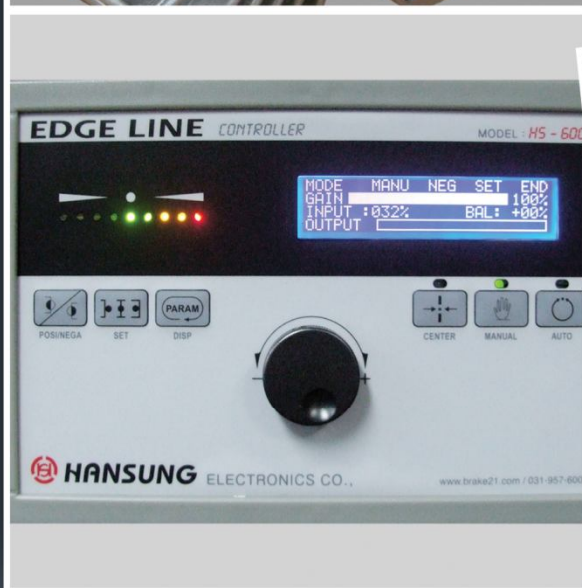


We are the Global Reader

HANSUNG



COMPANY INTRO

" Let's do the foundation technology "

GREETING

First of all, we would like to sincere thank you for your constant support and

encouragement to our HAN-SUNG Electronic Co. LTD.

We have been specializing in Powder brake, Powder clutch, all kind of Tension controller,

E. P. C. and others like Trimming winder, Powder spray, etc.

Our HAN-SUNG Electronic Co. LTD. has established firm foundation technique using the

long time experiences and advanced technique of the basic principle, also created through

professional craftsmanship.

Our HAN-SUNG Electronic Co. LTD. invested that all products are automatic line system

for improvement of good quality.

We are expanding to be best company in the global market.

In order to overcome the intense competition of the inside and outside of country.

We need your guidance and encouragement.

And so, we believe that producing better quality products is the best way to show our

appreciation for your interests and encouragement.

Thank you

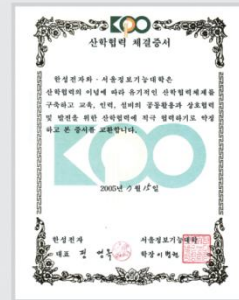
President

Jung myung-ok

HISTORY

- 1994 08 __ Set up the HAN-SUNG Electronic Co.
- 10 __ E. P. C. Developed & Produce
- 1995 01 __ Powder Brake & Clutch Developed & Produce
- 04 __ Digital Tension controller Developed & Produce
- 05 __ Registered a trade business
- 06 __ Export E. P. C. etc to Philippine & Indonesia
- 1996 01 __ Established Research & Development institute
- 05 __ Beam E. P. C. Developed & Produce
- 1997 02 __ L. F. C. Developed & Produce
- 09 __ Guide roller Developed & Produce
- 1999 03 __ Set up the Automatic system
- 2000 06 __ Instituted world trade business part
- 2002 07 __ Motor type E. P. C. Developed & Produce
- 2003 05 __ Extending a factory
- 2005 07 __ Contract the cooperation with College of Seoul I.T.
- 2006 02 __ Digital Taper tension controller Developed & Produce
- 06 __ New Digital Taper tension controller & E. P. C. Developed & Produce
- 2007 04 __ Digital tension controller Indicator Developed & Produce
- 12 __ Open Han-Sung R&D
- 2008 01 __ Get the Permit ISO 9001 : 2000
- 03 __ Get the Venture business company
- 03 __ Get the Technical INNO-BIZ
- 2009 04 __ Get the Patent for Position controller
- 10 __ Build the New & bigger Factory in PAJU City and Moved
- 2010 01 __ Ultra sonic Sensor Developed & Produce
- 2011 04 __ Get the permit of special company for Part & Material.

AUTHENTICATION



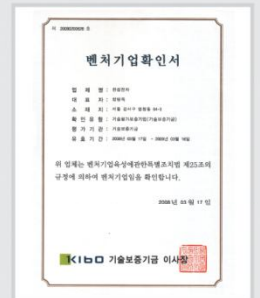
Contract the coop. with college



R&D institute



ISO 9001



Venture company



INNO-BIZ



Patent



Special part and material

CONTENTS

- 06** **POWDER BRAKE (Magnetic Brake)**
HSB-Y : Natural air cooling mode
HSB-YF : Forcing air cooling mode
HSB-W : Water cooling mode
HSB-A : External radiation mode
- 10** **POWDER CLUTCH (Magnetic Clutch)**
HSC-Y : Natural air cooling mode
HSC-W : Water cooling mode
HSC-S : Equal direction axis mode
HSC-A : External radiation mode
HSC-SF : Forcing Cooling Equal direction axis mode
- 15** **Powder Brake & Powder Clutch Operation principle**
Powder Brake & Powder Clutch Select
Powder Brake & Powder Clutch Attached Fig.
Powder Brake & Powder Clutch Mention
- 19** **TENSION CONTROLLER**
HST-700S : Auto Tension Controller
HTC-142, HTC-142B : Auto Tension Controller
HST-2002B, HS-900 : Analog Auto Tension Controller
HST-10MS : Tension Indicator
HS-2002M, HS-2002MP : Manual Tension Controller
HST-07T : Taper Tension Controller
HS-2002T, HS-2002TP : Manual Taper Tension Controller
HST-LAU : Load Cell "A" Type (Load are Up & Down)
HST-LAR : Load Cell "A" Type (Load are Left & Right)
HST-LBU : Load Cell "B" Type (Load are Up & Down)
HS-PU101 : Pick Up Sensor
SMPS : Switch Mode Power Supply for Tension Controller
- 27** **LINE OR EDGE POSITION CONTROLLER**
HS-200L : Hydraulic Fluid Line Position Controller
Sensor HS-LS51, HS-EL33
HS-200E : Hydraulic Fluid Edge Position Controller
Sensor HS-US50, HS-ES41, HS-102E, HS-102E-50
HS-200B : Hydraulic Fluid Line & Edge Position Controller
Sensor HS-BS11
HS-300S : Hydraulic Fluid Line & Edge Position Controller
with Lifter
HS-300L : Hydraulic Fluid Line & Edge Position Controller
with Lifter and Large Tank
HSGR-S : End Pivot Single Type
HSGR-D : End Pivot Double Type
LIFTER : Lifter for web-material
CY-50, 63 : Cylinder
HS-600L : Digital Motor L&E. P. C. Amplifier
HSE-09L : Small Digital Motor L&E. P. C. Amplifier
HS-500L : Analog Motor L&E. P. C. Amplifier
HS-A180L / 300L : Motor Actuator
HSGR-S-M : End Pivot Single Type for Digital
HSGR-D-M : End Pivot Double Type for Digital
CENTER PIVOT GUIDE
- 36** **SENSOR**
HS-LS51
HS-BL33
HS-US50
HS-BS11
HS-ES41
HS-102E
HS-102E-50
HS-ES40S
- 39** **EXAMPLE FOR INSTALL OF POSITION CONTROLLER**
- 40** **OTHER PRODUCTS**
HS-PS : POWDER SPRAY
HS-2006TW : TRIMMING WINDER

PRODUCTS INTRODUCTION



Brake & Clutch

Distinguish technique and all processing automatic line system !
We will show you the top class frame in the Powder Brake & Clutch.



Tension Controller

Reliable products are never allowable error !
It is proved the high performance that products are high precision
and constantly response at any working circumstance from manual
to digital.



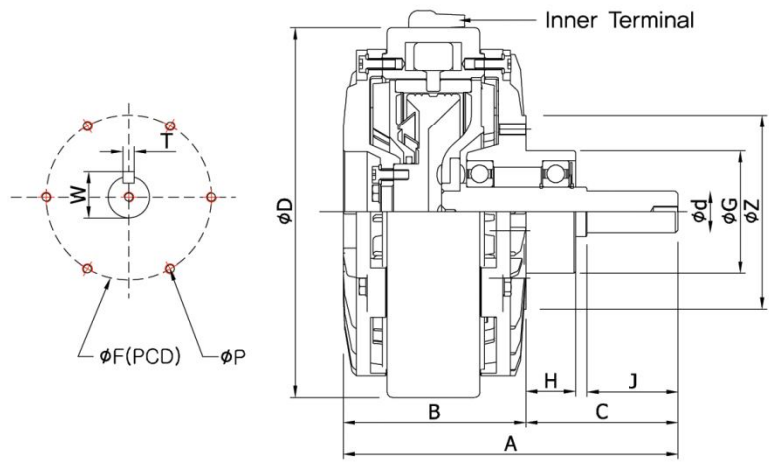
Edge & Line Position Controller

As it is the success of the technique by localization and
pioneer in Korea !
E. & L. P. C. of Han Sung Company which continuous support the
best technique will be motive power on future growing of your
company.

Han Sung Electronic Co. LTD. is basic on full knowledge.

Han Sung Electronic Co. LTD. is a flexible company
for the variation.
That's Why, Our laboratory never stop the Research
& Development.

Natural Air Cooling Mode (HSB-Y)

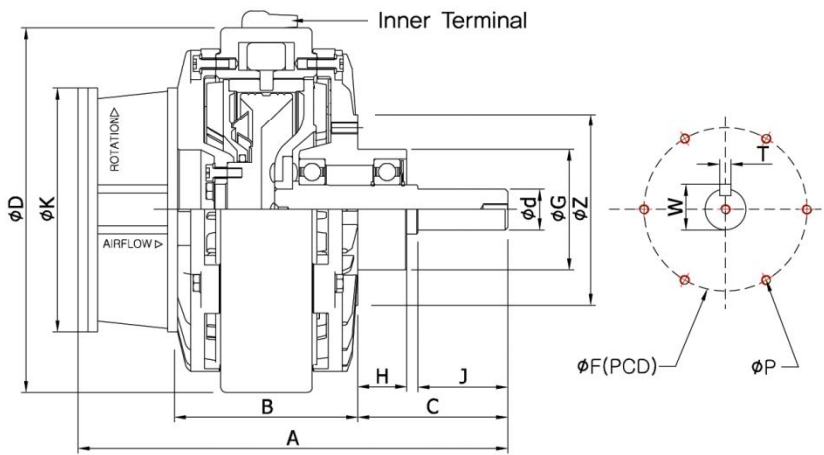


Dimension														
TYPE	A	B	C	D	d(h7)	F	G(g7)	H	J	P	R	T	W	Z
HSB-0.3Y	104	72.5	41.5	120	10	64	42	14	22	M5-6	M4	4×4	11.5	75
HSB-0.6Y	119	73	46	138	12	64	42	14	26	M5-6	M5	4×4	13.5	75
HSB-1.2Y	130	81	49	150	15	64	42	15	29	M6-6	M5	5×5	17	79
HSB-2.5Y	159	94.5	64.5	182	20	78	55	18	43	M6-6	M6	5×5	22	99
HSB-5Y	203	111	92	224	25	100	74	30	55	M6-6	M6	7×7	28	118
HSB-10Y	252	152	100	290	30	140	100	28	65	M10-6	M8	7×7	33	160
HSB-20Y	286	175	111	335	35	150	110	30	69	M10-6	M10	10×8	38.5	173.5
HSB-40Y	325	186	139	395	45	200	130	35	92	M12-6	M10	12×8	48.5	225

※ Can be change the dimension as new technologize

Specification										
TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Moment of inertia kg/m ²	Forced air cooling allowable			Weight kg
							Air pressure kg/cm ²	Air volume m ³ /min	Air Flowrate W	
HSB-0.3Y	0.3	24	0.64	15	0.047	1.2×10 ⁻³	-	-	-	4
HSB-0.6Y	0.6	24	1.2	28	0.06	2.7×10 ⁻³	-	-	-	5
HSB-1.2Y	1.2	24	1.4	34	0.10	5.1×10 ⁻³	0.3	0.2	200	6
HSB-2.5Y	2.5	24	1.9	46	0.12	1.5×10 ⁻²	0.5	0.4	380	8
HSB-5Y	5	24	2.8	67	0.13	3.8×10 ⁻²	1.0	0.6	700	15
HSB-10Y	10	24	3.6	86	0.21	1.4×10 ⁻¹	1.4	1.1	800	30
HSB-20Y	20	24	3.8	91	0.30	3.7×10 ⁻¹	1.5	1.6	1400	47
HSB-40Y	40	24	5	120	0.40	9.7×10 ⁻¹	1.6	2.0	2100	76

Forcing Air Cooling Mode (HSB-YF)



Dimension

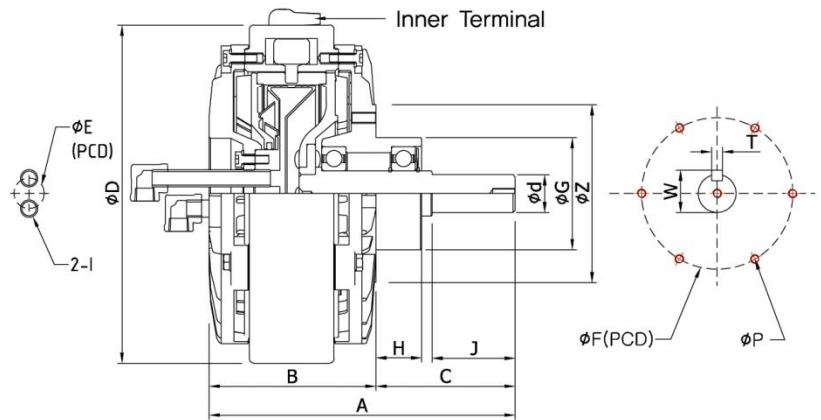
TYPE	A	B	C	D	d(h7)	F	G(g7)	H	J	K	P	R	T	W	Z
HSB-5YF	273	111	92	222	25	100	74	30	55	160	M6-6	M6	7x7	28	118
HSB-10YF	357	152	100	290	30	140	100	28	65	255	M10-6	M8	7x7	33	160
HSB-20YF	391	175	111	335	35	150	110	30	69	255	M10-6	M10	10x8	38.5	173.5
HSB-40YF	430	186	139	398	45	200	130	35	92	255	M12-6	M10	12x8	48.5	225

* Can be change the dimension as new technologize

Specification

TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Moment of inertia kg/m ²	Forced air cooling allowable			Weight kg
							Air pressure kg/cm ²	Air volume m ³ /min	Air Flowrate W	
HSB-5YF	5	24	2.8	67	0.13	1.2×10 ⁻²	1.0	0.6	1400	16
HSB-10YF	10	24	3.6	88	0.21	2.7×10 ⁻¹	1.4	1.1	1600	31
HSB-20YF	20	24	3.8	97	0.3	5.1×10 ⁻¹	1.5	1.6	2200	48
HSB-40YF	40	24	5	120	0.4	1.5×10 ⁻¹	1.6	2	3000	77

Water Cooling Mode (HSB-W)



