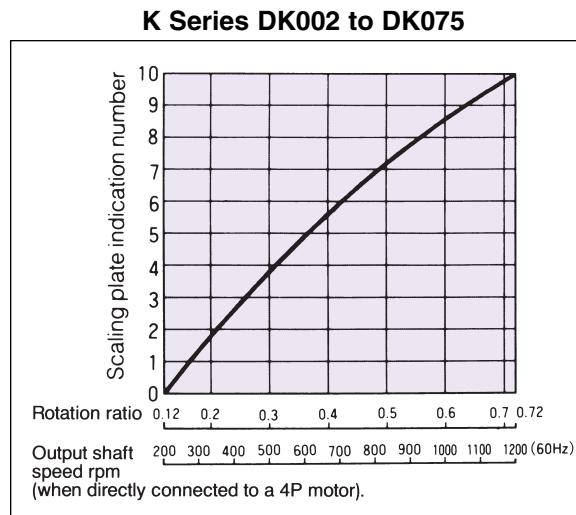


## Variable Speed Operation

DISCO comes standard with knob speed control. It is also possible to control the speed via remote speed control systems. These systems include both mechanical and electrical options.

### Standard Knob Control Operation

Relationship between the knob scale position and rotation ratio



### Knob torque and knob rotation

The torque necessary for rotating the speed adjustment knob and the number of rotations necessary to cover the entire range are given below.

Series number	Knob torque in./lbs.	No. of knob rotations
DK002	1.7 ~ 3.5	18.5
DK004	6.9 ~ 10.4	16.5
DK007	8.7 ~ 13.0	20
DK015	15.6 ~ 20.8	23
DK022	26.0 ~ 36.5	20.5
DK037	34.7 ~ 52.0	20.5
DK055	43.4 ~ 60.8	25
DK075	56.4 ~ 78.1	25



## Electrical Remote Control Operation (Basic Type)

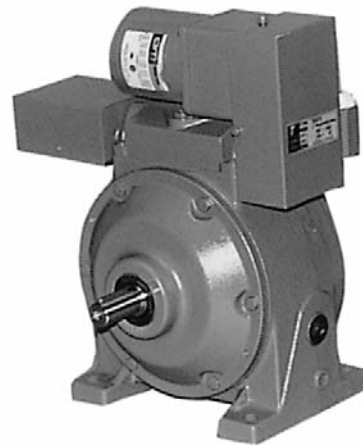
Speed change in the DISCO infinitely variable speed drive can be performed by electrical remote control through use of a pilot motor.

### Basic type

This specification is for electrical remote control operation only in which detection of speed or the variable speed position of the DISCO is not required.

### Characteristics

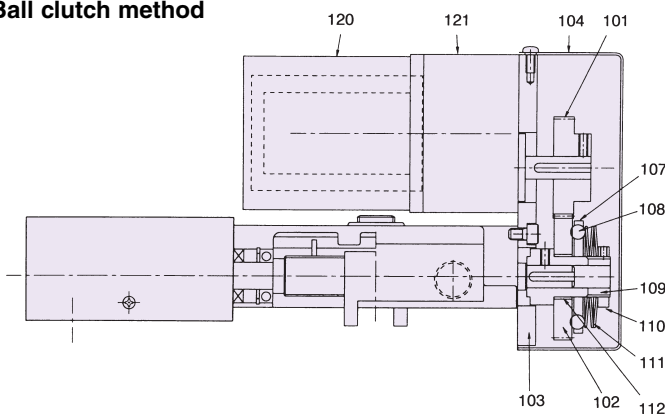
Model (K-Series)	Variable speed ratio	Variable speed parameter	Direct motor output shaft speed (rpm) 60Hz	Full range variation time sec.
DK002	6 to 1	1/8.4 ~ 1/1.4	200 ~ 1200	20
DK004				21
DK007				25
DK015				30
DK022				27
DK037				36
DK055 DK075	5 to 1	1/8 ~ 1/1.16	210 ~ 1050	70



### Drive method and safety equipment

Speed is changed by turning the DISCO speed control shaft with the pilot motor. A ball clutch is used on DK037 or smaller units. Limit switches are used on D055 and larger capacity units. A ball clutch or limit switch is installed in the speed control shaft for safety.

