Imports System.Text

Imports System

Imports System.IO

Imports System.Configuration

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]

End Structure

Public Class Form1

Dim T(34) As Tmodel

Dim flenzen() As Double

'T-model, Alle gegevens bij het hoogste rendement

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

Public O\_Ptot As Double 'Pressure totaal [mmwc]

Public O\_Toerental As Double 'Toerental [/sec]

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

Public O\_Debiet As Double 'Debiet [m3/sec]

Public O\_sgewicht As Double 'Soortelijk gewicht [m3/sec]

Public O\_diaw As Double 'Diameter waaier [m]

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

Public O\_Totaaldruckzahl As Double 'Kental

Public O\_Volumezahl As Double 'Kental

'Gewenste gegevens, Alle gegevens bij het hoogste rendement

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

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

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

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

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

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\_O\_snelheid As Double 'Omvangssnelheid waaier

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

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

Dim hh As Integer

flenzen = {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}

T(0).Tname = "T1A"

T(0).Dat = {560, 925, 770, 345, 123, 123, 560, 485, 83.04, 83, 0.5, 5.24, 4.14, 30, 25}

T(0).Maatgeg1 = {560, 485, 560, 925, 123, 123, 770, 345, 813, 650, 984, 815, 30, 30}

T(0).Maatgeg2 = {12, 2.27, 2.0, 2.17, 0.18}

T(0).aantalv = {0, 103010, 2193070, 4.2, 24.44, 1465, 925} 'soort, const, const, const, const, stand, toer, dia

T(0).werkp\_opt = {0.835, 229, 20.0, 5.0} 'rendement, deltaP [mmwc], toerental [/sec], debiet[m3/sec]

T(1).Tname = "T1E"

T(1).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(1).Maatgeg1 = {617, 512, 593, 1000, 130, 130, 815, 370, 859, 685, 1046, 867, 30, 30}

T(1).Maatgeg2 = {12, 3.09, 2.69, 2.97, 0.28}

T(1).aantalv = {0, 22414.5293, 3015347, 1.61, 24.35, 1480, 1000}

T(1).werkp\_opt = {0.805, 188, 10.9, 3.5}

T(2).Tname = "T12A"

T(2).Dat = {550, 613, 600, 300, 115, 115, 480, 465, 41.96, 42, 0.25, 2.3, 1.11, 30, 21}

T(2).Maatgeg1 = {550, 465, 480, 613, 115, 115, 600, 300, 553, 420, 706, 560, 21, 30}

T(2).Maatgeg2 = {12, 0.44, 0.23, 0.47, 1.0}

T(2).aantalv = {1, 5015.419922, 224254, 3.86, 25.81, 1465, 613}

T(2).werkp\_opt = {0.83, 82, 3.3, 2.5}

T(3).Tname = "T16B"

T(3).Dat = {300, 1030, 370, 190, 15, 33.5, 298, 248, 52.3, 52, 0.12, 6.5, 7.44, 40, 45}

T(3).Maatgeg1 = {300, 248, 298, 1030, 34, 15, 370, 190, 651, 710, 750, 686, 45, 40}

T(3).Maatgeg2 = {10, 3.75, 3.45, 0.41, 0.11}

T(3).aantalv = {1, 174762000, 4979180032, 189.62, 1707.6, 2930, 1030}

T(3).werkp\_opt = {0.69, 1522, 44.4, 1.5}

T(4).Tname = "T17B"

T(4).Dat = {550, 745, 650, 300, 100, 100, 480, 465, 47.05, 47, 0.31, 3.4, 2.49, 30, 27}

T(4).Maatgeg1 = {550, 465, 480, 745, 100, 100, 650, 300, 624, 460, 726, 548, 27, 30}

T(4).Maatgeg2 = {12, 0.95, 0.7, 0.92, 1.2}

T(4).aantalv = {1, 48767.5, 760199, 6.38, 28.4, 1465, 745}

T(4).werkp\_opt = {0.83, 138, 7.4, 3.0}

T(5).Tname = "T20B"

