WARGA INDUSTRIES
ELIMINATE COMPROMISE

SCOTCH MARINE BOILER RETROFIT TO WARGA DESIGN





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INTRODUCING WARGA BOILER

INNOVATIVE FIRETUBE BOILER TECHNOLOGY

- No refractory by industry first cooled door design checking all boxes
- Up to 2/3rd less tubes by 2.5sq.ft./HP design
- Token exterior losses
- Highest attainable thermal & turndown efficiencies
- Maintenance costs reduced to consumables replacement
- Enhanced aesthetics

Proven in multi-year 24/7 operation in U.S.A.



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RETROFIT TO WARGA DESIGN

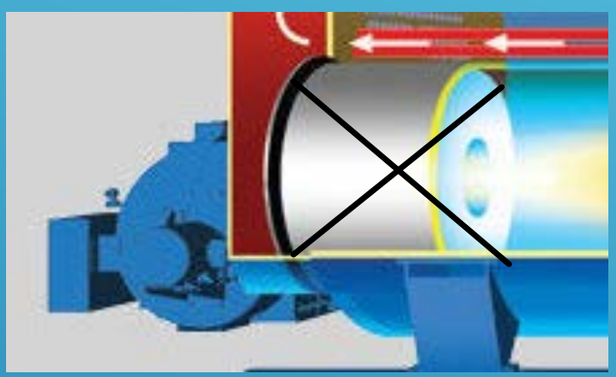
- Say good-bye to refractory, plethora of tubes and related repairs
- Say good-bye to 2/3/4-pass, dryback/wetback variations by industry's first common platform
- Say hello to highest attainable thermal efficiency
- Say hello to lowest maintenance costs
- Say hello to shortest ROI in business

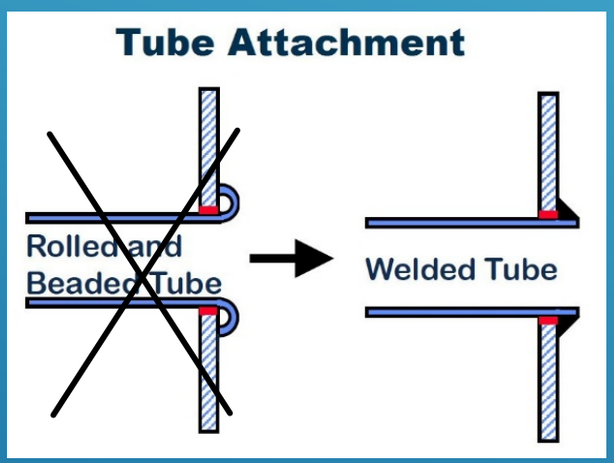
All that without buying a new boiler

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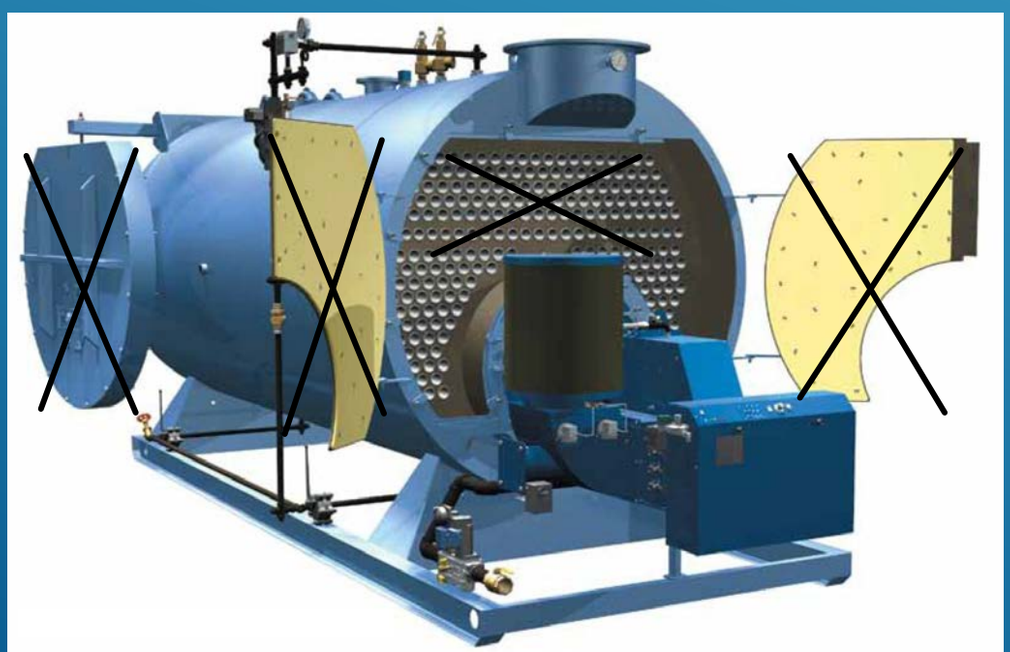
RETROFIT TO WARGA DESIGN

