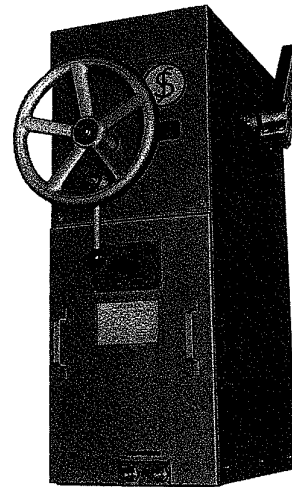


# CYLINDER TYPE DAMPER DRIVER

DATA SHEET

ZJM

Fuji's Cylinder Type Damper Driver efficiently drives butterfly valves, dampers, vanes, etc., using air pressure as an operating medium. It is designed so that its piston can be positioned to match the control signal from a controller, and the linear movement of the piston is converted into rotational movement by means of a crank.  
A cylinder type damper driver with built-in electropneumatic positioner, operated by current signal from a controller, is also available.



ZJM3

## SPECIFICATIONS

Input signal : 0.2~1.0kg/cm<sup>2</sup>  
DC 4~20mA  
DC 4~20mA (intrinsically safe explosionproofing)

Linearity : ± 2%  
Repeatability : 1%  
Hysteresis : 1%  
Sensitivity : 1%

Air supply and rated output :

Air supply Type	4 kg/cm <sup>2</sup>	5 kg/cm <sup>2</sup>	6 kg/cm <sup>2</sup>
ZJM1	15kg-m	18.7kg-m	22.5kg-m
ZJM2	50 "	62.5 "	75 "
ZJM3	150 "	187.5 "	225 "
ZJM4	300 "	375 "	450 "

Note: To insure safety and efficiency, the peak load-torque should be maintained below 90% of the rated output.

Response time (operating speed) :

Type	With pneumatic positioner	With electropneumatic positioner
ZJM1	About 4sec.	About 4sec.
ZJM2	About 9sec.	About 7sec.
ZJM3	About 22sec.	About 17sec.
ZJM4	About 54sec.	About 54sec.

Note: Above shows 90% response time where the load-torque is equal to the rated output.

Output shaft operating angle (linear characteristic) : (90° standard)

Pneumatic positioner  
0~70°...90°  
(60° is also possible)  
Electropneumatic positioner  
0~60°...90°

Turning direction :

For the normal action, the output shaft rotates counterclockwise (the nameplate is on the left side) when the input signal increases. Reverse action is also possible.

Maximum length of output lever :

ZJM1, 2, 3 250mm  
ZJM4 260mm

(Mounting of operation lever is possible to adjust the angle 5° at a time.)

Input/output characteristics :

Linear characteristic (standard)  
Square root characteristic } (on request)  
Square characteristic }

## Nominal air consumption :

Type	With pneumatic positioner	With electropneumatic positioner
ZJM1	40Nl/min	100Nl/min
ZJM2	60Nl/min	120Nl/min
ZJM3	120Nl/min	175Nl/min
ZJM4	180Nl/min	240Nl/min

Note: Air supply pressure...6kg/cm<sup>2</sup>

## Ambient temperature :

- 10°C ~ + 60°C

## Ambient humidity :

Less than 95% RH

## Weight :

ZJM1; About 50kg

ZJM2; About 130kg

ZJM3; About 200kg

ZJM4; About 450kg

## Air pipe joint :

Internal thread, PT1/4

## Enclosure :

All-weather type

(Equivalent to JIS C0920 water spray class 3)

## Mounting method :

Self-supporting

## Finish color :

Silver (baked melamine)

Acid-resistant and/or alkali-resistant treatment is available by order.

## Accessories :

### Booster relay

Used to increase response time

## Lock-up-valve

Used for the purpose of status quo maintenance of this damper driver when the air supply decreases below the setting value.

## Limit switch

Used when contact signals of upper and lower limit or of an optional point are required.

