Imports System.Text

Imports System

'Imports System.IO

'Imports System.Configuration

'Imports System.Drawing.Graphics

Imports System.Math

'Imports System.Drawing

'Imports System.Drawing.Image

'Imports System.Drawing.Printing

Public Structure Tmodel

Public Tname As String 'Name

Public Dat() As Double 'Dta

Public Maatgeg1() As Double 'Maatgegvens 1

Public Maatgeg2() As Double 'Maatgegvens 2

Public aantalv() As Double 'Aantal variabelen

Public werkp\_opT() As Double 'Eff.max[-], P\_tot [mmwc], Toerental [/s], Debiet[m3/s]

Public Tflow() As Double 'T-schets, lucht flow [m3/s]

Public Tptot() As Double 'T-schets, druk totaal [mmwc]

Public Trend() As Double 'T-schets, rendement [-]

Public Tverm() As Double 'T-schets, vermogen [pk]

End Structure

Public Class Form1

Dim Tschets(20) As Tmodel

Dim flenzen() As Double = {71, 80, 90, 100, 112, 125, 140, 160, 180, 200, 224, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1120, 1250, 1400, 1600, 1800, 2000}

Dim R20() As Double

'T-model, Alle gegevens bij het hoogste rendement

Public T\_eff As Double 'Efficiency max [-]

Public T\_Ptot\_mmwc As Double 'Pressure totaal [mmwc]

Public T\_Ptot\_Pa As Double 'Pressure totaal [Pa]

Public T\_Toerental\_sec As Double 'Toerental [/sec]

Public T\_Toerental\_rpm As Double 'Toerental [rpm]

Public T\_Debiet\_sec As Double 'Debiet [m3/sec]

Public T\_Debiet\_hr As Double 'Debiet [m3/hr]

Public T\_Debiet\_kg\_sec As Double 'Debiet [kg/sec]

Public T\_sg\_gewicht As Double 'Soortelijk gewicht [m3/sec]

Public T\_diaw\_m As Double 'Diameter waaier [m]

Public T\_no\_schoep As Double 'Aantal schoepen [-]

Public T\_hoek\_in As Double 'Schoep intrede hoek

Public T\_hoek\_uit As Double 'Schoep uittrede hoek

Public T\_omtrek\_s As Double 'Waaier omtreksnelhied [m/s]

Public T\_as\_kw As Double 'Opgenomen vermogen [kw]

Public T\_as\_pk As Double 'Opgenomen vermogen [pk]

Public T\_visco\_kin As Double 'Viscositeit lucht kinamatic [m2/s]

Public T\_reynolds As Double 'Reynolds waaier [-]

Public T\_air\_temp As Double 'Lucht temperatuur [celcius]

Public T\_spec\_labour As Double 'Specifieke arbeid [J/kg]

Public T\_Totaaldruckzahl As Double 'Kental [-]

Public T\_Volumezahl As Double 'Kental [-]

Public T\_laufzahl As Double 'Laufzahl kengetal [-]

Public T\_Diameter\_zahl As Double 'Diameterzahl kengetal [-]

'Gewenste gegevens, Alle gegevens bij het hoogste rendement

Public G\_eff As Double 'Efficiency max [-]

Public G\_Ptot\_mmwc As Double 'Pressure totaal [mmwc]

Public G\_Ptot\_Pa As Double 'Pressure totaal [Pa]

Public G\_Ptot\_mBar As Double 'Pressure totaal [mBar]

Public G\_Toerental\_rpm As Double 'Toerental [rpm]

Public G\_Debiet\_z\_sec As Double 'Debiet zuig [m3/sec]

Public G\_Debiet\_z\_hr As Double 'Debiet zuig [m3/hr]

Public G\_Debiet\_p As Double 'Debiet pers [m3/sec]

Public G\_Debiet\_kg\_s As Double 'Debiet [kg/sec]

Public G\_Debiet\_kg\_hr As Double 'Debiet [kg/hr]

Public G\_sg\_zuig As Double 'Soortelijk gewicht [m3/sec]

Public G\_sg\_pers As Double 'Soortelijk gewicht [m3/sec]

Public G\_sg\_gem As Double 'Soortelijk gewicht [m3/sec]

Public G\_Totaaldruckzahl As Double 'Kental

Public G\_omtrek\_s As Double 'Omvangssnelheid waaier

Public G\_diaw\_m As Double 'Diameter waaier [m]

Public G\_as\_kw As Double 'Opgenomen vermogen

Public G\_visco\_kin As Double 'Viscositeit lucht [m2/sec]

Public G\_reynolds As Double 'Reynolds waaier [-]

Public G\_air\_temp As Double 'Lucht temperatuur [celcius]

Public G\_air\_temp\_K As Double 'Lucht temperatuur [Kelvin]

'Renard gegevens

Public Renard\_diaw\_m\_R20 As Double 'Diameter waaier [m] in de R20 reeks

Public Renard\_Toerental\_rpm As Double 'Toerental [rpm]

Public Renard\_omtrek\_s As Double 'Waaier omtreksnelhied [m/s]

Public Renard\_as\_kw As Double 'Opgenomen vermogen

Public Renard\_reynolds As Double 'Reynolds waaier [-]

Public Renard\_eff As Double 'Efficiency max [-]

Public Renard\_Debiet\_z\_sec As Double 'Debiet zuig [m3/sec]

'Waaier direct gekoppelde aan de motor

Public Direct\_diaw As Double 'Diameter waaier [m] berekend

Public Direct\_diaw\_m\_R20 As Double 'Diameter waaier [m] in de R20 reeks

Public Direct\_Toerental\_rpm As Double 'Toerental [rpm] gekozen door gebruiker

Public Direct\_omtrek\_s As Double 'Waaier omtreksnelhied [m/s]

Public Direct\_as\_kw As Double 'Opgenomen vermogen

Public Direct\_reynolds As Double 'Reynolds waaier [-]

Public Direct\_eff As Double 'Efficiency max [-]

Public Direct\_Debiet\_z\_sec As Double 'Debiet zuig [m3/sec]

Private Sub Form1\_Load(sender As Object, e As EventArgs) Handles MyBase.Load

Dim hh As Integer

fill\_array\_T\_schetsen() 'T-schetsen info in de array plaatsen

For hh = 0 To Tschets.Length - 1 'Fill combobox1

' MessageBox.Show("no= " & hh & " " & Tschets(hh).Tname)

ComboBox1.Items.Add(Tschets(hh).Tname)

Next hh

ComboBox1.SelectedIndex = 0 'Select Willi Bohl

DomainUpDown1.SelectedIndex = 2 '1500 rpm motor

Selectie\_1()

End Sub

Private Sub ComboBox1\_SelectedIndexChanged\_1(sender As Object, e As EventArgs) Handles ComboBox1.SelectedIndexChanged

Selectie\_1()

End Sub

Private Sub Selectie\_1()

