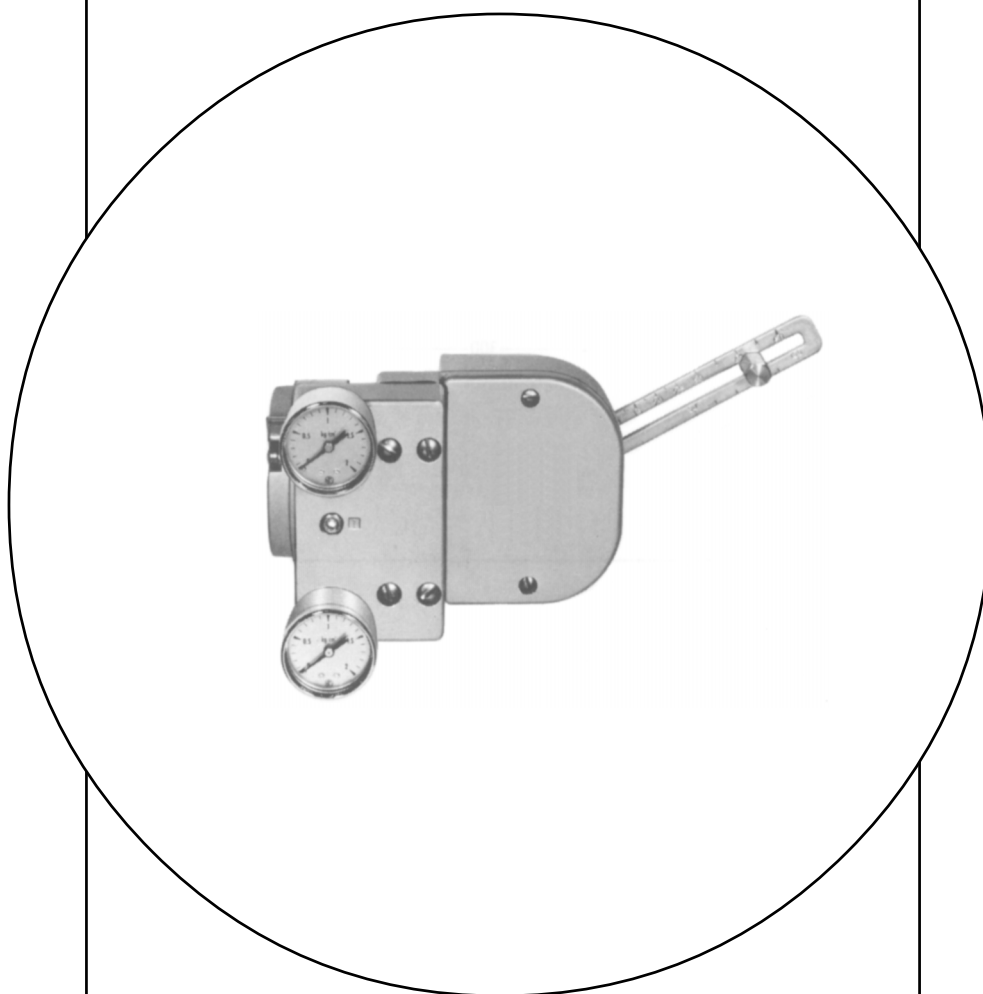


Pneumatic Motion Transmitter

Model : HTM

User's Manual



Yamatake Corporation

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The case, change HTP Valve Positioner to HTM Motion Transmitter.	

GENERAL

1. PREFACE

HTM Motion Transmitter is a sisterly product of HTP Valve Positioner, however, it has same mechanism as HTP Valve Positioner and motion transmitter function by adding HTM gasket.