### Ball clutch method



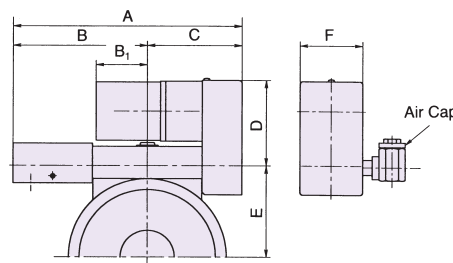
101	Pinion
102	Remote control gear
103	PM mounting plate
104	Gear cover
107	Ball retainer
108	Steel ball bearing
109	Clutch bushing
110	Spring retainer nut
111	Dish spring
112	Gear bushing
120	Pilot motor
121	Gear head

### Dimensions

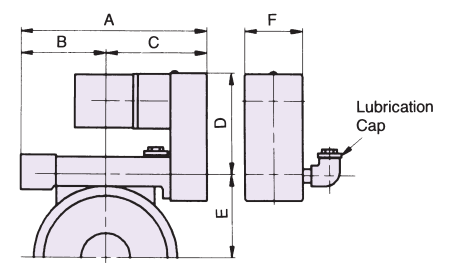
(in.)

Model (K-Series)	A	B	B <sub>1</sub>	C	D	E	F
DK002	6.50	5.43	3.19	3.31	3.90	3.03	2.68
DK004	6.70	5.59	—	3.78	3.94	3.58	2.87
DK007	7.76	6.14	—	4.29	3.94	4.17	2.87
DK015	7.83	6.14	—	4.37	4.17	4.92	3.27
DK022 DK037	9.17	6.46	—	4.69	4.33	6.02	3.27
DK055 DK075	14.53	7.20	—	7.32	6.38	7.44	3.66

### DK002 ~ DK037



### DK055 ~ DK075



## Specifications

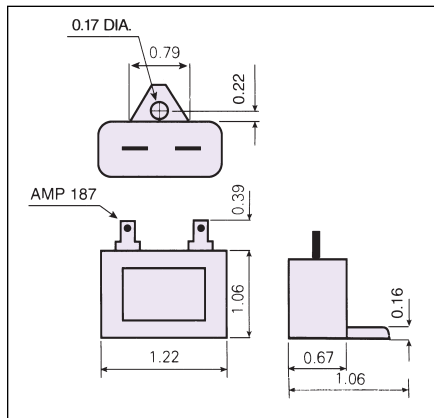
Model (K Series)	Pilot Motor			Auxiliary condenser capacity	Pilot motor protective equipment	Gear or chain sprocket
	Voltage — frequency	Output	Rated current			
DK002	Single phase 115 V 60 Hz	6W	0.22A	2.5 $\mu$ F	Ball clutch	57T • 58T
DK004 DK007		15W	0.36A	4.5 $\mu$ F		43T • 54T
DK015		30W	0.7A	8.0 $\mu$ F		46T • 54T
DK022 DK037		40W	0.85A	10 $\mu$ F		46T • 62T
DK055 DK075		40W	0.87A	12 $\mu$ F	Limit switch S-5GL13	RS-35-40 link 16T • 24T

The pilot motors for DK002-DK075 are recognized by UL.

## Pilot motor capacitor

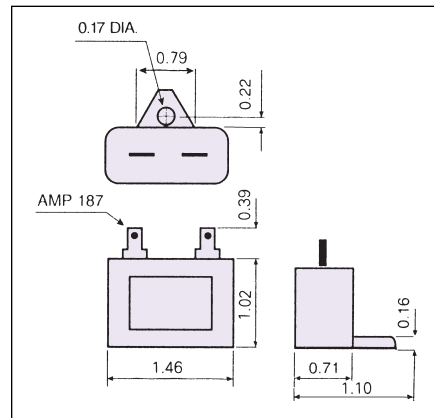
for DK002 (2.5  $\mu$ F)

(in.)