Dimension

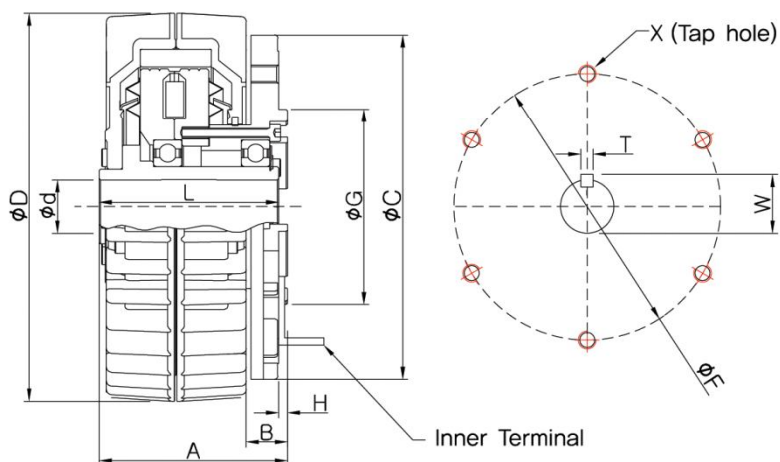
TYPE	A	B	C	D	d(h7)	E	F	G(g7)	H	I(PT)	J	P	R	T	W	Z
HSB-2.5W	159	94.5	64.5	182	20	18	78	55	17	1/8	43	M6-6	M6	5x5	22	99
HSB- 5W	203	111	92	222	25	20	100	74	30	1/4	55	M6-6	M6	7x7	28	118
HSB-10W	252	152	102	290	30	30	140	100	28	3/8	65	M10-6	M8	7x7	33	160
HSB-20W	286	175	111	335	35	30	150	110	30	3/8	69	M10-6	M10	10x8	38.5	173.5
HSB-40W	325	186	139	398	45	40	200	130	35	3/8	92	M12-6	M10	12x8	48.5	225

※ Can be change the dimension as new technologize

Specification

TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Moment of inertia kg/m ²	Forced air cooling allowable		Weight kg
							Water volume L/min	Air Flowrate W	
HSB-2.5W	2.5	24	1.24	30	0.12	1.5x10 ⁻²	1.5	700	8
HSB- 5W	5	24	2.15	51.5	0.13	3.8x10 ⁻²	3	1200	15
HSB-10W	10	24	3.6	86	0.21	1.4x10 ⁻¹	6	2800	30
HSB-20W	20	24	3.8	91	0.3	3.7x10 ⁻¹	9	3900	47
HSB-40W	40	24	5	120	0.4	9.7x10 ⁻¹	15	5200	76

External Radiation Mode (HSB-A)



Dimension											
TYPE	A	B	C	D	F	G(g7)	H	T	W	X	d(H7)
HSB-2.5A	100	26	170	180	140	100	5	5	22	M10-3	20
HSB-5A	110	28	194	221	150	110	5	7	33	M10-3	30
HSB-10A	143	37	247	278	150	110	5	10	38.5	M10-6	35
HSB-20A	165	40	325	365	240	160	6	12	48.5	M12-6	45
HSB-40A	210	40	325	365	240	160	6	12	53.5	M12-6	50

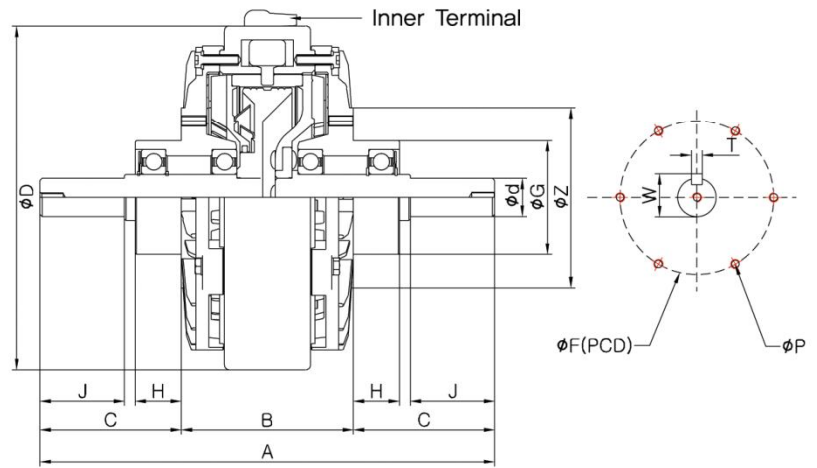
※ Can be change the dimension as new technologicize

Specification									
TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Moment of inertia kg/m ²	Air Flow rate		Weight kg
							100rpm	1000rpm	
HSB-2.5A	2.5	24	0.73	17.5	0.15	4.1x10 ⁻²	200	450	7.5
HSB- 5A	5	24	0.94	22.6	0.17	9.4x10 ⁻²	300	700	12
HSB-10A	10	24	1.21	28.8	0.3	0.39	500	900	22
HSB-20A	20	24	2.3	48	0.5	-			40
HSB-40A	40	24	3.3	80	0.5	-			50

Powder Brake

Powder Clutch

Natural Air Cooling Mode (HSC-Y)



Dimension

TYPE	A	B	C	D	d(h7)	F	G(g7)	H	J	P	R	T	W	Z
HSC-0.3Y	154	70	42	120	10	64	42	14	22	M5-6	M4	4x4	11.5	75
HSC-0.6Y	165	72	46	133	12	64	42	14	26	M5-6	M5	4x4	13.5	75
HSC-1.2Y	192	94	49	150	15	64	42	15	29	M6-6	M6	5x5	17	79
HSC-2.5Y	231	102	64.5	182	20	78	55	17	43	M6-6	M6	5x5	22	99
HSC-5Y	294	112	91	224	25	100	74	30	55	M6-6	M6	7x7	28	118
HSC-10Y	359	160	99.5	290	30	140	100	28	65	M10-6	M8	7x7	33	160
HSC-20Y	408	190	109	335	35	150	110	30	69	M10-6	M10	10x8	38.5	173.5
HSC-40Y	499	221	139	395	45	200	130	35	92	M12-6	M10	12x8	48.5	225

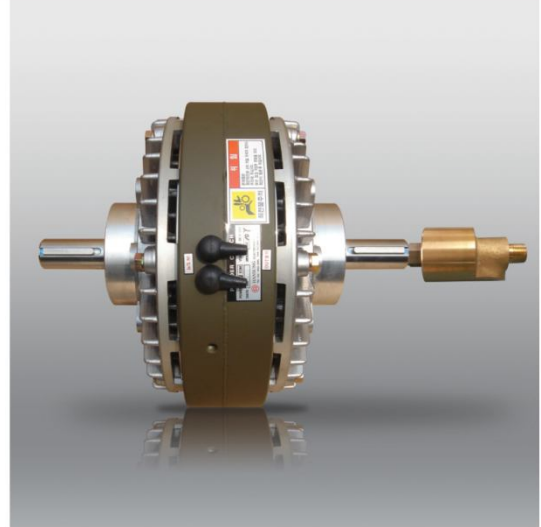
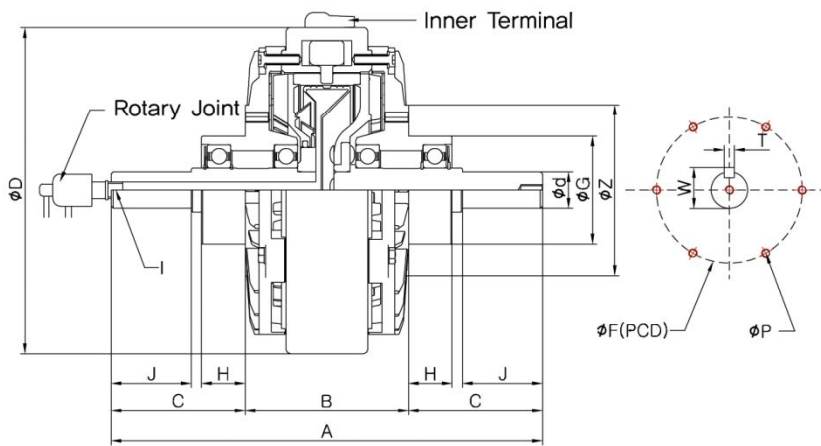
※ Can be change the dimension as new technologicize

Specification

TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Air cooling kg/m ²			Forced air cooling allowable		Weight kg
						Input side	Output side	Air pressure kg/cm ²	Air volume m ³ /min	Air Flowrate W	
HSC-0.3Y	0.3	24	0.64	15	0.047	1.2×10 ⁻³	4.0×10 ⁻⁴	-	-	-	4
HSC-0.6Y	0.6	24	1.2	28	0.06	2.7×10 ⁻³	9.8×10 ⁻⁴	-	-	-	5
HSC-1.2Y	1.2	24	1.4	34	0.1	5.1×10 ⁻³	1.8×10 ⁻³	0.3	0.2	200	6.5
HSC-2.5Y	2.5	24	1.9	46	0.1	1.6×10 ⁻²	7.1×10 ⁻³	0.5	0.4	380	9
HSC-5Y	5	24	2.8	67	0.11	4.2×10 ⁻²	2.1×10 ⁻²	1	0.6	700	17
HSC-10Y	10	24	3.6	86	0.21	1.4×10 ⁻¹	7.4×10 ⁻²	1.4	1.1	800	35
HSC-20Y	20	24	3.8	91	0.3	3.7×10 ⁻¹	2.3×10 ⁻¹	1.5	1.6	1400	50
HSC-40Y	40	24	5	120	0.4	9.7×10 ⁻¹	6.0×10 ⁻¹	1.6	2	2100	80

Powder Clutch

Water Cooling Mode (HSC-W)



Dimension

TYPE	A	B	C	D	d(h7)	F	G(g7)	H	I(PT)	J	P	R	T	W	Z
HSC-2.5W	231	102	64.5	182	20	78	55	18	1/8	43	M6-6	M6	5x5	22	99
HSC-5W	294	112	91	222	25	100	74	30	1/4	55	M6-6	M6	7x7	28	118
HSC-10W	359	160	99.5	290	30	140	100	28	3/8	65	M10-6	M8	7x7	33	160
HSC-20W	408	190	109	335	35	150	110	30	1/2	69	M10-6	M10	10x8	38.5	173.5
HSC-40W	499	221	139	395	45	200	130	35	1/2	92	M12-6	M10	12x8	48.5	225

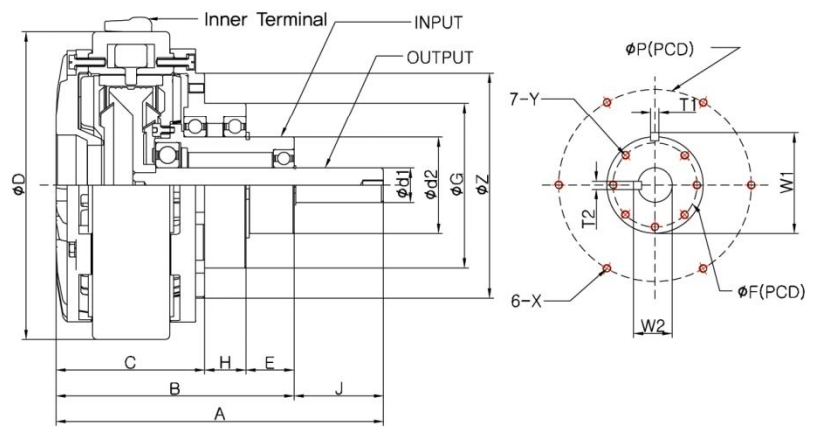
※ Can be change the dimension as new technologicize

Specification

TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Air cooling GD ² kgm ²		Water cooling		Weight kg
					Input side	Output side	Water volume L/min	Air Flow rate W	
HSC-2.5W	2.5	24	2.4	61	-	-	-	-	9
HSC-5W	5	24	2.8	67	4.2×10 ⁻²	2.2×10 ⁻²	3	1200	17
HSC-10W	10	24	3.6	86	1.4×10 ⁻¹	1.0×10 ⁻¹	6	2800	35
HSC-20W	20	24	3.8	91	3.7×10 ⁻¹	2.6×10 ⁻¹	9	3900	50
HSC-40W	40	24	5	120	9.7×10 ⁻¹	6.0×10 ⁻¹	15	5200	80

Powder Clutch

Equal Direction Axis Mode (HSC-S)



Dimension

TYPE	A	B	C	D	d ₁ (h7)	d ₂ (h7)	E	F	G(g7)	J	K	H	P	T1	T2	W1	W2	X	Y	Z
HSC-5S	241.5	196	112.5	224	25	70	35	61	120	65	160	30	140	6x6	6x6	73	28	M6	M6	160
HSC-10S	283	223.5	142	290	25	70	47.5	61	130	59.5	255	36	160	6x6	6x6	73	28	M10	M6	182.5
HSC-20S	327	257	159	335	35	90	50	75	160	70	255	49.2	200	12x8	10x8	94	39	M10	M8	218

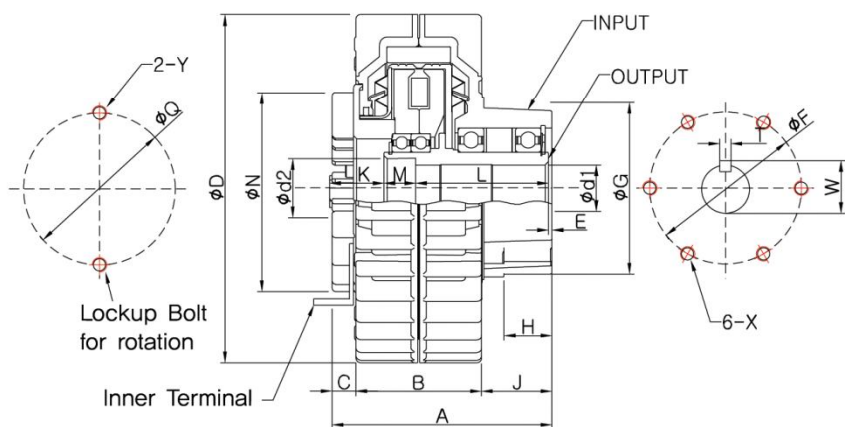
※ Can be change the dimension as new technologicize

Specification

TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Air cooling GD ² kgm ²		Weight kg
						Input side	Output side	
HSC-5S	5	24	3.7	89	0.11	2.1x10 ⁻²	3.1x10 ⁻¹	16
HSC-10S	10	24	5.2	125	0.21	7.4x10 ⁻²	6.8x10 ⁻¹	31
HSC-20S	20	24	5.4	130	0.3	2.3x10 ⁻¹	5.8x10 ⁻¹	50

Powder Clutch

External Radiation Mode (HSC-A)

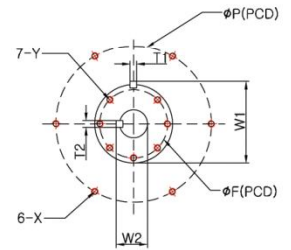
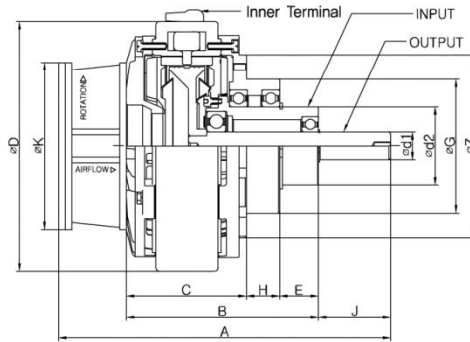


