

...to some folks  
a "cap lift" is  
no ordinary event!

# Well, Sir Winston certainly exemplified the *traditional* meaning of the ... “*Cap-Lift*”

## True Turbine NDE /NDT Inspection



Interestingly, in the world of heavy chiller and steam turbine service we are often requested even encouraged to submit an offering for...yes, a “Cap-Lift”. While this term has buzzed around our industry for years and has even been corner-stoned as an Industry standard to a major turbine service, we at Industrial Cooling find little credit to our industry’s example of the “Cap-Lift”.

Unfortunately the term is often followed through as a “scope of intent” where the large upper turbine case or “cap” is lifted to gain access to the turbine’s two major parts. More specifically, the diaphragms and rotor package. These items are simply removed and sidetracked for shop evaluation. Mission accomplished....NOT Quite!

While these components are and remain definite items to a true turbine NDE /NDT Inspection, they hardly represent the final scope or even actual intent. Many components, groups, sub components and ancillary support devices remain in need of both inspection and qualification for performance, durable use and overall safety.

***Anything short of a complete evaluation simply weakens the remaining links in the inspection and to the turbine’s operating expectancy!***

Industrial Cooling Inc.’s Freeport New York office has recognized this effort since our early days, servicing large commercial Steam Turbine Chillers for the finest clients over two decade ago. Our owners and operators recognize and have come to expect the differences in a True Turbine NDE/NDT Inspection compared to that of simply “lifting a cap” with interest to only the two main parts!

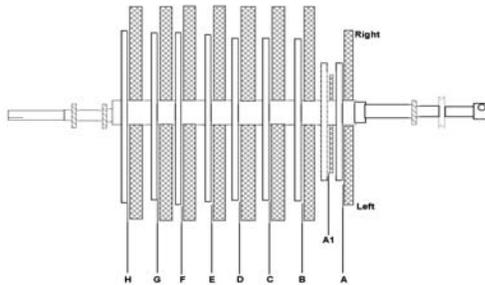


## Are all your Turbine components Inspected and Qualified?

- Journal Sleeves
- Thrust Shoes
- Thrust Discs
- Oil Rings, Sling
- Oil Labyrinths
- Regulators Valves
- Oil Switches aux/TLOP
- Gear Drive Coupling
- Thrust Carriages
- Internal to Oil Pump
- Gland Leak off Ass.
- Vacuum Breaker
- Trip Pedal
- Trip Catch
- Trip Latch
- Yoke
- Overspeed Governor
- Trip Spring
- Quad Plate Ass.
- Roll Pins at Trip Shafts
- Trip Solenoid
- Vacuum Plunge
- Micro Switches
- Posi Seal Micro
- Actuator Linkage
- Valve Seats
- Strainer Basket
- Hand Valves
- Sentinel Valves
- MAG Pickup Gears
- Reversing Segment
- Nozzle Block
- Diaphragms Stop Pin
- Diaphragms Keys
- Steam Case Alignment Pins
- Bearing Alignment Pins

## Part's and Smart's

Knowledge isn't lip service around here.  
It's our only service.



ROTOR TO DIAPHRAGM CLEARANCE			
DIMENSION	DESCRIPTION	Left	Right
A	Nozzle Block to 1st Disc		
A1 (if applicable)	Curtis Disc to Reversing Segment		
B	2nd Stage Disc to 2nd Diaphragm		
C	3rd Stage Disc to 3rd Diaphragm		
D	4th Stage disc to 4th Diaphragm		
E	6th Stage Disc to 6th Diaphragm		
F	6th Stage Disc to 6th Diaphragm		
G	7th Stage Disc to 7th Diaphragm		
H	8th Stage Disc to 8th Diaphragm		

We are not mechanical contractors or HVAC guys. Not plumbers or pipefitters either.

We don't work on pumps, fans or install new equipment. **We simply and effectively service Large Industrial Chillers and the Steam Turbo Machinery that drives them-nothing more!** And frankly, we're proud of it!

We recognized early that to be the best...you need to pick something and do it right. We far rather put our efforts in training, certification, safety, best practices, industry innovations and client solution's than being a "jack of all trades".

Our field engineers are continually provided OEM factory training and endorsements. They instinctively maintain the use of sectional drawings, BOM assemblies; cut sheets and specification of limitations and tolerances like others use a tool belt.