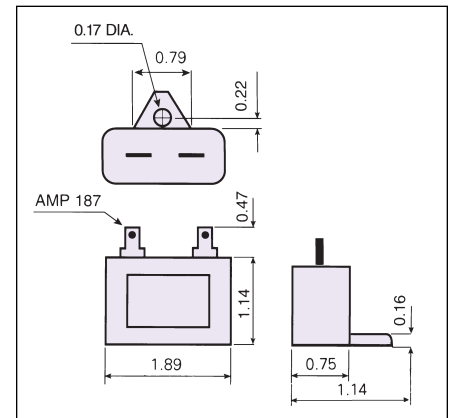
for DK004 and DK007 (4.5  $\mu$ F)

(in.)



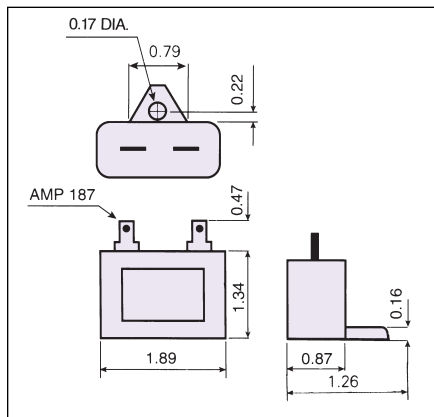
for DK015 (8.0  $\mu$ F)

(in.)



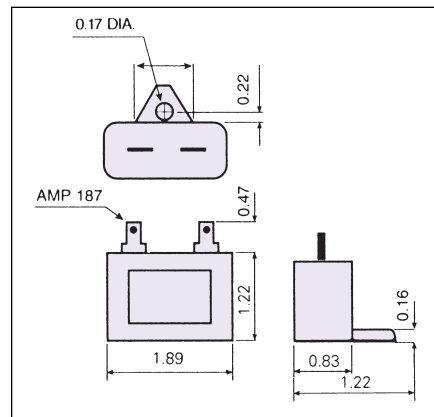
for DK022 and DK037 (10  $\mu$ F)

(in.)



for DK055 and DK075 (12  $\mu$ F)

(in.)

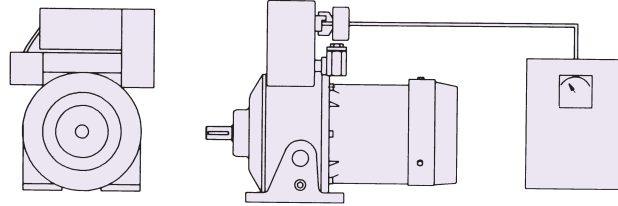


## Electrical Remote Control Operation (Potentiometer System)

### ■ Potentiometer system

The potentiometer senses the approximate output rpm and sends a signal to the analog meter.

Note: Outer dimensions of potentiometer style ERC are same as shown on page D-75.

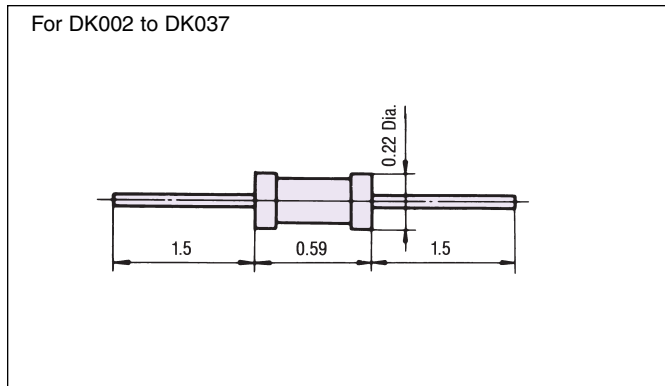


### Standard Attachments (included)

In addition to the basic system, the potentiometer system includes the following items, which should be mounted in the control panel.