Dimension																				
TYPE	A	B	C	D	F	G(g7)	H	J	K	L	N	Q	T	W	X	Y	d ₁ (h7)	d ₂	M	E
HSC-2.5A	122.5	674	19	177.5	80	90	20	35	33	70	115.5	80	5x5	22	M6	M6	20	27	17	2
HSC-5A	139.5	79	21.5	218	95	110	30	44	32.5	109	131	95	7x7	33	M8	M8	30	-	-	2
HSC-10A	159.5	81	21	277	110	125	31.5	58	34	122	167.5	110	10x8	38.5	M10	M10	35	-	-	4

※ Can be change the dimension as new technologize

Specification										
TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Air cooling GD ² kgm ²		Air Flow rate		Weight kg
						Input side	Output side	100rpm	1000rpm	
HSC-2.5A	2.5	24	1.1	26.4	0.06	4.7x10 ⁻²	8.7x10 ⁻³	170	600	8
HSC-5A	5	24	1.4	33.6	0.09	0.10	2.0x10 ⁻²	300	1000	13
HSC-10A	10	24	2	48	0.14	0.29	6.4x10 ⁻²	500	1400	20

Powder Clutch Forcing Cooling Equal Direction Axis Mode (HSC-SF)



Dimension																				
TYPE	A	B	C	D	d ₁ (h7)	d ₂ (h7)	E	F	G(g7)	J	K	H	P	T1	T2	W1	W2	X	Y	Z
HSC-5SF	302	196	112.5	222	25	70	35	61	120	65	160	30	140	6x6	6x6	73	28	M6	M6	160
HSC-10SF	388	223.5	142	290	25	70	47.5	61	130	59.5	255	36	160	6x6	6x6	73	28	M10	M6	182.5
HSC-20SF	432	257	159	335	35	90	50	75	160	70	255	49.2	200	12x8	10x8	94	39	M10	M8	218

※ Can be change the dimension as new technoligize

Specification								
TYPE	Torque kgm	Voltage DC-V	Current A	Power W	Time Constant sec	Air cooling GD ² kgm ²		Weight kg
						Input side	Output side	
HSC-5SF	5	24	3.7	89	0.11	2.1x10 ⁻²	3.1x10 ⁻¹	16
HSC-10SF	10	24	5.2	125	0.21	7.4x10 ⁻²	6.8x10 ⁻¹	31
HSC-20SF	20	24	5.4	130	0.3	2.3x10 ⁻¹	5.8x10 ⁻¹	50

Powder Brake & Clutch

Operation Principle

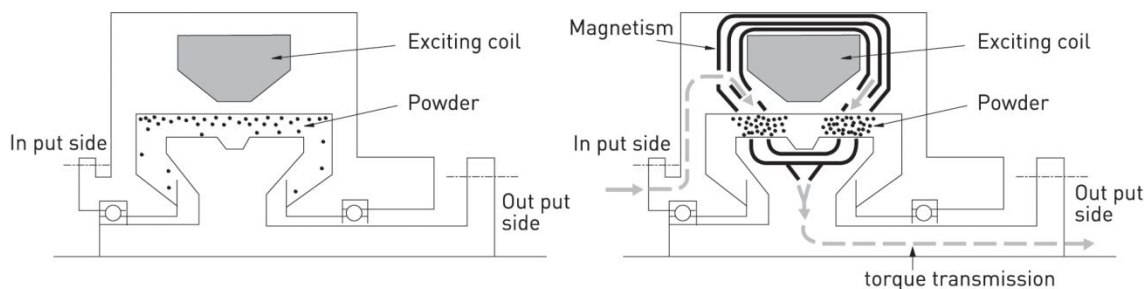
When no current flow in the magnetic coil, powder is being attached to in put drum side by centrifugal force as separate in put drum and out put drum. So the torque is not transmitted. If coil is excited by electric current, magnetic flux is generated, then torque is transmitted by the friction between powder and working side. Another word, When current flows in the coil, the powder is connected in iron chain form depending on the magnetic flux. At this time, the torque is transmitted by the interconnection force in the powder and friction of moving surface.

Features

- 1) Excitation current and transmitting torque are almost in proportion, also transmitting torque is controlled with wide ranges.
- 2) Regardless of slipped RPM, Torque is excellently transmitted.
- 3) Torque by residual flux is very little and stopping stability is excellent.
- 4) It can operate with slipping state, for large capacity cooling with heat.
- 5) Take short repair time as it is dry-type, so can use it for long time without any adjustment.
- 6) It is friction clutch of based on the powder.

Structure

fig. 1 Operation principle of powder clutch.



Current Off

When no current is flowed in the excitation coil, clutch is open state without any torque transmitted, at the moment, powder is being attached by the centrifugal force on the outside of powder cap.

Current In

When current in is flowed in the excitation coil, powder become a solid lump by the strong magnetic flux and torque is transmitted. At this moment, If decreasing or increasing the excitation current, the transmitting torque is also decreased or increasing.

Powder Brake & Clutch Brake & Clutch Selection

How to select the mode ?

Use it when operate the Rewinder or Unwinder.

When unwind with constant tension or first time has strong after that will be weak,

You have to use Taper tension. But control of torque are better use constant torque.

In case of used Continuous slip state

In case of used the tension controller of REWINDER, UNWINDER, or torque limited in continuous slip state, Continuous slip power "P" of brake or clutch are calculate below method.

$$P = 1.03 \times T \times Nr(W) \dots\dots\dots(1)$$

Nr : Slip rotary speed (r/min)
T : Transmitting torque

Does select the form of clutch that the P of mode (1) are in a allowable limit.

If not enough the thermal capacity by natural air cooling, reference the allowable limit of each item, and select the natural air cooling, external radiation mode, water cooling mode.

In case of use Continuous slip, most of them select the size of slip rate, and torque was related rated torque of clutch. In this case It can select the easy to control range of using torque as added reducing device.

Coupling Device

Load torque (less than 50% of motor regular torque) are less then load GD2

(less then 5 times of clutch GD2), If connect frequency less then 10 times/1hour, Motor has selected, and regular output power of motor are designate the revolution of clutch axes.

Reference to fig-4.

$$T = 974 \times P/N(kgm) \dots\dots\dots(2)$$

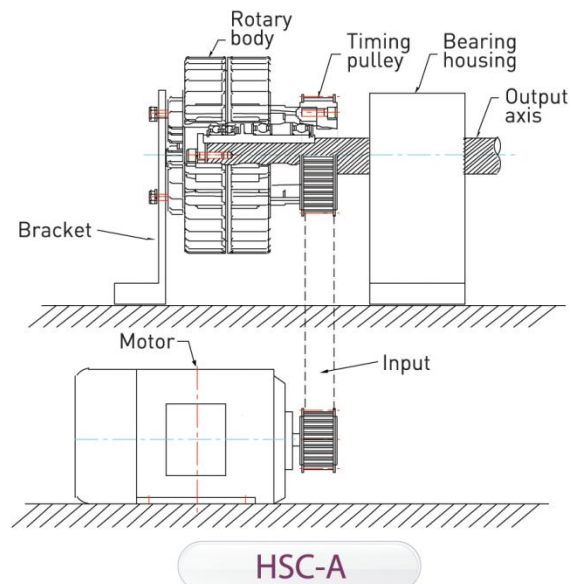
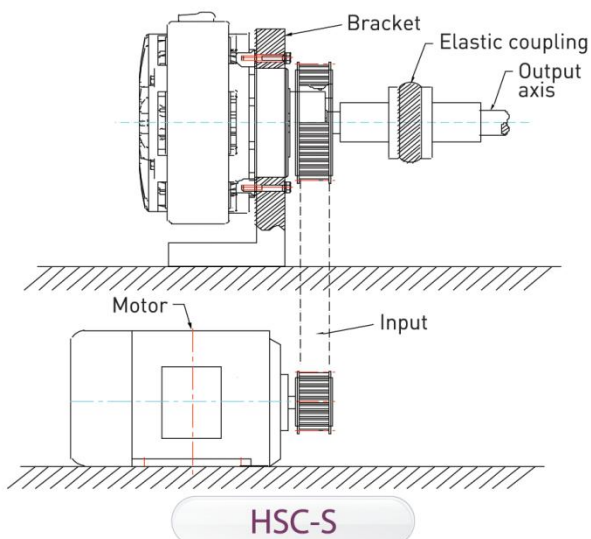
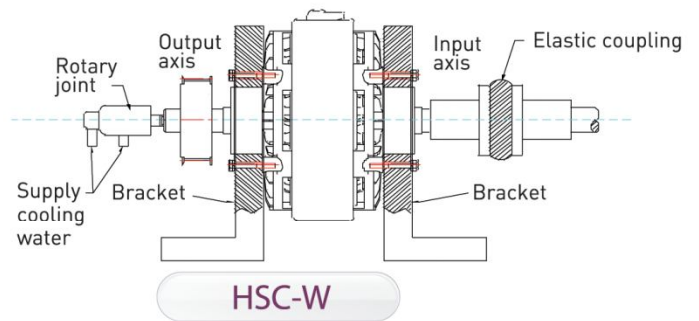
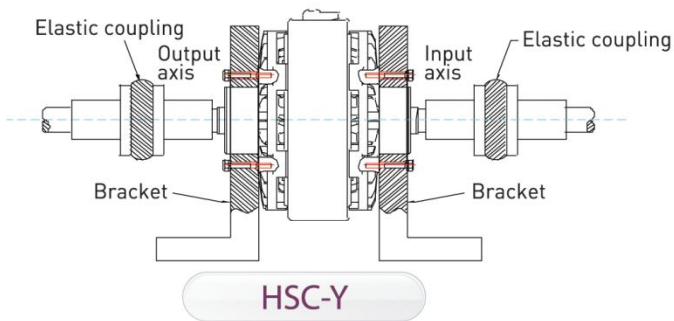
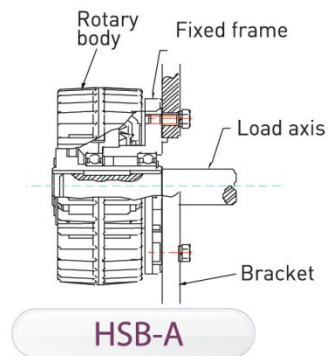
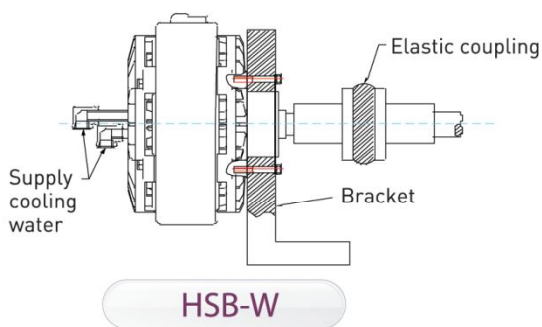
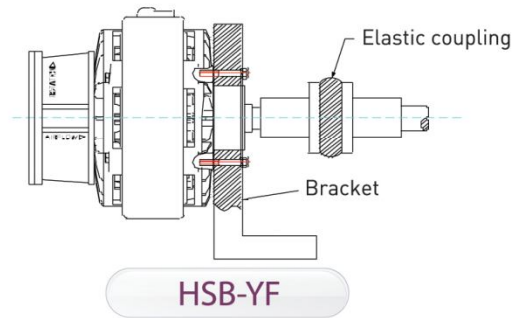
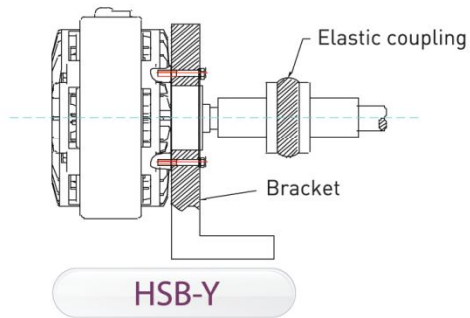
P : Motor regular output power (KW)
N : Revolution of clutch axes (RPM)

Fig-4 Powder clutch motor capacity

Motor Capacity(kw) \ RPM	1800	1500	1200	1000	900	750	600	500	400	300
0.2	HSC-0.3	HSC-0.6			HSC-1.2			HSC-2.5		
0.4	HSC-0.6	HSC-1.2			HSC-2.5			HSC-5		
0.75	HSC-1.2		HSC-2.5			HSC-5			HSC-10	
1.5	HSC-2.5		HSC-5			HSC-10			HSC-10	
2.2	HSC-5			HSC-10			HSC-20			
3.7	HSC-10			HSC-20			HSC-20			
5.5	HSC-10		HSC-20			HSC-40			HSC-65	
7.5	HSC-20		HSC-40			HSC-65				
11	HSC-20		HSC-40			HSC-65				
15	HSC-40			HSC-65						
22	HSC-40		HSC-65			2				

Powder Brake & Clutch

Brake & Clutch Install



Powder Brake & Clutch Suggestion

1. Generals Information

Powder Clutch is designed that high speed axis can be linked to input side.
How do you find Input axis and Output axis ?

The answer is when fixed one side and turn other side, In this case, if aluminium cooling plate of inside cover is rotation, then fixing side are output axis, and the other way is input side. Also HSC-A mode are that center axis is output axis and installed as bolt is input axis. In case of use opposite way, Do as below 1000RPM. but we do not suggest this way because powder will be damage as torque feature.
Brake & Clutch should use horizontal and can not use vertical way.

Consider of below circumstance .

A. In case of Use as any slope or angle B. In case of whole thing are revolved. C. Use at low temperature or any special specification.

2. Avoid from " moisture "

If the powder is wet, operation condition is an un-stable, Specially careful, water or oil to be permeated inside, An occasion attached gear box, completely does oil-sealing cause oil though the shaft.

3. Be careful " surface humidity "

For the continuous operation, the maximum surface temperature should be maintained lower than 30°C to protect a decrease of endurance.

4. Life time of powder

Life time of powder is depends on operating condition, usually you can operate 5000 - 8000 hours in allowable slip rate. When to replace powder, do it doing disassembling brake & clutch.

5. In case of Low speed operation (Lower than 15 RPM)

When you operate continuously for the tension control, specific of torque is generated. In case of the on-off operation to be accompanied with the revolving and right after applying the electric pressure(voltage), torque operating can be delayed, Therefore, to avoid it use as followings.

- A. Even though rolling-up has been completed, if applying a weak current (5 -10% of rate) continuously, power is not completely parted from the working surface and can protect to get in between and operation delay.
- B. Minimum RPM does 15RPM as speed up.
Be careful, because if enhanced rate is increased, the exact torque control is not available due to the mechanical friction of speed-up machine.

6. Normal speed operation

Keep always the normal speed operation and perform the preliminary operation before initial starting because of the powder being existed inside brake & clutch.

7. Torque trouble expected when initial starting.

In case of the preliminary operation is fully, certainly required to prevent a higher torque cased by the maldistribution or moisture, but it is not often trouble.

(1) After exciting OFF, input & output power are revolving.

Some time cooling side does not revolve due to impurities get into the powder by expansion & contraction of heat, but is not often trouble. At that time, you can operate as turn the axe few times after stop condition.

(2) Forced air cooling.

