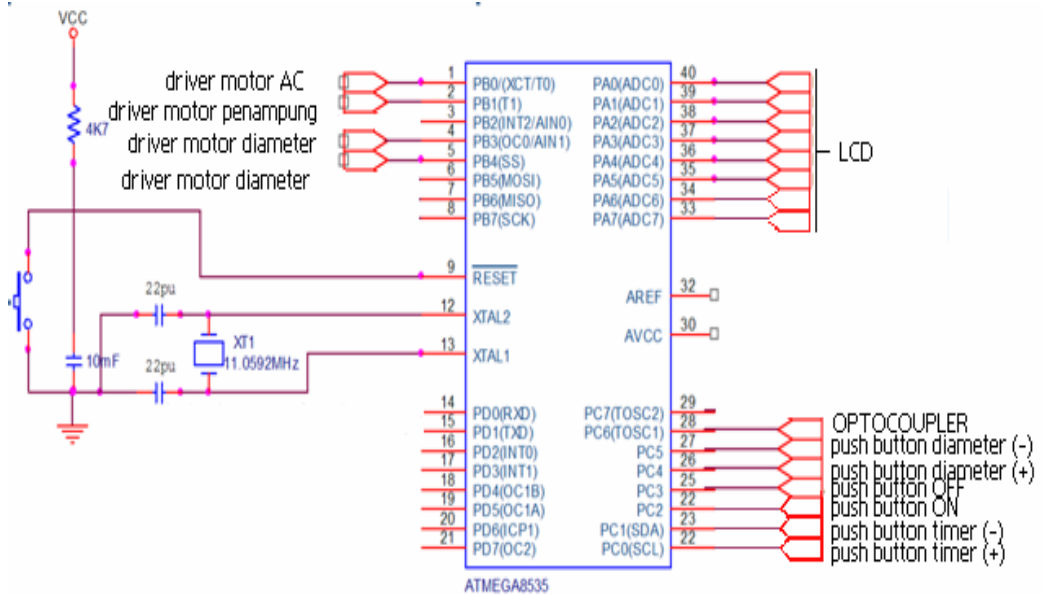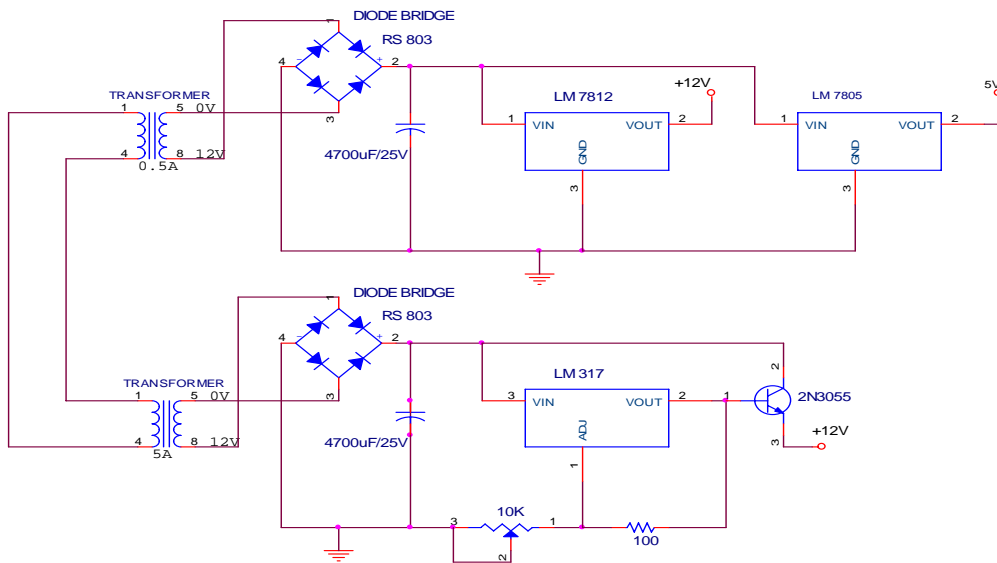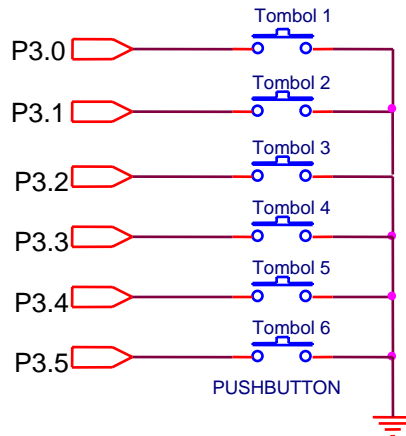# LAMPIRAN A