Try

Dim R\_gasconstante As Double

Dim P\_zuig\_Pa As Double 'Pressure abs in [Pa]

Dim P\_pers\_Pa As Double 'Pressure abs in [Pa]

Dim visco\_temp As Double

Dim delta\_R\_eff As Double 'Gleichung von Ackeret (page 131 Ventilatoren Willi Bohl)

Dim delta\_D\_eff As Double 'Gleichung von Ackeret (page 131 Ventilatoren Willi Bohl)

Dim strr As String

'------- get data from database--------------------------

TextBox1.Text = Tschets(ComboBox1.SelectedIndex).Dat(1) 'Diameter waaier

TextBox2.Text = Tschets(ComboBox1.SelectedIndex).Dat(2)

TextBox3.Text = Tschets(ComboBox1.SelectedIndex).Dat(3)

TextBox4.Text = Tschets(ComboBox1.SelectedIndex).Dat(4)

TextBox5.Text = Tschets(ComboBox1.SelectedIndex).Dat(5)

TextBox6.Text = Tschets(ComboBox1.SelectedIndex).Dat(6)

TextBox7.Text = Tschets(ComboBox1.SelectedIndex).Dat(7)

TextBox8.Text = Tschets(ComboBox1.SelectedIndex).Dat(8)

TextBox9.Text = Tschets(ComboBox1.SelectedIndex).Maatgeg2(0) 'aantal schoepen

TextBox59.Text = Tschets(ComboBox1.SelectedIndex).Dat(14) 'schoep intrede hoek

TextBox60.Text = Tschets(ComboBox1.SelectedIndex).Dat(13) 'schoep uittrede hoek

TextBox61.Text = Tschets(ComboBox1.SelectedIndex).Dat(15) 'schoep lengte

TextBox62.Text = Tschets(ComboBox1.SelectedIndex).Maatgeg1(0) 'inlaat flens diameter inwendig

'

T\_hoek\_in = Convert.ToDouble(TextBox59.Text) 'schoep intrede hoek

T\_hoek\_uit = Convert.ToDouble(TextBox60.Text) 'schoep uittrede hoek

T\_eff = Tschets(ComboBox1.SelectedIndex).werkp\_opT(0) 'Rendement[-]

T\_Ptot\_mmwc = Tschets(ComboBox1.SelectedIndex).werkp\_opT(1) 'Pressure totaal [mmwc]

T\_Ptot\_Pa = T\_Ptot\_mmwc \* 10.0 'Pressure totaal [Pa]

T\_Toerental\_rpm = Tschets(ComboBox1.SelectedIndex).werkp\_opT(4) 'Toerental [rpm]

T\_Toerental\_sec = T\_Toerental\_rpm / 60.0 'Toerental [/sec]

'----------- temperaturen----------------

T\_air\_temp = 20 'T-schetsen proef temperatuur

'---------- debiet----------------------

T\_Debiet\_sec = Tschets(ComboBox1.SelectedIndex).werkp\_opT(3) 'Debiet [m3/sec]

T\_Debiet\_hr = Math.Round(T\_Debiet\_sec \* 3600, 0) 'Debiet [m3/hr]

T\_sg\_gewicht = 1.2 'Lucht s.g.[[kg/m3]

T\_Debiet\_kg\_sec = T\_Debiet\_sec \* T\_sg\_gewicht 'Debiet [kg/s]

'-------------- waaier-------------------------------

T\_diaw\_m = Tschets(ComboBox1.SelectedIndex).Dat(1) / 1000 'Diameter waaier [m]

T\_as\_pk = Tschets(ComboBox1.SelectedIndex).werkp\_opT(2) 'as\_vermogen [pk]

T\_omtrek\_s = T\_diaw\_m \* Math.PI \* T\_Toerental\_sec 'Omtrek snelheid

'---------- Specifieke arbeid -----------------

T\_spec\_labour = T\_Ptot\_Pa / T\_sg\_gewicht 'Spec arbeid [J/kg]

'---------- as vermogen T-model -----------------

T\_as\_kw = T\_Debiet\_sec \* T\_Ptot\_Pa / T\_eff

T\_as\_kw = Math.Round(T\_as\_kw / 1000, 1) 'in [kw]

'------------- visco----------------

T\_visco\_kin = kin\_visco\_air(T\_air\_temp) 'Kin viscositeit [m2/s] T\_schets

visco\_temp = Math.Round(T\_visco\_kin \* 10 ^ 6, 2)

TextBox69.Text = visco\_temp.ToString 'Visco T\_schets

'-------------------------------------------------------------------------------------------------

'---------- specifiek toeretal kengetal [-] ------------------------------------------------------

T\_laufzahl = T\_Toerental\_sec \* Math.Sqrt(T\_Debiet\_sec / Math.Pow(T\_spec\_labour / 9.81, 0.75))

'---------- diameter toeretal kengetal [-] -------------------------------------------------------

T\_Diameter\_zahl = T\_diaw\_m \* Math.Pow(2 \* T\_spec\_labour / T\_Debiet\_sec ^ 2, 0.25) \* Math.Sqrt(Math.PI) / 2

'--------------- Totaldruckzahl (Zie hoofdstuk 4.2, pagina 130 )---------------------------------

T\_Totaaldruckzahl = 2 \* T\_Ptot\_Pa / (T\_sg\_gewicht \* T\_omtrek\_s ^ 2)

'----------- Volume zahl----------------------------------------------------------------------------

T\_Volumezahl = 4 \* T\_Debiet\_sec / (Math.Pow(Math.PI, 2) \* Math.Pow(T\_diaw\_m, 3) \* T\_Toerental\_sec)

'------------ Reynolds T-schets--------------------------------------------------------------------

T\_reynolds = Math.Round(T\_omtrek\_s \* T\_diaw\_m / T\_visco\_kin, 0)

TextBox68.Text = Math.Round((T\_reynolds \* 10 ^ -6), 2).ToString

'-----------------Present T-model info----------------------------------------------

TextBox10.Text = T\_eff.ToString 'Rendement

TextBox11.Text = T\_Ptot\_mmwc.ToString

TextBox55.Text = T\_Ptot\_Pa.ToString

TextBox12.Text = Math.Round(T\_Toerental\_sec, 1).ToString '[/sec]

TextBox31.Text = T\_Toerental\_rpm.ToString '[rpm]

TextBox13.Text = T\_Debiet\_sec.ToString

TextBox56.Text = T\_Debiet\_hr.ToString

TextBox14.Text = T\_sg\_gewicht.ToString

TextBox16.Text = T\_diaw\_m.ToString

TextBox30.Text = Math.Round(T\_omtrek\_s, 1).ToString

TextBox53.Text = T\_as\_kw.ToString

TextBox71.Text = T\_air\_temp.ToString

TextBox17.Text = Math.Round(T\_Totaaldruckzahl, 3).ToString 'Totaldruckzahl

TextBox18.Text = Math.Round(T\_Volumezahl, 3).ToString 'Volume zahl

TextBox85.Text = Math.Round(T\_spec\_labour, 3).ToString 'Specifieke arbeid [-]