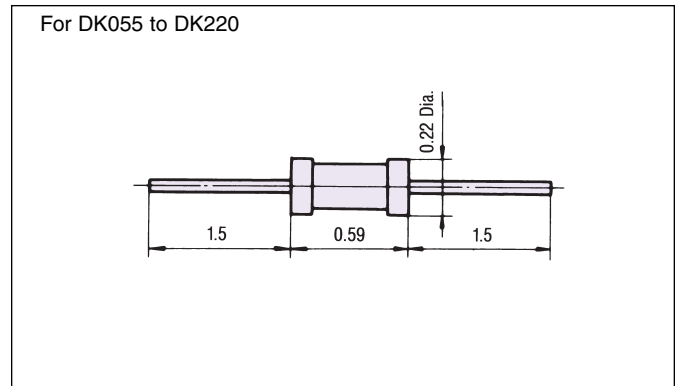
Fixed resistance ERG-3ANJ682

(in.)



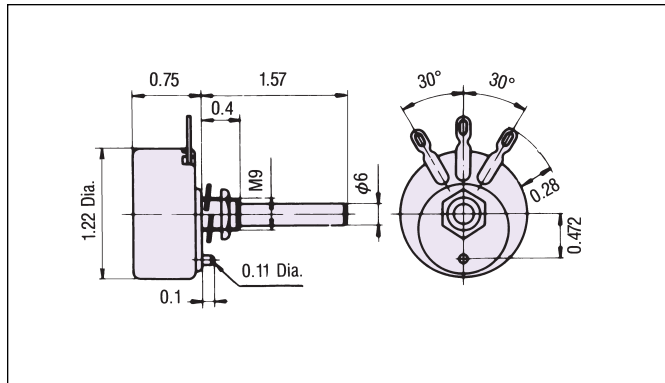
Fixed resistance ERG-2ANJ273

(in.)



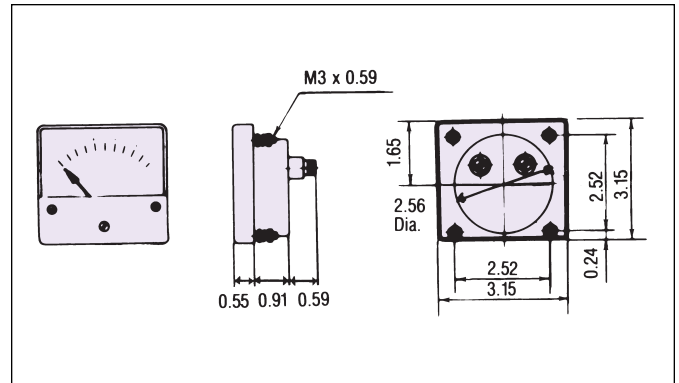
Variable resistance RV 30YN 40R

(in.)

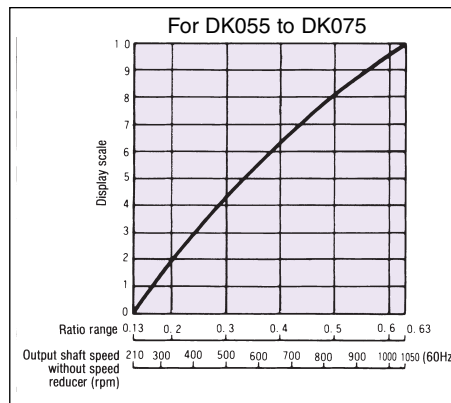
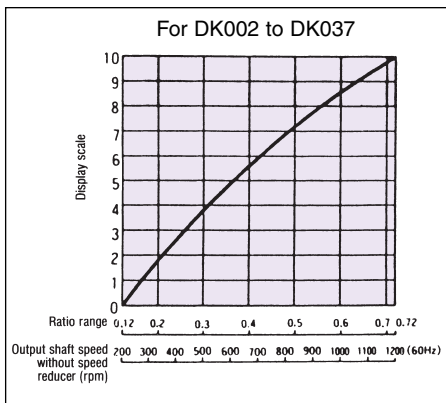


Analog display gauge SC-80

(in.)

