



Alpha  
*Therm*

**Clear Driving Technology**



## AlphaTherm Heated Wash:

- Is a cutting edge system that rapidly heats washer fluid to clean and deice windshields.
- Clears ice and frost in winter months and sets a new standard in cleaning grime and insects in warm weather driving.
- Aids in clearing hard to reach places and ice build up on wiper arms.
- Reduces the time standing outside of the vehicle scraping.
- Brings to the marketplace: cleaner windshields, better wiper performance, enhanced visibility and improved safety.



# See The **SAFETY** Difference Total Vision For Total Safety in All Seasons



## CAN'T REACH



No more dirty clothes from scraping when you can't reach the windshield

## WINDSHIELD SLAM



Improves driver vision during snow and ice storms. Removes ice build-up on wiper blades and arms

## POOR SCRAPING



Provides quick defrosting, defogging and de-icing

## DON'T FEEL SAFE



Increased safety for drivers -- eliminates scraping in dark parking lots

## SUN/HEADLAMP GLARE



Heated fluid is more effective on road grime in warm weather

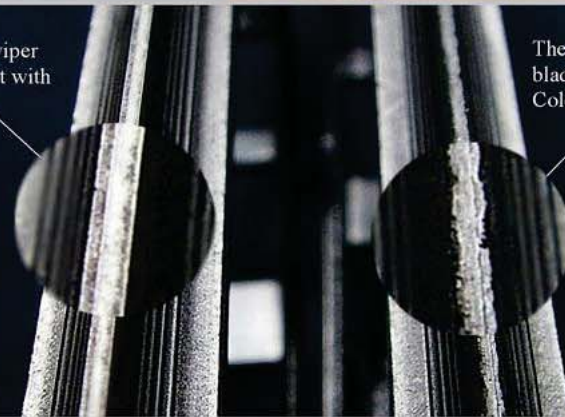
### HEATED WASHER FLUID BENEFITS

- Hot Fluid Cleans Better
- 40% More Effective than Cold Fluid
- Dramatically improves road safety under all weather and driving conditions. Clear driving technology means optimal SAFETY.

### IMPROVED WIPER BLADE LIFE/QUALITY

The edge of wiper blade after test with Hot fluid.

The edge of wiper blade after test with Cold fluid.



# Alpha Therm

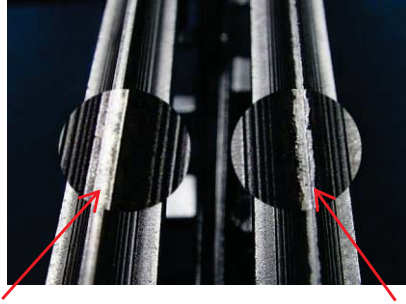
## HEATED WASHER FLUID UNIT



# Performance Enhancement of the Vehicle Wiper / Washer System

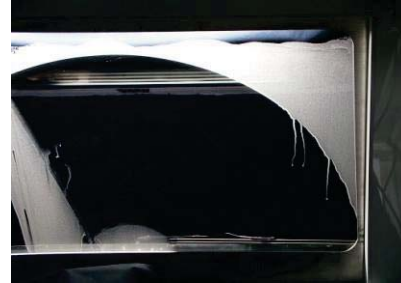


➤ The blade's effectiveness and longevity are significantly improved by using hot fluid. Hot fluid dissolves sharp ice and dirt crystals quicker, thus providing less abrasive particles in contact with the wiper blade.

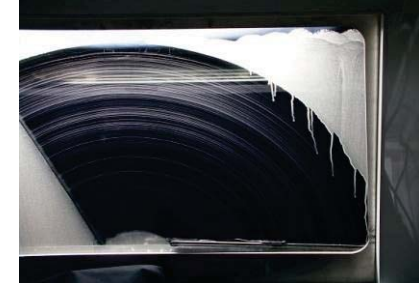


Blade after use  
with hot fluid  
(good blade)

Blade after use  
with cold fluid  
(damaged blade)