Refractory gone, less tubes without removal, leaks mitigated, maintenance costs minimized, token exterior loss, performance boost, paid back from economic gain









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INTRODUCING WET
WARGA ENHANCEMENT TECHNOLOGY

New boiler acquisition – CAPEX:

- Long due process
- Demolition & installation costs more than a new boiler

Retrofit – OPEX:

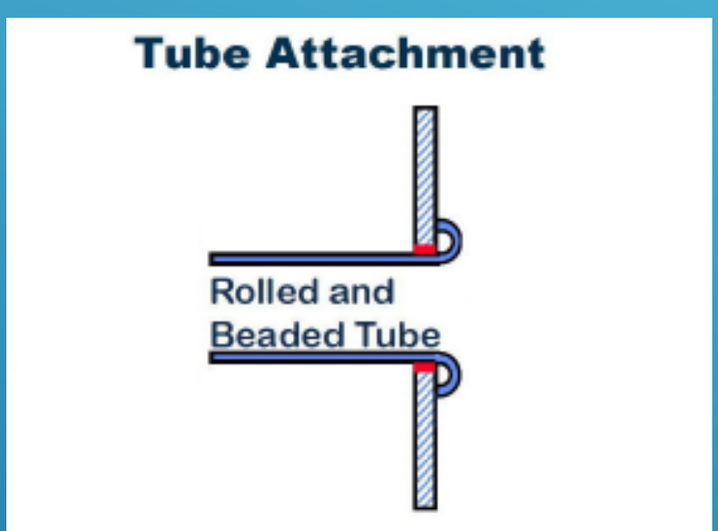
- Faster approval
- Boiler stays in place & connected
- Significantly less invasive vs retubing
- Cost comparable to retubing done in less time

WET procedure turns CAPEX into OPEX

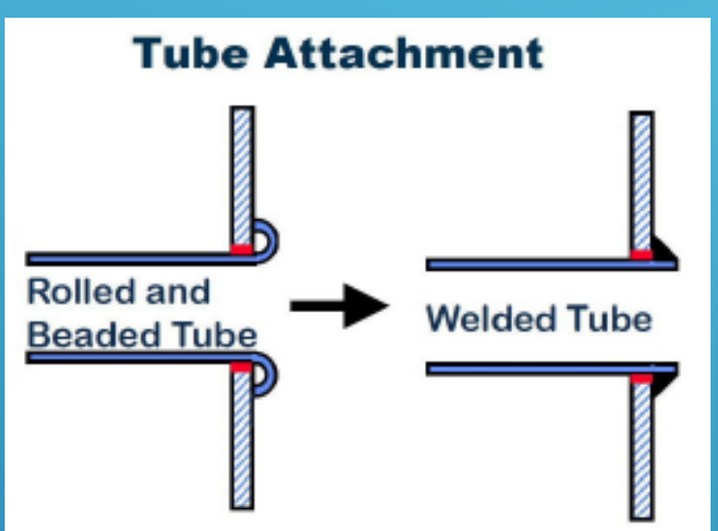
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WET PROCEDURE STEP #1

WELDING THE TUBES – MITIGATE LEAK OCCURRENCE



From this



To this



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WET PROCEDURE STEP #2

ADDING COOLED DOOR – ELIMINATE REFRACTORY





From THIS: Surfaces too hot to touch





To THIS: Surfaces warm

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WET PROCEDURE STEP #3

NON-INVASIVE TUBE NUMBER REDUCTION

SAY HELLO TO 2.5SQ.FT./HP DESIGN



From THIS: 200+ tubes in 400HP boiler



To THIS: 75 tubes in 400HP boiler

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WET PROCEDURE OPTIONS

STATE OF THE ART BURNER & COMBUSTION CONTROLS, ECONOMIZER, BURNER HOOD









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WET PROCEDURE OUTCOME

USER EXPERIENCE BOOST

- Thermal & turndown efficiencies boost
- Significant fuel & carbon footprint reduction
- Refractory-related costs gone
- Leak-related problems & costs mitigated
- Minimized maintenance costs
- Reduced noise
- Enhanced aesthetic

Economic gain pays for investment in record time unlike repairs which don't pay back – clock reset



From THIS



To THIS in just few days

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WET PROCEDURE OUTCOME
MINNESOTA SPECIAL

- Minnesota State code mandates 24/7 licensed boiler operator supervision for boilers with more than 2500sq.ft. internal surface
- Warga Minnesota Special design renders 7500+sq.ft. boiler deliver better performance in any aspect from less than 2500sq.ft.



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