S.P.D.T. (1c) each for upper and lower limits

## Heater

This is used to prevent the moisture in compressed air from freezing when the ambient temperature falls below 5°C. It is equipped with a thermo-switch to maintain a constant temperature.

## Two-way solenoid valve

This is used to lock the device at any given position during automatic operation.

## Four-way solenoid valve

This performs ON/OFF control and is used in place of the positioner.

## Air regulator

This is used to adjust the air supply pressure.

ZJM1, 2, 3... Mounted on outside

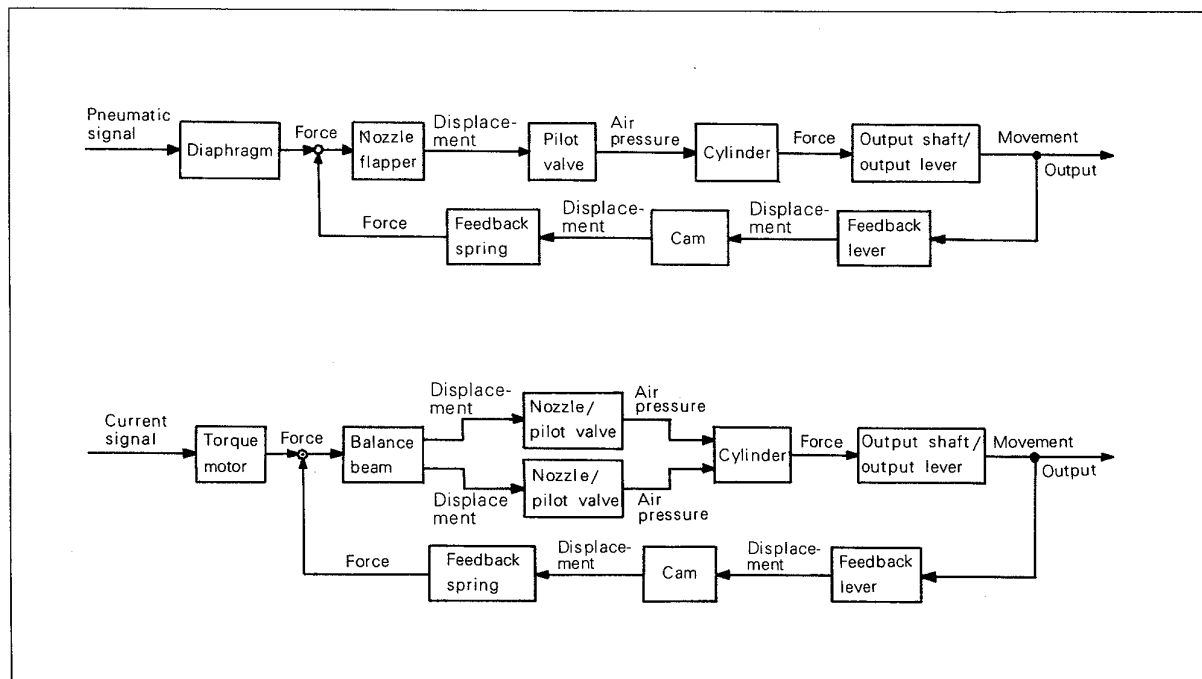
ZJM4..... Built-in

## Auxiliary handle

Auxiliary handle for manual operation is available for ZJM4 upon request.

(Without auxiliary handle, the manual operation force is about 50kg at 450kg-m load, thus two persons are required normally.)

