

MAGNETIZER PRE-INSTALLATION QUESTIONNAIRE

Prepared by: _____ Organization: _____ Date: DD/MM/YR __/__/__

CUSTOMER SITUATION

TYPE OF INSTALLATION SITE?

Plant

- | | | | |
|-------------------------------------------|------------------------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Paper | <input type="checkbox"/> Pharmaceutical | <input type="checkbox"/> Semiconductor/Chip |
| <input type="checkbox"/> Greenhouse | <input type="checkbox"/> Petroleum | <input type="checkbox"/> Refinery | <input type="checkbox"/> Steel |
| <input type="checkbox"/> Electronic Goods | <input type="checkbox"/> PIMM (Mold Injection) | <input type="checkbox"/> Transport/Automotive | <input type="checkbox"/> White Goods |
| <input type="checkbox"/> Food & Beverage | <input type="checkbox"/> Other (<i>Please describe</i>): | | |

Building/Store

- | | | |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <input type="checkbox"/> Coffee Shop | <input type="checkbox"/> Laundry | <input type="checkbox"/> Restaurant |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Office Building | <input type="checkbox"/> Supermarket |
| <input type="checkbox"/> Hotel | <input type="checkbox"/> Private Home | <input type="checkbox"/> Other (<i>Please describe</i>): _____ |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Residential Building - indicate total number of floors per each staircase (ex. Staircase A = 4 floors, Staircase B = 7 floors, Total 11 floors): _____ | |

Farm

- | | | |
|------------------------------------|--------------------------------------|------------------------------------------------------------------|
| <input type="checkbox"/> Livestock | <input type="checkbox"/> Agriculture | <input type="checkbox"/> Other (<i>Please describe</i>): _____ |
|------------------------------------|--------------------------------------|------------------------------------------------------------------|

Vehicle/Transport

- | | | |
|-------------------------------------------|------------------------------------------------------------------|-------------------------------|
| <input type="checkbox"/> Automotive Fleet | <input type="checkbox"/> Bus | <input type="checkbox"/> Ship |
| <input type="checkbox"/> Private Vehicle | <input type="checkbox"/> Other (<i>Please describe</i>): _____ | |

BUSINESS MERIT OF INSTALLING MAGNETIZER

Check all that apply

Water Installation (page 3)

Fuel Installation (p. 6)

Petroleum Installation (p.7)

Increase Productivity/Cycle Times

Increase Fuel Combustion

Reduce Chemical Treatment

Reduce Exhaust Emissions

Reduce Maintenance

Extend Life of Engine and/or Equipment

Reduce Need for Soap/Detergent

Other (*Please describe*): _____

Reduce Levels of Chlorine _____

Extend Life of Pipes/Equipment _____

Inhibit Bacteria _____

Stop Corrosion _____

Other (*Please describe*): _____

IMPORTANT * HOW TO CONFIRM RESULTS OF INSTALLATION ?**

There are various methods to confirm conditions before and after installation of MAGNETIZER

Examples for Business Merits
Use these and add your own:

Counting units of production output: _____

Observe cost of chemicals used: _____

Observe time between maintenance procedures: _____

Amount and cost of soaps and detergents: _____

Amount and cost of chlorine: _____

Potential cost of restoring or replacing water pipes: _____

Examples for Scale and Corrosion Reduction
Use these and add your own:

Observe changes by eye: _____

Observe changes in water pressure: _____

Observe changes in water temperature:

Calculate potential cost of maintenance or replacement of water pipes and/or equipment:

DESCRIBE YOUR METHODS FOR CONFIRMING RESULTS OF MAGNETIZER INSTALLATION IN DETAIL:

WATER INSTALLATION

*****IMPORTANT*****

Attach a SIMPLE FLOWSHEET showing entrance of source water and the connection of water pipes and equipment, including all floors if more than one floor and including pipe diameters.

Equipment to install

Check all that apply

Boiler

Air Conditioner

Water Intake

Cooling Tower

Swimming Pool

Hydrophore Station

Heat Exchanger

Water Pipe

Heating Node _____

Chiller

Filter /
Conditioner

Each Floor on Staircase Vertical _____

Coffee Machine

Dishwasher

Fire Extinguisher Tank/Pipes

Grease Trap

Water Heater

Other (Please describe): _____

Water problem to treat

Check all that apply

Scale

Metal Pitting

In water pipes

Corrosion

Algae

In equipment (which? _____)

Red Rust Water

Pipe/Equipment is new, but we want hard water problem prevention

Slime / Fouling

Other

Please describe: _____

Is chemical treatment being used?

- No
- Yes

Cost per month _____

What chemicals are used and what brand names? _____

How often are the chemicals added to the water?

- Constant chemical drip
- Once a week
- Once a month
- Once a month

Chemical treatment uses Phosphorous (P) Chromium (Cr) Other heavy metals

PLEASE NOTE: Chemical treatment using Phosphorous (P), Chromium (Cr) and other heavy metals may interfere with the function of MAGNETIZER. Also, the amount of scale reduction when chemical treatment is stopped depends on (1) the breadth and expanse of scale in the pipes and equipment; (2) the thickness/height of the scale buildup in the pipes and equipment; and (3) the speed at which the scale forms in "natural conditions" when no chemicals, no MAGNETIZER or other water treatment is used. These are difficult parameters to get good measurements on, but you may include below the additional comments.