T(5).Dat = {300, 635, 362, 175, 45.5, 80.5, 281, 247, 27.52, 28, 0.17, 2.47, 2.48, 40.0, 27.5}

T(5).Maatgeg1 = {300, 247, 281, 635, 81, 46, 362, 175, 466, 450, 546, 476, 29, 40}

T(5).Maatgeg2 = {10, 0.5, 0.48, 0.29, 0.08}

T(5).aantalv = {1, 11272400, 331086016, 76.04, 691.8, 2930, 635}

T(5).werkp\_opt = {0.8, 628, 16.8, 1.6}

T(6).Tname = "T21F"

T(6).Dat = {340, 450, 303, 225, 56, 72, 288, 282, 15.66, 16, 0.11, 1.24, 0.92, 58.5, 35}

T(6).Maatgeg1 = {340, 282, 288, 450, 72, 56, 303, 225, 332, 280, 380, 318, 35, 59}

T(6).Maatgeg2 = {16, 0.13, 0.11, 0.09, 0.12}

T(6).aantalv = {0, 877952, 25672300, 38, 295, 2930, 450}

T(6).werkp\_opt = {0.752, 286, 7.1, 1.4}

T(7).Tname = "T21E"

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

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

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

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

T(7).werkp\_opt = {0.735, 232, 5.9, 1.4}

T(8).Tname = "T21G"

T(8).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

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

T(8).Maatgeg2 = {12, 0.13, 0.11, 0.07, 0.12}

T(8).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(8).werkp\_opt = {0, 0, 0, 0}

T(9).Tname = "T22"

T(9).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(9).Maatgeg1 = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(9).Maatgeg2 = {12, 0.00, 0.00, 0.00, 0}

T(9).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(9).werkp\_opt = {0, 0, 0, 0}

T(10).Tname = "T22A"

T(10).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(10).Maatgeg1 = {550, 450, 456, 557, 210, 155, 516, 376, 370, 380, 508, 417, 15, 25}

T(10).Maatgeg2 = {24, 0.3, 0.22, 0.83, 0}

T(10).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(10).werkp\_opt = {0, 0, 0, 0}

T(11).Tname = "T22B"

T(11).Dat = {550, 570, 516, 376, 155, 183, 456, 456, 1, 1, 1, 1, 1, 25, 20}

T(11).Maatgeg1 = {550, 456, 456, 570, 183, 155, 516, 376, 370, 380, 520, 417, 20, 25}

T(11).Maatgeg2 = {24, 0.3, 0.22, 0.83, 0}

T(11).aantalv = {0, 1290.16, 45882.7, 4.63, 35.8, 950, 570}

T(11).werkp\_opt = {0, 0, 0, 0}

T(12).Tname = "T22C"

T(12).Dat = {550, 570, 516, 376, 155, 183, 456, 456, 1, 1, 1, 1, 1, 25, 20}

T(12).Maatgeg1 = {550, 456, 456, 570, 183, 155, 516, 376, 370, 380, 520, 417, 20, 25}

T(12).Maatgeg2 = {12, 0.3, 0.22, 0.41, 0}

T(12).aantalv = {0, 372.57, 41063.63, 2.68, 34.5, 950, 570}

T(12).werkp\_opt = {0, 0, 0, 0}

T(13).Tname = "T26"

T(13).Dat = {246, 703, 308, 150, 20.3, 42.7, 233, 204, 27.07, 30, 0.1, 3.02, 3.37, 40, 40}

T(13).Maatgeg1 = {246, 204, 233, 703, 43, 20, 308, 150, 469, 440, 540, 488, 40, 40}

T(13).Maatgeg2 = {10, 0.78, 0.78, 0.19, 0}

T(13).aantalv = {0, 2033000, 125590000, 182.7, 3017.8, 1465, 703}

T(13).werkp\_opt = {0.775, 179, 1.5, 0.5}

T(14).Tname = "T27"