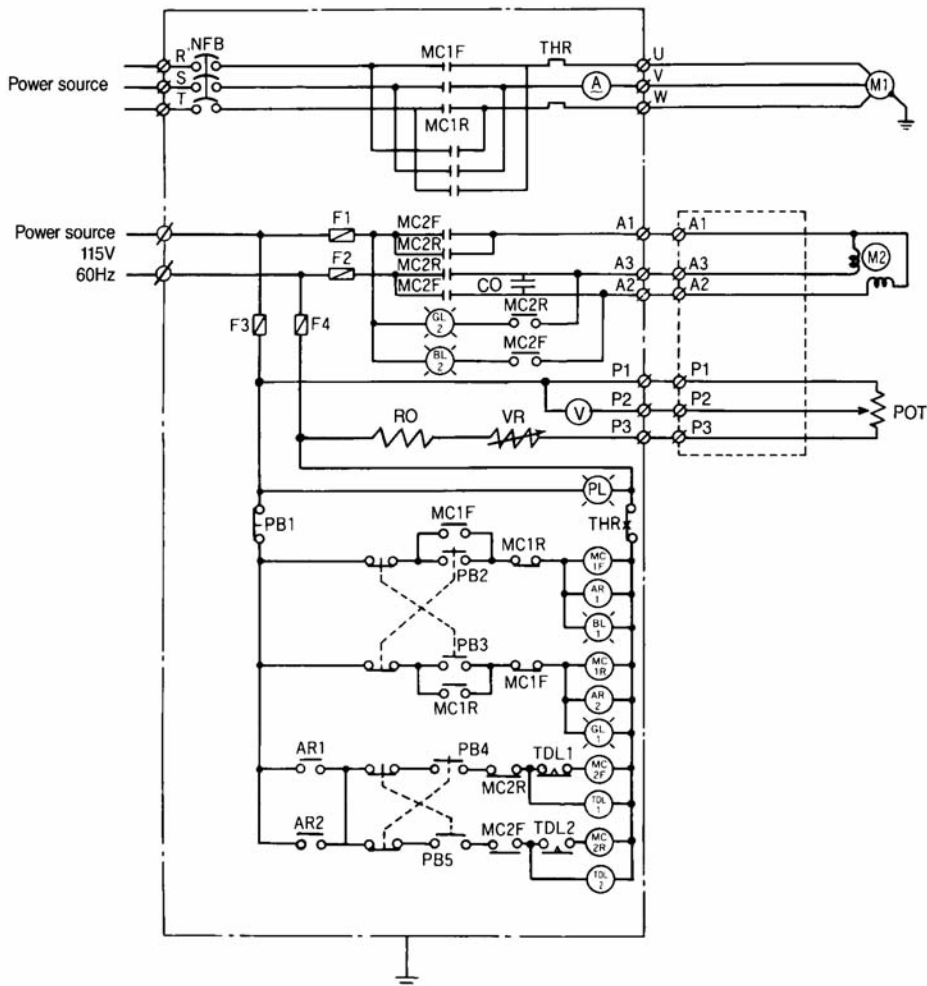


## Display gauge scale — rotation ratio graph (with potentiometer)



## Electrical remote control operation reference circuit drawing

DK002 to DK037



NFB	Wiring isolator
MC1F	Main motor normal operation electromagnetic contactor
MC1R	Main motor reverse operation electromagnetic contactor
THR	Thermal relay
A	Main motor ammeter
M1	Main motor
F1 ~ F4	Fuse
MC2F	PM(M2) electromagnetic accelerator contactor
MC2R	PM(M2) electromagnetic decelerator contactor
TDL1	PM(M2) accelerator timer <sup>1</sup>
TDL2	PM(M2) decelerator timer <sup>1</sup>
M2	Pilot motor (PM) <sup>2</sup>
GL2	Decelerator indicator light
BL2	Accelerator indicator light
CO	PM(M2) operation capacitor
V	Analog display gauge
PL	Power source indicator light
PB1	All stop push button
PB2	Main motor normal operation push button
PB3	Main motor reverse operation push button
AR1 ~ 2	Support relay
BL1	Main motor normal operation indicator light
GL1	Main motor reverse operation indicator light
PB4	PM(M2) Accelerator push button
PB5	PM(M2) Decelerator push button
POT	Potentiometer
RO	Fixed resistance
VR	Variable resistance

<sup>1</sup> TDL1 - 2 settings differ according to the type of DISCO.

<sup>2</sup> PM(M2) power voltage and frequency is 115V 60 Hz.