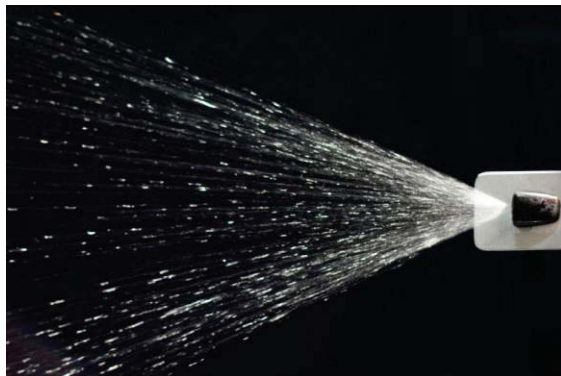


Windshield cleanliness  
after use with good blade

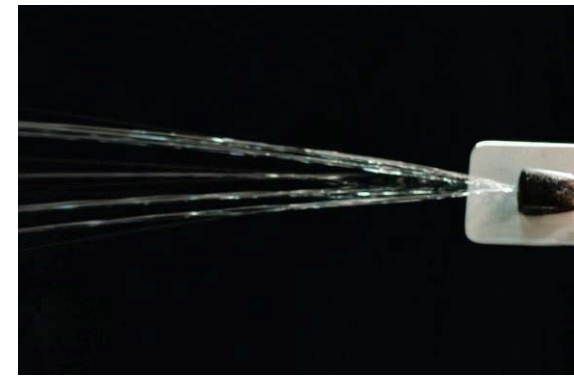


Windshield cleanliness  
after use with damaged blade

➤ Cold temperature increases the viscosity of the washer fluid causing a poor spray pattern. Hot fluid provides the proper spray pattern.



Spray pattern at cold temperature with hot fluid



Spray pattern at cold temperature with cold fluid



### The AT-380D operates in “On-Demand” mode.

The unit starts to operate when the ignition is on (engine running) and the battery voltage level is higher than 13.0 volts. Once the unit is activated, the washer fluid inside its heating chamber will be heated and kept within pre-determined temperature limits (133 – 140°F). So there is always hot fluid inside the unit’s heating chamber which can be used by a driver for cleaning the windshield.

Each time the driver activates the factory installed washer system, heated washer fluid is applied to the windshield for approximately the first 3 seconds of spray. Three seconds of the spray delivers approximately 50-60 cc of fluid that is considered sufficient amount of fluid for one spray. The next portion of heated washer fluid is available in 10-20 seconds (depending on ambient conditions).

The unit uses full power of 50 Amps for approximately 30 seconds to heat the washer fluid to the pre-determined temperature limits (133 – 140°F) and minimal power to keep it within these limits. The unit’s power consumption is less than 2 Amps per hour at ambient temperature of 0°F.

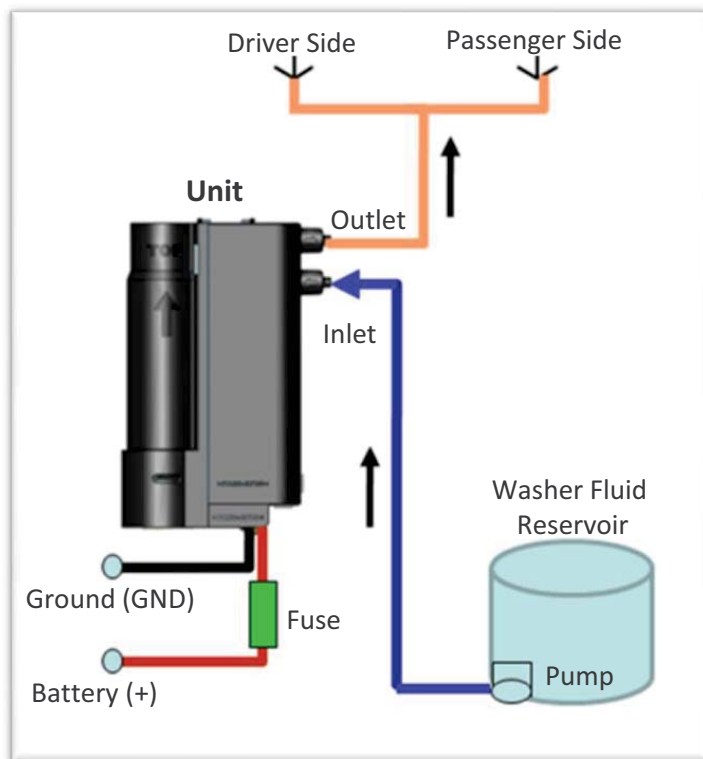
**Once the unit starts to operate (engine is running), it will heat the washer fluid in approx. 30 seconds. Driver operates the washer system manually to spray the heated fluid onto the windshield. Recommended duration of spray is 3 seconds. Driver can spray as many times as he wants. Best results are achieved when time intervals between sprays are approximately 20 seconds.**



- AlphaTherm Heated Wash Unit was designed as an universal product to dramatically improve the performance of vehicle wiper/washer systems.
- The unit was optimized to work in all applications.