TextBox86.Text = Math.Round(T\_laufzahl, 3).ToString 'Laufzahl [-]

TextBox87.Text = Math.Round(T\_Debiet\_kg\_sec, 2).ToString 'Debiet [kg/hr]

TextBox88.Text = Math.Round(T\_Diameter\_zahl, 2).ToString 'Diameter kengetal [-]

'--------------------------- gewenste gegevens------------------------------------------

G\_Ptot\_mmwc = NumericUpDown2.Value 'Gewenst Pressure totaal [mmwc]

G\_Ptot\_Pa = G\_Ptot\_mmwc \* 10 'Gewenst Pressure totaal [Pa]

G\_Ptot\_mBar = G\_Ptot\_mmwc / 10 'Gewenst Pressure totaal [mBar]

G\_air\_temp = NumericUpDown4.Value 'Gewenste arbeids temperatuur

'---------------- Debiet kg/sec------------------

G\_Debiet\_kg\_hr = NumericUpDown3.Value

G\_Debiet\_kg\_s = G\_Debiet\_kg\_hr / 3600 'Gewenst Debiet [kg/sec]

G\_Debiet\_z\_sec = G\_Debiet\_kg\_s / G\_sg\_zuig 'Gewenst Debiet [m3/sec]

G\_Debiet\_z\_hr = G\_Debiet\_z\_sec \* 3600.0 'Gewenst Debiet [m3/hr]

'------------ gas constante---------------

R\_gasconstante = Convert.ToDouble(TextBox23.Text)

'----------- soortelijk gewicht----------------

P\_zuig\_Pa = NumericUpDown1.Value \* 100

P\_pers\_Pa = P\_zuig\_Pa + G\_Ptot\_Pa

G\_sg\_zuig = calc\_sg(P\_zuig\_Pa, G\_air\_temp, R\_gasconstante)

G\_sg\_pers = calc\_sg(P\_pers\_Pa, G\_air\_temp, R\_gasconstante)

'----------- de gewenste waaier---------------

G\_omtrek\_s = Math.Pow(2 \* G\_Ptot\_Pa / (G\_sg\_zuig \* T\_Totaaldruckzahl), 0.5)

G\_Debiet\_p = G\_Debiet\_z\_sec \* G\_sg\_zuig / G\_sg\_pers

G\_diaw\_m = Math.Pow(4 \* (G\_Debiet\_z\_sec) / (Math.PI \* T\_Volumezahl \* G\_omtrek\_s), 0.5)

G\_Toerental\_rpm = (G\_omtrek\_s / (Math.PI \* G\_diaw\_m)) \* 60

'---------- as vermogen gewenste waaier-----------

G\_as\_kw = G\_Debiet\_z\_sec \* G\_Ptot\_Pa / T\_eff

G\_as\_kw = Math.Round(G\_as\_kw / 1000, 1) 'in [kw]

'---------- presenteren-----------------------

TextBox24.Text = Math.Round(G\_sg\_zuig, 3).ToString

TextBox25.Text = Math.Round(G\_sg\_pers, 3).ToString

TextBox26.Text = Math.Round(G\_omtrek\_s, 2).ToString 'Omtrek snelheid

TextBox28.Text = Math.Round(G\_Debiet\_p, 2).ToString 'Pers debiet is kleiner dan zuig debiet door drukverhoging

TextBox27.Text = Math.Round(G\_diaw\_m, 3).ToString

TextBox29.Text = Math.Round(G\_Toerental\_rpm, 0).ToString

TextBox57.Text = Math.Round(G\_Ptot\_Pa, 0).ToString

TextBox63.Text = Math.Round(G\_Ptot\_mBar, 0).ToString

TextBox58.Text = Math.Round(G\_as\_kw, 1).ToString

TextBox20.Text = Math.Round(G\_Debiet\_z\_sec \* 3600, 0).ToString 'Debiet m3/hr kkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkk

TextBox64.Text = Math.Round(G\_diaw\_m / T\_diaw\_m, 3) 'Size factor K

'--------- Renard R20 reeks voor de waaier

Renard\_diaw\_m\_R20 = find\_Renard\_R20(G\_diaw\_m) 'Diameter waaier [m] in de R20 reeks

Renard\_omtrek\_s = G\_omtrek\_s 'Omtrek snelheid blijft gelijk

Renard\_Toerental\_rpm = Renard\_omtrek\_s / (Math.PI \* Renard\_diaw\_m\_R20) \* 60.0 'Toerental [rpm]

'--------- Kinmatic viscosity air[m2/s]-----------------------

G\_visco\_kin = kin\_visco\_air(G\_air\_temp) 'Kin viscositeit [m2/s]

visco\_temp = Math.Round(G\_visco\_kin \* 10 ^ 6, 2)

'------------ Reynolds Renard waaier -------------------------------------------------------------

Renard\_reynolds = Math.Round(Renard\_omtrek\_s \* Renard\_diaw\_m\_R20 / G\_visco\_kin, 0)

TextBox72.Text = Math.Round((Renard\_reynolds \* 10 ^ -6), 2).ToString

'------------ Rendement Renard Waaier --------------

delta\_R\_eff = (1 - T\_eff) \* 0.5 \* Math.Pow((1 - (T\_reynolds / Renard\_reynolds)), 0.2)

Renard\_eff = Math.Round(T\_eff + delta\_R\_eff, 3)

'---------- as vermogen gewenste waaier-----------

Renard\_as\_kw = G\_Debiet\_z\_sec \* G\_Ptot\_Pa / Renard\_eff

'---------- Debiet -----------------------

Renard\_Debiet\_z\_sec = Renard\_diaw\_m\_R20 ^ 2 \* Math.PI \* Renard\_omtrek\_s \* T\_Volumezahl / 4

'---------- presenteren-----------------------

TextBox73.Text = Math.Round(Renard\_omtrek\_s, 1) 'Omtrek snelheid [m/s]

TextBox70.Text = visco\_temp.ToString 'Visco T\_schets

TextBox74.Text = Renard\_eff.ToString

TextBox65.Text = Renard\_diaw\_m\_R20.ToString

TextBox66.Text = Math.Round(Renard\_Toerental\_rpm, 0).ToString 'Speed [rpm]

TextBox67.Text = Math.Round(Renard\_as\_kw / 1000, 0).ToString 'As vermogen in [kW]

TextBox80.Text = Math.Round(Renard\_diaw\_m\_R20 / T\_diaw\_m, 3) 'Size factor K

TextBox84.Text = Math.Round(Renard\_Debiet\_z\_sec \* 3600.0, 0) 'Debiet m3/hr

'--------------------------------------------------------------------------------------------------

'--------- Direct coupled motor--------------------------------------------------------------------

