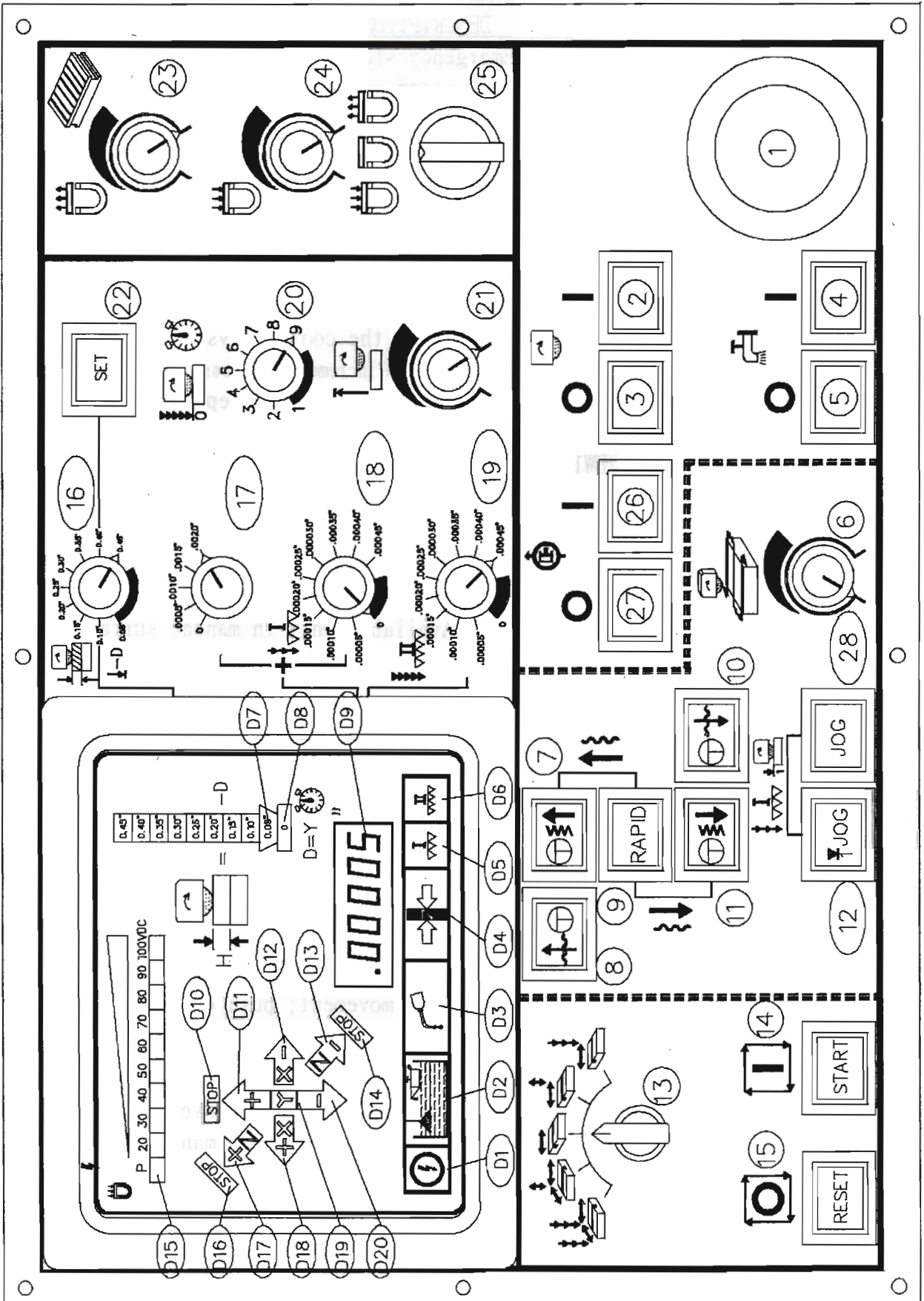


1.8: CONTROL PANEL LAYOUT FOR AHD (in inches) SERIES



1.8.1 Description of control panel for AHD series (Operation instruction)

NO.	ELECTRICAL CODE NO.	P/N	SYMBOLIC DEFINITION DESCRIPTION
1	S0	C25-22R1B	Emergency stop button To stop all motors and functions.
2	S1	C20-161A1BG1	Spindle (wheel-head) start push button To start the spindle (wheel head).
3	S2	C20-161A1BR1	Spindle (wheel-head) stop push button To stop the spindle (wheel head).
4	S6E	C20-161B1BG1	Coolant pump start button To start the coolant system.
5	S7E	C20-161B1BR1	Coolant pump stop button To stop the coolant system.
6	R2	C79-VR105A	Variable step increment of crossfeed selector switch To select required step increment of crossfeed in auto mode.
7	S15E	C19-162A2BW1	Wheel-head slow up button (a) Slow up movement activated by button (7). (b) Rapid up movement activated by button (7) and (9) – Push the two buttons together. * Available only in manual surface/plunge modes selector switch (13).
8	S16E	C20-161A1BW1	Rapid inward crossfeed movement button (a) To move saddle inward, available only in manual surface mode (by switch (13)) and light of reset button (15) is on. (b) To toggle outward crossfeed movement to inward, available only in auto/manual surface modes and when light of start button (14) is on.
9	S17E	C19-162A2BW2	Rapid up/down confirm push button (a) Push (9) and (7) together to get rapid up movement; push (9) and (11) together to get rapid down movement. * Push (9) only will get no movement.
10	S4E	C19-162A2BW3	Rapid outward crossfeed movement push button (a) Available only in manual surface mode selected on (13) and light of reset push button (15) is on. Toggle inward movement to outward under auto/manual surface mode (available only when light of start push button (14) is on).

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|----|------|--------------|--|
| 11 | S5 | C19-162A2BW4 | Wheel-head slow down push button
Push (11) to get slow down. Push (11) and (9) together to get rapid down movement.

* Available only under manual surface/plunge modes on (13). |
| 12 | S18E | C20-161A1B2 | Downfeed jogging push button
In inches, 0.00005" downfeed increment per push. |
| 13 | S8 | C03-5SW-2 | Grinding mode selector switch
Five selections as follows

A. Auto surface mode.
In this mode, automatic feeds in 3 axis, hydraulic feed, crossfeed, vertical feed are provided.
(a) When light of buttons (15), (25) is on
1. Rapid in/out by (8), (10).
2. Wheel-head up/down movement by button (7), (9), (11).
3. Jogging by push button (12).
(b) When light of button (14) is on, automatic grinding cycle is activated, the wheel-head is raised and all motors are automatically stopped upon completion of grinding cycle.
1. Step increment of crossfeed by selector switch (6).
2. Jogging by push button (12).
3. Crossfeed in/out direction toggle by button (8), (10).
4. Downfeed functions by selector switch (16), (17), (18), (19), (20) and (21).

B. Manual surface mode:
(a) When light of button (15) is on, below functions are available:
1. Rapid in/out by (8), (10).
2. Rapid/slow, up/down is by (7), (9) and (11). Jogging is by (12).