Install the air filter, Normally some oil or moisture is included in the pressed air using for the cooling purpose, therefore, use only the filtered & dried air though the filter.

Do not use that air not to filter through to protect powder to be damped & defected.

(3) Water cooling.

1) Install the water drain cock.

Long time operation stop can bring about a corrosion by the inner cooling water, therefore, require drain cock for run out the cooling water. When to stop using long time at a cold place, The cooling water can be frozen and broken down the powder brake or clutch.

2) Install a fill-up tank for provide fresh of water.

If no water supply then water cooling brake & clutch are easy to fire in inside with in short time.

3) Be careful of the dew.

If supply cold water then can be easy to make dew at powder, so make sure supply water temperature should be same temperature as indoor temperature.

4) Stop supplying water as soon as machine stop.

TENSION CONTROLLER

All Tension controller are to detect the tension of material by the load cell detector fixing at the both end position for the fine deviation control in order to make the tension difference "zero" between the result and object and control excitation current feeding back from the powder clutch and powder brake, air brake, motor controller.

It is super precision controller cause fine deviation control mode. Roller detector has a low hysteresis and high response time as it is combination with high precision differential transformer.

You can check out the tension state of the web at once operating. Automatic & exact tension control is available with one time dial setting from the rewinding work to un-winding without any extra setting.

Controller being used "proportional integral circuit" so it is very stability and excellent precision.

This equipment is to detect the tension of web as pick up detector which installed at the both end roller. Also it is to controlled the "excitation current" of the powder brake & clutch as automatic in order to make tension difference "zero" between detected tension and set-up tension.

It is high mechanical response time of the detection part and super precision tension control.

HST-700S

Auto Tension Controller

HTC-142

Auto Tension Controller

HTC-142B

Auto Tension Controller

HST-2002B

Analog Auto Tension Controller

HS-900

Analog Auto Tension Controller

HST-10MS

Tension Indicator

HS-2002M

Manual Tension Controller

HS-2002MP

Manual Tension Controller

HST-07T

Taper Tension Controller

HS-2002T

Manual Taper Tension Controller

HS-2002TP

Manual Taper Tension Controller

HST-LAU

Load Cell "A" Type (Loading Up & Down)

HST-LAR

Load Cell "A" Type (Loading Left & Right)

HST-LBU

Load Cell "B" Type (Loading Up & Down)

HS-PU101

Pick Up Sensor

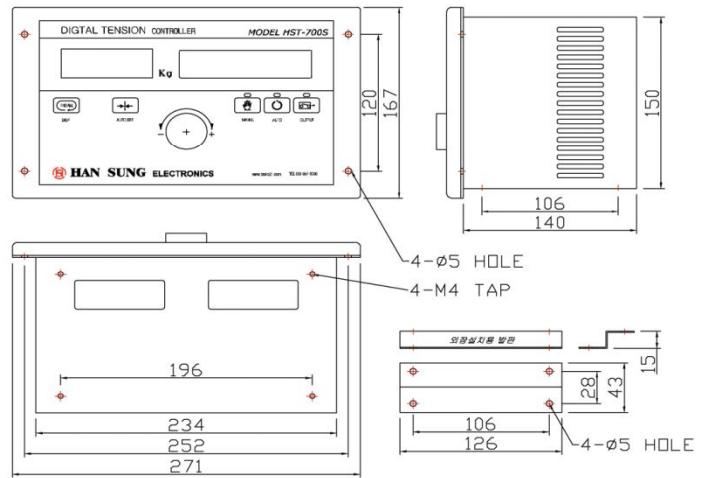
SMPS

Switch Mode Power Supply for Tension Controller



Tension Controller

Auto Tension Controller(HST-700S)



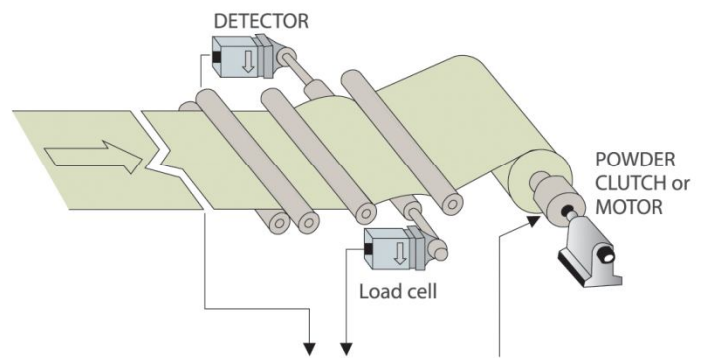
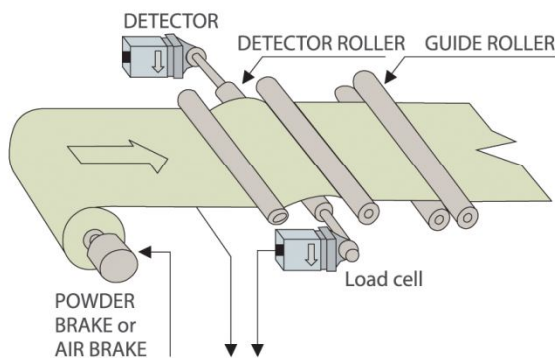
Summary of products

This is Digital Tension Controller that use digital CPU (Microcomputer) are to detect the tension of web material by the load cell detector fixing at the both end position for the fine deviation control in order to make the tension difference "zero" between the result and object and control excitation current feeding back from the powder clutch and powder brake, air brake, motor controller.

Mode	HST-700S
Input Voltage	Single AC220V 50/60Hz
Sensor	HST-LAU(R), HST-LBU LOAD CELL, HS-PU101
Output	DC 0~24V 5A DC 4~20mA (Electric Converter,For Motor Controller) DC 0~10V (Electric Converter,For Motor Controller) DC 0~10V (TENSION F/S)
Weight	4Kg

Feature

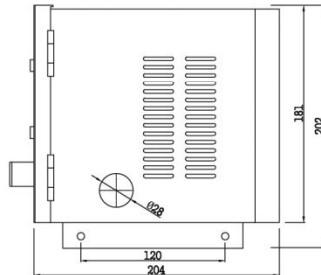
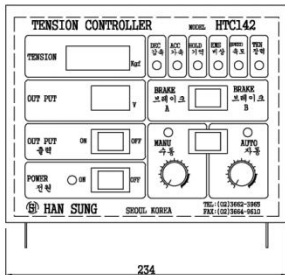
- * All function has digital control
- * Rapid response speed (10ms)
- * Memory of Auto zero point control.
- * Memory of Auto tension control.
- * Auto hold function
- * Setting the Auto or Manual change.
- * Compensation of voltage when emergence stop.
- * Setting the Maximum voltage.
- * Compensation of Lower voltage.
- * Setting the changing time for Auto to Manual or Manual to Auto.
- * Compensation of voltage when change to Auto or Manual.
- * Compensation for reduce the speed or increase the speed.
- * Taper tension controller.
- * Compensation of A/B convert
- * Signal for No more web material.
- * Remote control, Analog signal control.
- * Can be use Load cell or Pick up.
- * Variety output signal.



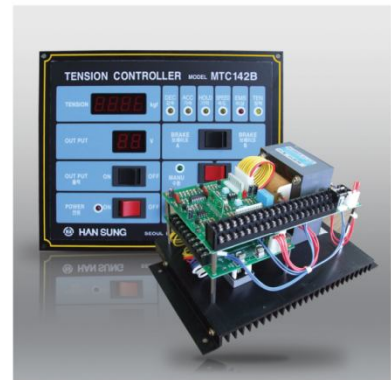
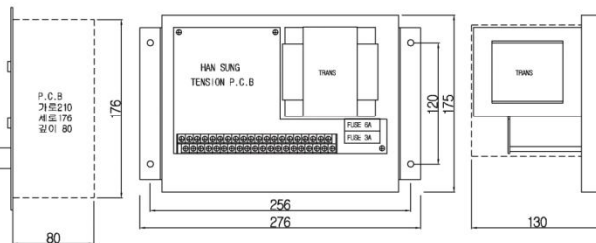
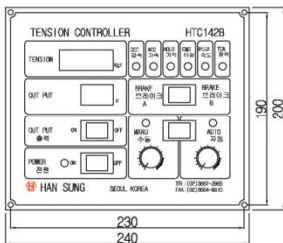
Tension Controller

Auto Tension Controller(HTC-142)

HTC-142



HTC-142B



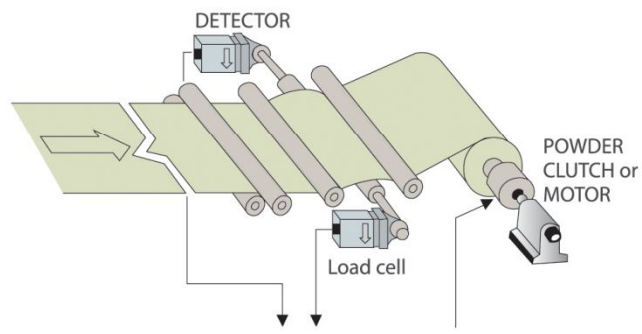
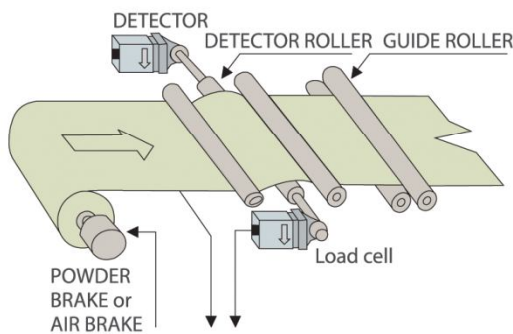
Summary of products

This Auto Tension Controller is to detect the tension of web material by the load cell detector fixing at the both end position for the fine deviation control in order to make the tension difference "zero" between the result and object and control excitation current feeding back from the powder clutch and powder brake, air brake, motor controller.

Mode	HTC-142(Case), HTC-142B(No Case)
Input Voltage	Single AC220V,380V 50/60Hz
Sensor	HST-LAU(R), HST-LBU LOAD CELL
Output	DC 0~24V 6A
Weight	7Kg

Feature

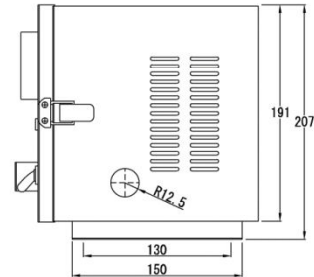
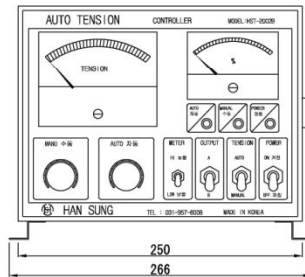
- * All function has digital control
- * Rapid response speed
- * Voltage hold function
- * Setting the Auto or Manual change.
- * Setting the Maximum voltage.
- * Setting the changing time for Auto to Manual or Manual to Auto.
- * Compensation of voltage when change to Auto or Manual.
- * Compensation for reduce the speed or increase the speed.
- * Compensation of A/B convert
- * Signal for No more web material.
- * Can be use Load cell



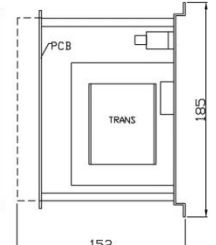
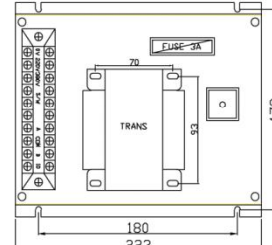
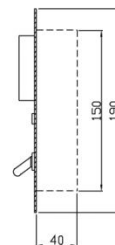
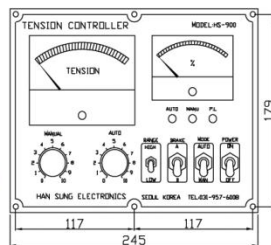
Auto Tension Controller(HST-2002B)



HST-2002B



HS-900



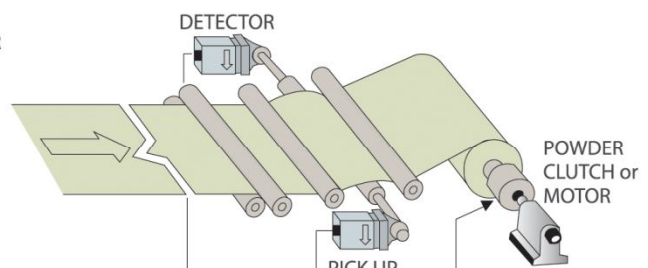
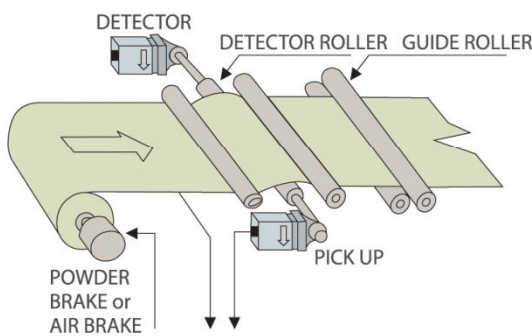
Summary of products

This Differential Tension Controller is to detect the tension of web material by the differential pulse trans. It is automatic control the tension and can control to powder brake, powder clutch, air brake, motor controller.

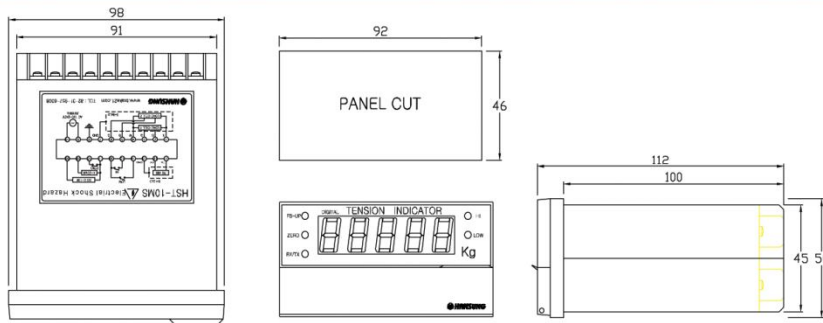
Mode	HST-2002B(Case), HS-900(No Case)
Input Voltage	Single AC220V, 380V 50/60Hz
Sensor	HS-PU101, Differential type(PICK UP)
Output	DC 0~24V-5A
Weight	7Kg

Feature

- * Rapid response speed
- * Setting the Maximum voltage.
- * Possible to change the Auto or Manual.
- * Use Pick up type sensor.
- * Little Noise as differential trans type.



Tension Controller Tension Indicator(HST-10MS)



Summary of products

This is a controller of digital CPU (Microcomputer) type. This Digital Tension Controller use Load cell to detect the tension of web material. It is for the motor controller as correct output rate and for the detector a present tension.