Direct\_omtrek\_s = G\_omtrek\_s 'Omtrek snelheid blijft gelijk

TextBox76.Text = Math.Round(Direct\_omtrek\_s, 1) 'Omtrek snelheid [m/s]

'---------------- toerental bepaald door motor selectie----------------------

strr = DomainUpDown1.SelectedItem()

Direct\_Toerental\_rpm = Convert.ToDouble(Val(strr)) 'Toerental [rpm]

'----------------- diameter waaier--------------

Direct\_diaw = Direct\_omtrek\_s / (Math.PI \* Direct\_Toerental\_rpm / 60.0) 'Dia berekend gelijke omtrek snelheid

Direct\_diaw\_m\_R20 = find\_Renard\_R20(Direct\_diaw) 'Diameter volgens R20 reeks

TextBox81.Text = Direct\_diaw\_m\_R20.ToString

'------------ Reynolds Direct coupled waaier --------------

Direct\_reynolds = Math.Round(Direct\_omtrek\_s \* Direct\_diaw\_m\_R20 / G\_visco\_kin, 0)

TextBox77.Text = Math.Round((Direct\_reynolds \* 10 ^ -6), 2).ToString

'------------ Rendement Direct gekoppelde Waaier --------------

delta\_D\_eff = (1 - T\_eff) \* 0.5 \* Math.Pow((1 - (T\_reynolds / Direct\_reynolds)), 0.2)

Direct\_eff = Math.Round(T\_eff + delta\_D\_eff, 3)

TextBox75.Text = Direct\_eff.ToString

'---------- as vermogen Direct gekoppelde Waaier-----------

Direct\_as\_kw = G\_Debiet\_z\_sec \* G\_Ptot\_Pa / Direct\_eff

TextBox78.Text = Math.Round(Direct\_as\_kw / 1000, 0).ToString 'As vermogen in [kW]

'---------- presenteren-----------------------

TextBox82.Text = Math.Round(Direct\_diaw\_m\_R20 / T\_diaw\_m, 3) 'Size factor K

'---------- Debiet -----------------------

Direct\_Debiet\_z\_sec = Direct\_diaw\_m\_R20 ^ 2 \* Math.PI \* Direct\_omtrek\_s \* T\_Volumezahl / 4

TextBox83.Text = Math.Round(Direct\_Debiet\_z\_sec \* 3600.0, 0) 'Debiet m3/hr

'--------------------------------------------------------------------------------------------------

'---------- info to stress calculation-----------------------

'TextBox39.Text = TextBox27.Text

'--------------------- draw chart-----------------------------------

draw\_chart(ComboBox1.SelectedIndex)

Catch ex As Exception

'MessageBox.Show(ex.Message) ' Show the exception's message.

End Try

End Sub

Private Sub Button2\_Click(sender As Object, e As EventArgs) Handles Button2.Click

Calc\_Stress\_1()

End Sub

Private Sub Calc\_Stress\_1()

Dim maxrpm As Double

Dim maxV As Double

Dim sigma\_allowed As Double

Dim sg\_staal As Double

Dim Waaier\_dia As Double

Dim Waaier\_dik As Double

Dim S\_breed As Double

Dim S\_dik As Double

Dim S\_hoek As Double

Dim schoep\_gewicht As Double

Dim aantal\_schoep As Double

Dim Bodem\_gewicht As Double

Dim sg\_ver\_gewicht As Double 'sg vervangend gewicht

Dim sigma\_schoep As Double

Dim V\_omtrek As Double

Dim n\_actual As Double

If S\_hoek > 90 Then TextBox37.Text = "90"

sigma\_allowed = Convert.ToDouble(TextBox34.Text) \* 1000 ^ 2 '[N/m2] niet [N/mm2]

sg\_staal = Convert.ToDouble(TextBox33.Text)

Waaier\_dia = Convert.ToDouble(TextBox39.Text) / 1000.0

Waaier\_dik = Convert.ToDouble(TextBox52.Text) / 1000.0

S\_breed = Convert.ToDouble(TextBox36.Text) / 1000.0

S\_dik = Convert.ToDouble(TextBox35.Text) / 1000.0

S\_hoek = Convert.ToDouble(TextBox37.Text) \* Math.PI / 180.0 'degree to radians

'--------max toerental (beide zijden ingeklemd)-----------

maxrpm = 0.32 \* Math.Sqrt(sigma\_allowed \* S\_dik / (sg\_staal \* Waaier\_dia \* S\_breed ^ 2 \* Math.Cos(S\_hoek)))

'--------max omtreksnelheid------------

maxV = Math.Sqrt(sigma\_allowed \* S\_dik \* Waaier\_dia / (sg\_staal \* S\_breed ^ 2 \* Math.Cos(S\_hoek)))

'--------Waaier bodem gewicht------------

Bodem\_gewicht = Math.PI / 4 \* Waaier\_dia ^ 2 \* Waaier\_dik \* sg\_staal

'--------vervangen soortelijk gewicht------------

schoep\_gewicht = Convert.ToDouble(TextBox42.Text)

aantal\_schoep = Convert.ToDouble(TextBox50.Text)

sg\_ver\_gewicht = sg\_staal \* (Bodem\_gewicht + (schoep\_gewicht \* aantal\_schoep)) / Bodem\_gewicht

'--------omtrek snelheid------------

n\_actual = Convert.ToDouble(TextBox41.Text) / 60.0

V\_omtrek = Waaier\_dia \* Math.PI \* n\_actual

'--------Spanning schoep------------

sigma\_schoep = 0.83 \* sg\_ver\_gewicht \* V\_omtrek ^ 2

'--------Present data------------

maxV = Math.Round(maxV, 0)

maxrpm = Math.Round(maxrpm \* 60.0, 0)

sg\_ver\_gewicht = Math.Round(sg\_ver\_gewicht, 0)

sigma\_schoep = Math.Round(sigma\_schoep / 1000 ^ 2, 0) 'Trekstekte in N/m2 niet N/mm2

V\_omtrek = Math.Round(V\_omtrek, 0)

Bodem\_gewicht = Math.Round(Bodem\_gewicht, 1)

TextBox49.Text = maxV.ToString

TextBox51.Text = V\_omtrek.ToString

TextBox44.Text = sg\_ver\_gewicht.ToString

TextBox43.Text = sigma\_schoep.ToString

TextBox38.Text = maxrpm.ToString

TextBox45.Text = Bodem\_gewicht.ToString

'-------------- check stress safety-----------------------

If sigma\_schoep > sigma\_allowed / 1000 ^ 2 Then

TextBox43.BackColor = Color.Red

Else

TextBox43.BackColor = Color.LightGreen

End If

'-------------- check rpm safety-----------------------

If maxrpm < n\_actual \* 60 Then

TextBox38.BackColor = Color.Red

Else

TextBox38.BackColor = Color.LightGreen

End If

End Sub

Private Sub TabPage2\_TextChanged(sender As Object, e As EventArgs) Handles TabPage2.TextChanged

' Calc\_Stress\_1()