T(14).Dat = {230, 805, 280, 148, 19, 44, 232, 203, 30.46, 31, 0.17, 3.97, 4.55, 60, 44}

T(14).Maatgeg1 = {230, 232, 412, 805, 44, 19, 280, 148, 498, 545, 565, 522, 44, 60}

T(14).Maatgeg2 = {16, 1.3, 1.26, 0.4, 1.7}

T(14).aantalv = {2, 410291008, 1834749952, 534.66, 1648.43, 2830, 805}

T(14).werkp\_opt = {0.74, 1043, 18.7, 1.0}

T(15).Tname = "T28"

T(15).Dat = {315, 660, 315, 250, 100, 155, 244, 425, 27.01, 30, 0.27, 2.67, 0, 90, 90}

T(15).Maatgeg1 = {315, 425, 244, 660, 155, 100, 315, 250, 425, 425, 523, 466, 90, 90}

T(15).Maatgeg2 = {8, 0, 0, 0, 0}

T(15).aantalv = {3, 541031, 9014050, 34.63, 239.51, 1465, 660}

T(15).werkp\_opt = {0.65, 186, 5.3, 1.4}

T(16).Tname = "T30"

T(16).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(16).Maatgeg1 = {584, 430, 460, 758, 162, 90, 650, 345, 665, 600, 804, 666, 10, 30}

T(16).Maatgeg2 = {8, 1.02, 1.05, 0.81, 0.19}

T(16).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(16).werkp\_opt = {0.868, 161, 7.4, 3.0}

T(17).Tname = "T31A"

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

T(17).Maatgeg1 = {584, 430, 460, 758, 150, 78, 650, 320, 665, 600, 804, 666, 20, 30}

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

T(17).aantalv = {0, 7463.54, 2130373.75, 3.18, 58.77, 1465, 758}

T(17).werkp\_opt = {0.877, 161, 7.3, 3.0}

T(18).Tname = "T31B"

T(18).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(18).Maatgeg1 = {584, 430, 460, 758, 162, 90, 650, 320, 665, 600, 804, 666, 20, 30}

T(18).Maatgeg2 = {8, 0, 0, 0, 0}

T(18).aantalv = {0, 26580.6, 1865149.625, 4.55, 48.85, 1465, 758}

T(18).werkp\_opt = {0, 0, 0, 0}

T(19).Tname = "T31C"

T(19).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(19).Maatgeg1 = {584, 430, 460, 758, 187, 115, 650, 345, 665, 600, 804, 666, 20, 30}

T(19).Maatgeg2 = {8, 0, 0, 0, 0}

T(19).aantalv = {0, 48170.2, 2188638.25, 5.05, 51.53, 1465, 758}

T(19).werkp\_opt = {0, 0, 0, 0}

T(20).Tname = "T31D"

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

T(20).Maatgeg1 = {584, 430, 460, 758, 211, 139, 650, 395, 665, 600, 804, 666, 20, 30}

T(20).Maatgeg2 = {8, 0, 0, 0, 0}

T(20).aantalv = {0, 36506.92188, 1988186.5, 3.88, 43.95, 1465, 758}

T(20).werkp\_opt = {0, 0, 0, 0}

T(21).Tname = "T31E"

T(21).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(21).Maatgeg1 = {584, 430, 460, 758, 235, 163, 650, 395, 665, 600, 804, 666, 20, 30}

T(21).Maatgeg2 = {8, 0, 0, 0, 0}

T(21).aantalv = {0, 38787.73047, 1594581.75, 3.66, 34.43, 1465, 758}

T(21).werkp\_opt = {0, 0, 0, 0}

T(22).Tname = "T32"

T(22).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(22).Maatgeg1 = {584, 430, 460, 800, 153, 71, 650, 345, 665, 600, 804, 666, 10, 35}

T(22).Maatgeg2 = {12, 0, 0, 0, 0}

T(22).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(22).werkp\_opt = {0, 0, 0, 0}