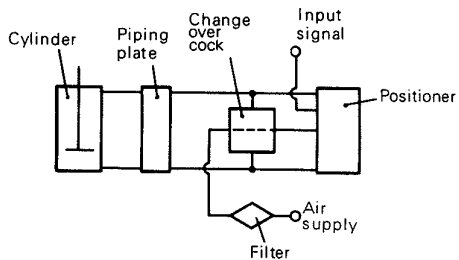
## STANDARD BLOCK DIAGRAM



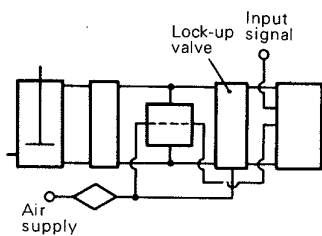
# CODE SYMBOLS

ZJM	Description
	<b>Rated output</b>
1	15, 18.7 and 22.5kg-m output torque
2	50, 62.5 and 75kg-m output torque
3	150, 187.5 and 225kg-m output torque
4	300, 375 and 450kg-m output torque
	<b>Input signal</b>
0	Without positioner (with 4-way solenoid valve)
1	0.2 ~ 1.0kg/cm <sup>2</sup>
2	DC 4~20mA
3	DC 4~20mA (intrinsically safe explosionproofing i3nG5)
5	0.2 ~ 1.0kg/cm <sup>2</sup>
6	DC 4~20mA
7	DC 4~20mA (intrinsically safe explosionproofing i3nG5)
	Normal action
	Reverse action
	<b>Air supply (kg/cm<sup>2</sup>)</b>
2	4
3	5
4	6
5	4
6	5
7	6
	Without air regulator
	With air regulator
	<b>Attachments</b>
Y	None
A	With connecting rod
B	With damper lever
C	A + B
	<b>Limit switch</b>
0	None
1	Upper and lower limits, SPDT (AC 125, 250V 15A, DC 125/250V 0.5/0.25A)
*2	Upper and lower limits, DPDT (common type) (AC 125, 250V 10A, DC 125/250V 0.3/0.15A)
*3	Upper and lower limits, SPDT x2 (individual type) (AC 125, 250V 15A, DC 125/250V 0.5/0.25A) (only ZJM4)
4	Upper and lower limits, SPDT (flameproofing d2G4) (AC 125/250V, -15A, DC 125/250V-0.5/0.25A)
	<b>Lock-up valve and others</b>
Y	None
A	With lock-up valve
B	With booster relay (impossible for ZJM1)
C	A + B
*Z	Others
	<b>Solenoid valve</b>
Y	None
A	2-way solenoid valve (conduction-open, made by Chukyo Co.) (AC 100, 200V, DC 100, 200V)
C	4-way solenoid valve (single-acting, made by Chukyo Co.) (AC 100, 200V, DC 100, 200V)
D	2-way solenoid valve (conduction-open, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
E	2-way solenoid valve (conduction-closed, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
F	4-way solenoid valve (single-acting, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
G	4-way solenoid valve (double-acting, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
*H	Flameproofing d2G4, 2-way solenoid valve (conduction-open, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
*J	Flameproofing d2G4, 2-way solenoid valve (conduction-closed, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
*K	Flameproofing d2G4, 4-way solenoid valve (single-acting, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
*L	Flameproofing d2G4, 4-way solenoid valve (double-acting, made by ASCO Co.) (AC 100, 200V, DC 24, 100, 120V)
*Z	Others
	(impossible for ZJM1)
	<b>Heater</b>
Y	None
A	AC 100V (400W for ZJM1~3, 800W for ZJM4)
B	AC 200V (400W for ZJM1~3, 800W for ZJM4)
	<b>Treatment</b>
Y	Standard
*A	Acid- and alkali-resistant

