

# FDR(X) Series Burners

## Multi-Fuel, Forced Draft Register Burners



## Benefits of FDR(X) Multi-Fuel Burners



Webster's FDR(X) Forced Draft Register burner is a highly efficient combustion system that combines a windbox, air register, ignition assembly, fuel train, flame safety control, combustion control, FGR (Flue Gas Recirculation) system, and a forced draft blower, all assembled into **one complete packaged unit**.

Webster's FDR(X) burners are available in single or multi-fuel models. Among the list of fuels that can be burned are natural, LP, coke oven, refinery and low BTU gases, as well as fuel oils ranging from diesel fuel to heavy viscous fuels such as No. 6 oil, on up to asphalt and tail oils.

The Webster FDR(X) burner air register is housed in an industrial grade windbox constructed of mild steel with a minimum thickness of 1/4". Each windbox has an access door for easy maintenance. FDR(X) units are designed for low

combustion air velocities, permitting balanced air distribution to the burner. Fuel piping trains and operating components are mounted on the windbox and pre-wired to the central control panel. The easy addition of Flue Gas Recirculation (FGR) allows for most applications to achieve less than 30ppm NOx emissions.

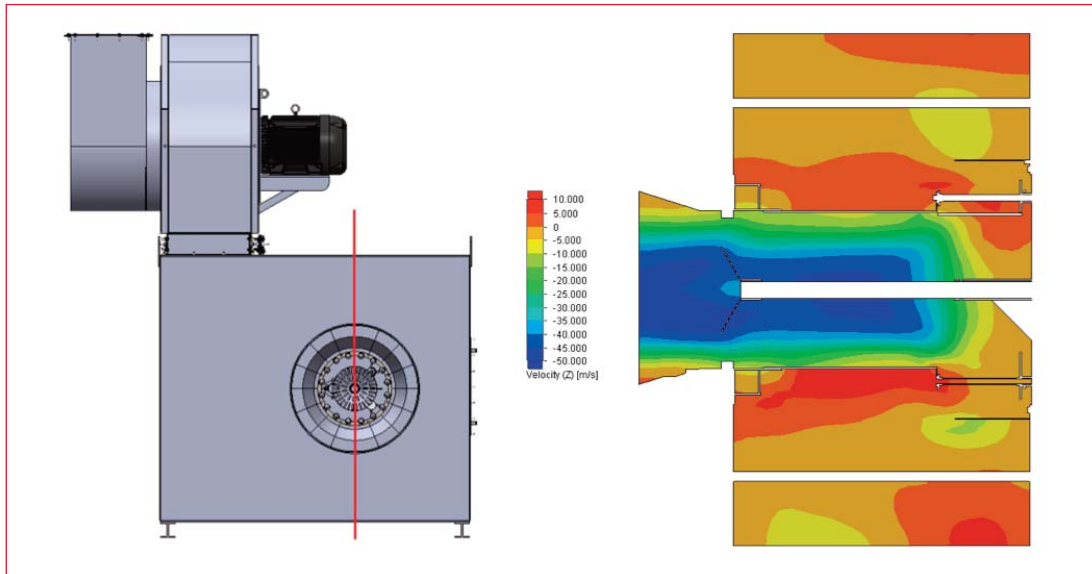
The Webster register is a multi-vane, circular assembly using curvature designed louvers for precise distribution and control of high volume combustion air. By adjusting the register door positioner, the air can be rotated either in a clockwise or counter clockwise direction. This rotating combustion air creates a thorough mixing of the fuel and air before it enters the combustion zone, resulting in complete, efficient combustion with low excess air. Single zone air registers are used on units up to ~120 Million Btu/Hr. Above that firing rate, dual zone registers are utilized. A hinged access door is provided on the registers to permit easy access to the interior of the register assembly.

Most models of the FDR(X) are available with either an internal or external gas ring. The internal ring is standard unless certain job site conditions exist, such as contaminated fuel, high combustion air temperatures or use of multiple fuels. The precision-drilled gas tips are accessible on both the internal and external designs. The unique design of Webster's FDR(X) burners allow for adjustment of the primary air register setting from the outside of the burner, without shutting down, pulling the burner, or accessing the inside of the windbox, thus enabling precise flame length, shaping, and adjustment during operation.

Webster also supplies either BMS (Burner Management System) or CCS (Combustion Control System) control systems, for virtually any project to meet the demands of our customers. These systems can be fully metered PLC based control systems, or parallel positioning, depending on the project. Whatever the requirement, Webster will provide reliable controls that fit your specifications.

## Custom Engineering & Flow Modeling

Webster Combustion is accustomed to working on custom engineered solutions, and our sales applications and engineering department are ready to assist with complex applications. As part of our design and engineering process, we have the ability to use Computational Fluid Dynamic (CFD) modeling to predict product performance or adjust product design prior to burners being installed in the field. Whatever the application, Webster is ready to work with you for the best combustion solution possible.