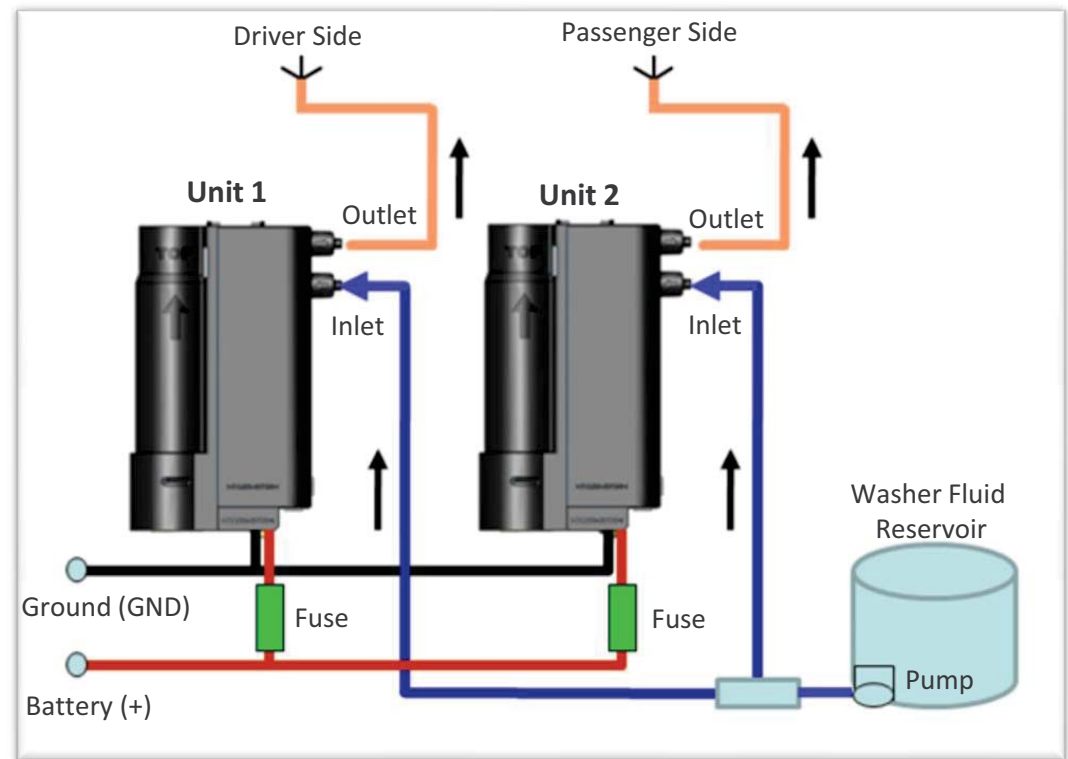
One unit per vehicle:

Sedan's, Coupe's, SUV's, Light Truck's



Two units per vehicle:

Heavy Truck's, Semi-Truck's, Buses



# Cold Washer Fluid Defrost System vs. AlphaTherm Technology



Society of Automotive Engineers (SAE) standard automotive test conducted by Ford at 3°Fahrenheit

