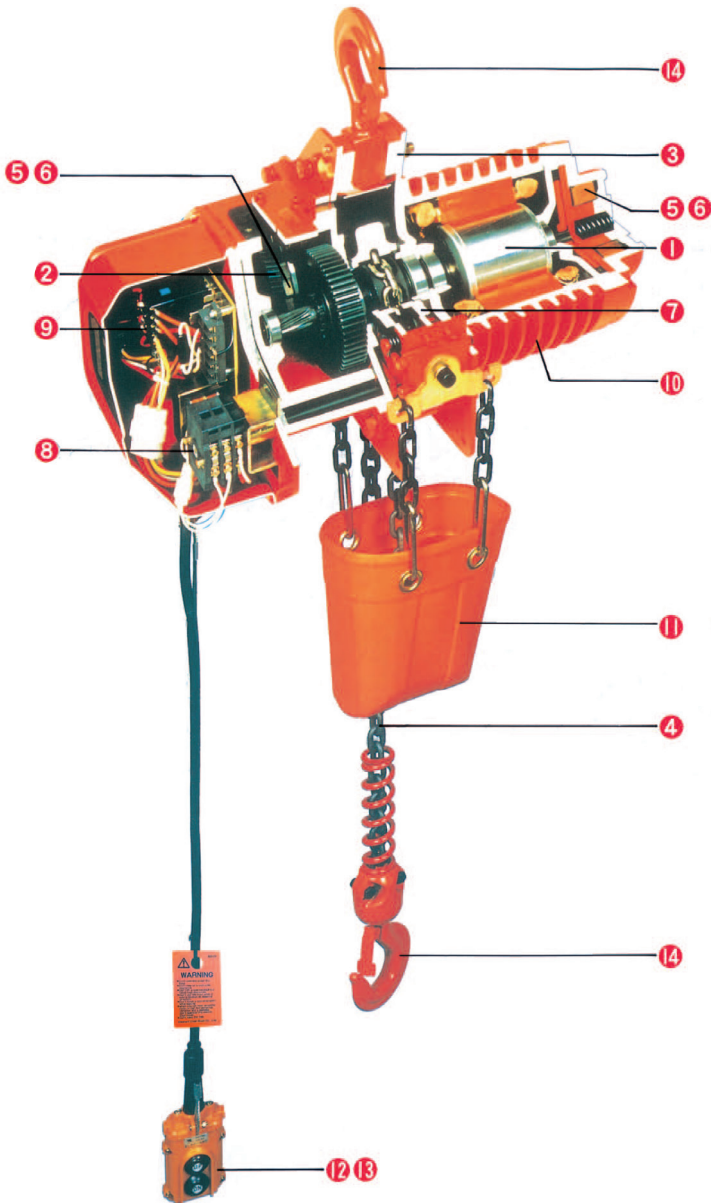




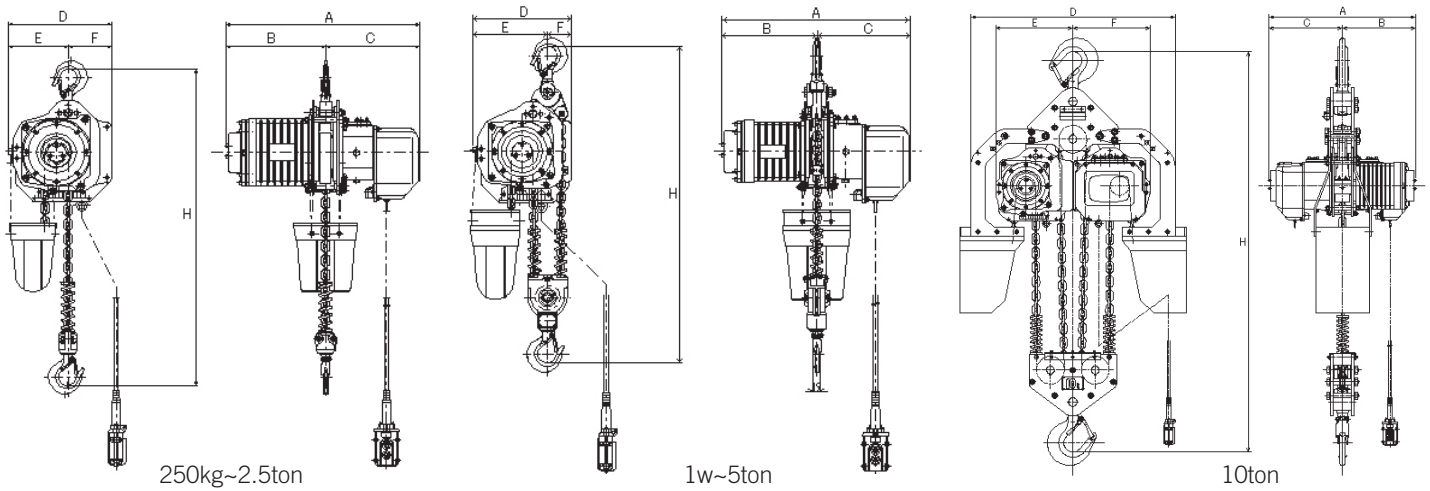
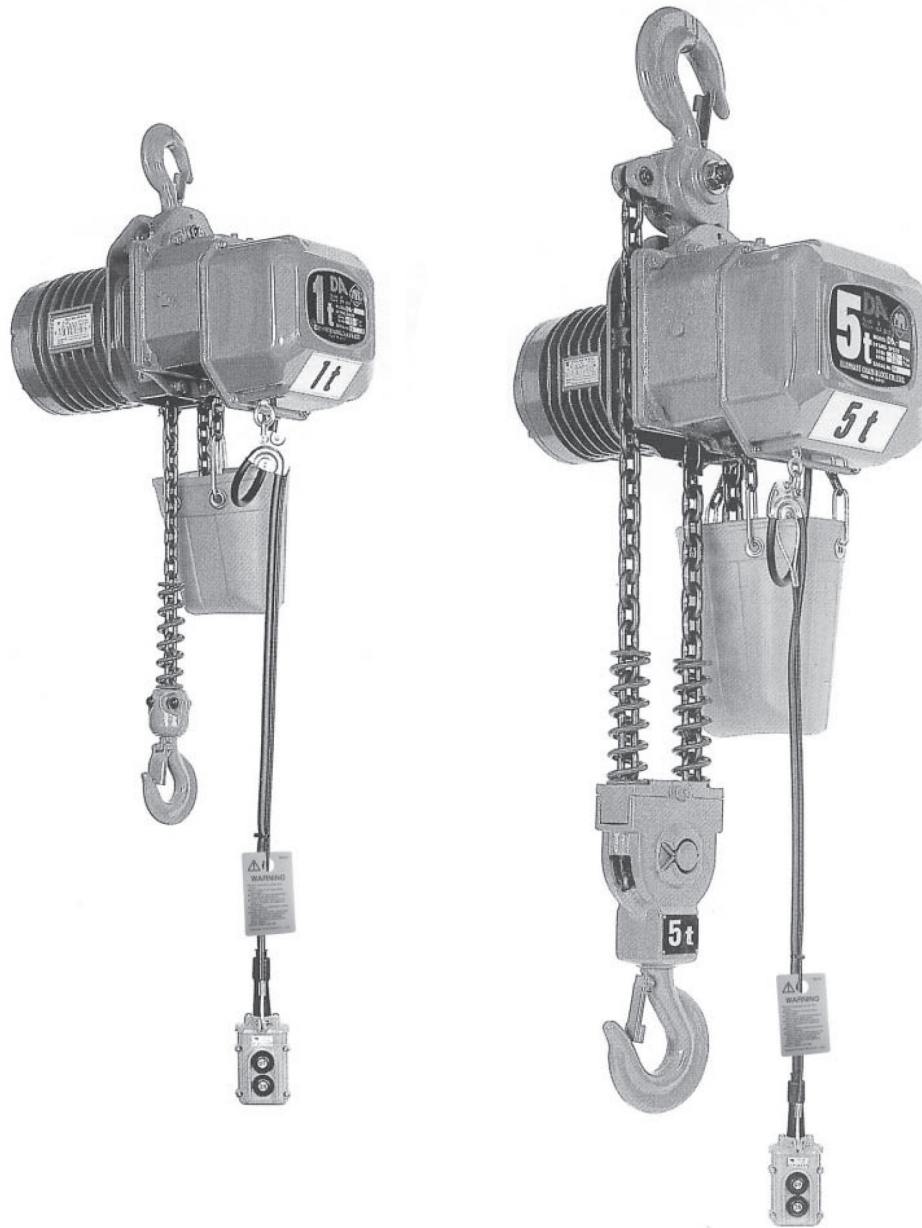
**ELECTRIC CHAIN  
HOIST DA TYPE  
1 SPEED, 3 PHASE  
SINGLE VOLTAGE  
&  
DB TYPE 2 SPEED,  
3 PHASE SINGLE  
VOLTAGE**