RANGKAIAN ELEKTRONIK KESELURUHAN

RANGKAIAN MIKROKONTROLER KESELURUHAN

RANGKAIN POWER SUPPLY

P3.0

Tombol 1

P3.1

Tombol 2

P3.2

Tombol 3

P3.3

Tombol 4

P3.4

Tombol 5

P3.5

Tombol 6

PUSHBUTTON

GAMBAR PUSH BUTTON

VCC

R 1
10k
3   1

PORT A

2

RS   4
EN   5
RD   6
D0
D1
D2
D3
D4   11
D5   12
D6   13
D7   14

0
1
2
3
4
5
6
7

D 1
DIODE   15

16

1

RANGKAIAN LCD

vcc

330

330 K

1 A1   3

Optocoupler

2   5

PC_6
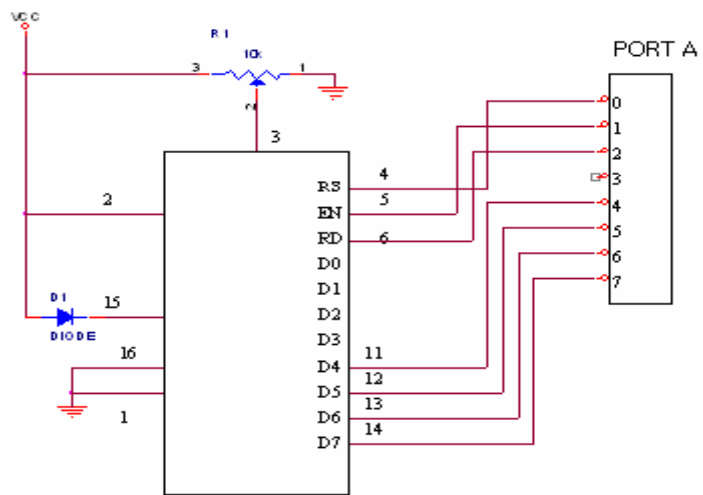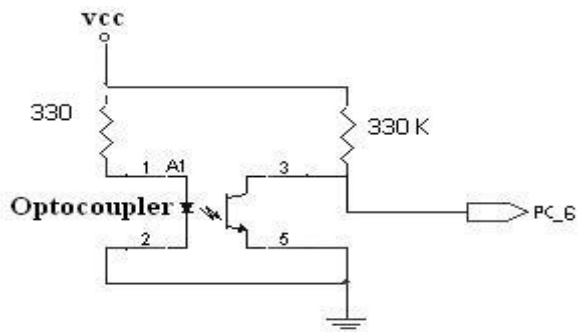
RANGKAIAN *OPTOCOUPLER*
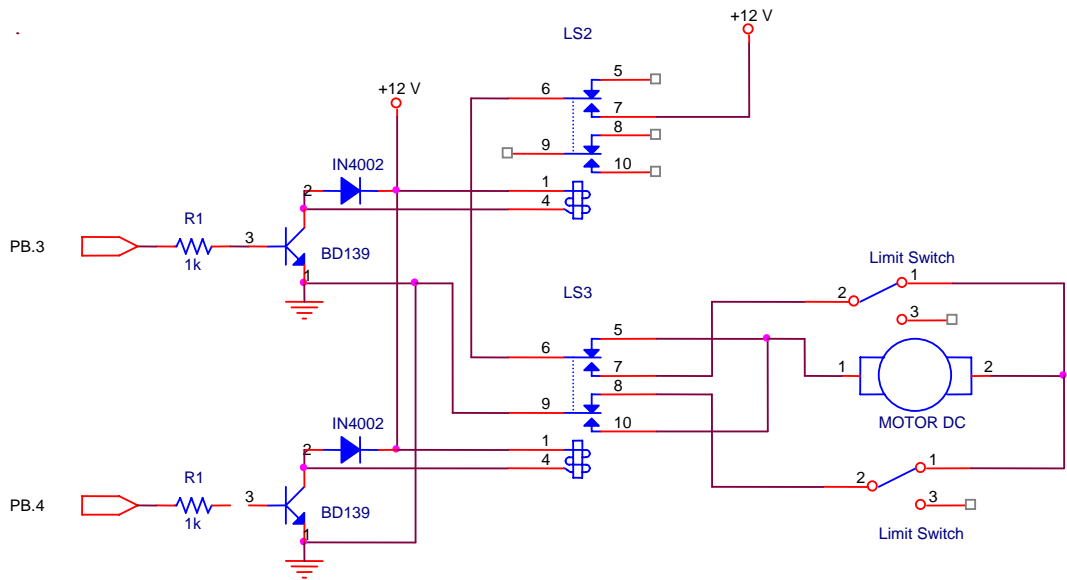
RANGKAIN *DRIVER* MOTOR PENGATUR DIAMETER