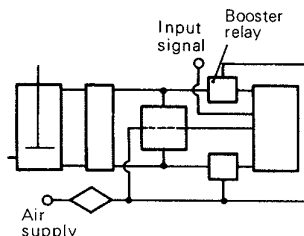
PIPING



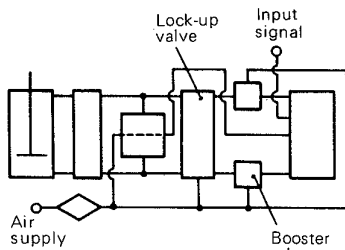
Standard



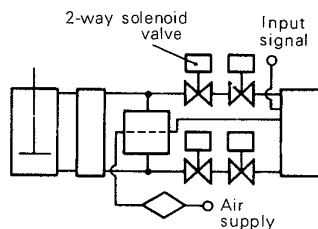
With lock-up valve



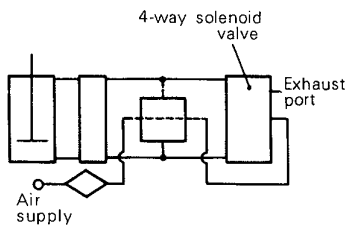
With booster relay



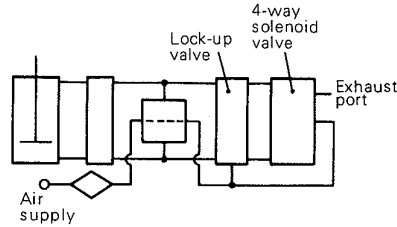
With lock-up valve and booster relay



With 2-way solenoid valve