T(23).Tname = "T33"

T(23).Dat = {786, 758, 650, 483, 177, 238, 522, 500, 67.55, 70, 0.92, 3.52, 2.31, 30, 10}

T(23).Maatgeg1 = {584, 430, 460, 758, 150, 78, 650, 320, 665, 600, 804, 666, 20, 30}

T(23).Maatgeg2 = {8, 1.0, 0.63, 2.34, 1.07}

T(23).aantalv = {0, 9527.769531, 415383, 1.94, 14.04, 1465, 758}

T(23).werkp\_opt = {0.884, 135, 10.2, 5.0}

T(24).Tname = "T34"

T(24).Dat = {768, 758, 650, 526, 220, 281, 522, 500, 69.53, 70, 0.92, 3.52, 2.31, 30, 10}

T(24).Maatgeg1 = {768, 500, 522, 758, 281, 220, 650, 526, 665, 600, 804, 665, 10, 30}

T(24).Maatgeg2 = {8, 0, 0, 0, 0}

T(24).aantalv = {0, 15054.5, 277706, 2.03, 10.27, 1465, 758}

T(24).werkp\_opt = {0.885, 157, 11.8, 5.0}

T(25).Tname = "T35A"

T(25).Dat = {140, 600, 200, 105, 20, 65, 200, 225, 19.69, 20, 0.08, 2.76, 0, 90, 90}

T(25).Maatgeg1 = {140, 225, 200, 600, 65, 20, 200, 105, 390, 475, 456, 442, 90, 90}

T(25).Maatgeg2 = {8, 0, 0, 0, 0}

T(25).aantalv = {0, 54400000, 1789840000, 470.59, 4922.45, 2930, 600}

T(25).werkp\_opt = {0, 0, 0, 0}

T(26).Tname = "T35B"

T(26).Dat = {140, 600, 200, 105, 30, 65, 200, 225, 19.69, 20, 0.1, 2.76, 0, 90, 90}

T(26).Maatgeg1 = {140, 225, 200, 600, 65, 30, 200, 105, 390, 475, 456, 442, 90, 90}

T(26).Maatgeg2 = {8, 0, 0, 0, 0}

T(26).aantalv = {3, 327680, 3194400000, 51.2, 7333.330078, 2930, 600}

T(26).werkp\_opt = {0, 0, 0, 0}

T(27).Tname = "T35C"

T(27).Dat = {140, 600, 200, 105, 45, 65, 200, 225, 19.69, 20, 0.1, 2.76, 0, 90, 90}

T(27).Maatgeg1 = {140, 225, 200, 600, 65, 45, 200, 105, 390, 475, 456, 442, 90, 90}

T(27).Maatgeg2 = {8, 0, 0, 0, 0}

T(27).aantalv = {0, 65727400, 1638400000, 432.13, 4000, 2930, 600}

T(27).werkp\_opt = {0, 0, 0, 0}

T(28).Tname = "T35D"

T(28).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(28).Maatgeg1 = {140, 225, 200, 600, 65, 30, 200, 105, 390, 725, 456, 442, 90, 90}

T(28).Maatgeg2 = {8, 0, 0, 0, 0}

T(28).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(28).werkp\_opt = {0, 0, 0, 0}

T(29).Tname = "T36"

T(29).Dat = {398, 760, 435, 250, 47.5, 119, 353, 336, 59.97, 60, 0.15, 3.54, 2.78, 40, 29} 'Zuig?,dia waaier,pers hoog, pers breed, waaier breed1, waaier breed2,

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

T(29).Maatgeg2 = {10, 1.02, 0.95, 0.29, 0}

T(29).aantalv = {0, 285248, 13312000, 20.49, 237, 1465, 760}

T(29).werkp\_opt = {0.879, 221, 5.1, 1.5}

T(30).Tname = "T36A"

T(30).Dat = {398, 760, 435, 250, 47.5, 101.5, 353, 336, 41.77, 45, 0.24, 3.54, 3.52, 40, 29}