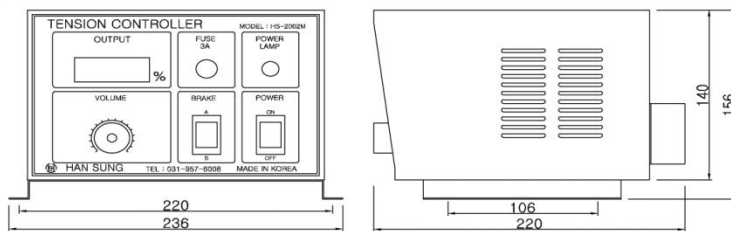
Mode	HST-10MS
Input Voltage	Single AC 100~230V 50/60Hz
Sensor	HST-LAU(R), HST-LBU LOAD CELL
Output	DC 0~10V, 4~20mA(Canbe converse output voltage) LOW(Point of output voltage), HI(Point of output voltage) RS 485 Telecom.(Option)
Weight	0.5Kg

Feature

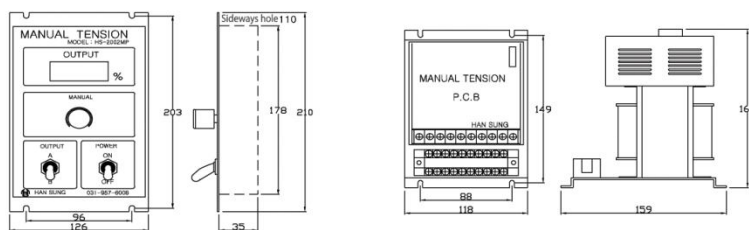
- * All function has digital control
- * Rapid response speed (5ms)
- * Memory of Auto zero point
- * Calculate the span of each Load cell and auto setting.
- * Span auto setting.
- * Possible to DC 0-10V output.
- * Possible to DC 4-20mA output.
- * Reverse or non-reverse of output.
- * Setting Minimum tension value, output the connect point.
- * Setting Maximum tension value, output the connect point.
- * Convenient Output setting.
- * Correct output rate as weight.
- * Filtering of output.
- * Precise as Load cell
- * Telecommunicate (Option)

Manual Tension Controller(HS-2002M)

HS-2002M



HS-2002MP



Summary of products

This Manual Tension Controller are control to Powder brake and Powder clutch by just one volume.

Mode	HS-2002M, HS-2002MP
Input Voltage	Single AC220, 380V 50/60Hz
Output/Weight	DC 0~24V 5A / 7Kg

Feature

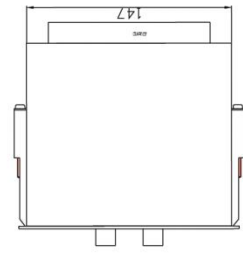
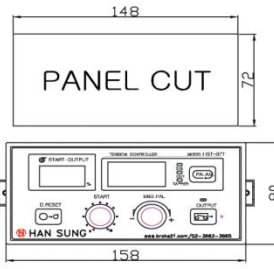
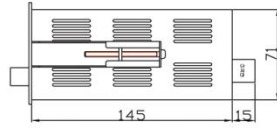
- * Rapid response speed
- * Control by exterior voltage (DC 0-10V)
- * Voltage down as precisely slope.
- * Lower price.

Tension Controller

Taper Tension Controller(HST-07T)



HST-07T



Summary of products

Taper Digital Tension Controller is tension controller of Mic-Com type. Taper tension will control the powder brake & clutch, air brake, motor controller as proximity sensor.

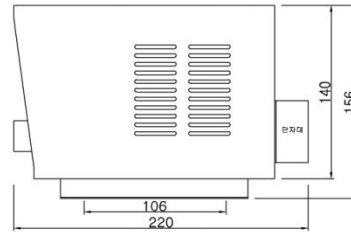
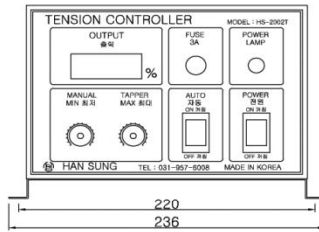
Mode	HST-07T
Input Voltage	Single AC220V 50/60Hz
Sensor	Proximity sensor(PNP type)
Output	DC 0~24V 5A DC 0~10V(Option) , 4~20mA(Option)
Weight	2Kg

Feature

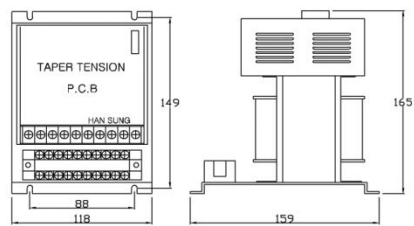
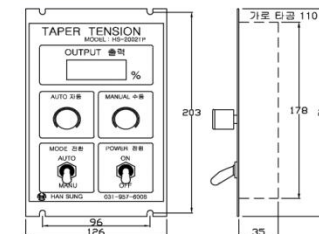
- * All function has digital control
- * Rapid response speed (10ms)
- * Easy to install as proximity sensor (PNP type)
- * Voltage down as precisely slope.
- * Easy to install as small size.
- * Avoid old type of potentiometer.
- * Compensation of voltage when emergence stop.
- * Setting the Maximum voltage.
- * Compensation of Lower voltage.
- * Taper tension control.
- * Variety output.
- * Telecommunicate (Option)
- * Lower price.



HS-2002T



HS-2002TP



Summary of products

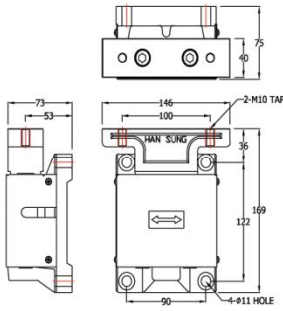
Taper Tension Controller is tension controller of potentiometer type. Taper tension will control the powder brake & clutch, air brake, motor controller as potentiometer.

Mode	HS-2002T, HS-2002TP
Input Voltage	Single AC 220,380V 50/60Hz
Sensor	Potentiometer (1KΩ~10KΩ)
Output	DC 0~24V 5A
Weight	5.5Kg

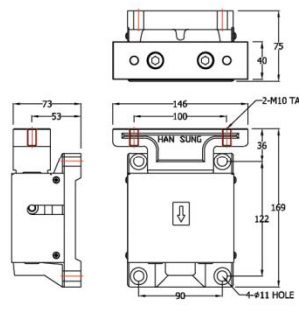
Feature

- * Rapid response speed
- * Use potentiometer
- * Voltage down as precisely slope.
- * Setting the Maximum voltage.
- * Compensation of Lower voltage.
- * Lower price.

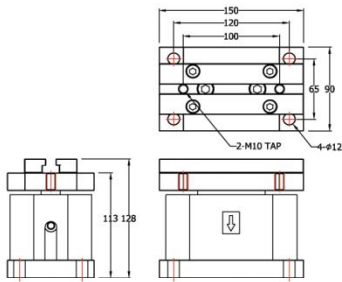
Tension Controller Tension Detector(LOAD CELL)



HST-LAR



HST-LAU



HST-LBU

Summary of products

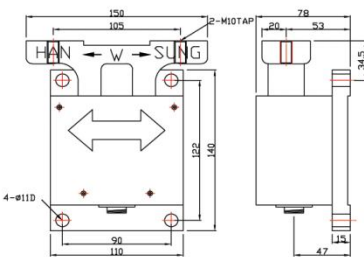
Sensor of tension detector, as use Load Cell of Electric scales. As so very precise and no turn aside of "zero point"

Mode	HST-LAU, HST-LAR, HST-LBU
Apply Controller	HST-700S, HTC-142(B) HST-10MS, HTC-300
Weight	HST-LA type 2Kg HST-LB type 5Kg

Feature

- * Rapid response speed
- * Variety size and option
- * Precisely slope tension detector.
- * Possible to work with High Precise.
- * Precise "zero point"

Tension Detector(Pick up) HS-PU101



Summary of products

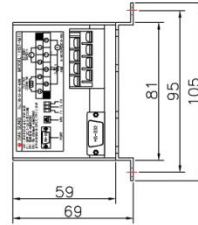
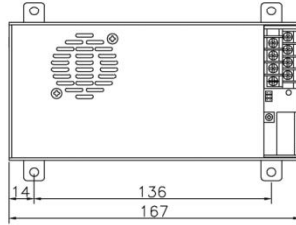
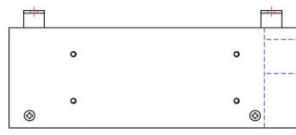
Tension Controller SMPS is tension controller of Mic-Com type. Possible to Control the powder brake & clutch as connect the variety external signal and rheostat.

Mode	HS-PU101 (1.5T, 2.5T, 3.5T)
Apply Controller	HST-2002B, HS-900
Weight	5Kg

Feature

- * Rapid response speed
- * Variety size and option
- * Precisely slope tension detector.
- * Possible to work with High Precise.
- * Protect strong of noise.

Tension Controller SMPS(HST-M11)



Summary of products

Sensor of tension detector, use as the differential trans. As so very precise and protect strong of noise.

Mode	HST-M11
Input Voltage	Single AC220V 50/60Hz
Input Signal	DC 0~10V, 0~5V, Variable resister(2~10kΩ) RS-232 Telecom.
Output	DC 0~24V 5A (current & voltage)
Weight	0.5Kg

※ Cable option

Feature

- * All function has digital control type.
- * Rapid response speed (10ms)
- * Control as exterior power.
- * Control the right output power as digital type.
- * Small and light as SMPS type.
- * Possible to select the current control and voltage control.
- * Possible to RS-232telecom
- * Lower Price

LINE & EDGE FOLLOW CONTROLLER

It is the detector adjusting the edge of the web in line as light source or ultra sonic emitting sensor, so detects the edge of the web without touching them.

And so the signal on the receipt part detects the position of the web, amplified power at the receipt part provides \pm voltage to moving coil. After that the voltage provided to moving coil is transformed to mechanical power, which moves spool, sends pumped oil pressure from hydraulic pump to cylinder, and moves the opposite wheels of un-winder and rewinder left and right, and positions the web at the center of detector sensor. If the edge of the web is located at the center of sensor, voltage is not supplied to moving coil, so spool would maintain the balance.

In case of opaque materials, light emitting part is consist of L.E.D. and receiving units is consist of C.D.S.as so that is semi-permanent and excellent detecting.

You can call " Line Position Controller " or " Edge Follow Controller "

HS-200L

Hydraulic Fluid Line Position Controller Sensor HS-LS51, HS-EL33

HS-200E

Hydraulic Fluid Edge Position Controller Sensor HS-US50, HS-ES41, HS-102E, HS-102E-50

HS-200B

Hydraulic Fluid Line & Edge Position Controller Sensor HS-BS11

HS-300S

Hydraulic Fluid Line & Edge Position Controller with Lifter

HS-300L

Hydraulic Fluid Line & Edge Position Controller with Lifter and Large Tank

HSGR-S

End Pivot Single Type

HSGR-D

End Pivot Double Type

LIFTER

Lifter for order

CY-50, 63

Cylinder

HS-600L

Digital Motor L&E. P. C. Amplifier

HSE-09L

Small Digital Motor L&E. P. C. Amplifier

HS-500L

Analog Motor L&E. P. C. Amplifier

HS-A180L / 300L

Motor Actuator

HSGR-S-M

End Pivot Single Type for Digital

HSGR-D-M

End Pivot Double Type for Digital

CENTER PIVOT GUIDE

SENSOR

HS-LS51
HS-BL33
HS-US50
HS-BS11
HS-ES40S
HS-ES41
HS-102E
HS-102E-50

EXAMPLE FOR INSTALL OF POSITION CONTROLLER



E.P.C > Oil pressure

L.F.C. or E.P.C. (HS-200L)

Powder Brake

Powder Clutch

Tension Controller

E.P.C

Other Products



L.F.C(HS-200L) Feature

As use the High sensitive detect diode CDS, so excellent detection. We use the ultra brightness LED not old type of light ball so that is semi-permanent and excellent detecting. It is detect the line or edge of web material so that is good for Printing machine, Coating machine, Slitter machine.

HS-LS51

HS-EL33



E.F.C(HS-200E) Feature

It is detect the edge of web material as use Ultra sonic sensor and Reflection mirror. That is semi-permanent and excellent detecting. It is good for Laminating machine, Coating machine, Board-posting machine.

HS-US50

HS-ES41

HS-102E

HS-102E-50

HS-ES40S



B.E.F.C(HS-200B) Feature

It is detect the edge of web material as use Infrared light sensor. It is use for Opaque or transparent web material. It is good for Laminating machine, Coating machine, Board-posting machine.

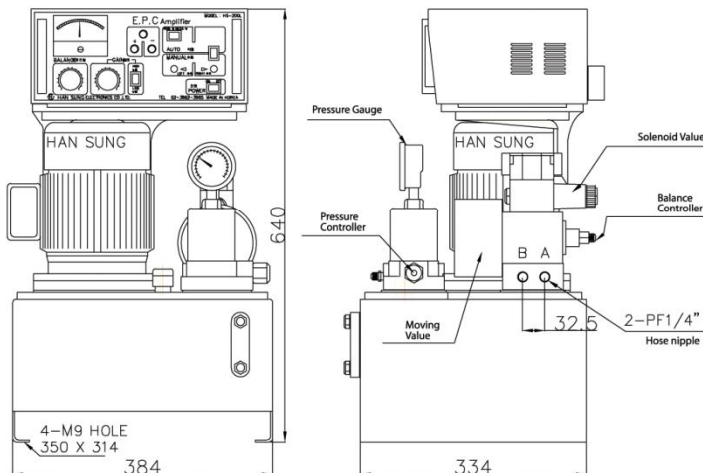
HS-BS11



SPEC.

Motor	Three Pulse AC 220V~440V 50/60Hz (1/2~1hp)
Pressure	1.0Mpa (10Kg/cm ²)
Pump Capacity	7.0ℓ/min
Temp.	-10℃ ~ +50℃
Oil	18ℓ
Oil Spec.	Regulator Oil 32~ 46
Weight	50Kg (Not include oil)
Accessory	Low oil press 50*s/t150*1ps Hose 3M*2ps

* When you order, make sure your Voltage and HZ.



E.P.C > Oil pressure Lifter

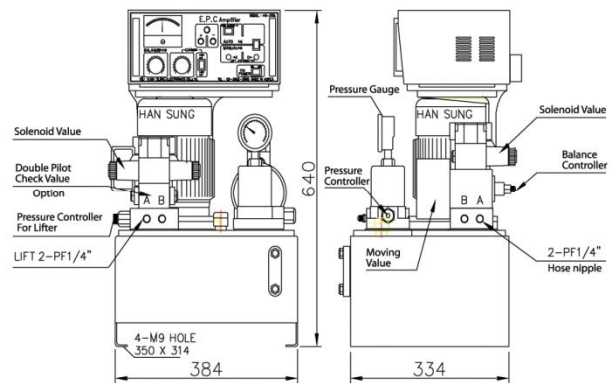
Lifter Feature

It is added LIFTER on HS-200L, E., B., so easy to change the web material. Press of Lifter can use Moment press.

When you order, make sure your Voltage and HZ.

SPEC.