RANGKAIAN *DRIVER* MOTOR PENGGILINGAN
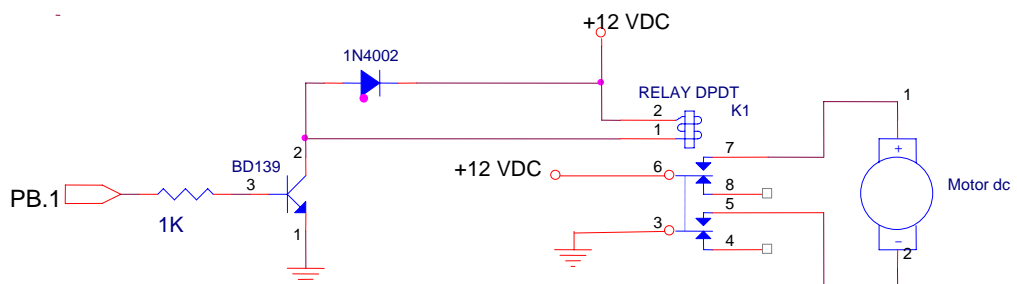
RANGKAIAN *DRIVER* TEMPAT PENAMPUNGAN

LAMPIRAN B
LISTING PROGRAM

```c
/************************************************************************
***************
This program was produced by the
CodeWizardAVR V1.24.8d Professional
Automatic Program Generator
© Copyright 1998-2006 Pavel Haiduc, HP InfoTech s.r.l.
http://www.hpinfotech.com

Project :
Version :
Date    : 09/01/2002
Author  : F4CG
Company : F4CG
Comments:

Chip type           : ATmega8535
Program type        : Application
Clock frequency     : 4,000000 MHz
Memory model        : Small
External SRAM size  : 0
Data Stack size     : 128
*************************************************/

#include <mega8535.h>
#include <string.h>
#include <stdio.h>
#include <stdlib.h>
#include <delay.h>
// Alphanumeric LCD Module functions
#asm
   .equ __lcd_port=0x1B ;PORTA
#endasm
#include <lcd.h>

// Declare your global variables here
#define PB1        PINC.0
#define PB2        PINC.1
#define PB3        PINC.2
#define PB4        PINC.3
#define PB5        PINC.4
#define PB6        PINC.5
#define TxRx        PINC.6

#define R1        PORTB.0
#define R2        PORTB.1
#define R3        PORTB.2
#define R4        PORTB.3
#define R5        PORTB.4

void main(void)
{
// Declare your local variables here
unsigned int i,j,a,b,n;
```
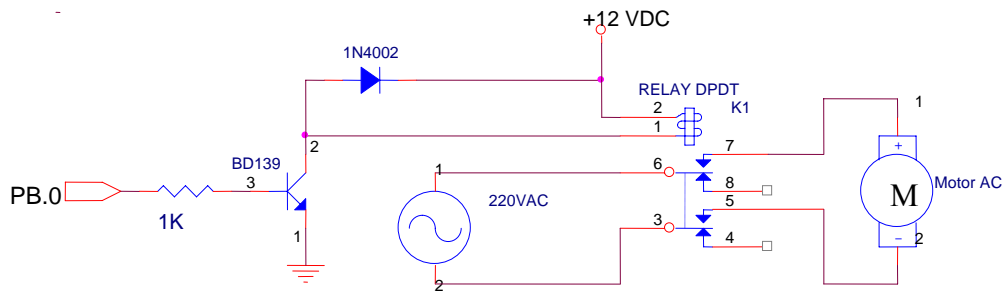
```c
//unsigned long int i;
char mnt[15],dtk[15];
// Input/Output Ports initialization
// Port A initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTA=0x00;
DDRA=0x00;

// Port B initialization
// Func7=In Func6=In Func5=In Func4=Out Func3=Out Func2=Out Func1=Out Func0=Out
// State7=T State6=T State5=T State4=0 State3=0 State2=0 State1=0 State0=0
PORTB=0x00;
DDRB=0x1F;

// Port C initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=P State4=P State3=P State2=P State1=P State0=P
PORTC=0x7F;
DDRC=0x00;

// Port D initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTD=0x00;
DDRD=0x00;

// Timer/Counter 0 initialization
// Clock source: System Clock
// Clock value: Timer 0 Stopped
// Mode: Normal top=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=0x00;