T(30).Maatgeg1 = {398, 336, 353, 760, 102, 48, 435, 250, 558, 540, 653, 570, 29, 40}

T(30).Maatgeg2 = {10, 1.02, 0.95, 0.29, 0}

T(30).aantalv = {0, 331760, 12730900, 24.19, 233.5, 1465, 760}

T(30).werkp\_opt = {0, 0, 0, 0}

T(31).Tname = "GW"

T(31).Dat = {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(31).Maatgeg1 = {62, 62, 81, 485, 10, 4, 76, 40, 260, 300, 278, 278, 65, 90}

T(31).Maatgeg2 = {12, 0.17, 0.19, 0.04, 0}

T(31).aantalv = {0, 4340199936, 977075000000.0, 24769, 725375, 5130, 485}

T(31).werkp\_opt = {0, 0, 0, 0}

T(32).Tname = "Willi Bohl"

T(32).Dat = {0, 630, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}

T(32).Maatgeg1 = {62, 62, 81, 400, 10, 4, 76, 40, 260, 300, 278, 278, 65, 90}

T(32).Maatgeg2 = {0, 0, 0, 0, 0}

T(32).aantalv = {0, 0, 0, 0, 0, 0, 0}

T(32).werkp\_opt = {0.81, 1000, 59.5, 2}

'Fill combobox1

For hh = 0 To 32

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

Next hh

ComboBox1.SelectedIndex = 0

End Sub

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

Selectie\_1()

End Sub

Private Sub Selectie\_1()

Dim T\_kelvin As Double

Dim R\_gasconstante As Double

Dim P\_ambient As Double = 100000

TextBox1.Text = T(ComboBox1.SelectedIndex).Dat(1) 'Diameter waaier

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

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

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

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

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

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

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

TextBox9.Text = T(ComboBox1.SelectedIndex).Dat(9)

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

O\_Ptot = T(ComboBox1.SelectedIndex).werkp\_opt(1) 'Pressure totaal [mmwc]

O\_Toerental = T(ComboBox1.SelectedIndex).werkp\_opt(2) 'Toerental [/sec]

O\_Toerental\_rpm = O\_Toerental \* 60.0 'Toerental [rpm]

O\_Debiet = T(ComboBox1.SelectedIndex).werkp\_opt(3) 'Debiet [m3/sec]

O\_sgewicht = 1.2 'Lucht s.g.[[kg/m3]

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

'Zie hoofdstuk 4.2, pagina 130

O\_Totaaldruckzahl = 2 \* (O\_Ptot \* 10.0) / (O\_sgewicht \* Math.Pow((Math.PI \* O\_diaw \* O\_Toerental), 2))

O\_Totaaldruckzahl = Math.Round(O\_Totaaldruckzahl, 4)

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

O\_Volumezahl = Math.Round(O\_Volumezahl, 4)

O\_omtrek\_s = Math.Round(O\_diaw \* Math.PI \* O\_Toerental, 1)

TextBox10.Text = O\_eff.ToString

TextBox11.Text = O\_Ptot.ToString

TextBox12.Text = O\_Toerental.ToString '[/sec]

TextBox31.Text = O\_Toerental\_rpm.ToString '[rpm]

TextBox13.Text = O\_Debiet.ToString

TextBox14.Text = O\_sgewicht.ToString

TextBox16.Text = O\_diaw.ToString

TextBox17.Text = O\_Totaaldruckzahl.ToString

TextBox18.Text = O\_Volumezahl.ToString

TextBox30.Text = O\_omtrek\_s.ToString

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

G\_Ptot = Convert.ToDouble(TextBox19.Text) 'Gewenst Pressure totaal [mmwc]

G\_Ptot = (G\_Ptot \* 10) 'Gewenst Pressure totaal [Pa]

G\_Debiet\_z = Convert.ToDouble(TextBox20.Text) 'Gewe Debiet [m3/sec]