# Our Commitment to Excellence

- Elliot Factory Trained Technicians
- Carrier Factory Trained Technicians
- OSHA 10 Certified Technicians
- Columbus McKinnon Hoist Certified
- York Factory Trained Service
- Murray Turbine Factory Trained
- AUTHORIZED Murray Service Provider
- National Chiller CSG Member
- NREC Compressor Design and Engineering Forum
- NYC only Exclusive Chiller Service Provider



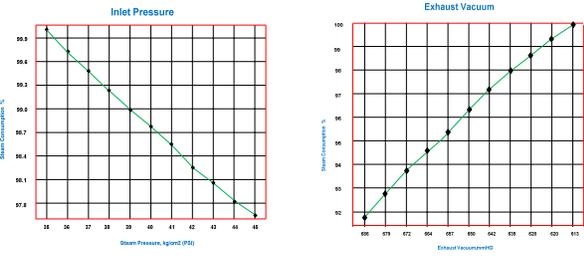
We maintain access to each OEM part and component. If it's a remedial OEM part or an enhanced optimized control system...feel assured you are likely to find real solution's and real choices at Industrial Cooling.

*We remain an independent service provider free of biases or limitations that are simply unacceptable in today's demanding business world.*

# Energy Matters

A little secret about rotating equipment assembly that is seldom put forth. *"if it don't rub... it'll run"*.

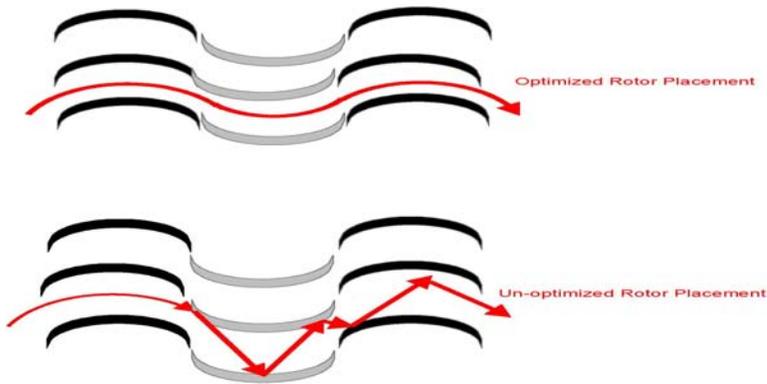
Yes, that may be true. If the assembly meets rotational obligations, maintains adequate lubrication and is free of vibration- it will likely run. Well that should be good enough? Or perhaps not!



While the expense of maintaining a turbine appliance is certainly a considerable obligation to an operating budget...poor performance and high consumption cost's can make any maintenance expense pale by comparison.

*Your turbine is built with many considerations that look beyond simply "getting it to run"*

Actually all efforts beyond "simply starting and running" are intended to deliver PERFORMANCE! From nozzle to station- to rotor separation, velocity placement of steam energies, even sealing faces and nozzle ring volume's...are "built in considerations" that seek ENERGY PERFORMANCE.



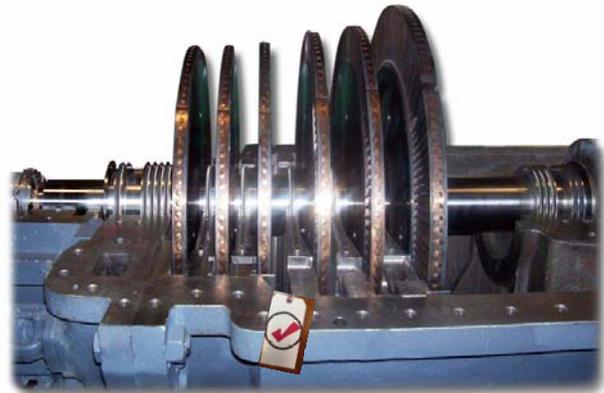
*Without consideration to the unit's energy performance during a service event... the turbine appliance may very well become the most costly "bad maintenance" investment made!*

We share the value of a better job, we recognize **ENERGY MATTERS** and we feel energy minded assembly is well deserved for an energy minded world!

## Cans are for Coffee!

We treat your property like it's our own!

Parts are group arranged, logged and tagged in sequential order— "essentially a last out- first in" approach followed by enveloping and securing each component. Special tooling like magnet hoists, diaphragm carriages, rotor cradles and case jigs are the expected norm here.



Responsible field disassembly assures that our owner's appliance or its sub components are not subject to damage during the overhaul or shipping process

*We think our clients have earned their reputation and assets...you can be assured that our style reflects and respects that to the fullest extent!*

***Do not expect to find your buildings disassembled turbine parts thrown in coffee cans and buckets throughout the machine room -simply not going to happen here!***



.....**Pledge!**

In today's competitive world, a low price should be received as skeptical as a high price, perhaps even more! Shell game price offerings and low bid temptations are never hard to find. However we feel you get what you pay for and even a bad steak still costs real money! **We** believe in the right job, for the right price...the first time!

We recognize real value and the mutual reward of a well commissioned project. We also realize providing more - can cost more.

Fortunately, we believe our client owner's have similar sentiment and commitment in their businesses and they have earned the privilege of having exceptional service providers.

***For our nearly 25 years we recognize that terms like trust, confidence and respect are what made our Company what it is...not simply nuts and bolts. We remain committed to our client partners and to providing the distinction of the difference.***