Motor	Three Pulse AC 220V~440V 50/60Hz (1hp)
Pressure	E.P.C 1.0Mpa (10Kg/cm ²) Lifter 6.0Mpa (60Kg/cm ²)Moment Press(10sec.)
Pump Capacity	7.0ℓ/min
Temp.	-10℃ ~ +50℃
Oil	18ℓ
Oil Spec.	Regulator Oil 32~ 46
Weight	54Kg (Not include oil)
Accessory	Low press cylinder 50*s/t150*1ps / Speed Value(option) Oil hose 3M*2ps / Pilot check value(option)



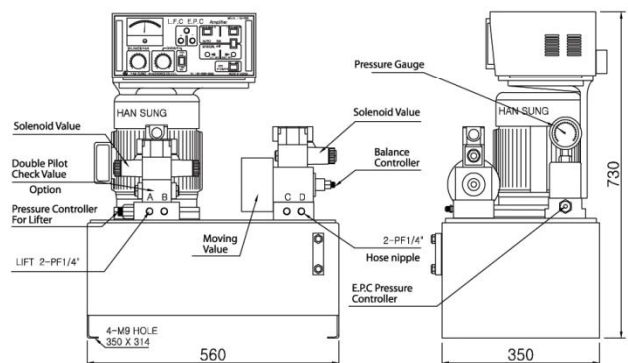
Large Tank of L. F. C. or E. P. C.

Large Tank of L. F. C. or E. P. C. Feature

It is large Hydraulic oil tank than 200 serial. It is good for the Heavy and fast cylinder of Winder. Normally applied iron or paper web material.

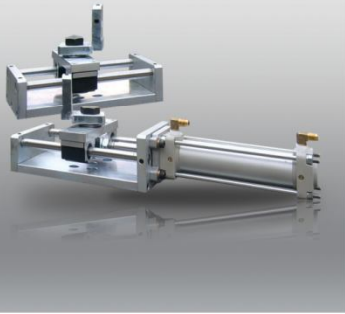
SPEC.

Motor	Three Pulse AC 220V~440V 50/60Hz (1~2hp)
Pressure	E.P.C 1.0~3.0Mpa (10~30Kg/cm ²)
Pump Capacity	7.0~10ℓ/min
Temp.	-10℃ ~ +50℃
Oil	26ℓ
Oil Spec.	Regulator Oil 32~ 46
Weight	80Kg (Not include oil)
Accessory	Low press cylinder 50*s/t150*1ps / Oil hose 3M*2ps / Lifter(option)

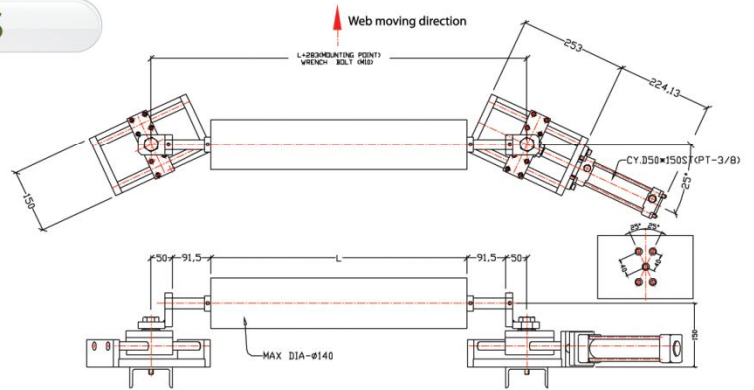


※ Can be produce other model by order

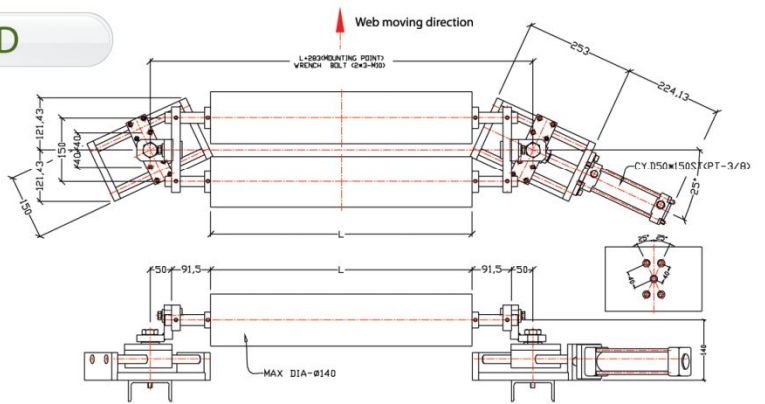
E.P.C > Oil pressure End Pivot Guide



HSGR-S



HSGR-D



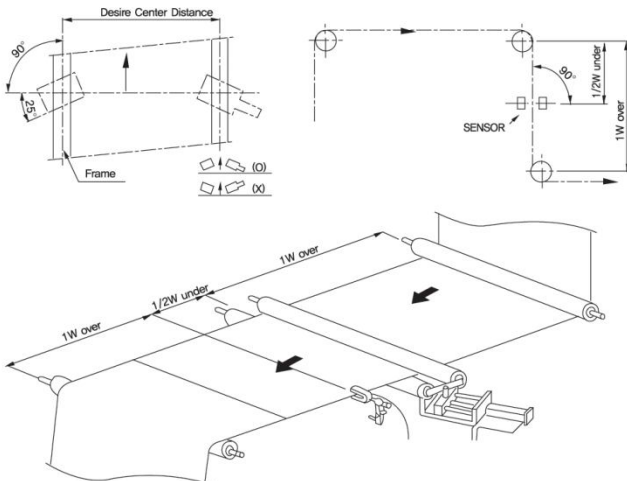
Feature of products

This End Pivot Guide install between 1 Roll and 2 Roll which chosen according to the place being used. Normally applied for the light web material like Cellophane, Vinyl or Polyethylene that are flexible and enough to absorb the tension-change at both end position of web material. Very convenient and easy to install it to the existing machine of facilities.

Motor	HSGR-S(Single), HSGR-D(Double) Ø25,30
Max Control Angle	±5.2
Control Aberration	0.1mm
Weight	20Kg (Except Roller)

※ When you order,ask Ø25 or Ø30

Install



* Basically the curve angle keeps 90 degrees between Guide-roll & Web. However, allowed a slight difference of angle unless any slip happens.

* Even though, Distance of entering roller is short, If processing by force, it can bring out of control or a creases.

* Install the sensor position has 90 degree of web material.

E.P.C > Oil pressure Special Lifter Order

Special Lifter Order Feature

It is good for When you use many cylinder.
Easy to use for change the web material or move to Left or Right of Corn type Un-winder. Moment high voltage can use very high voltage.
It is order item so You can do best Producing condition.

SPEC. ※ Can be produce other model by order

Motor	Three Pulse AC 220V~440V 50/60Hz(1~2hp)	Temp.	-10°C ~ +50°C
Pressure	1.0~10.0Mpa (10~100Kg/cm ²)	Oil Capacity	18~26ℓ
Pump Capacity	7.0~10ℓ/min	Oil Mode	Regulator Oil 32~46



Cylinder & Part

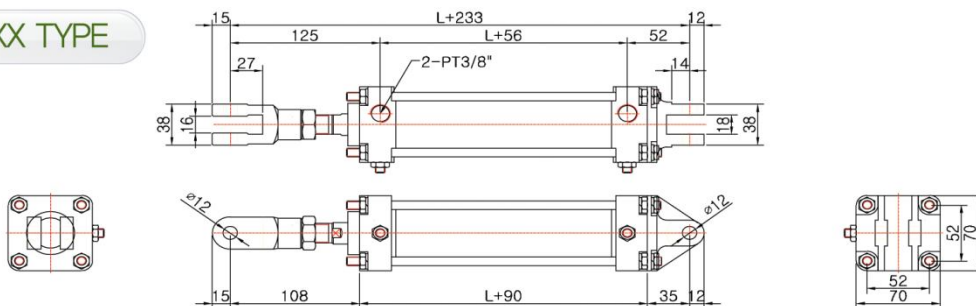
Lowpress Cylinder(CY-50,63)

SPEC.

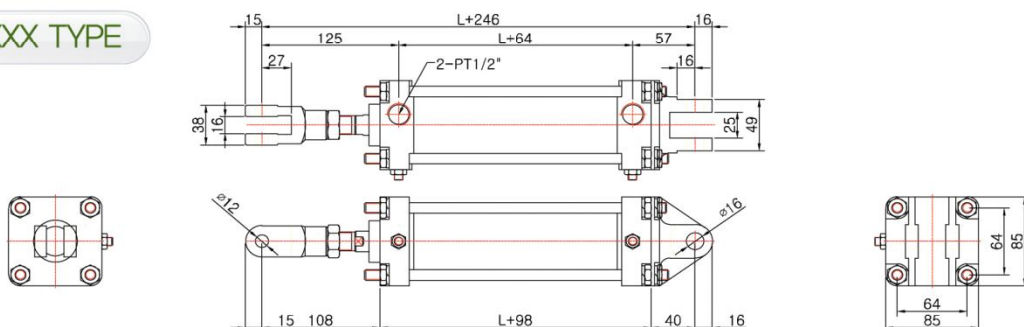
Oil	Hydraulic Fluid
Max Internal Pressure	15kgf/cm ²
Mini Pressure	0.5kgf/cm ²
Temp.	0~60°C
Piston Speed	0.5~30mm/s
Stroke	150, 200mm or order



HS-CY-50-XXX TYPE

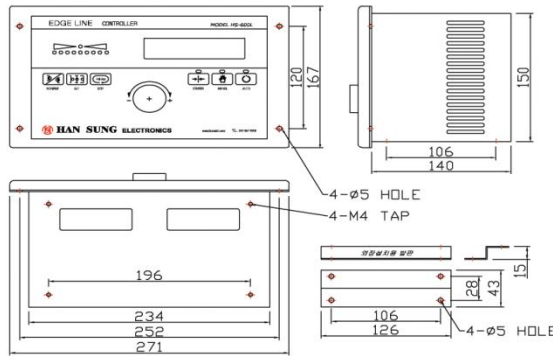


HS-CY-63-XXX TYPE



- ※ Can be change the dimension as by technical develop.
- ※ Possible to order for high pressure cylinder

Digital Motor E.P.C.(HS-600L)



Summary of products

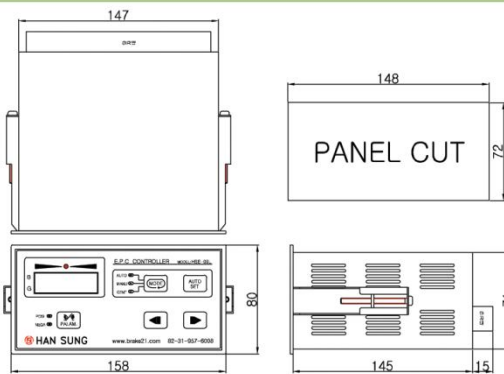
Digital Motor E. P. C. are control the position by Mic-com It does control the position of line or edge of web material as change to digital signal. It is very fast and precious sensor setting as by Patent.

Model	HS-600L
Input Voltage	Single AC220V 50/60Hz
Sensor	HS-LS51, HS-BL33, HS-US50 HS-ES41, HS-102E, HS-BS11
Actuator	HS-A180(300)LD
Output & Weight	DC 0~24V 3A, 5A / 4Kg

Feature

- * All function has digital control
- * Rapid response speed
- * Memory function of Auto sensor balance by button type
- * Auto sense appoint function for sensor balance deflection.
- * Improved admission as used large LCD.
- * Centering function (proximity PNP type)
- * Change the direction Right or Left in Manual condition.
- * You can use all kind of our sensor.
- * Protect the over flow Load.
- * Change to Manual if over flow Load.
- * Possible to use remote controller (Option)

Small Digital Motor E. P. C. (HSE-09L)



Summary of products

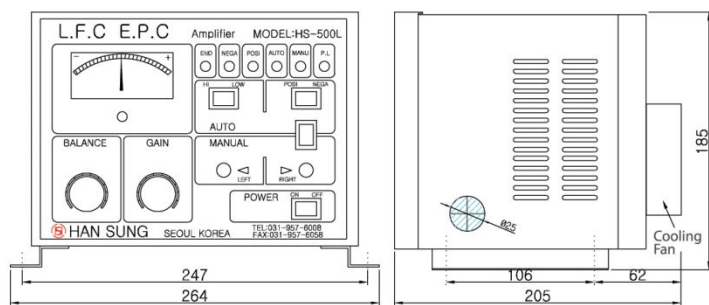
Small Digital Motor E. P. C. are control the position by Mic-com It does control the position of line or edge of web material as change to digital signal. It is very fast and precious sensor setting as by Patent. Easy and convenience install as small and light.

Model	HSE-09L
Input Voltage	Single AC220V 50/60Hz
Sensor	HS-LS51, HS-BL33, HS-US50 HS-ES41, HS-102E, HS-BS11
Actuator	HS-A180(300)LD
Output & Weight	DC 0~24V 3A / 4Kg

Feature

- * All function has digital control
- * Small and Light.
- * Rapid response speed
- * Memory function of Auto sensor balance by button type
- * Auto sense appoint function for sensor balance deflection.
- * Improved admission as used large LCD.
- * Centering function (proximity PNP type)
- * Change the direction Right or Left at Manual condition.
- * You can use all kind of our sensor.
- * Protect the over flow Load.
- * Change to Manual if over flow Load.
- * C. P. C.(Center Position Control) function.

E.P.C > Electric Analog Motor E.P.C.(HS-500L)



Summary of products

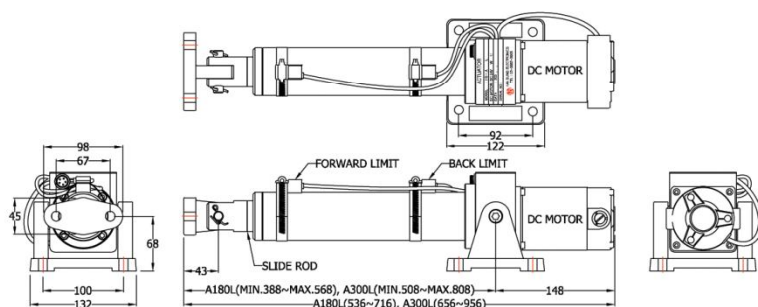
Analog Motor E. P. C. are control the position on line or edge of web material.
It is old type but keep steady selling item.
It's very simple, safety and easy to operating.

Model	HS-500L
Input Voltage	Single AC220/380V 50/60Hz
Sensor	HS-LS51, HS-BL33, HS-US50 HS-ES41, HS-102E, HS-BS11
Actuator	HS-A180(300)L
Output & Weight	DC 0~24V 4A / 7Kg

Feature

- * Rapid response speed
- * Change the direction Right or Left at Manual condition.
- * You can use all kind of our sensor.
- * Protect the over flow Load.
- * Lower price.

Motor Actuator (HS-A180L / 300L)



Summary of products

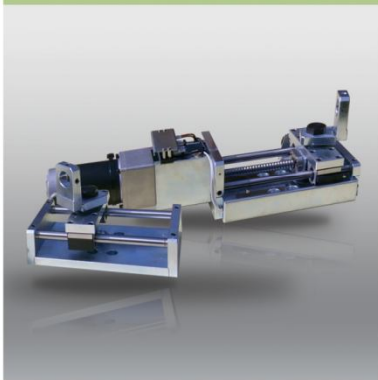
A new design loaded with DC motor combined with ball screw components offering the standard of convenience for maintenance and also improved the power consumption rate, noise problem and physical volume. Also never make dirty on floor so you can keep clean factory. Motor Actuator is operated by DC motor instead Hydraulic fuel. It is high precision in straight-line motion, and possible to control a moving range of straight-line motion with ball screw. Cubic volume of motor actuator is small, and no oil leakage like a hydraulic type, also working semi-permanent life time.