End Sub

'Find the waaier diameter in the Renard reeks

Function find\_Renard\_R20(getal As Double)

Dim x1, x2 As Double

For hh = 0 To 100

x1 = Renard\_R20(hh)

x2 = Renard\_R20(hh + 1)

If getal > x1 And getal < x2 Then

Return (x1)

End If

Next hh

Return (00) 'Return zero when somethings goes wrong

End Function

'Renard R20 reeks

Function Renard\_R20(getal As Double)

Dim Ren As Double

Ren = (10 ^ (getal / 20) / 10)

Ren = Math.Round(Ren, 2, MidpointRounding.AwayFromZero)

Return (Ren)

End Function

Function kin\_visco\_air(temp As Double)

Dim visco As Double

'--------- Kinmatic viscosity air[m2/s]-----------------------

' Formula valid from -200 to +400 celcius------------------

If temp > 400 Then MessageBox.Show("kin\_visco\_air(temp) too high")

If temp < -200 Then MessageBox.Show("kin\_visco\_air(temp) too low")

temp = temp + 273

visco = 0.00009 \* temp ^ 2 + 0.0351 \* temp - 2.9294

visco = visco \* 10 ^ -6

Return (visco)

End Function

Private Sub DomainUpDown1\_SelectedItemChanged(sender As Object, e As EventArgs) Handles DomainUpDown1.SelectedItemChanged

Selectie\_1() 'This one gives an exception at startup

End Sub

Private Sub fill\_array\_T\_schetsen()

Tschets(0).Tname = "Willi Bohl"

Tschets(0).Dat = {0, 400, 0, 0, 45, 45, 140, 0, 0, 0, 0, 0, 0, 50, 35, 0} 'Zuigmond, keeldiameter, inw schoepen, waaier, pers hoog, pers breed, waaier breed1, waaier breed2,

Tschets(0).Maatgeg1 = {62, 62, 81, 400, 10, 4, 76, 40, 260, 300, 278, 278, 65, 90}

Tschets(0).Maatgeg2 = {12, 0, 0, 0, 0} 'aantal schoepen,

Tschets(0).aantalv = {0, 0, 0, 0, 0, 1480, 400} ' unknown, max(P^3/Q^2), min(P^3/Q^2), max(P/Q^2), min(P/Q^2), as-rpm, dia-waaier

Tschets(0).werkp\_opT = {0.81, 742.8, 8.36, 0.67, 4850} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(0).Tflow = {0, 1, 2, 3, 4, 5, 6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(0).Tptot = {276, 295, 308, 318, 292, 250, 194, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(0).Tverm = {5.44, 8.82, 12.3, 16.75, 18.95, 19.95, 20.1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(0).Trend = {0, 44.3, 66.7, 76, 82.2, 83.5, 77.3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(1).Tname = "T1A"

Tschets(1).Dat = {0, 925, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Zuig?,dia waaier,pers hoog, pers breed, waaier breed1, waaier breed2,

Tschets(1).Maatgeg1 = {617, 512, 593, 925, 130, 130, 815, 370, 859, 685, 1046, 867, 30, 30, 315}

Tschets(1).Maatgeg2 = {12, 0, 0, 0, 0}

Tschets(1).aantalv = {0, 0, 0, 0, 0, 1480, 925} ' unknown, max(P^3/Q^2), min(P^3/Q^2), max(P/Q^2), min(P/Q^2), as-rpm, dia-waaier

Tschets(1).werkp\_opT = {0.835, 250, 19.95, 5.0, 1480} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(1).Tflow = {0, 1, 2, 3, 4, 5, 6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(1).Tptot = {276, 295, 308, 318, 292, 250, 194, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(1).Tverm = {5.44, 8.82, 12.3, 16.75, 18.95, 19.95, 20.1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(1).Trend = {0, 44.3, 66.7, 76, 82.2, 83.5, 77.3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(2).Tname = "T1E"

Tschets(2).Dat = {0, 810, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(2).Maatgeg1 = {617, 512, 593, 810, 130, 130, 815, 370, 859, 685, 1046, 867, 30, 30, 315} 'Zuigmond,keeldiameter, inw schoepen, waaier,pers hoog, pers breed, waaier breed1, waaier breed2,

Tschets(2).Maatgeg2 = {12, 3.09, 2.69, 2.97, 0.28}

Tschets(2).aantalv = {0, 22414.5293, 3015347, 1.61, 24.35, 1480, 810} ' unknown, max(P^3/Q^2), min(P^3/Q^2), max(P/Q^2), min(P/Q^2), as-rpm, dia-waaier

Tschets(2).werkp\_opT = {0.785, 297, 31.6, 6.25, 1480} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(2).Tflow = {0, 2.85, 3.8, 4.28, 4.75, 5.25, 5.7, 6.25, 6.65, 7.6, 8.55, 9.5, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(2).Tptot = {318, 351, 356, 351, 343, 331, 315, 291, 270, 218, 164, 107, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(2).Tverm = {9.52, 22.86, 26.39, 28.2, 29.3, 30.3, 31.2, 31.6, 31.4, 30.3, 28.8, 26.4, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(2).Trend = {0, 59.5, 69, 72.5, 75.5, 77.2, 78, 78.5, 77.5, 74, 66, 50, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(3).Tname = "T12A"

Tschets(3).Dat = {550, 613, 600, 300, 115, 115, 480, 465, 41.96, 42, 0.25, 2.3, 1.11, 30, 21, 150}

Tschets(3).Maatgeg1 = {550, 465, 480, 613, 115, 115, 600, 300, 553, 420, 706, 560, 21, 30}

Tschets(3).Maatgeg2 = {12, 0.44, 0.23, 0.47, 1.0}

Tschets(3).aantalv = {1, 5015.419922, 224254, 3.86, 25.81, 1465, 613}

Tschets(3).werkp\_opT = {0.83, 82, 3.3, 2.5, 9999}

Tschets(3).Tflow = {0, 0.5, 1.0, 1.3, 1.5, 2.0, 2.5, 3.0, 3.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(3).Tptot = {87, 97.5, 100, 101, 103.5, 98, 82.3, 56.3, 23, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(3).Tverm = {1.16, 1.72, 2.31, 2.66, 3, 3.3, 3.31, 3.05, 2.6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(3).Trend = {0, 38, 57.5, 66, 69, 79.1, 83, 73, 41.25, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(4).Tname = "T16B"

Tschets(4).Dat = {300, 1030, 370, 190, 15, 33.5, 298, 248, 52.3, 52, 0.12, 6.5, 7.44, 40, 45, 487}

Tschets(4).Maatgeg1 = {300, 248, 298, 1030, 34, 15, 370, 190, 651, 710, 750, 686, 45, 40}

