	MANUAL BLOW DOWN
14	TOP INSPECTION HOLE
15	SIDE INSPECTION HOLE
16	AUTOMATIC BLOWDOWN
17	AIR DUCT
18	ECONOMIZER SAFETY VALVE
19	FEEDWATER PIPING
20	MAIN GAS TRAIN

SCHEMATIC VIEW (Standard)



NO.	NAME OF PART	NO.	NAME OF PART
1	MAIN GAS VALVE	23	SAMPLE WATER VALVE
2	MAIN GAS REGULATOR	24	GAS PRESSURE SWITCH
3	GAS CONTROL VALVE	25	GAS PRESSURE SWITCH
4	MAIN GAS ORIFICE (LOW)	26	AIR PRESSURE SWITCH
5	TEST FIRING VALVE	27	WATER VALVE*
6	PILOT GAS VALVE	28	CHECK VALVE*
7	PILOT GAS REGULATOR	29	CHECK VALVE
8	PILOT GAS CONTROL VALVE	30	CHECK VALVE
9	PILOT GAS ORIFICE	31	FEED WATER VALVE
10	PILOT AIR ORIFICE (HIGH)	32	OIL PUMP
11	HIGH-LOW CONTROL VALVE	33	OIL FILTER
12	SAFETY VALVE(S)	34	OIL CONTROL VALVE
13	SAFETY RELIEF VALVE*	35	OIL CONTROL VALVE
14	AIR VENT VALVE	36	OIL CONTROL VALVE
15	STEAM PRESSURE SWITCH	37	OIL PRESSURE GAUGE
16	STEAM PRESSURE SWITCH	38	OIL VENT VALVE
17	PRESSURE GAUGE	39	GAS VENT VALVE*
18	PRESSURE SENSOR	40	AIR CONTROL VALVE
19	BOILER BLOW-OFF VALVE	41	L.V.C. BLOW-OFF VALVE
20	BLOWDOWN CONTROL VALVE	42	PILOT AIR ORIFICE
21	SAMPLE WATER VALVE	43	OIL PRESSURE SWITCH*
22	BLOWDOWN STRAINER		

* May not be supplied or optional according to boiler type
** Numerous options are available upon request

BL MICRO CONTROLLER BOILER CONTROL SYSTEM

NEW

The new BL Micro Controller Boiler Control System (left) offers significant advancements including many new individual monitoring points; an increase of over 60% compared to our popular XJ1.

The BL Controller is the smart answer to troubleshooting. It works for you and with you, identifying problems and suggesting solutions in plain, descriptive English on an easy-to-read display. Featuring simple, intuitive programming and operation, the BL Controller is as easy to set up and program as it is to operate. Miura's training program and the intuitive, easy-to-use interface is your assurance of an intelligent boiler that works according to your needs.

- *Greater control over steam pressure settings for steadier steam pressure.*
- *Allows for compensated adjustment of high and low fire scale thermocouple settings.*
- *Allows for compensated adjustment of automatic blowdown based upon Total Dissolved Solids (TDS) and/or blowdown rates.*
- *Easily interfaces with the Miura "Colormetry" unit to minimize scale formation due to water softener failure.*

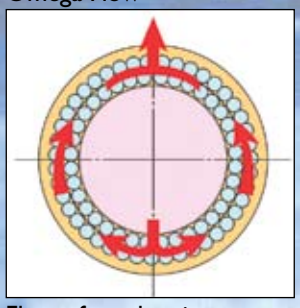
Detailed Boiler Operations

The BL Micro Controller Boiler Control System measures the performance of your boiler in an easy-to-read, user-friendly format:

- *Steam Pressure*
- *Flue Gas Temperature*
- *Feed Water Temperature*
- *Scale Monitor Temperature*
- *Overheat Monitor Temperature*
- *Flame Current*
- *Remaining Time to Blowdown*
- *Automatic Surface Blowdown Valve (On/Off)*
- *Water Conductivity*
- *11-Point Boiler Management Data*

... Plus many more

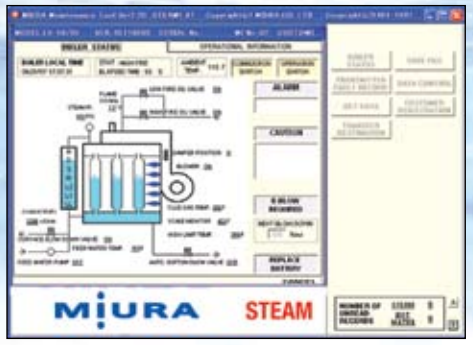
Omega Flow

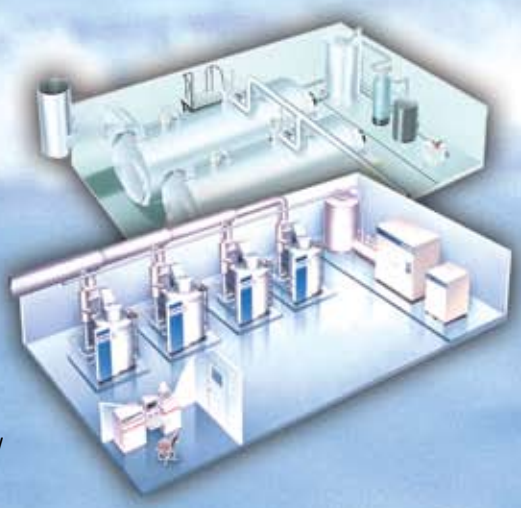


Flow of combustion gas

Dual Fuel (Gas/Oil)

Miura's EX Series boilers offer a unique advantage for users of both gas and oil. Now you can enjoy the flexibility of switching fuel, without the need for a separate burner, typically required by other manufacturers. Miura technology means outstanding innovation and ease of use.