Model	HS-A***L(Analog *** Stroke) HS-A***LD(Digital *** Stroke)
Input Voltage/Motor	DC ±24V / DC 24V 60W
Propulsion power	Oiliness Reduction Gear ratio 1:7(150Kg) Other Option
Output & Weight	DC 0~±24V 5A / 7Kg

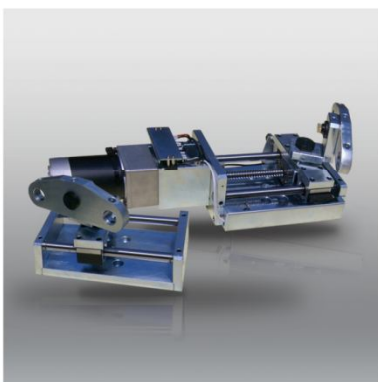
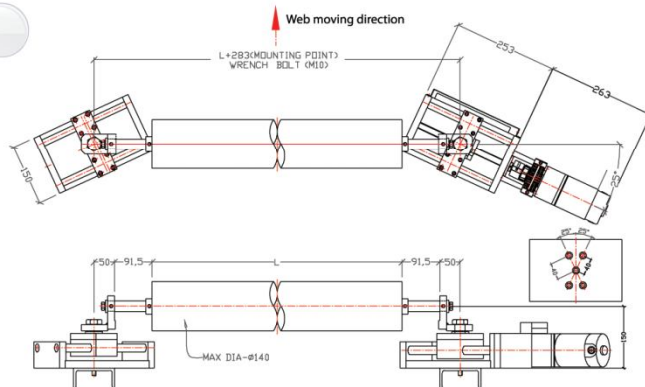
Feature

- * Rapid response speed
- * Applied Oiliness reduction gear at sub-motor.
- * Unification Up and Down Limit
- * Variety stroke control.
- * Up the Precision and torque as applied Ball screw 25Ø Nut 2 circle
- * Excellent precision as ball screw.
- * Lower consumption power and high efficiency.
- * Easy to install and maintenance
- * Lower price.

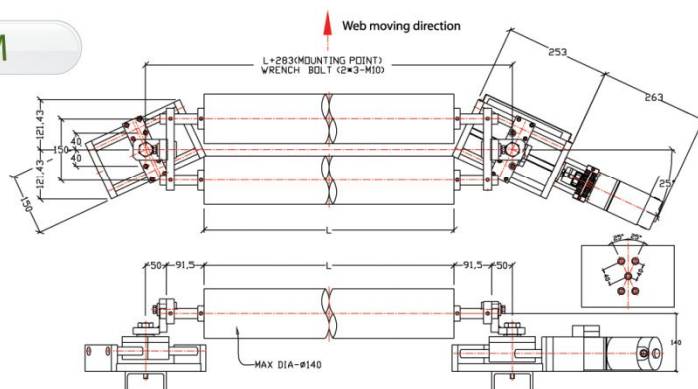
E.P.C > Electric End Pivot Guide



HSGR-S-M



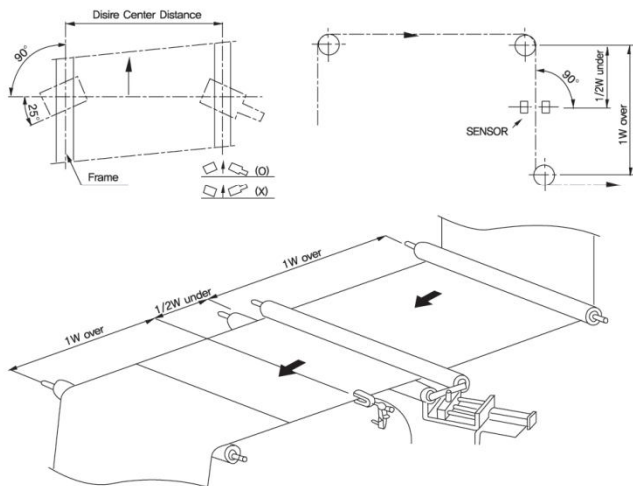
HSGR-D-M



Feature of products

This End Pivot Guide install between 1 Roll and 2 Roll which chosen according to the place being used. This product directs the material to the exact position before it reaches the printing point or cutting point using a hydraulic cylinder. Normally applied for the light web material like Cellophane, Vinyl or Polyethylene that are flexible and enough to absorb the tension-change at both end position of web material. Very convenient and easy to install it to the existing machine of facilities.

Install



Model	HSGR-S-M(Single), HSGR-D-M(Double) Ø25,30
Max Control Angle	±5.2
Control Aberration	0.1mm
Motor Capacity	Gear ratio 1:10 DC 24V 60W
Weight	21Kg (Except Roller)

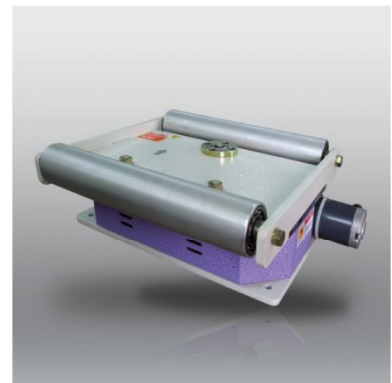
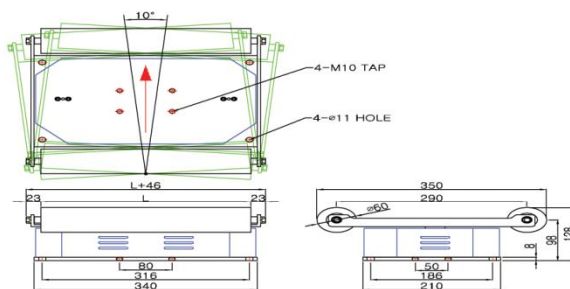
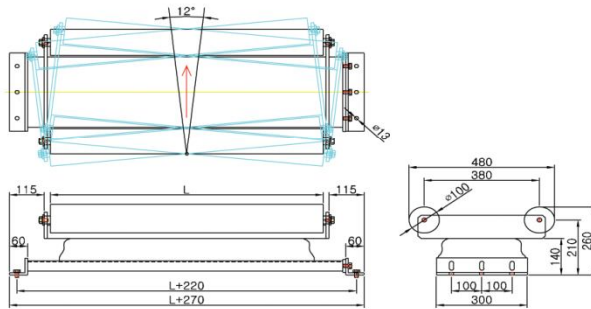
※ When you order,ask Ø25 or Ø30

* Basically the curve angle keeps 90 degrees between Guide-roll & Web. However, allowed a slight difference of angle unless any slip happens.

* Even though, Distance of entering roller is short, If processing by force, it can bring out of control or a creases.

* Install the sensor position has 90 degree of web material.

E.P.C > Electric Center Pivot Guide



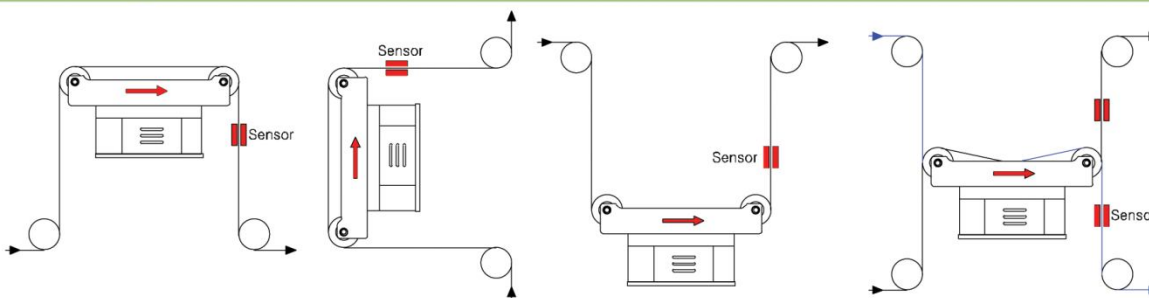
Summary of products

This roller is to straighten & control the position of web processing in taking advantage of the tension difference created at the both end position of Guide-Rod. This guide roller directs the material to the exact position before it reaches the printing point or cutting point Also specially designed for being twisted or torn. Use material are flexible like fiber, Leaf, News paper, printing, coating, polyethylene & plastic etc.

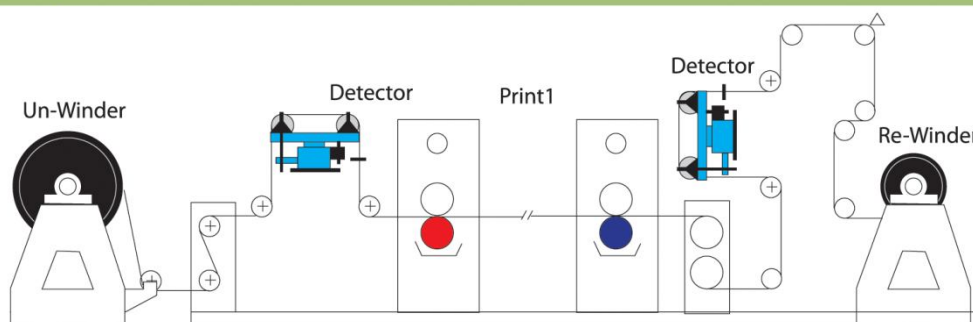
Feature of products

- * It is recommended to use an aluminum roller.
- * Design the roller as a guide type roller not a drum type.

Install Type



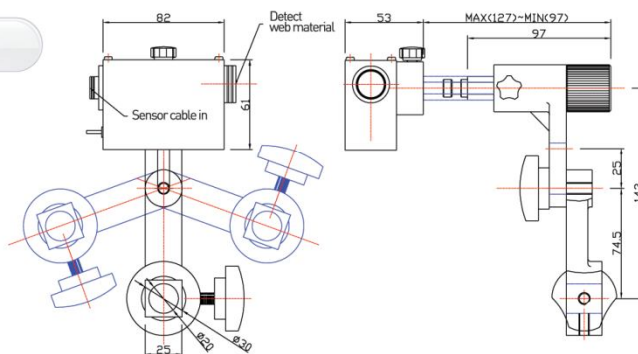
Example



Line or Edge combined Sensor



HS-LS51



Summary of products

This is that accurately detects the Edge or Line by high brightness L.E.D. so you can use semi-permanent and good for the Opaque material also transparent material.

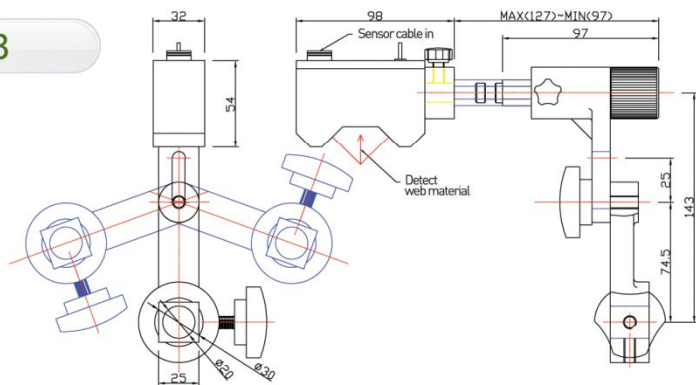
Model	HS-LS51
Input	DC 6~12V
Detect Type	Beam Reflection
Detection Error	0.05mm
Output / Weight	DC 0~3V / 0.7Kg

Feature

- * Rapid response speed
- * Very convenience as used the switch for Edge position or Line position.
- * Applied CDS of high sensitive detect diode
- * Applied high brightness L.E.D. at lighting.
- * Applied reflection of half mirror.
- * Analog output.



HS-BL33



Summary of products

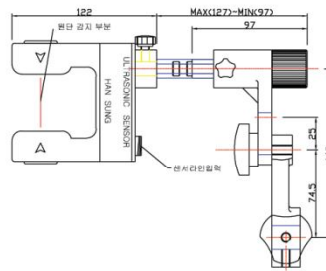
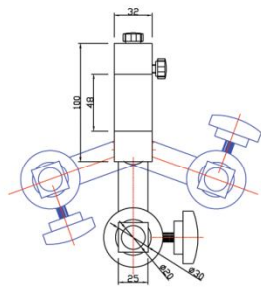
You can use Edge or Line position but better use for Line position as Hologram Line or not cleared color distinction web material. Good for the Opaque material also transparent material.

Model	HS-BL33
Input	DC 6~12V
Detect Type	Beam Reflection
Detection Error	0.05mm
Output / Weight	DC 0~3V / 0.7Kg

Feature

- * Rapid response speed
- * Very convenience as used the switch for Edge position or Line position.
- * Applied CDS of high sensitive detect diode
- * Applied high brightness L.E.D. at lighting.
- * Excellent detect for the Minute Line
- * Analog output.

HS-US50



Summary of products

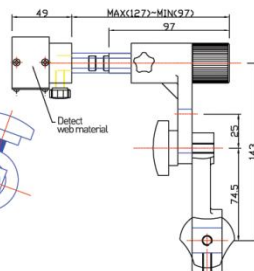
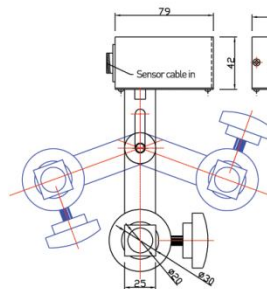
It is a sensor which uses a Ultra Sonic to accurately detect the edge position of no matter any color of web material as Opaque material or transparent material.

Model	HS-US50	Detection Error	0.05mm
Input	DC 12V	Output / Weight	DC 0~4V / 1Kg
Detect Type	Ultra Sonic(200Khz)		

Feature

- * Rapid response speed
- * Completely isolate noise of any exterior light
- * Applied the high sensitive Ultra Sonic diode
- * Work of variety web material.
- * Analog output.

HS-BS11



Summary of products

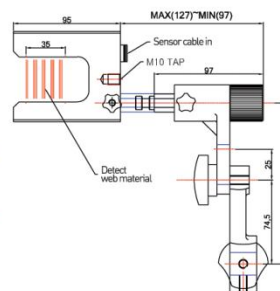
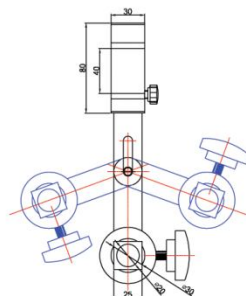
It is a sensor which uses a Infrared rays to accurately detect the edge position of no matter any color of web material as Opaque material or transparent material. It is easy to install as directly reflection type

Model	HS-BS11	Detection Error	0.1mm
Input	DC 12V	Output / Weight	DC 0~3V / 0.6Kg
Detect Type	Beam Reflection		

Feature

- * Rapid response speed
- * Made for easy to change the web material.
- * Applied the high sensitive detected diode
- * Analog output.