Pipe materials

Check all that apply

- Iron
- Copper
- Other (Please describe): _____

- Stainless Steel (SUS)
- PVC

Pipe Diameter(s)

Specify the Outer Diameter (OD) of pipes to be installed in inches: _____

Source water

Check all that apply

- City Water Factory Water Other (Please describe): _____
- Well Water Waste Water _____

ATTACH WATER ANALYSIS

Water flow?

Water hardness?

**SURVEYING A COOLING TOWER/CONDENSER FOR MAGNETIZER®
INSTALLATION**

Make & Model: _____

Tonnage of Tower: _____

Number of Gallons of Water in the System: _____

Number Hours of Operation: _ Daily? _____ Weekly? _____ Monthly? _____ Annually? _____

How many feed water lines: _____ Diameter: _____ Composition: _____

Is there insulation on the feed lines? YES _____ NO _____

If yes, can units be put inside the tower, or can they remove some of the insulation to facilitate the installation of the Magnetizer units? _____

Is there heat tape on the feed water lines? YES _____ NO _____

What is the diameter of the make-up water line? _____

What is the hardness? _____ What is the pH? _____

What is the current water treatment program? _____

Salt Softener? _____ Chemicals? _____ Other? _____

Monthly/Annual Cost: _____ Annual Cost: _____

How are the blow downs performed? _____

Automatic? _____ Timer? _____ Manual? _____ Other? _____

FUEL INSTALLATION

Examples for Fuel Performance and Combustion Efficiency

Use these and add your own:

Observe amounts of fuel used: _____

Monthly Natural Gas (m³) / Steam (Kg) Index _____

Observe change in power and pickup: _____

Observe change in emissions: _____

Observe change in need for cleaning engine: _____

Calculate potential cost of maintenance or replacement of engine and/or engines and equipment: _____

DESCRIBE YOUR METHODS FOR CONFIRMING RESULTS IN THIS MAGNETIZER SITE IN DETAIL: _____

ICE equipment to install (Diesel Engines, Generators, Cars, Power Plants)

Check all that apply

- | | | |
|-------------------------------------------|--------------------------------------------|------------------------------------------------------------------|
| <input type="checkbox"/> Car | <input type="checkbox"/> Boiler | <input type="checkbox"/> Other (Please describe): _____ _____ |
| <input type="checkbox"/> Taxi | <input type="checkbox"/> Steam Heater | _____ |
| <input type="checkbox"/> Van | <input type="checkbox"/> Water Heater | _____ |
| <input type="checkbox"/> Bus | <input type="checkbox"/> Furnace | _____ |
| <input type="checkbox"/> Light Truck | <input type="checkbox"/> Stationary Engine | _____ |
| <input type="checkbox"/> Heavy Truck | <input type="checkbox"/> Generator | _____ |
| <input type="checkbox"/> Train/Locomotive | | _____ |

Ship

Number of cylinders _____ Is there a fuel rail? Yes No Number of injector lines _____

Size of the air intake to the engines intake manifold - OD of the air hose between the turbo charger and the air intake: 3" 4" 6" Other _____

Cooling system's lower radiator hose OD _____

Pipe Diameter(s)

Specify the Outer Diameter (OD) of pipes to be installed

- Fuel Line _____ Oil Filter line _____
 Injector Lines _____ Other - Please specify _____

Pipe materials

Type of Fuel?

Check all that apply

Condition of Equipment

- | | | |
|-----------------------------------|-------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> Gasoline | <input type="checkbox"/> Clean | <input type="checkbox"/> Mazut |
| <input type="checkbox"/> LPG | <input type="checkbox"/> Dirty | <input type="checkbox"/> Other Please describe: _____ |
| <input type="checkbox"/> Diesel | <input type="checkbox"/> Bunker Oil | <input type="checkbox"/> Heavy Oil |

Surface Temperature of Water Pipe ***very important for boiler fuel installations on the water side into boiler

_____ deg. C or F (please circle which one)

**** Is there a tubular **Air Feed Pipe** feeding boiler/burner? If so what is its OD _____ and surface temperature _____?

OIL WELL & OIL LINES INSTALLATION

Check all that apply

- Vertical Lines Horizontal Lines

What problem to treat?

- Reduce Viscosity Reduce Paraffin Suppress H₂S Reduce Downtime
 Reduce Hot Watering Extend Life of Equipment Other: _____

Surface Temperature of Casing

- Below 149 deg. F
 150 - 165 deg. F
 166 - 199 deg. F
 200 deg. F and up

Surface Temperature of Pipe

- Below 149 deg. F
 150 - 165 deg. F
 166 - 199 deg. F
 200 deg. F and up

Specify Temperature for Casing or Pipe: _____ deg. F.

OD:

- Casing:
 2 ³/₈"
 2 ⁷/₈"
 3 ¹/₂"
 Pipe: _____"

Crude Viscosity: _____

Pipe internal wall thickness: _____ mm

Crude Pressure: _____

Pipe content: Carbon _____% Manganese _____%
 Phosphor _____% Sulphur _____% Other _____%

Crude Temp.: _____

Other

Comments: _____