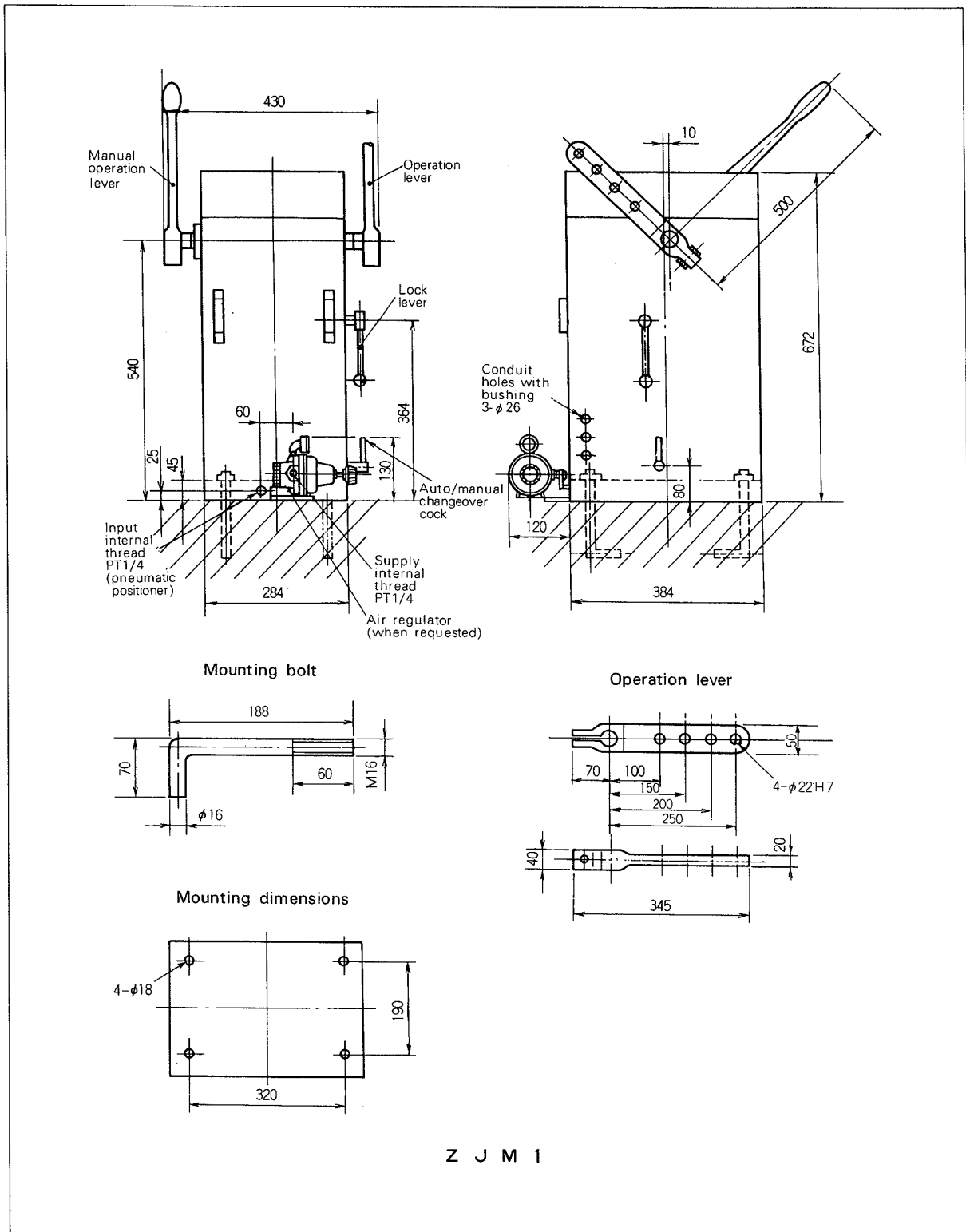


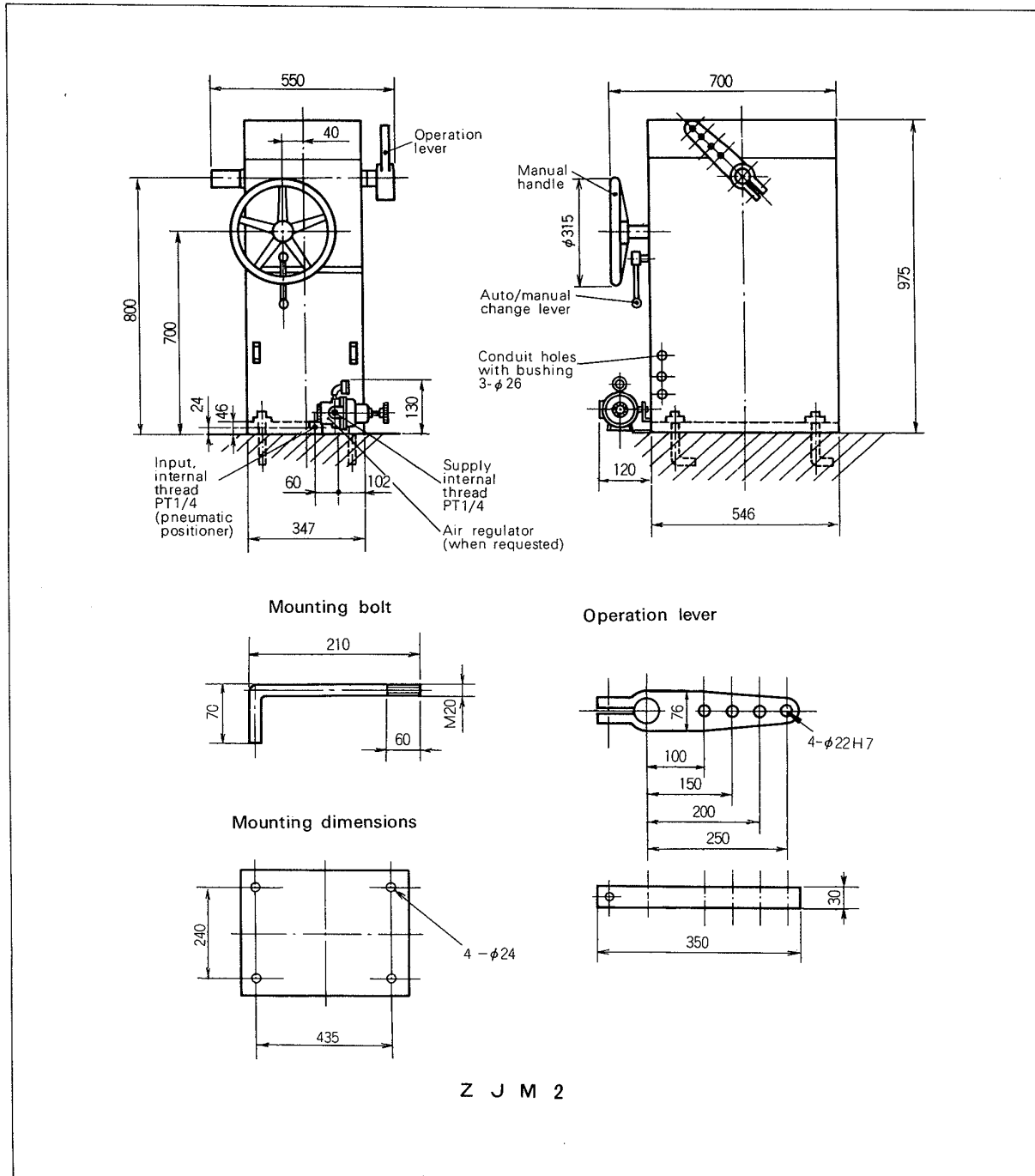
With 4-way solenoid valve



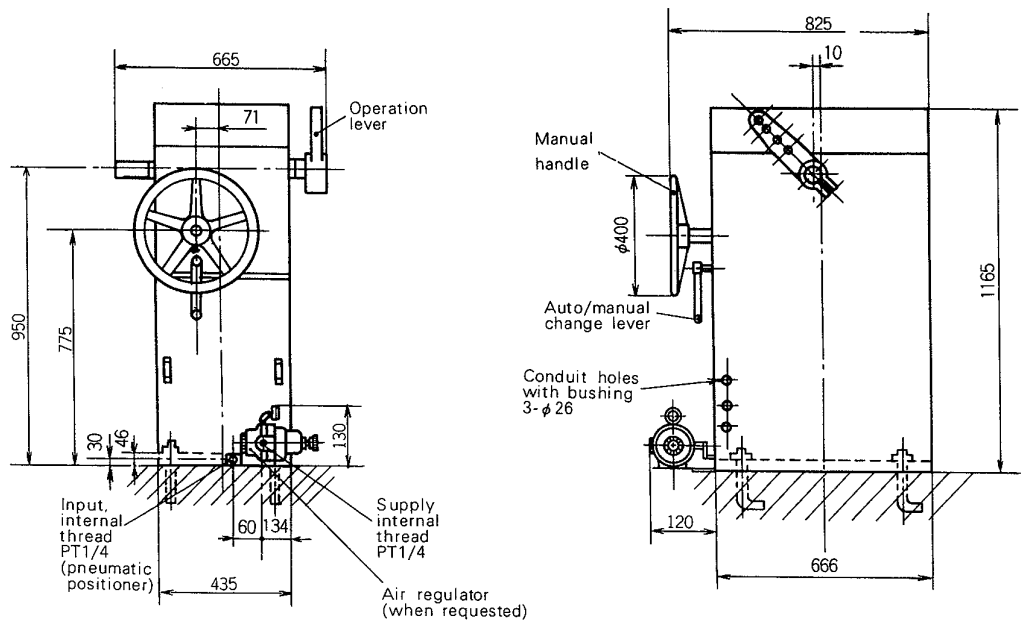
With lock-up valve and 4-way solenoid valve