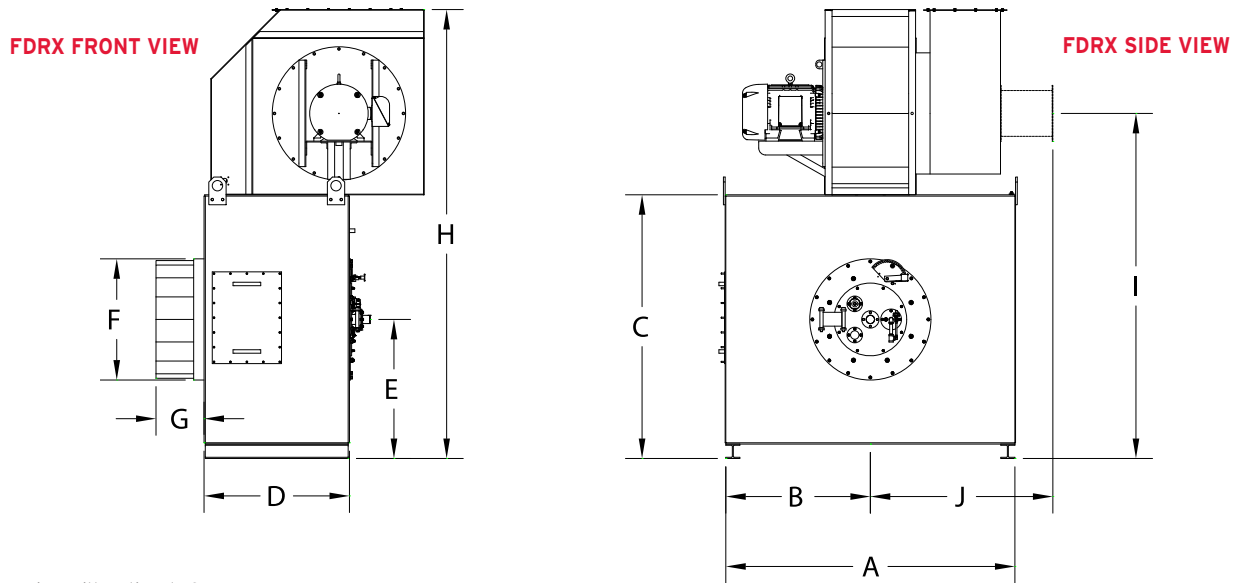


## FDR(X) Features

- Low combustion air velocities for balanced air distribution
- Multi-fuel models work with a broad variety of fuels
- Wide choice of burner arrangements
- Heavy duty construction for decades of reliable performance
- Less than 30 ppm NOx emissions with optional FGR
- Flame shaping and primary air register adjustment from outside the windbox
- Thorough combustion, lower fuel and energy consumption
- Burner mounted or remote control panels

**A wide choice of burner arrangements is available with the FDR(X) package burner system. Webster's engineering team will assist you in designing the best arrangement for your application. Flexibility in design and assembly means the FDR(X) can be applied to a wide variety of applications, including package watertube boilers, field erected boilers, dryers, air heaters and refinery heaters.**

## FDR(X) Series Typical Dimensions (Inches)



\* Dims with optional FGR

Burner Model	Max Firing Rate(MBH)	No. 2 Oil (gph)	No. 6 Oil (gph)	Dimensions (in)									
				A	B	C	D	E	F	G	H	I*	J*
FDR15	15,000	107	98	60	30	64	30	30	27	14	95	79	36
FDR20	20,000	143	131	60	30	64	36	30	29	14	108	83	45
FDR25	25,000	179	164	60	30	70	40	33	29	14	118	90	47
FDR30	30,000	214	197	60	30	70	40	33	31	14	118	90	47
FDR35	35,000	250	230	60	30	70	44	33	31	14	121	91	47
FDR40	40,000	286	262	60	30	70	44	33	33	14	121	91	47
FDR45	45,000	321	295	60	30	70	44	33	33	14	121	91	47
FDR50	50,000	357	328	60	30	70	44	33	35	14	121	91	47
FDR55	55,000	393	361	60	30	70	44	33	35	14	121	91	47
FDR60	60,000	429	393	72	36	82	50	39	35	14	136	103	58
FDR65	65,000	464	426	72	36	82	50	39	37	14	136	103	58
FDR70	70,000	500	459	72	36	82	50	39	37	14	136	103	58
FDR75	75,000	536	492	72	36	82	50	39	37	14	136	103	58
FDR80	80,000	571	525	72	36	82	50	39	37	14	136	103	58
FDR85	85,000	607	557	72	36	82	50	39	39	14	136	103	58
FDR90	90,000	643	590	76	38	82	54	39	39	14	142	106	55
FDR95	95,000	679	623	76	38	82	54	39	41	14	142	106	55
FDR100	100,000	714	656	76	38	82	54	39	41	14	142	106	55
FDR110	110,000	786	721	76	38	82	54	39	41	14	142	106	55
FDR120	120,000	857	787	76	38	82	54	39	43	14	142	106	55
FDR130	130,000	929	852	80	40	90	60	43	43	14	155	116	59
FDR140	140,000	1,000	918	80	40	90	60	43	43	14	155	116	59
FDR150	150,000	1,071	984	80	40	90	60	43	43	14	155	116	59
FDR160	160,000	1,143	1,049	80	40	90	60	43	45	14	155	116	59
FDR170	170,000	1,214	1,115	80	40	84	54	40	45	14	149	110	59
FDR180	180,000	1,286	1,180	80	40	84	54	40	47	14	149	110	59
FDR190	190,000	1,357	1,246	80	40	84	54	40	47	14	154	112	65
FDR200	200,000	1,429	1,311	80	40	84	54	40	47	14	154	112	65



**The Better Boiler Burner.**

Represented By

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