T\_kelvin = Convert.ToDouble(TextBox21.Text) + 273.0

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

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

G\_sg\_zuig = P\_ambient / (R\_gasconstante \* T\_kelvin)

G\_sg\_pers = (P\_ambient + G\_Ptot) / (R\_gasconstante \* T\_kelvin)

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

G\_O\_snelheid = Math.Pow(2 \* G\_Ptot / (G\_sg\_zuig \* O\_Totaaldruckzahl), 0.5)

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

G\_diaw = Math.Pow(4 \* (G\_Debiet\_z / 3600) / (Math.PI \* O\_Volumezahl \* G\_O\_snelheid), 0.5) \* 1000

G\_Toerental\_rpm = (G\_O\_snelheid / (Math.PI \* G\_diaw)) \* 60 \* 1000

'---------------- afronden-----------------------

G\_O\_snelheid = Math.Round(G\_O\_snelheid, 0)

G\_Debiet\_p = Math.Round(G\_Debiet\_p, 0)

G\_diaw = Math.Round(G\_diaw, 0)

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

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

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

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

TextBox24.Text = G\_sg\_zuig.ToString

TextBox25.Text = G\_sg\_pers.ToString

TextBox26.Text = G\_O\_snelheid.ToString

TextBox28.Text = G\_Debiet\_p.ToString 'Pers debiet is kleiner dan zuig debiet door drukverhoging

TextBox27.Text = G\_diaw.ToString

TextBox29.Text = G\_Toerental\_rpm.ToString

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

'TextBox39.Text = TextBox27.Text

End Sub

Private Sub TextBox19\_Validated(sender As Object, e As EventArgs) Handles TextBox19.Validated

Selectie\_1()

End Sub

Private Sub TextBox20\_Validated(sender As Object, e As EventArgs) Handles TextBox20.Validated

Selectie\_1()

End Sub

Private Sub TextBox21\_Validated(sender As Object, e As EventArgs) Handles TextBox21.Validated

Selectie\_1()

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 As Double

Dim Dia\_waaier As Double

Dim Breed As Double

Dim Dik As Double

Dim Hoek As Double

Dim schoep\_gewicht As Double

Dim aantal\_schoep As Double

Dim Bodem\_gewicht As Double

Dim sg\_ver\_gewicht As Double

Dim sigma\_schoep As Double

Dim V\_omtrek As Double

Dim n\_actual As Double

If Hoek > 90 Then TextBox37.Text = "90"

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

sg = Convert.ToDouble(TextBox33.Text)

Dia\_waaier = Convert.ToDouble(TextBox39.Text) / 1000.0

Breed = Convert.ToDouble(TextBox36.Text) / 1000.0

Dik = Convert.ToDouble(TextBox35.Text) / 1000.0

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

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

maxrpm = 0.32 \* Math.Sqrt(sigma\_allowed \* Dik / (sg \* Dia\_waaier \* Breed ^ 2 \* Math.Cos(Hoek)))

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

maxV = Math.Sqrt(sigma\_allowed \* Dik \* Dia\_waaier / (sg \* Breed ^ 2 \* Math.Cos(Hoek)))

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

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

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

Bodem\_gewicht = Convert.ToDouble(TextBox45.Text)

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

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

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

V\_omtrek = Dia\_waaier \* 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)

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

TextBox49.Text = maxV.ToString

TextBox51.Text = V\_omtrek.ToString

TextBox44.Text = sg\_ver\_gewicht.ToString

TextBox43.Text = sigma\_schoep.ToString

TextBox38.Text = maxrpm.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 Button3\_Click(sender As Object, e As EventArgs) Handles Button3.Click

'Dim bitmap1 As Bitmap

'PictureBox1.Image.RotateFlip(RotateFlipType.Rotate90FlipNone)

'bitmap1.RotateFlip(RotateFlipType.Rotate180FlipY)

'PictureBox1.Image = bitmap1

End Sub

End Class