Our Boilers Require Less Space

Miura Boiler's exclusive floating header design technology produces BHP outputs comparable to much larger units, but with far less water, and a more compact footprint. This reduces new construction costs and/or better utilizes current space.

Trouble-Free Online Maintenance System

Efficiency is also measured in trouble-free, reliable performance, and Miura's online maintenance system with the "sliding window feature" actually records an alarm or caution four seconds before it occurs, so it can be diagnosed and corrected faster. This important feature is one of many Miura boiler advantages.

EX SERIES SPECIFICATIONS

ITEM	EX-100 SGO	EX-150 SGO	EX-200 SGO	EX-250 SGO	EX-300 SGO(*9, *10)
Utilization Horsepower	100HP	150HP	200HP	250HP	300HP
Maximum Pressure (*1)	170 PSIG MAWP, 150 PSIG Maximum Operating				
Equivalent Output (*2)	3,450 LB/HR	5,175 LB/HR	6,900 LB/HR	8,625 LB/HR	10,350 LB/HR
Heat Output	3,348,000 BTU/HR	5,022,000 BTU/HR	6,695,000 BTU/HR	8,369,000 BTU/HR	10,050,000 BTU/HR
Efficiency (fuel to steam) (*3)	85% (80% without Economizer)				
Heating Surface Area	193 FT^2	323 FT^2	323 FT^2	407 FT^2	468 FT^2
Operational Weight	7,250 LBS	11,500 LBS	11,500 LBS	17,850 LBS	18,000 LBS
Shipping Weight	6,750 LBS	10,650 LBS	10,650 LBS	16,600 LBS	17,100 LBS
	Dimensions Given are Approximate				
Width	81.5 in.	90 in.	90 in.	94 in.	105.5 in.
Length	108.5 in.	130 in.	130 in.	135.5 in.	142 in.
Height	102.5 in.	127 in.	127 in.	157 in.	157 in.
Combustion System	Proprietary Forced Draft, Step Fired Modulation Hi-Low-Off				
Ignition System	Electric Spark Ignited, Interrupted Gas Pilot				
Power Supply	208, 230, 460, or 575 V, 3 PHASE, 60 HZ				
Max. Electrical Consumption	13.35 KVA (14.2 for oil)	24.5 KVA (25.4 for oil)	27.5 KVA (28.5 for oil)	32.3 KVA (34.3 for oil)	35.4 KVA (37.3 for oil)
Fuel Type (*4)	Natural Gas or Propane (3-5 PSIG), No. 2 oil				
Gas Consumption (*5)	3,920 SCFH	5,880 SCFH	7,850 SCFH	9,810 SCFH	11,780 SCFH
No. 2 oil	28.1 GAL/Hr	42.2 GAL/Hr	56.3 GAL/Hr	68.7 GAL/Hr	84.5 GAL/Hr
Gas Supply Pressure	3-5 PSIG Natural (Gas or Propane)				
Main Steam Outlet	2 in.	3 in.	3 in.	4 in.	4 in.
Safety Valve Outlet (*1)	One 2 in.	One 2 ½ in.	One 2 ½ in.	Two 2 in.	Two 2 ½ in.
Main Water Inlet	1 in.	1 in.	1 in.	1 ¼ in.	1 ¼ in.
Fuel Gas Inlet	2 in.	2 in.	2 in.	2 ½ in.	2 ½ in.
Fuel Oil Inlet	¾ in.				
Automatic Surface Blowdown	One ⅜ in.	One ⅜ in.	One ⅜ in.	Two ⅜ in.	Two ⅜ in.
Manual Blowdown	Two 1 in.	Two 1 in.	Two 1 in.	Two 1 in.	Two 1 in.
Chimney Diameter (ID)	14 in.	20 in.	20 in.	20 in.	26 in.
Flame Detector	Ultraviolet Flame Eye Sensor				
Pressure Control	Adjustable Pressure Transducer and Switch				
Liquid Volume Control	Electric Conductivity Type				
Overheat Protection	Low Water Cut Off & Thermocouple				

Note: *1 Optional EXH-SGO Series at 250 PSIG MAWP, 225 PSIG maximum operating.
*2 Equivalent output calculated from and at 212°F (100°C) feed water at 212°F (100°C) steam.
*3 Thermal Efficiencies are based on high heating values of fuels at 68°F (20°C) feed water.
*4 UL and c-UL approved for natural gas, propane, and No. 2 oil.
*5 Gas consumption based on natural gas with high heating 1004 BTU/SCF.
*6 All Miura steam boilers are fully packaged and test fired at factory.
*7 Built to meet and exceed UL & ASME standards in U.S.A; c-UL & B-51 standards in Canada.
*8 Flue gas recirculation is optional only with the Economizer.
*9 Low water content option available as low as 75 Imperial gallons to meet water volume regulation.
*10 Low NOx model (EXN300SGOF) available to meet 30ppm NOx.
*11 Safety valve outlet size may change depending on the pressure setting.

"S" - Economizer
"G" - Natural Gas or Propane Fired
"O" - #2 Oil Fired

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