// Timer/Counter 1 initialization
// Clock source: System Clock
// Clock value: Timer 1 Stopped
// Mode: Normal top=FFFFh
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer 1 Overflow Interrupt: Off
// Input Capture Interrupt: Off
// Compare A Match Interrupt: Off
// Compare B Match Interrupt: Off
TCCR1A=0x00;
TCCR1B=0x00;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
```

```c
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

// Timer/Counter 2 initialization
// Clock source: System Clock
// Clock value: Timer 2 Stopped
// Mode: Normal top=FFh
// OC2 output: Disconnected
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;

// External Interrupt(s) initialization
// INT0: Off
// INT1: Off
// INT2: Off
MCUCR=0x00;
MCUCSR=0x00;

// Timer(s)/Counter(s) Interrupt(s) initialization
TIMSK=0x00;

// Analog Comparator initialization
// Analog Comparator: Off
// Analog Comparator Input Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

// LCD module initialization
lcd_init(16);

lcd_gotoxy(0,0);
lcd_putsf("ANDREW TJUNDAWAN");
delay_ms(2000);
lcd_gotoxy(3,1);
lcd_putsf("5103002063");
delay_ms(3000);
lcd_clear();
j=0;
i=0;
a=0;
while (1)
    {
    // Place your code here
    if(PB5==0){
    j++;
    if(j>11)
    j=11;
    while(PB5==0);
    }
    else if(PB6==0){
    j--;
    if(j<1)
```

```c
  j=1;
 while(PB6==0);
 }

 else if(PB3==0){
 if(j==1){
  lcd_clear();
  R4=1;
   while(TxRx==0){
   R5=1;
   };

   for(n=1;n<=2;n++){
    while(TxRx==1){
     R4=1;
     R5=1;
    };
    while(TxRx==0){
     R4=1;
     R5=1;
     if(n==2){
      break;
     };
    };

   };
   R4=0;
   j=0;
   i=1;
  }
 else if(j==2){
  lcd_clear();
  R4=1;
  while(TxRx==0){
  R5=1;
  };
  for(n=1;n<=4;n++){
   while(TxRx==1){
    R4=1;
    R5=1;
   };
   while(TxRx==0){
    R4=1;
    R5=1;
    if(n==4){
     break;
    };
   };

  };
   R4=0;
   j=0;
   i=1;
  }
 else if(j==3){
```

```c
 lcd_clear();
 R4=1;
 while(TxRx==0){
 R5=1;
 };
 for(n=1;n<=6;n++){
  while(TxRx==1){
   R4=1;
   R5=1;
  };
   while(TxRx==0){
    R4=1;
    R5=1;
    if(n==6){
     break;
    };
   };

  };
  R4=0;
  j=0;
  i=1;
 }
else if(i==1){
 lcd_clear();
 for(b=0;b<5;b++){
 lcd_clear();
 R1=1;
 R2=1;