Tschets(4).Maatgeg2 = {10, 3.75, 3.45, 0.41, 0.11}

Tschets(4).aantalv = {1, 174762000, 4979180032, 189.62, 1707.6, 2930, 1030}

Tschets(4).werkp\_opT = {0.69, 1522, 44.4, 1.5, 2930}

Tschets(4).Tflow = {0, 0.5, 1, 1.5, 2, 2.5, 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(4).Tptot = {1680, 1795, 1720, 1550, 1235, 765, 255, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(4).Tverm = {14, 24.6, 35.7, 44.4, 49.5, 50.6, 48.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(4).Trend = {0, 48.64, 64.23, 69.81, 66.53, 50.39, 20.32, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(5).Tname = "T17B"

Tschets(5).Dat = {550, 745, 650, 300, 100, 100, 480, 465, 47.05, 47, 0.31, 3.4, 2.49, 30, 27, 263}

Tschets(5).Maatgeg1 = {550, 465, 480, 745, 100, 100, 650, 300, 624, 460, 726, 548, 27, 30}

Tschets(5).Maatgeg2 = {12, 0.95, 0.7, 0.92, 1.2}

Tschets(5).aantalv = {1, 48767.5, 760199, 6.38, 28.4, 1465, 745}

Tschets(5).werkp\_opT = {0.83, 138, 7.4, 3.0, 1465}

Tschets(5).Tflow = {0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(5).Tptot = {157.5, 165.9, 171.6, 176.1, 176.4, 171.06, 152.5, 123.9, 84.2, 54.4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(5).Tverm = {1.75, 3, 4.28, 5.5, 6.44, 7.05, 7.35, 7.15, 6.6, 5.97, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(5).Trend = {0, 36.8, 53.45, 64.03, 73.06, 80.88, 83, 80.87, 68.04, 52.26, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(6).Tname = "T20B"

Tschets(6).Dat = {300, 635, 362, 175, 45.5, 80.5, 281, 247, 27.52, 28, 0.17, 2.47, 2.48, 40.0, 27.5, 282}

Tschets(6).Maatgeg1 = {300, 247, 281, 635, 81, 46, 362, 175, 466, 450, 546, 476, 29, 40}

Tschets(6).Maatgeg2 = {10, 0.5, 0.48, 0.29, 0.08}

Tschets(6).aantalv = {1, 11272400, 331086016, 76.04, 691.8, 2930, 635}

Tschets(6).werkp\_opT = {0.8, 628, 16.8, 1.6, 2930}

Tschets(6).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(6).Tptot = {609, 655, 689, 710, 716, 707, 689, 663, 628, 584, 532, 477, 409, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(6).Tverm = {2.55, 4.66, 6.7, 8.65, 10.6, 12.4, 14.02, 15.48, 16.75, 17.9, 18.85, 19.55, 19.85, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(6).Trend = {0, 37.5, 55, 65.8, 72.2, 76.02, 78.63, 79.94, 80, 78.3, 75.26, 71.6, 66.1, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(7).Tname = "T21E"

Tschets(7).Dat = {340, 450, 303, 225, 56, 72, 288, 282, 25.84, 16, 0.06, 1.24, 0.92, 2930, 58.5, 109}

Tschets(7).Maatgeg1 = {340, 282, 288, 450, 72, 56, 303, 225, 332, 280, 380, 318, 35, 59}

Tschets(7).Maatgeg2 = {8, 0.13, 0.11, 0.04, 0.12}

Tschets(7).aantalv = {2, 622739, 30244900, 36.28, 419.53, 2930, 450}

Tschets(7).werkp\_opT = {0.735, 232, 5.9, 1.4, 2930}

Tschets(7).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(7).Tptot = {250, 282, 291, 288, 277, 264, 249, 232, 212, 189, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(7).Tverm = {1.15, 2.1, 2.95, 3.7, 4.4, 4.95, 5.45, 5.9, 6.25, 6.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(7).Trend = {0, 36, 53.5, 62.2, 67.3, 71.2, 73.2, 73.5, 72.5, 70, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(8).Tname = "T21F"

Tschets(8).Dat = {340, 450, 303, 225, 56, 72, 288, 282, 15.66, 16, 0.11, 1.24, 0.92, 58.5, 35, 109}

Tschets(8).Maatgeg1 = {340, 282, 288, 450, 72, 56, 303, 225, 332, 280, 380, 318, 35, 59}

Tschets(8).Maatgeg2 = {16, 0.13, 0.11, 0.09, 0.12}

Tschets(8).aantalv = {0, 877952, 25672300, 38, 295, 2930, 450}

Tschets(8).werkp\_opT = {0.752, 286, 7.1, 1.4, 2930}

Tschets(8).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(8).Tptot = {262, 281, 297, 306, 310, 308, 300, 286, 265, 238, 205, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(8).Tverm = {1.0, 1.85, 2.8, 3.8, 4.85, 5.85, 6.6, 7.1, 7.55, 7.9, 8.2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(8).Trend = {0, 40.5, 56.5, 64.5, 68.2, 70.2, 72.7, 75.2, 75, 72.5, 66.7, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(9).Tname = "T26"

Tschets(9).Dat = {246, 703, 308, 150, 20.3, 42.7, 233, 204, 27.07, 30, 0.1, 3.02, 3.37, 40, 40, 329}

Tschets(9).Maatgeg1 = {246, 204, 233, 703, 43, 20, 308, 150, 469, 440, 540, 488, 40, 40}

Tschets(9).Maatgeg2 = {10, 0.78, 0.78, 0.19, 0}

Tschets(9).aantalv = {0, 2033000, 125590000, 182.7, 3017.8, 1465, 703}

Tschets(9).werkp\_opT = {0.775, 179, 1.5, 0.5, 1465}

Tschets(9).Tflow = {0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(9).Tptot = {204, 209, 208, 202, 192.6, 178.5, 160, 136.5, 107.5, 66, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(9).Tverm = {0.38, 0.64, 0.9, 1.115, 1.35, 1.53, 1.69, 1.8, 1.845, 1.785, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(9).Trend = {0, 42.5, 61.5, 71.7, 76, 77.5, 76.2, 71.5, 63.2, 45, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(10).Tname = "T27"

Tschets(10).Dat = {230, 805, 280, 148, 19, 44, 232, 203, 30.46, 31, 0.17, 3.97, 4.55, 60, 44, 335}

Tschets(10).Maatgeg1 = {230, 232, 412, 805, 44, 19, 280, 148, 498, 545, 565, 522, 44, 60}

Tschets(10).Maatgeg2 = {16, 1.3, 1.26, 0.4, 1.7}

Tschets(10).aantalv = {2, 410291008, 1834749952, 534.66, 1648.43, 2830, 805}

Tschets(10).werkp\_opT = {0.74, 1043, 18.7, 1.0, 2830}

Tschets(10).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(10).Tptot = {935, 1006, 1061, 1083, 1078, 1043, 973, 870, 735, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(10).Tverm = {7.06, 10.02, 12.84, 15.75, 18.67, 21.18, 23.2, 24, 31, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(10).Trend = {0, 38, 56.5, 67.2, 73, 74.5, 73.5, 70, 64.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(11).Tname = "T28"

