

# AC Tractive Electromagnets

AC tractive electromagnets include piston type made of multilayer silicon steel plate and frame type made of cold-rolled calendaring steel. And there are more than thirty sorts of standard types, which are composed of attractive force from 2.9N (0.3kgf) to 117.6N (12kgf) and travel from 10mm to 40mm.

## We Are More Specialized In Tractive Electromagnets

### ■ Features

#### Structure With High Abrasion Resistance

The whole coil is shaped by casting nylon with the integrated structure with frame work coil, which intensifies the features of electrical performance and mechanical performance and takes on high faith.

#### Long Service Life

The electromagnet, as an important functional component, determines the performance of supported machines. To extend the service life of electromagnets, we are engaged in improving production technology, and therefore the products with life of over one million times can be used. (Please ask for more information about product service life.)

#### Outstanding Insulating Performance Of Framework

Formed (equivalent to type B insulation) by unique coil casting process technology of our company and with glass heat-resistant belt treatment (equivalent to type A insulation), the product has outstanding heat resistance, water resistance and impact resistance, etc.

#### Various Sorts For Various Purposes

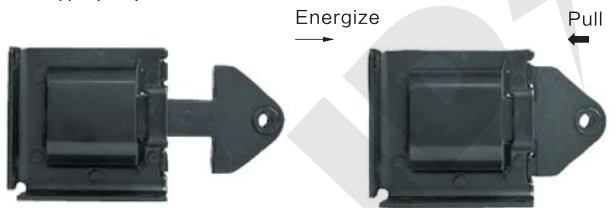
There are more than thirty sorts of standard types according to different specifications of the attractive force from 2.9N (0.3kgf) to 117.6N (12kgf), which forms an energy-saving and automatic product series suitable for various industries.

#### Simple Installation

With the options of horizontal installation, vertical installation and both-side installation, simple installation is achieved by fixing the installing hole of side plate.

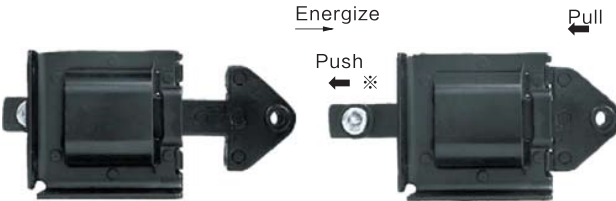
#### Purpose Of Two Sorts

##### ● Pull type (Pull)



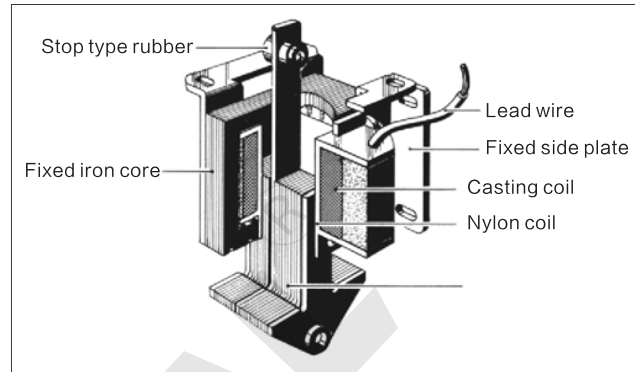
The trunk piston, after being energized, can work to pull, which is therefore called pull type.

##### ● Push-pull type (push pull)



The trunk piston, after being energized, produces pulling force, and meanwhile the extrusion is made in the reverse direction (stop type rubber). It has the effects of both pulling force and extrusion at the same time, which is therefore called push-pull type.

## Structure Of AC Tractive Electromagnet



The diagram above shows the representative structure of our trunk piston type. The coil is inserted into the inside of the fixed iron core, and therein the movable iron core starts to work. A magnetic field comes into being in the center part of the coil after it's energized, it absorbs the movable iron core to move to the position of the fixed iron core and to adsorb it and drive the external machines to work. At that time, the force is attractive force. The attractive force is used to make the machine own automatic and energy-saving function.