HS-ES40S



Summary of products

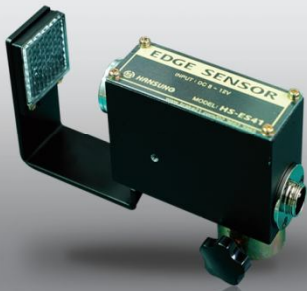
It is a sensor which control Direct transmit the Infrared rays at Edge of web material. and designed that No more Noise Interference as exterior light by filtering use the microcomputer. Detect setting of web material has more convenient the control as the constant Output value has setting on sensor and then that value send to amplifier. Easy to confirm the location of web material at sensor as applied LED bar. You can possible to do the CPC control, cause detect width of sensor has very wide.

Model	HS-ES40S	Detection Error	Max 32mm / 0.05mm
Input	DC 12V	Output / Weight	DC 0~5V / 0.7Kg
Detect Type	Direct transmit the Infrared rays		

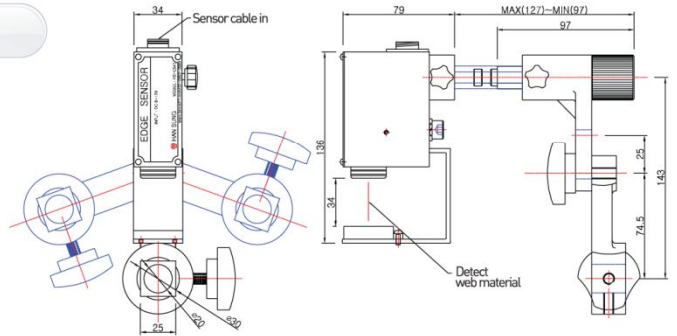
Feature

- * Rapid response speed
- * Completely protective circuit for noise of any exterior light.
- * Constant Output for web material.
- * Applied the high sensitive detected diode.
- * Convenient setting as applied Microcomputer.
- * Applied high brightness L.E.D. at lighting Panel.
- * Analog output.

E.P.C > Sensor Edge only



HS-ES41



Summary of products

It is a sensor which uses a reflection mirror to accurately detect the edge position of no matter any color of web material as Opaque material or transparent material. It is easy to install as directly reflection type

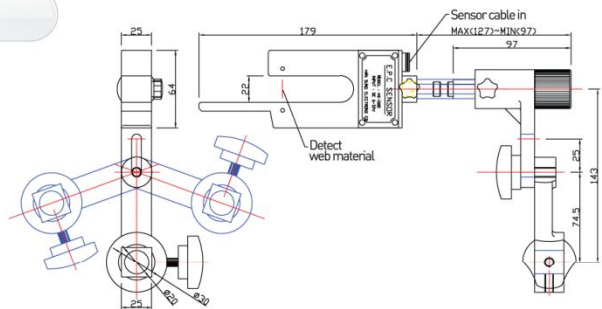
Model	HS-ES41
Input	DC 6~12V
Detect Type / Error	Mirror Reflection / 0.05mm
Output / Weight	DC 2~6V / 0.9Kg

Feature

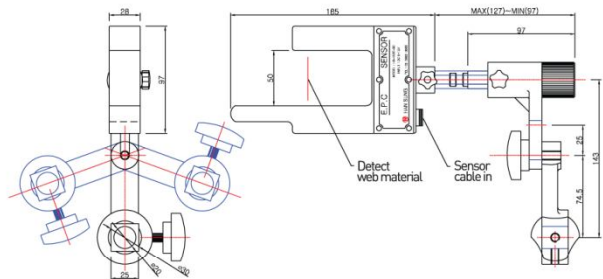
- * Rapid response speed
- * Applied high brightness L.E.D. at lighting.
- * Applied the high sensitive detected diode
- * Completely compensation circuit of any exterior light
- * Analog output.



HS-102E



HS-102E,-50



Summary of products

It is a sensor which uses a direct transmit the Infrared rays to accurately detect the edge position of Opaque material.

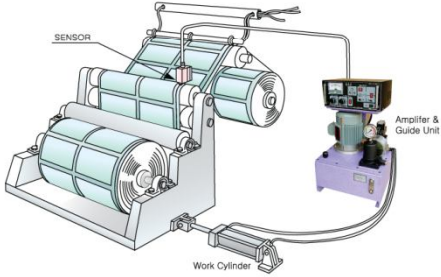
Model	HS-102E(width 22mm), HS-102E-50(width 50mm)
Input	DC 6~12V
Detect Type / Error	Infrared rays / 0.1mm
Output / Weight	DC 0~3V / 0.9(1.2)Kg

Feature

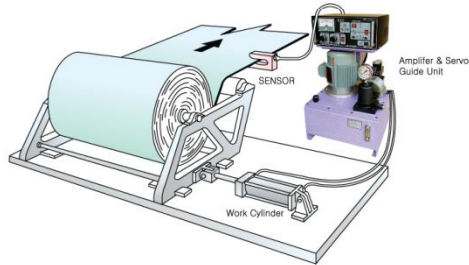
- * Rapid response speed
- * Applied the high sensitive detected diode
- * Analog output.
- * Lower price.

E.P.C System of Structure

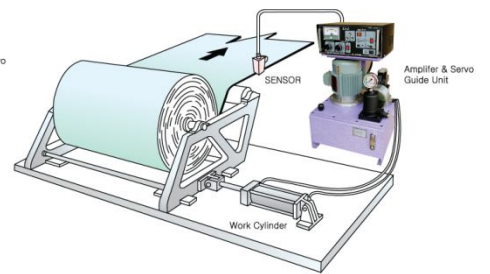
L.F.C Install Example



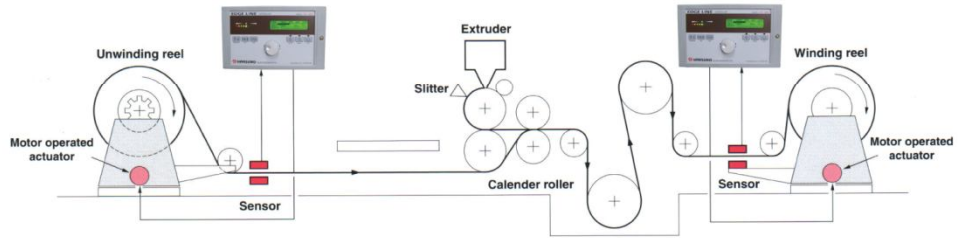
E.P.C Install Example



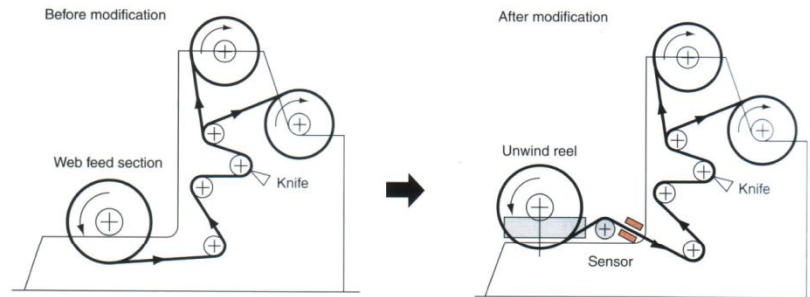
B.E.P.C Install Example



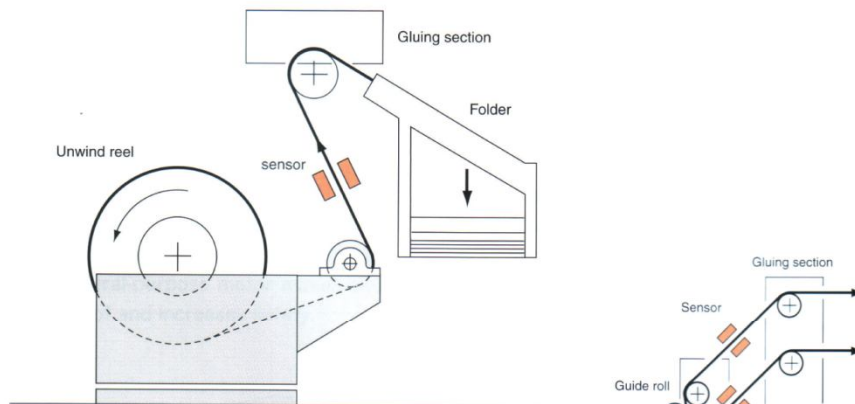
Laminator



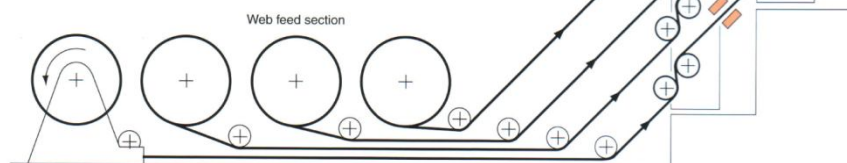
Slitter



Packing machine



Bag making machine



POWDER SPRAY & TRIMMING WINDER

POWDER SPRAY

This Powder Spray is machine for spread powder on web surface in the progress of work such as printing or slitter and laminator, which protect products as web material does not stick together. So this machine should applied to place that have to spread definite powder equally as using high voltage. This machine use specific high-voltage cable to take definite spray effect.

TRIMMING WINDER

This Trimming Winder is wind the remnant to reel instead blow out with ring blow type during operate the slitter or sealing etc.



Other products

Powder Spray(HS-PS)

Summary of products

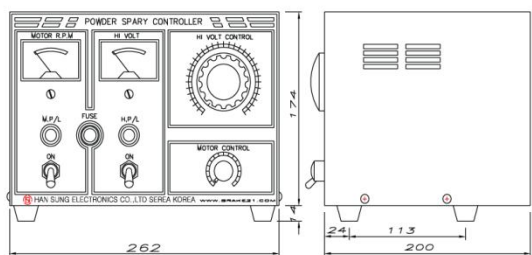
This Powder Spray is machine for spread powder on web surface in the progress of work such as Printing or slitter and laminator, which protect products as web material does not stick together. So this machine should applied to place that have to spread definite powder equally as using high voltage. This machine use specific high-voltage cable to take definite spray effect.



Feature

1. Quantity & even-spray are controlled by the variable high pressure
2. Easy for the proper machine & line-speed control by the variable motor speed.
3. Used the high voltage cable to increase spraying effectiveness and solve the eccentric problem.
4. Designed the bracket for the easy installation to the main machine and save the installation expense.

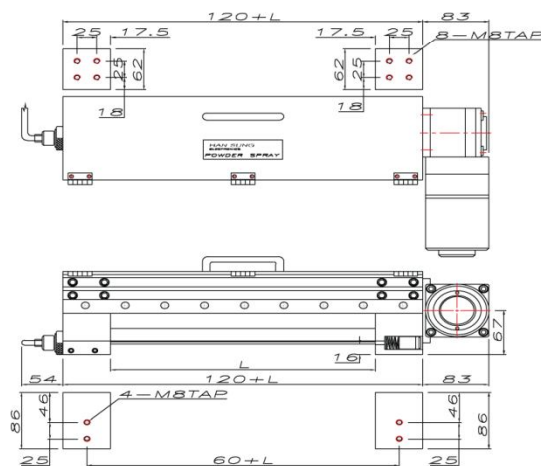
SPEC.



1) SPRAY CONTROLLER

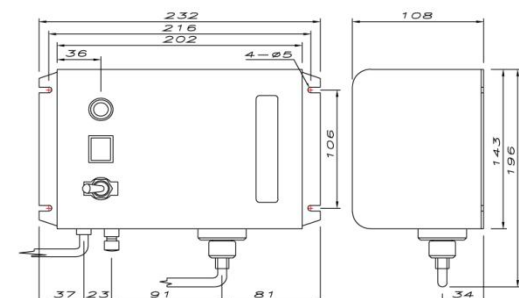
This control part and the main body can be separated so that it can be mounted on a panel.

Input	AC220V, 50/60Hz
Output	RPM/AC VOLT
Output-1(TRANS)	0~220V Output
Output-2(MOTOR)	0~220V Output
Temp.	-10~40°C



2) SPRAY ROLLER

Motor Input	AC220V, 50/60Hz
Output	RPM/AC VOLT
Temp.	-10~40°C



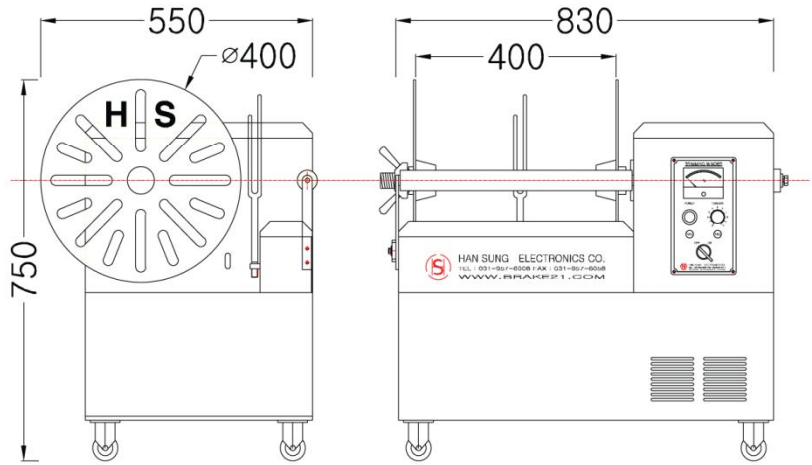
3) High Voltage TRANS

This generates static electricity using high voltage in order to evenly spread the powder without being clustered together

Input	AC220V, 50/60Hz
Output	0~10000 VOLT
Temp.	-10~40°C

※ Can be change the dimension as new technologize(Can be produce other model by order)

Trimming Winder(HS-2006TW)



Summary of products

Trimming Winder is wind the remnant to reel instead blow out the remnant with ring blow type during operate the slitter or sealing etc.

Mode	HS-2006TW
Input	Three Phase AC220,380V 50/60Hz
Control Type	Voltage Control Powder Clutch Control (option) Being Inter Locked Control (option)
Line Speed	80m/min, 150m/min, 300m/min (other by order)
Winding Diameter	400mm/Ø400
Motor Capacity	20Kg/cm, 40Kg/cm
Weight	30Kg

Feature

- * Applied torque motor.
- * It is reduced size
- * It is very quiet as no air blow noise.
- * Easy to keep the remnant after work.
- * It is very convenient for rewinding.
- * Easy to moving the machine as 4 wheel on bottom.
- * Possible to use Clutch by order (Option)
- * Possible to being inter locked control (Option)

※ Can be change the dimension as new technologize(Can be produce other model by order)

We were the star of korea until yesterday,
but now, We will be the global reader
who leads the world technical knowledge.

FIRST

HAN-SUNG Electronic Co. LTD are made a Powder brake,
Powder clutch, Tension controller, E. P. C. and other
(Powder Spray, Trimming winder). by own technology
which it put out already the industry become standard,
and also, one step forward, we trying to do will become the
standard of world-wide technique as creative and
challenge spirit of a more knowledge.

BEST

The best technical power is fraction defective 0%.
So our all products were produce by own technique and
auto system, and so, our company products supplied most
of domestic, that is our greatest power.
we will go on best quality and new mode for
customer satisfactory service

GLOBAL

Our volition are never stop the research and
development for the top of world wide.
Repeatedly, We are continued that ambition is a
springboard for ours future and global leader.