# EXTERNAL VIEW (Unit: mm)

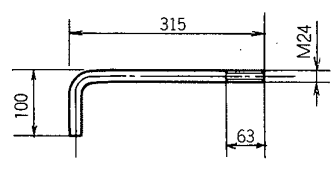




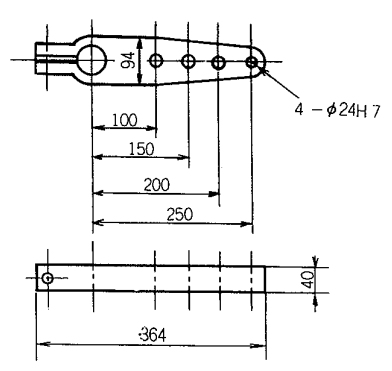
Z J M 2



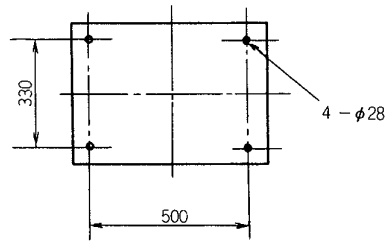
Mounting bolt



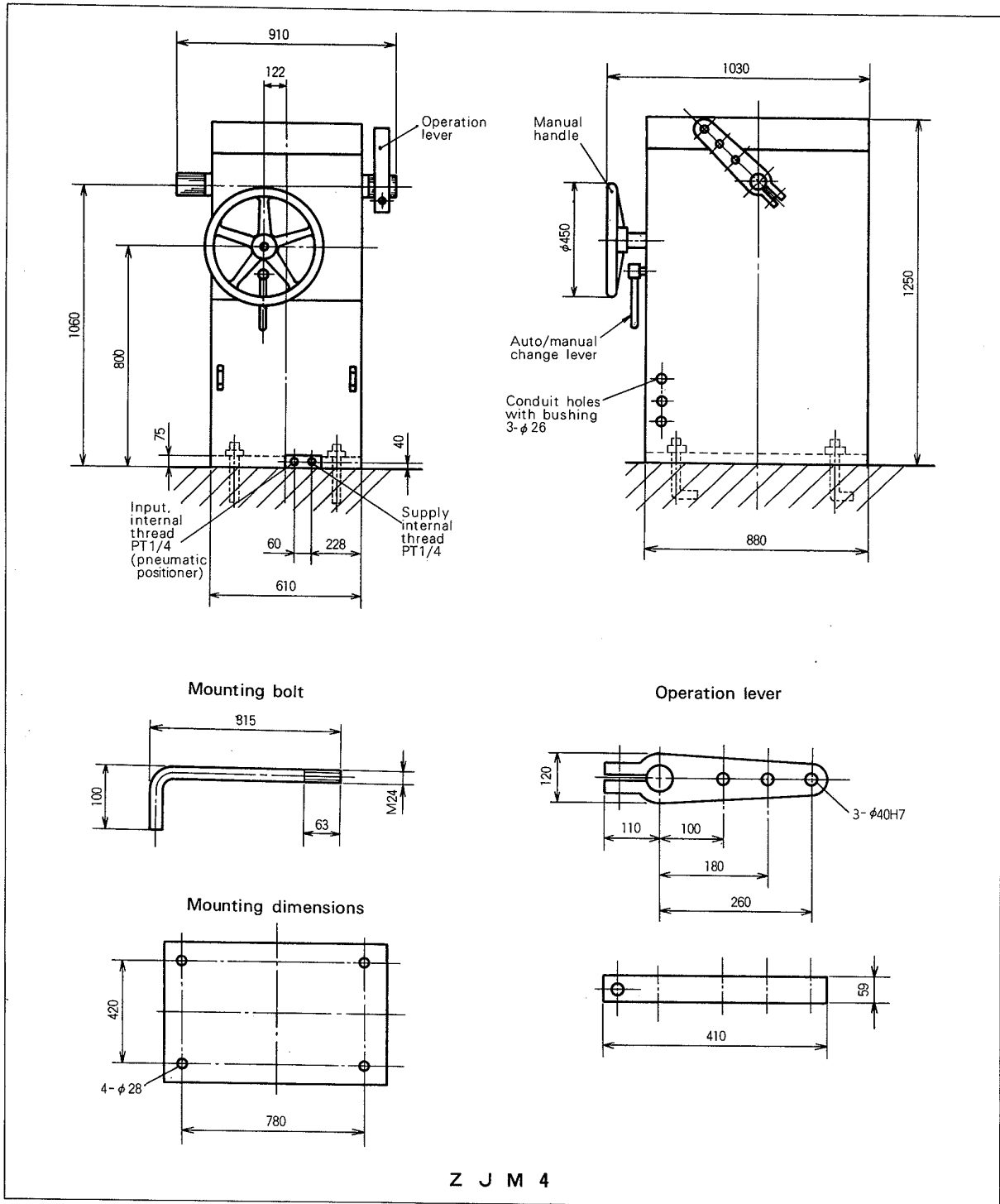
Operation lever



Mounting dimensions



Z J M 3



Z J M 4

Notes) • Alteration reserved without notice.  
 • Asterisk (\*) items; Nonstandard.