Tschets(11).Dat = {315, 660, 315, 250, 100, 155, 244, 425, 27.01, 30, 0.27, 2.67, 0, 90, 90, 0}

Tschets(11).Maatgeg1 = {315, 425, 244, 660, 155, 100, 315, 250, 425, 425, 523, 466, 90, 90}

Tschets(11).Maatgeg2 = {8, 0, 0, 0, 0}

Tschets(11).aantalv = {3, 541031, 9014050, 34.63, 239.51, 1465, 660}

Tschets(11).werkp\_opT = {0.65, 186, 5.3, 1.4, 1465}

Tschets(11).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(11).Tptot = {192.5, 200, 205.5, 206.5, 204, 199, 193, 185.5, 176.5, 166.5, 155.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(11).Tverm = {1.9, 2.2, 2.62, 3.13, 3.65, 4.2, 4.72, 5.25, 5.8, 6.3, 6.85, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(11).Trend = {0, 26, 41, 51, 57.5, 62, 64, 65, 64.5, 62.7, 60, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(12).Tname = "T30"

Tschets(12).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(12).Maatgeg1 = {584, 430, 460, 758, 162, 90, 650, 345, 665, 600, 804, 666, 10, 30}

Tschets(12).Maatgeg2 = {8, 1.02, 1.05, 0.81, 0.19}

Tschets(12).aantalv = {0, 0, 0, 0, 0, 0, 0}

Tschets(12).werkp\_opT = {0.868, 161, 7.4, 3.0, 1484}

Tschets(12).Tflow = {0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(12).Tptot = {185.2, 193.5, 201.8, 200, 199.3, 184.1, 161, 135.7, 106.5, 77.9, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(12).Tverm = {2.1, 3.34, 4.72, 5.75, 6.62, 7.17, 7.43, 7.45, 7.19, 6.65, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(12).Trend = {0, 37.4, 57.5, 69.5, 80.2, 86, 86.6, 85.2, 79, 68.8, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(13).Tname = "T31B"

Tschets(13).Dat = {0, 758, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(13).Maatgeg1 = {584, 430, 460, 758, 150, 78, 650, 320, 665, 600, 804, 666, 20, 30}

Tschets(13).Maatgeg2 = {8, 0, 0, 0, 0}

Tschets(13).aantalv = {0, 7463.54, 2130373.75, 3.18, 58.77, 1465, 758}

Tschets(13).werkp\_opT = {0.877, 161, 7.3, 3.0, 1465}

Tschets(13).Tflow = {0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(13).Tptot = {182.6, 192, 199, 203.8, 198, 182, 160.8, 137, 108, 73, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(13).Tverm = {2.0, 3.22, 4.57, 5.75, 6.6, 7.05, 7.32, 7.42, 7.2, 6.52, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(13).Trend = {0, 39.75, 58, 70.0, 80, 86, 87.67, 86.2, 80, 65.7, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(14).Tname = "T32"

Tschets(14).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(14).Maatgeg1 = {584, 430, 460, 800, 153, 71, 650, 345, 665, 600, 804, 666, 10, 35}

Tschets(14).Maatgeg2 = {12, 0, 0, 0, 0}

Tschets(14).aantalv = {0, 0, 0, 0, 0, 0, 0}

Tschets(14).werkp\_opT = {0.83, 200, 8.5, 2.6, 1465} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(14).Tflow = {0, 0.4, 0.8, 1.2, 1.6, 2.0, 2.4, 2.8, 3.2, 3.6, 4.0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(14).Tptot = {206, 221, 227, 236, 236, 227, 210, 185, 153, 112, 65, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(14).Tverm = {2.0, 3.2, 4.6, 6, 7, 7.7, 8.25, 8.5, 8.4, 8.2, 7.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(14).Trend = {0, 34, 52, 63, 72, 78, 82, 82, 77, 66, 45, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(15).Tname = "T33"

Tschets(15).Dat = {786, 758, 650, 483, 177, 238, 522, 500, 67.55, 70, 0.92, 3.52, 2.31, 30, 10, 0}

Tschets(15).Maatgeg1 = {584, 430, 460, 758, 150, 78, 650, 320, 665, 600, 804, 666, 20, 30}

Tschets(15).Maatgeg2 = {8, 1.0, 0.63, 2.34, 1.07}

Tschets(15).aantalv = {0, 9527.769531, 415383, 1.94, 14.04, 1465, 758}

Tschets(15).werkp\_opT = {0.884, 135, 10.2, 5.0, 1465}

Tschets(15).Tflow = {0, 1, 2, 3, 4, 5, 6, 7, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(15).Tptot = {166, 181.5, 191.5, 187, 168, 135, 92.5, 40.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(15).Tverm = {3.5, 5.85, 7.95, 9.4, 10.15, 10.18, 9.24, 7.25, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(15).Trend = {0, 41, 64.2, 79.6, 88.3, 88.4, 80.5, 52, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(16).Tname = "T34"

Tschets(16).Dat = {768, 758, 650, 526, 220, 281, 522, 500, 69.53, 70, 0.92, 3.52, 2.31, 30, 10, 0}

Tschets(16).Maatgeg1 = {768, 500, 522, 758, 281, 220, 650, 526, 665, 600, 804, 665, 10, 30}

Tschets(16).Maatgeg2 = {8, 0, 0, 0, 0}

Tschets(16).aantalv = {0, 15054.5, 277706, 2.03, 10.27, 1465, 758}

Tschets(16).werkp\_opT = {0.885, 157, 11.8, 5.0, 1465}

Tschets(16).Tflow = {0, 1, 2, 3, 4, 5, 6, 7, 8, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(16).Tptot = {169, 180, 187, 190, 172.8, 156.7, 126.4, 88, 43, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(16).Tverm = {4, 6.2, 8.3, 10.05, 11.15, 11.75, 11.6, 10.5, 8.8, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(16).Trend = {0, 37.5, 61, 74, 83.7, 88.5, 87, 78, 52, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(17).Tname = "T35D"

Tschets(17).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(17).Maatgeg1 = {140, 225, 200, 600, 65, 30, 200, 105, 390, 725, 456, 442, 90, 90}

Tschets(17).Maatgeg2 = {8, 0, 0, 0, 0}

Tschets(17).aantalv = {0, 0, 0, 0, 0, 0, 0}

Tschets(17).werkp\_opT = {0.53, 600, 10.5, 0.7, 2930} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(17).Tflow = {0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(17).Tptot = {680, 670, 660, 620, 570, 500, 410, 300, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(17).Tverm = {4.1, 5.8, 7.6, 9.5, 11.4, 13.6, 15.8, 18.5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(17).Trend = {0, 30, 45, 52, 53, 49, 42, 30, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(18).Tname = "T36"

Tschets(18).Dat = {398, 760, 435, 250, 47.5, 119, 353, 336, 59.97, 60, 0.15, 3.54, 2.78, 40, 29, 0}