START  
30 Second  
60 Second  
90 Second  
120 Second

## Traditional Cold Washer Fluid System



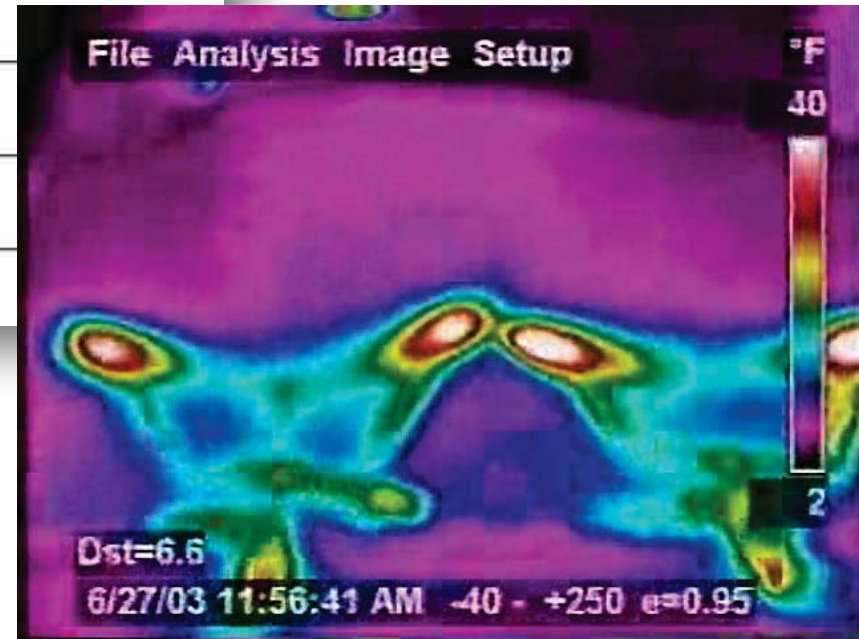
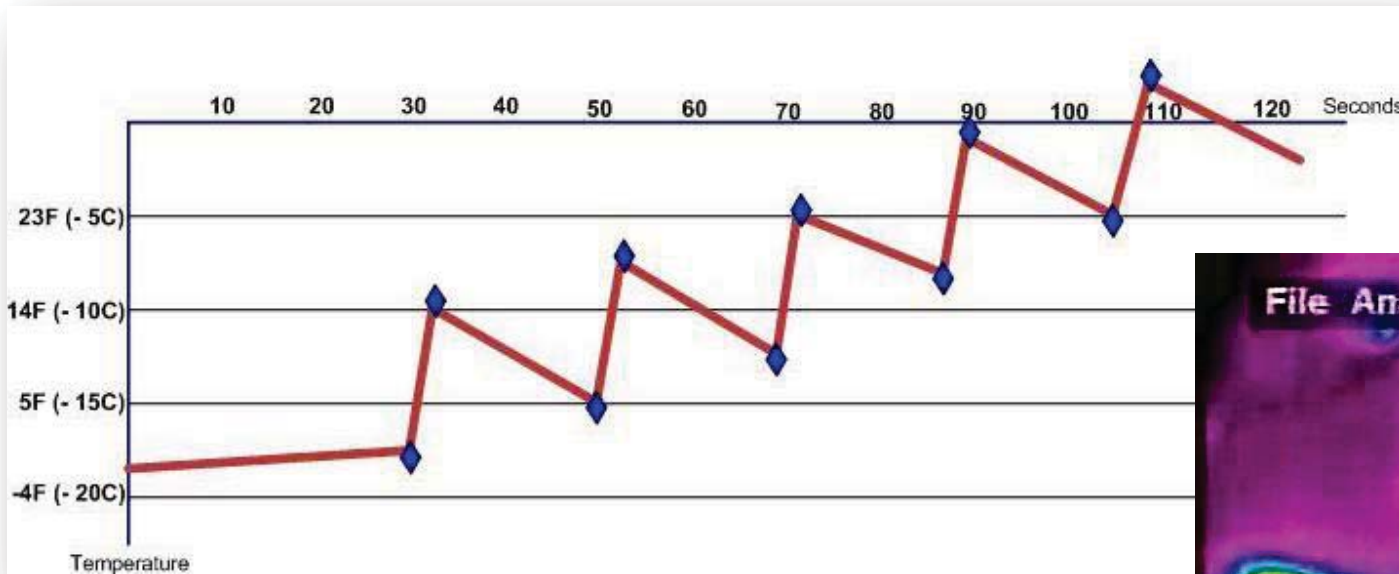
## AlphaTherm Washer Fluid System



AlphaTherm technology provides both important safety and convenience factors



## Glass Temperature Versus Time in Seconds @ 0F (-18C)



➤ Laboratory & field testing show that controlled pulsed sprays of heated washer fluid can raise the temperature of the windshield / wiper blades. Tested on typical 4 mm windshield thickness.



## Dimensions \*:

- ❑ Height 5.5 inches (137 mm)
- ❑ Width 4 inches (100 mm)
- ❑ Thickness 1.75 inches (43 mm)

## Weight \*:

- ❑ 1.01 lbs (460 g)

\* Without prime, bracket and cables attached.



- ▶ **AT-380D unit w/attached cables**
- ▶ **Installation bracket**
- ▶ **Red power cable with inline fuse (60 amps) (attached to unit)**
- ▶ **Black power cables (ground) (attached to unit)**
- ▶ **8 cable ties**
- ▶ **6 self tapping screws**
- ▶ **Installation manual**
- ▶ **2 hose splicers**
- ▶ **48 inches of rubber tube to connect the unit to the washer system**