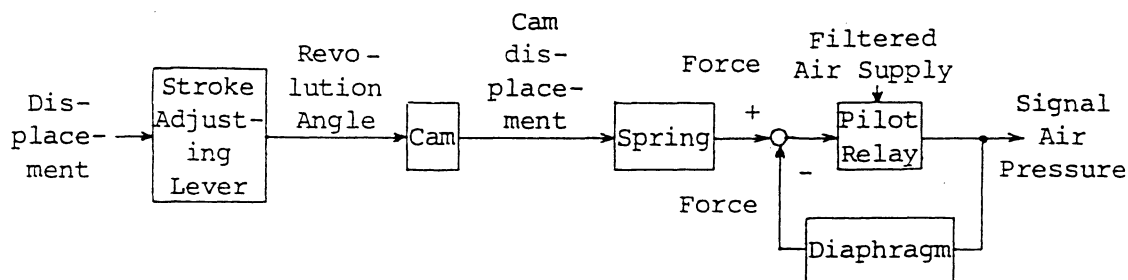
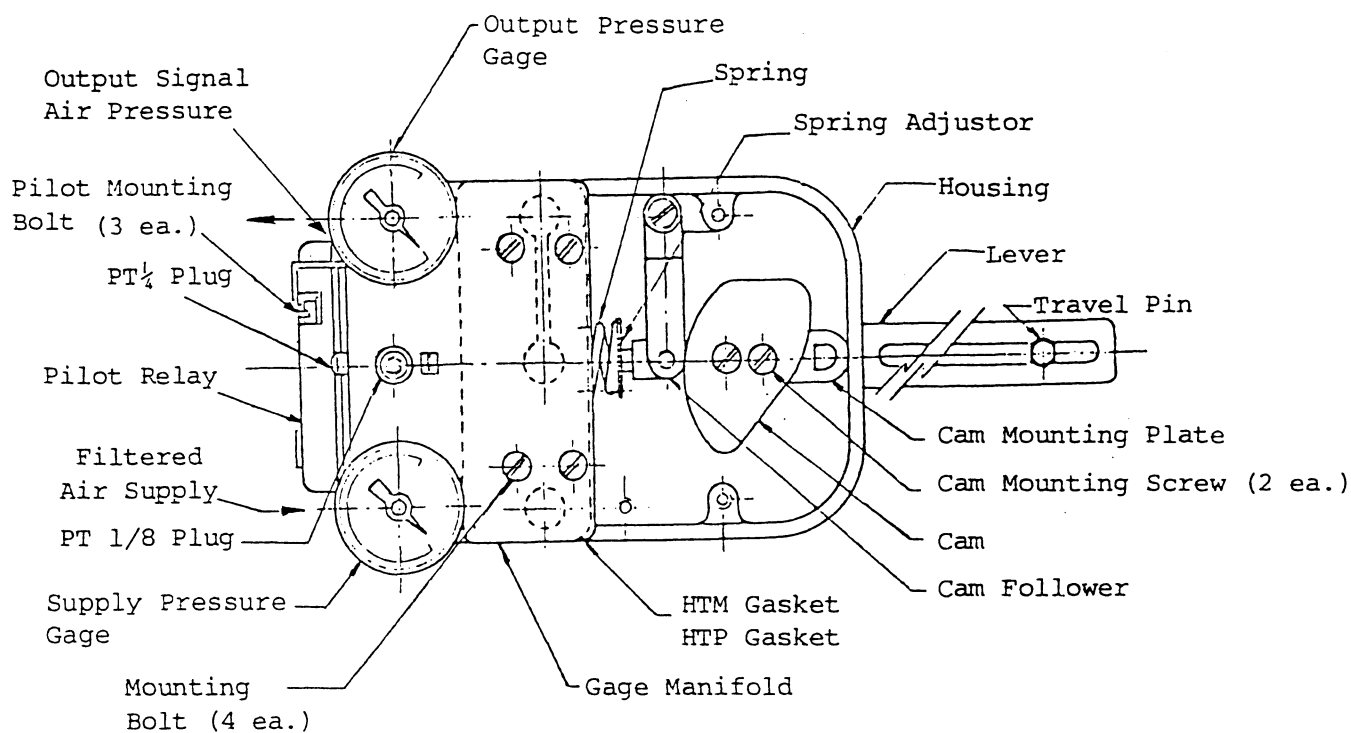


Fig. 1 Block Diagram of HTM Motion Transmitter

2. SPECIFICATIONS

Standard Air Pressure Supply	: 140 kPa {1.4 kg/cm ² }
(Maximum Air Pressure Supply)	: 350 kPa {3.5 kg/cm ² }
Output Air Pressure Range	: 20 - 100 kPa {0.2 - 1.0 kg/cm ² } (standard)
Air Connection	: PT $\frac{1}{4}$ thread (Output and Supply)
Input Displacement Range	: 12 - 100 m/m (Revolution Angle 50°)
Cam Characteristic	: Linear
Ambient Temperature	: -30 - +80°C
Air Consumption	: 7 Nl/min.
Accuracy	: 1% of Full Span or less
Sensitivity	: 0.05 deg. or less (Lever Revolution Angle)
Repeatability	: 0.1% of Full Span
Linearity	: 1% of Full Span or less



PREPARATION

Following points must be confirmed prior to mounting and adjustment.