Tschets(18).Maatgeg1 = {398, 336, 353, 760, 119, 48, 435, 250, 558, 540, 653, 570, 29, 40}

Tschets(18).Maatgeg2 = {10, 1.02, 0.95, 0.29, 0}

Tschets(18).aantalv = {0, 285248, 13312000, 20.49, 237, 1465, 760}

Tschets(18).werkp\_opT = {0.879, 221, 5.1, 1.5, 1465}

Tschets(18).Tflow = {0, 0.25, 0.5, 0, 75, 0.1, 1.25, 1.5, 1.75, 2.0, 2.25, 2.5, 2.75, 3.0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(18).Tptot = {223, 237, 243, 245, 242, 235, 222, 205, 186, 162, 139, 112.5, 83, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(18).Tverm = {1.04, 1.81, 2.57, 3.33, 4.0, 4.56, 5.05, 5.46, 5.75, 5.96, 6.03, 5.96, 5.84, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(18).Trend = {0, 43.6, 63.2, 73.6, 80.7, 85.5, 87.9, 87.6, 86, 81.8, 76.6, 69.2, 56.9, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(19).Tname = "T36A"

Tschets(19).Dat = {398, 760, 435, 250, 47.5, 101.5, 353, 336, 41.77, 45, 0.24, 3.54, 3.52, 40, 29, 0}

Tschets(19).Maatgeg1 = {398, 336, 353, 760, 102, 48, 435, 250, 558, 540, 653, 570, 29, 40}

Tschets(19).Maatgeg2 = {10, 1.02, 0.95, 0.29, 0}

Tschets(19).aantalv = {0, 331760, 12730900, 24.19, 233.5, 1465, 760}

Tschets(19).werkp\_opT = {0.85, 210, 5.0, 1.5, 1465} 'rendement, deltaP [mmwc], as\_vermogen [pk], debiet[m3/sec], as\_rpm

Tschets(19).Tflow = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(19).Tptot = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(19).Tverm = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(19).Trend = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

Tschets(20).Tname = "GW"

Tschets(20).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

Tschets(20).Maatgeg1 = {62, 62, 81, 485, 10, 4, 76, 40, 260, 300, 278, 278, 65, 90}

Tschets(20).Maatgeg2 = {12, 0.17, 0.19, 0.04, 0}

Tschets(20).aantalv = {0, 4340199936, 977075000000.0, 24769, 725375, 5130, 485}

Tschets(20).werkp\_opT = {0, 0, 0, 0, 1465}

Tschets(20).Tflow = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'lucht flow [m3/s]

Tschets(20).Tptot = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'Druk totaal [mmwc]

Tschets(20).Tverm = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'vermogen [pk]

Tschets(20).Trend = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0} 'rendement [-]

End Sub

Private Sub draw\_chart(Tschets\_no As Int16)

Dim rndm As New Random()

Dim hh As Integer

Chart1.Series(0).Points.Clear()

Chart1.Series(1).Points.Clear()

Chart1.Series(2).Points.Clear()

Chart1.Titles.Clear()

Chart1.Titles.Add(Tschets(Tschets\_no).Tname)

Chart1.Titles(0).Font = New Font("Sans Serif", 16, FontStyle.Bold)

Chart1.Series(0).ChartType = DataVisualization.Charting.SeriesChartType.Spline

Chart1.Series(0).Name = "P totaal [mmwc]"

Chart1.Series(1).Name = "As vermogen [pk]"

Chart1.Series(2).Name = "Rendement [%]"

Chart1.ChartAreas(0).AxisX.Minimum = 0

'Chart1.ChartAreas(0).AxisX.Maximum = 6

Chart1.Series(0).Font = New Font("Arial", 10, System.Drawing.FontStyle.Bold)

Chart1.Series(1).Font = New Font("Arial", 10, System.Drawing.FontStyle.Bold)

Chart1.Series(2).Font = New Font("Arial", 10, System.Drawing.FontStyle.Bold)

Chart1.Series(0).IsValueShownAsLabel = True

Chart1.Series(1).IsValueShownAsLabel = True

Chart1.Series(2).IsValueShownAsLabel = True

Chart1.ChartAreas(0).AxisX.Title = "Flow in [m3/sec]"

Chart1.ChartAreas(0).AxisY.Title = "P total [mmwc]"

Chart1.Text = Tschets(Tschets\_no).Tname

For hh = 0 To 19 'Fill line chart

If Tschets(Tschets\_no).Tptot(hh) > 0 Then 'Part of the array is empty

Chart1.Series(0).Points.AddXY(Tschets(Tschets\_no).Tflow(hh), Tschets(Tschets\_no).Tptot(hh)) 'P\_totaal lijn [mmwc]

If CheckBox1.Checked Then

Chart1.Series(1).Points.AddXY(Tschets(Tschets\_no).Tflow(hh), Tschets(Tschets\_no).Tverm(hh)) 'Vermogenslijn [pk]

End If

If CheckBox2.Checked Then

Chart1.Series(2).Points.AddXY(Tschets(Tschets\_no).Tflow(hh), Tschets(Tschets\_no).Trend(hh)) 'Rendements lijn [%]

End If

End If

Next hh

End Sub

'Save line chart to file

Private Sub Button3\_Click(sender As Object, e As EventArgs) Handles Button3.Click

Dim sfd As New SaveFileDialog

sfd.AddExtension = True

sfd.Filter = "JPEG Files (\*.jpg)|\*.jpg"

sfd.Title = "Select the file to save the image too."

sfd.AddExtension = True

If sfd.ShowDialog = DialogResult.OK AndAlso sfd.FileName <> "" Then

Chart1.SaveImage(sfd.FileName, Imaging.ImageFormat.Jpeg)

End If

End Sub

Private Sub TextBox19\_TextChanged(sender As Object, e As EventArgs)

Selectie\_1()

End Sub

Private Sub TextBox54\_TextChanged(sender As Object, e As EventArgs)

Selectie\_1()

End Sub

'Calculatie soortelijk gewicht

'Zonder vochtigheidcompensatie

Private Function calc\_sg(P As Double, T As Double, R As Double)

Dim sg As Double

sg = P / (R \* (T + 273))

Return (sg)

End Function

Private Sub NumericUpDown1\_ValueChanged(sender As Object, e As EventArgs) Handles NumericUpDown1.ValueChanged

Selectie\_1()

End Sub

Private Sub NumericUpDown2\_ValueChanged(sender As Object, e As EventArgs) Handles NumericUpDown2.ValueChanged

Selectie\_1()

End Sub

Private Sub NumericUpDown3\_ValueChanged(sender As Object, e As EventArgs) Handles NumericUpDown3.ValueChanged

Selectie\_1()

End Sub

Private Sub NumericUpDown4\_ValueChanged(sender As Object, e As EventArgs) Handles NumericUpDown4.ValueChanged

Selectie\_1()

End Sub

End Class