Grape Installation Presentation
Dynamax – The Company

- 25+ Years of Experience in Sap Flow Technology
- (4) Patents related to sap flow sensors and irrigation control
- Main office in Houston, Western Office in Fresno
- Worldwide Distribution – 30 countries
- US Distributor for Delta-T Devices, Gill Instruments, and ForceA Systems integrators for Campbell Scientific
- World Leading Precision Ag Electronics / Plant Science Research
Dynamax – Leading precision sensors to agriculture

Dynamax  
Delta-T  
ForceA  
Gill  

Canopy Analysis -  
Nitrogen  
Polyphenols  
Anthocyanins  
Leaf Temp - Stress  

Soil Moisture & Temperature  
EC- Conductivity  
Hydraulic Properties  

Sap Flow  
Water Dynamics  
Transpiration  
ET & weather  
Crop Coefficient
Dynamax Customers & Markets

Universities, Research Institutions
USDA-ARS, Forest Service, NRCS
EPA, NASA, USGS, DOD, US Army, Navy
Agricultural Research Companies
Viticulture, Fruition Sciences
Growers, Farmers, Orchards & Field Crops
Wind & Solar Energy
Ships, Offshore, Data Buoys
Sports Fields & Turf Grass Managers
Dynamax – Commercial Sensors for Agriculture

Sap Flow – 4th Generation by Dynamax
Soil Moisture – 5th Generation by Delta-T
Sap Flow Sensors

Measurement of Plant Transpiration

- g/hr, Gals/hr, Gals/Day, mm/d

Heat Balance

\[ \text{Heat}_{in} = \text{Heat Sap Flow} (Q_f) + (Q_r) \] (heat out)
*Converted by Temperature(~2-3 deg) and Cp

Range of Sizes

- 2 mm up to 150 mm (6”)

Works on Most Crops and Trees

- Woody or Herbaceous Plants
SapIP Wireless System

Create Water Budgets and Conserve Water Usage

Daily Water Use (gal/day/tree)

Per tree water use is extrapolated to entire irrigation zone, trees/acre
Add SapIP-IRT Infrared Temperature Sensor

- Add IRT Sensors to SapIP Wireless Network
- Monitor Leaf Temp & Plant Stress
- 0.5 C Degrees Accuracy
- Wireless, Analog, or SDI12 Versions
- Can be used with Center Pivot systems
- SALH Stress Accumulator Logger
- CWSI or iDANS Models Built In
- Receive Frost Warnings
- Developed in conjunction with USDA-ARS
Installation of Sap Flow Sensors on Grape Plants
SGEX25 sap flow sensors
Grape Cordons
Prepare the stem by smoothing the thin bark, or removing thick bark with sandpaper if necessary.

Wash with soapy water.

Measure the stem diameter in mm.

Spray a thin layer of canola oil around the stem.

Add a small amount of G4 grease and coat the insides of the sensor.

Install the sensor around the stem. Tuck in and overlap the heater strip.
Wrap the stretchable Velcro strap around the sensor from top to bottom.

Attach the cable.

Install the white waterproof membrane cloth with tape at the top and at the bottom.
Install the (3) foam bodies with Velcro straps.
Install bubble shield around the entire sensor and tape in place.