- 1) Make certain that R.A. mark on the top of Pilot assembly must mate with ∇ mark on the Housing. If it is mated with D.A side, this will not operate as Motion Transmitter. Therefore, correct position by removing three bolts on the top of pilot assembly.
- 2) Connecting holes (PT 1/4 and PT 1/8) of I marking on Gage manifold must be closed with blind plugs.
- 3) Note that spring suitable to output air pressure must be installed. (Refer Table No. 1)

Table No. 1

Output Air Pressure Range (kPa {kg/cm ² })	Spring Color Code
20 - 100 {0.2 - 1.0}	Green
20 - 60 {0.2 - 0.6}	Orange
60 - 100 {0.6 - 1.0}	White
40 - 200 {0.4 - 2.0}	Blue

- 4) Pressure gage must be suitable to supply air pressure.

INSTALLATION

Installation of HTM Motion Transmitter is same as HTP Valve Positioner, therefore, refer to instruction manual C-8011 "HTP Valve Positioner".

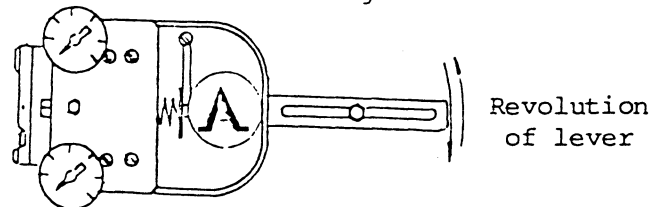
ADJUSTMENT

- 1) Lever must be parallel with Slide Rail, when Input Displacement is at midpoint. If not, correct mounting. (Refer "Installation".)
- 2) Select cam mounting and mount cam. (Refer Table No. 2)
- 3) According to figures (m/m unit) on the lever, set travel pin to the adapted stroke position.
- 4) Set the stroke to upper limit (or lower limit), adjust the output

pressure range, by turning spring adjustor to the extent that output air pressure of this stage becomes one end (instance 20 kPa {0.2 kg/cm²}) of span. Spring adjustor will function in manner that output air pressure increases by tightening and decrease by releasing.

- 5) Set the stroke to lower limit (or upper limit), read the output air pressure of this stage. In lack of output air pressure move travel pin to left, and move to right when it is over.
- 6) By trying step 4) and 5) again, adjust the output air pressure within allowable range on full stroke span.

Table No. 2 Cam Mounting Method



Cam mounting A		Revolution of lever	Output Air Pressure
The case stroke 50-100m/m	The case stroke 12-50 m/m		
		Clockwise	Increase
		Counter-Clockwise	Decrease
		Clockwise	Decrease
		Counter-Clockwise	Increase

CHANGE TRANSMITTER ACTING

Change cam mounting as specified in Adjustment Step 2).

CHANGES OF OUTPUT SIGNAL RANGE

Suitable spring must be selected as specified on Table 1. Spring for the standard range (20 - 100 kPa {0.2 - 1.0 kg/cm²}) is able to use for 20 - 60 kPa {0.2 - 0.6 kg/cm²} or 60 - 100 kPa {0.6 - 1.0 kg/cm²} range in the case of stroke 50 m/m or less only.

MAINTENANCE

Refer to the maintenance column of instruction manual C-8011 "HTP Valve Positioner".

ADDITIONAL NOTE

In order to change HTP Valve Positioner to HTM Motion Transmitter, following procedures must be taken.

- 1) Prepare additional parts specified on Table 3.
- 2) In case with bypass manifold, it is desirable to exchange bypass manifold to gage manifold but in order to utilize bypass manifold, tighten Bypass Switch on POSITIONER position.
- 3) Unscrew four bolts on the manifold then mount HTM gasket on HTP gasket and install manifold again.
- 4) Mount Pilot assembly and Cam segment as specified on "Preparation".

Table 3 Additional Parts
Required quantity of each part is one each except mounting bolts.

HTP Valve Positioner		
With Gage and Bypass	With Gage, without Bypass	Without Gage, Bypass
Gasket PT $\frac{1}{4}$ Blind Plug *(PT 1/8 Blind Plug) **(Gage Manifold)	HTM Gasket PT $\frac{1}{4}$ Blind Plug *(PT 1/8 Blind Plug)	HTM Gasket PT $\frac{1}{4}$ Blind Plug PT 1/8 Blind Plug Gage Manifold Mounting Bolts 4 ea. (YHES 111-120-282) HTP Gasket

* Plug the hole after removed pressure gauge.

** Not required, if bypass manifold is used.

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