## Brief Introduction To SA Series AC Tractive Electromagnets

SA series AC tractive electromagnets with patent number of ZL00251767.1, which adopts the structure of trunk piston with high quality silicon steel sheet and cast sealed coil, is mainly applicable to the circuit with AC 50Hz or 60 Hz and rated voltage up to 415V for local or remote control of the automatic system of mechanical equipments as well as various operating mechanisms.

## Structure Of Model

ID **SA** - **25** **0** **2** - **220**

AC tractive electromagnet Design No. Coil accomplished  
**0** Casting accomplished  
**9** Winding adhesive tapes accomplished  
 Function distinctions  
**1** Pull type (PULL)  
**2** Push-pull type (PUSH-PULL)  
 Coil Voltage  
**110** : 110V  
**220** : 220V

ID **SA** - **52** - **220**

AC tractive electromagnet Design No. Coil Voltage  
**110** : 110V  
**220** : 220V

\* The basic operation of the electromagnet is, when the current is applied, to insert the movable iron core into the coil and make it adsorbed on the fixed iron core. Except for some products, the movable iron core can't return automatically, so it needs to assemble springs and others to make it return.  
 \* The stop type rubber of push-pull type below grade ID-3702 is used to prevent the trunk piston (the movable iron core) from being pulling out.

## ■ Fault reason and settlement



Fault						Reason	Settlement
Bad attraction	Burnt coil	Return problem	Damaged installing parts	Damaged load connecting parts	Noise (going after the operation)		
<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	Over load	During travel operation, confirm the load characteristic and the electromagnet's attractive force characteristic, and then select machine of suitable rated attractive force.
<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	Abnormal load increase	When designing the structure, take into account the disordered operation of the clutch and the bolt as well as abnormal load increase.
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Extremely light load	The load weight, after the trunk piston is adsorbed, shall be not more than 30% of the rated attractive force of the electromagnet.
<input type="radio"/>	<input type="radio"/>					Supply voltage is too low	Confirm the voltage variation range for structure design to make it workable at the minimum voltage.
	<input type="radio"/>			<input type="radio"/>		Supply voltage is too high	Don't exceed 110% of rated voltage
<input type="radio"/>	<input type="radio"/>					False rated voltage of the coil	Confirm the rated voltage and circuit voltage of the coil before the operation.
		<input type="radio"/>				Adhesive control junction point	According to the pickup current, determine the junction point capacity when selecting the control relays and switches.
<input type="radio"/>						Bad conduction of control junction point	Select the control relays and switches with long service life and reliability.
<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	The operating direction of the trunk piston deviates	The operating direction of the trunk piston shall be in accordance with the load direction.
		<input type="radio"/>			<input type="radio"/>	Loose installing screws	Be sure to use four screws for the installation to avoid looseness.
<input type="radio"/>	<input type="radio"/>					Deflected set travel position	Be sure to use the electromagnet within the travel to avoid the deflection during the operating travel.
<input type="radio"/>	<input type="radio"/>					High-frequent operation makes the temperature rise	Try to use it within the short travel to ensure suitable load operating frequency.
<input type="radio"/>	<input type="radio"/>					Affected by ambient temperature	Operate within the range of 0–40。 C, and try to reduce the frequency and power on rate when it's operated at over 40。 C.
		<input type="radio"/>				Adsorption of oil, water and something adhesive	Usually clean up and keep it tidy when the covering is placed.
<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	Foreign objects on the adsorbing surface	Prevent it from entering the contact surface of the electromagnet iron core.
				<input type="radio"/>		Unsuitable load connecting bolt	Be sure to use screws and bolts with suitable dimensions.
			<input type="radio"/>		<input type="radio"/>	Flatness problem of the installing surface	Pay attention to the flatness of the installing surface and the balance when using rubber gasket.