 itoa(b,mnt);
 lcd_gotoxy(1,0);
 lcd_puts(mnt);
 lcd_gotoxy(4,0);
 lcd_putsf("mnt");
 for(a=0;a<60;a++){
  R1=1;
  R2=2;
  itoa(a,dtk);
  lcd_gotoxy(8,0);
  lcd_puts(dtk);
  lcd_gotoxy(11,0);
  lcd_putsf("dtk");
  if(PB4==0){
  R1=0;
  R2=0;
  break;
  while(PB4==0);
  }
  else if(b==5){
  break;
  };
  delay_ms(1000);
 };
 };
 lcd_clear();
```

```c
R1=0;
R2=0;
R4=1;
R5=0;
lcd_gotoxy(0,0);
lcd_putsf("Proses Selesai..");
delay_ms(20000);
lcd_clear();
delay_ms(500);
i=0;
j=1;
R4=0;
}
else if(i==2){
lcd_clear();
for(b=0;b<10;b++){
 lcd_clear();
 R1=1;
 R2=1;
 itoa(b,mnt);
 lcd_gotoxy(1,0);
 lcd_puts(mnt);
 lcd_gotoxy(4,0);
 lcd_putsf("mnt");
 for(a=0;a<60;a++){
  R1=1;
  R2=2;
  itoa(a,dtk);
  lcd_gotoxy(8,0);
  lcd_puts(dtk);
  lcd_gotoxy(11,0);
  lcd_putsf("dtk");
  if(PB4==0){
   R1=0;
   R2=0;
   break;
   while(PB4==0);
  }
  else if(b==10){
   break;
  };
  delay_ms(1000);
 };
};
lcd_clear();
R1=0;
R2=0;
R4=1;
R5=0;
lcd_gotoxy(0,0);
lcd_putsf("Proses Selesai..");
delay_ms(20000);
 lcd_clear();
delay_ms(500);
 i=0;
```

```
 j=1;
 R4=0;
 }
else if(i==3){
 lcd_clear();
 for(b=0;b<15;b++){
  lcd_clear();
  R1=1;
  R2=1;
  itoa(b,mnt);
  lcd_gotoxy(1,0);
  lcd_puts(mnt);
  lcd_gotoxy(4,0);
  lcd_putsf("mnt");
  for(a=0;a<60;a++){
   R1=1;
   R2=2;
   itoa(a,dtk);
   lcd_gotoxy(8,0);
   lcd_puts(dtk);
   lcd_gotoxy(11,0);
   lcd_putsf("dtk");
   if(PB4==0){
    R1=0;
    R2=0;
    break;
    while(PB4==0);
    }
   else if(b==15){
    break;
    };
   delay_ms(1000);
   };
  };
 lcd_clear();
 R1=0;
 R2=0;
 R4=1;
 R5=0;
 lcd_gotoxy(0,0);
 lcd_putsf("Proses Selesai..");
 delay_ms(20000);
 lcd_clear();
 delay_ms(500);
 i=0;
 j=1;
 R4=0;
 }
else if(i==4){
 lcd_clear();
 for(b=0;b<20;b++){
  lcd_clear();
  R1=1;
  R2=1;
  itoa(b,mnt);
```

```c
 lcd_gotoxy(1,0);
 lcd_puts(mnt);
 lcd_gotoxy(4,0);
 lcd_putsf("mnt");
 for(a=0;a<60;a++){
  R1=1;
  R2=2;
  itoa(a,dtk);
  lcd_gotoxy(8,0);
  lcd_puts(dtk);
  lcd_gotoxy(11,0);
  lcd_putsf("dtk");
  if(PB4==0){
   R1=0;
   R2=0;
   break;
   while(PB4==0);
  }
  else if(b==20){
   break;
  };
  delay_ms(1000);
 };
};
lcd_clear();
R1=0;
R2=0;
R4=1;
R5=0;
lcd_gotoxy(0,0);
lcd_putsf("Proses Selesai..");
delay_ms(20000);