(b) When light of button (14) is on, start hydraulic table by turning table speed control, adjust selector switch (6) to get required step increment of crossfeed.
1. Crossfeed in/out direction controls by buttons (8), (10). |

2. Wheel-head up/down movement by button (7), (9), (11).

C. For hydraulic table turns to the middle position of switch (13).

D. Manual plunge mode:

In this mode, only manual wheelhead feed is on, and cross travel's auto step feed are not available.

Rapid in/out saddle motion are disabled.

1. Jogging by push-button (12)

2. Rapid/slow, up/down by push-button (7), (9) and (11).

E. Auto plunge mode,

In this mode:

(a) When light of button (14), (25) is on, automatic grinding cycle is activated. The wheelhead downfeed will start when table motion for grinding cycle.

1. Jogging by push-button (12).

2. Selector switch

(16), (17), (18), (20), (21) and (22)

Note: When changing the position of the button, it will effect the auto cycle.

The wheelhead is raised and all motors are automatically stopped after completion of spark-out cycle.

(b) When the light of push-button is on

1. Jogging by push-button (12).

2. Rapid up/down, rapid in/out are not available.

14	S12E	C20-161A1BG2	Confirmation button for selector switch (13) To confirm the selection by select switch (13).
15	S13E	C20-161A1BR2	Function cancellation for selector switch To cancel the function selection by select switch (13).
16		DIS-16002	Total amount (downfeed increment) selector switch (in inches) Use selector switch (16) together with downfeed dial ring to set the required downfeed amount. (Please refer to p.21) Max. Auto downfeed amount=0.45" (in inches) Pushing button (22) to confirm the total amount set by selector switch (16).
17/18		DIS-16002	Rough grinding step increment selector switch

- (in inches)
Rough grinding step
increment=0.00005"~0.002"(at interval of 0.00005").
Setting on (17)+setting on (18)=rough grinding step increment. (Maximum is 0.0020")
- 19 DIS-16002 Finish grinding step increment selector switch (in inches)
Finish grinding step
increment=0.00005"~0.00045"(at interval of 0.00005")
Finish pass will start for the last 0.005" of total amount.
* To reset this function, switch to zero position.
- 20 S14 C04-12SW-1 Spark-out selector switch
Spark-out 1~9 times, to ensure a fine finish of workpiece.
- 21 R3 Variable elevation amount adjustment switch
To preset rising amount for the wheelhead. The wheelhead is raised up on the completion of grinding cycle.
- 22 C20-161A1B3 Set button (input confirmation button)
To confirm the setting on selector switch (16). The m/c will act according to new settings by pushing button (22).
Do not use this button during the auto grinding cycle unless you want to change the total downfeed setting.
Usage:
1.Before starting the grinding cycle, make the m/c to accept downfeed setting
2.After changing total downfeed amount on selector switch (16) during the grinding cycle.
- 23 C99-VR500KB Demagnetizing time adjustment switch
To adjust demagnetizing time for larger work-piece, and high carbon containing work-pieces, like tool steel,SKD,SKH,SKS,SCM,CNCM,etc. which take longer time to demagnetize.