## Notes Related To Safety

To use our electromagnets safely, please be sure to obey the following points.

### ■ About warning signs

As to notes of operating management, the signs are explained as follows. On the right are the results that may appear when the notes are not obeyed.

Sign	Results which may appear when the notices are not obeyed
 <b>WARNING</b>	Error processing may cause wound or serious injury to human body.
 <b>CAUTION</b>	Error processing may cause injury to user or do harm to the product.

### [Operating notes of AC tractive electromagnets]



To avoid the dangers of electric shock or fire, please obey the following points.

1. Please use rated voltage.
2. Please avoid the product touching water or sinking into water. Please don't use it in the open air.





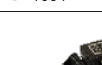











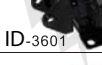







1. Don't use the movable iron core when it stops during operation.
2. Don't energize in case of no movable iron core.
3. Don't absorb or clamp foreign objects from the adsorption surface.
4. Avoid the false connection of the electromagnet with three lead wires. Don't put hands close to running parts during the period of power on.

※ Please inquire for more information for any doubt.

# AC Tractive Electromagnet Model List

## ■ SA Series

Model	Action Forms		Rated travel (mm)	Rated suction N(kgf)	Rated voltage (V)	Rated cycle (Hz)	Insulation type	Insulation Resistance	Frequency voltage	Temperature rise	Rated operating frequency (Electric) rate of 60%	Movable iron core weight (g)	Total weight (g)							
	PUSH-PULL	PULL																		
ID -992			10	4.9 (0.5)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50/ 60Hz Common (2 lead wire)	Type A Insulation	AC 1500V 1minute	85°C below	1500 time/ hour	65	205								
ID -991											ID -991	60	195							
ID-1092											5.8 (0.6)	73	235							
ID-1091												ID-1091	68	225						
ID-1192											7.8 (0.8)	96	295							
ID-1191												ID-1191	91	285						
ID-2402			15	9.8 (1.0)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50/ 60Hz Common (2 lead wire)	Type B Insulation	DC 500V 50MΩ above	AC 2000V 1minute	1200 time/ hour	100	360								
ID-2401											ID-2401	95	350							
ID-2502											14.7 (1.5)	125	430							
ID-2501												ID-2501	120	420						
ID-2602											19.6 (2.0)	150	490							
ID-2601												ID-2601	145	480						
ID-3502			20	29.4 (3.0)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50 or 60Hz (3 lead wire)	Type B Insulation	DC 500V 50MΩ above	AC 2000V 1minute	720 time/ hour	295	1015								
ID-3501											ID-3501	285	1000							
ID-3602											39.2 (4.0)	350	1175							
ID-3601												ID-3601	340	1150						
ID-3702											49.0 (5.0)	405	1315							
ID-3701												ID-3701	395	1280						
ID-4502			30	58.8 (6.0)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50 or 60Hz (3 lead wire)	Type B Insulation	DC 500V 50MΩ above	AC 2000V 1minute	360 time/ hour	745	2650								
ID-4501											ID-4501	710	2580							
ID-4602											78.4 (8.0)	910	3250							
ID-4601												ID-4601	880	3180						
ID-52											40	98.0 (10.0)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50 or 60Hz (3 lead wire)	Type A Insulation	AC 1500V 1minute	85°C below	240 time/ hour	1280	4400
ID-56											117.6 (12.0)	1480							5160	
ID -02			10	2.9 (0.3)	AC220 or AC110 AC380 AC24 AC36 Non-standard voltages can be customized	50/ 60Hz Common (2 lead wire)	Type A Insulation	AC 1500V 1minute	(1minute sustained pull-in) 65°C below	360 time/ hour	18	81								
ID -03			4.9 (0.5)	22							115									

※ Temperature on the rise in the ambient temperature at 20 °C measured when the applied voltage. Experimental conditions and determine the standards based on Q/YPH040-2004