lcd_clear();
delay_ms(500);
i=0;
j=1;
R4=0;
}
else if(i==5){
 lcd_clear();
 for(b=0;b<25;b++){
  lcd_clear();
  R1=1;
  R2=1;
  itoa(b,mnt);
  lcd_gotoxy(1,0);
  lcd_puts(mnt);
  lcd_gotoxy(4,0);
  lcd_putsf("mnt");
  for(a=0;a<60;a++){
   R1=1;
   R2=2;
   itoa(a,dtk);
   lcd_gotoxy(8,0);
   lcd_puts(dtk);
```

```c
    lcd_gotoxy(11,0);
    lcd_putsf("dtk");
    if(PB4==0){
     R1=0;
     R2=0;
     break;
     while(PB4==0);
    }
    else if(b==25){
     break;
    };
    delay_ms(1000);
   };
  };
  lcd_clear();
  R1=0;
  R2=0;
  R4=1;
  R5=0;
  lcd_gotoxy(0,0);
  lcd_putsf("Proses Selesai..");
  delay_ms(20000);
  lcd_clear();
  delay_ms(500);
 i=0;
 j=1;
 R4=0;
 };
 while(PB3==0);
 };
 if(PB1==0){
 i++;
 if(i>6)
 i=6;
 while(PB1==0);
 }
 else if(PB2==0){
 i--;
 if(i<1)
 i=1;
 while(PB2==0);
 };
  if(j==1){
 lcd_gotoxy(1,0);
 lcd_putsf("MENU DIAMETER  ");
 lcd_gotoxy(0,1);
 lcd_putsf("18 mm        ");
 }
 else if(j==2){
 lcd_gotoxy(0,1);
 lcd_putsf("21 mm         ");
 }
 else if(j==3){
 lcd_gotoxy(0,1);
 lcd_putsf("24 mm         ");
```

```c
        }
         else if(i==1){
        lcd_gotoxy(1,0);
        lcd_putsf("MENU WAKTU    ");
        lcd_gotoxy(0,1);
        lcd_putsf("5 menit       ");
        }
        else if(i==2){
        lcd_gotoxy(0,1);
        lcd_putsf("10 menit      ");
        }
        else if(i==3){
        lcd_gotoxy(0,1);
        lcd_putsf("15 menit      ");
        }
        else if(i==4){
        lcd_gotoxy(0,1);
        lcd_putsf("20 menit      ");
        }
        else if(i==5){
        lcd_gotoxy(0,1);
        lcd_putsf("25 menit      ");
        };
        };
}
```

LAMPIRAN C

GAMBAR ALAT PEMECAH KULIT KEMIRI

GAMBAR ALAT MANUAL

GAMBAR ALAT KESELURUHAN

BIODATA

Nama	:	Andrew Tjundawan
NRP	:	5103002063
Tempat/Tgl Lahir	:	Moru, 15 Agustus 1984
Alamat	:	Jl. Sutorejo Timur II/34 (MM-22)
Telp	:	031-5933109

Riwayat Pendidikan:

- Tahun 1996, lulus SDK. Santu Arnoldus Kalongbuku, Alor.
- Tahun 1999, lulus SLTP NEGERI 1 Moru, Alor.
- Tahun 2002, lulus SMU NEGERI 1 Kalabahi, Alor.
- Tahun 2002 hingga biodata ini dibuat, penulis masih tercatat sebagai mahasiswa Fakultas Teknik Elektro di Universitas Katolik Widya Mandala Surabaya.