24		C99-VR50KB	Magnetizing power adjustment switch To adjust magnetizing power, status of power has shown on (D15).
25		C93-30SW2A1B	Magnetize/demagnetize selector switch (a) On-position is to magnetize. Use adjusting switch (24) to adjust power of magnetism. (b) Middle-position is to stop chuck functions and the hydraulic system. (c) Off-position is to demagnetize. Use adjusting switch (23) to adjust time of demagnetizing.
26	S16	C20-161A1BG1	Hydraulic start push-button To start hydraulic system for the table. * Hydraulic starts interlocks with chuck control and table parking. * See Operation manual P.41
27	S15	C20-161A1BR1	Hydraulic stop push-button
28		C20-161A1BW3	Step increment jog push-button * Jogging amount can be pre-set, range is from 0.00005" to 0.0020". Please select by rough grinding step increment selector switch (17) and (18). This function is available while light of push-button (14) is on. Increment amount relates to the setting on selector switch (17) and (18). Operation method: Hold push-button (28), then push (12).

Description of DISPLAY SCREEN for AHD series (OPERATION INSTRUCTION)

D1	DIS-16002	Power indicator lamp Light on represents normal power supply.
D2	DIS-16002	Lubricant oil inadequacy indicator lamp Light on represents that lubricant oil is not enough, and needs to add more.
D3	DIS-16002	Lubricant performance status indicator lamp Light-on represents normal lubricant oil supply (Lubricant pump is activated by starting hydraulic system.) Light not on could be caused by: 1.Lubricant pump is not started. 2.Oil filter is blocked. 3.Oil pressure is not enough. 4.Power supply for lubricant pump is off. 5.Lubricant pump is out of order.
D4	DIS-16002	Crossfeed locking indicator To indicate the crossfeed has been locked.
D5	DIS-16002	Rough grinding indicator lamp Light on represents that rough-grinding is proceeding. Step increment is indicated by selector switch (17), (18).
D6	DIS-16002	Finish grinding indicator lamp Light on represents that finish-grinding pass is proceeding. Step increment is indicated by selector switch (19). This procedure proceeds for the last 0.005" of total downfeed amount.
D7	DIS-16002	Total downfeed amount indicator lamp (in inches) To indicate current total downfeed amount. Actual downfeed amount to be proceeded = (total downfeed amount indicated on D6)- (reading on downfeed dial ring).
D8	DIS-16002	Spark-out indicator lamp Light on represents pre-set spark-out cycle. It's relative to the position of selector switch (20). All motors are automatically stopped on completion of spark out cycle.
D9	DIS-16002	Downfeed step increment (in inches). Display proceeding downfeed step increment in inches. It is indicated by selector

switch (17), (18) or (19).

D10	DIS-16002	Upper limits indicator lamp Light on represents the upper limit of vertical travel is reached by the wheel-head. More upward movement is automatically turned off.
D11	DIS-16002	Upward movement indicator lamp Light on represents wheel-head upward movement is proceeding
D12	DIS-16002	Table rightward movement indicator lamp Light on represents table rightward movement is proceeding.
D13	DIS-16002	Saddle inward movement indicator lamp Light on represents the saddle inward movement is proceeding
D14	DIS-16002	Saddle inner limit indicator lamp Light on represents the saddle inner limits is reached. More inward movement is automatically turned off.
D15	DIS-16002	Magnetizing/demagnetizing indicator lamp 10 steps, to indicate magnetizing power, or demagnetizing time. Power supply output voltage ranges from 20V to 100V.
D16	DIS-16002	Saddle outer limits indicator lamp Light on represents the saddle outer limit is reached. More outward movement is automatically turned off.
D17	DIS-16002	Saddle outward movement indicator lamp Light on represents saddle outward movement is proceeding.
D18	DIS-16002	Table leftward movement indicator lamp Light on represents table leftward movement is proceeding.
D19	DIS-16002	Upward/downfeed movement by stepping motor indicator lamp Light on represents that stepping motor is being activated. 1.Slow upward feed is proceeding:(D11)and (D19) are lighted 2.Slow downfeed is proceeding:(D20)and(D19)are lighted. 3.Jog movement is preceeding:(D19)is lighted.
D20	DIS-16002	Downward movement indicator lamp

Light on represent rapid/slow downward
movement is proceeding.

Light of (D20) keeps on during auto
grinding cycles.