## Features of the DA/DB Electric Chain Hoist

- 1 An efficient motor that offers high lift speeds**  
The DA/DB series hoist features a newly developed motor for severe conditions, which allows it to operate continuously for long periods of time with frequent starts within an hour cycle. These lifting speeds were engineered to be as fast as possible to ensure efficiency.
- 2 Quiet operation with a sealed protective body against dust**  
Durable helical gears & an oil bath style gear case make these units quiet during operation.
- 3 Solid steel side plates for a rugged heavy duty construction**
- 4 Highly durable load chain**  
Our surface hardened load chain is manufactured within our factory in Osaka, Japan and is in compliance with ISO standard grade T, offering a satisfactory degree of breaking strength, wear resistance, and impact absorption. We can also offer load chain of a higher corrosion resistance upon request.
- 5 Safe DOUBLE BRAKE design**  
A mechanical brake and motor brake – the electric-magnetic brake is combined with a mechanical brake to constitute a complete double brake system. Even the former alone has enough capacity to hold a static safe working load!
- 6 DC brake and motor with low power consumption**  
A DC solenoid is used for the electro-magnetic brake. This lowers the electrical consumption throughout the operation of the electric chain hoist.
- 7 A safer chain guide with our unique design**  
The DA/DB series is designed so that the chain guide's rotation on the load sheave transmits to the electrical limit switch. The electric limit switch automatically stops the operation of the hoist in the event that the load chain is raised or lowered to the chain's end. In this case, the limit switch would also engage if dust or foreign matters remain pressed within the pockets of the load sheave.
- 8 Reliable double-action limit switch**  
Electrical limit switch for this model acts in two steps. In the first step the limit switch breaks the operating circuit. Then within the second step, the limit switch breaks the main circuit. Ensuring the hoist ceases operation.
- 9 Negative phase contactor and a highly efficient magnetic contact with a mechanical & electrical interlock**
- 10 Motor frame**  
The motor frame is constructed with high quality aluminum cooling fins which help reduce the rise of temperature within the motor
- 11 Durable chain container**
- 12 Pendant control switch is set at 24v for safe operation**
- 13 Push-push button style pendant for the DB models**
- 14 Top and bottom hooks with safety latch**  
Designed to gradually open and not break suddenly in the event of an overload. A compact thrust bearing also helps to prevent the load chain from twisting.
- 15 Ratings**  
JIS / ISO M5, FEM 2M, ASME H3 Motor, IP54 Hoist Protection, IP65 NEMA 4X Pendant Protection





**SPECIFICATIONS - DA/DB HEAVY DUTY ELECTRIC CHAIN HOIST**

Model	W.L.L. (lbs)	W.L.L. (mt)	Test Load (mt)	Standard Lift (ft)	Load Chain Dia (mm) x Number of Falls	Lifting Motor Output (H.P.) (DB) High: Low Speed	Lifting Speed (ft/min) (DB) High:Low Speed		Minimum Distance H (in)	Ampere (A)	Net Wt. (lbs) 10' : 20'
							50Hz	60Hz			
DA-0.25	550	0.25	0.313	10 20	5.6 x 1	0.68	26	31	20.4	2.5	112 : 116
DA-0.5	1100	0.5	0.625	10 20	6.3 x 1	1.22	24	28	20.8	4.5	123 : 130
DA-1W	2200	1	1.25	10 20	6.3 x 2	1.22-0.41	12	14	27.7	4.5	139 : 152
DA-1S	2200	1	1.25	10 20	7.1 x 1	2.31	22	27	23	8.7	158 : 168
DA-1.5	3500	1.5	1.88	10 20	9.5 x 1	4.62	29	34	28.7	15.3	265 : 280
DA-2W	4400	2	2.5	10 20	7.1 x 2	2.31	11	13	31	8.7	185 : 201
DA-2S	4400	2	2.5	10 20	11.2 x 1	4.62	23	27	28.7	15.3	273 : 293
DA-2.5	5500	2.5	3.13	10	11.2 x 1	4.62	18	21	28.7	15.3	282
DA-3	6600	3	3.75	10	9.5 x 2	4.62	14	17	37	15.3	320
DA-5	11000	5	6.25	10	11.2 x 2	4.62	9	11	40.5	15.3	359
DA-10	22000	10	12.5	10	11.2 x 4	4.62 x 2	9	10	54.7	15.3	873
DB-0.25	550	0.25	0.313	10 20	5.6 x 1	0.68 : 0.23	26 : 9	31 : 10	20.4	2.6	123 : 130
DB-0.5	1100	0.5	0.625	10 20	6.3 x 1	1.22 : 0.41	24 : 8	28 : 9	20.8	4.7	137 : 146
DB-1W	2200	1	1.25	10 20	6.3 x 2	1.22 : 0.41	12 : 4	14 : 5	27.7	4.7	152 : 168
DB-1S	2200	1	1.25	10 20	7.1 x 1	2.31 : 0.77	22 : 7	27 : 9	23	9.2	174 : 185
DB-1.5	3500	1.5	1.88	10 20	9.5 x 1	4.62 : 1.55	29 : 10	34 : 11	28.7	16	300 : 317
DB-2W	4400	2	2.5	10 20	7.1 x 2	2.31 : 0.77	11 : 4	13 : 4	31	9.2	203 : 220
DB-2S	4400	2	2.5	10 20	11.2 x 1	4.62 : 1.55	23 : 8	27 : 9	28.7	16	311 : 331
DB-2.5	5500	2.5	3.13	10	11.2 x 1	4.62 : 1.55	18 : 6	21 : 7	28.7	16	317
DB-3	6600	3	3.75	10	9.5 x 2	4.62 : 1.55	14 : 5	17 : 6	37	16	357
DB-5	11000	5	6.25	10	11.2 x 2	4.62 : 1.55	9 : 3	11 : 3	40.5	16	394

\* Current Ampere Depends on the Voltage and Length of Power Cord

\* The Length of Power Cord 4Core Cable is 16'

\* Standard Push Button Cord is 2' Less than Lift

\* If You Require 6 Button Pendant Control in Place of 4 Button, a "C" Should be Added to the End of the Model Name

**DIMENSIONS (IN.) - DA/DB HEAVY DUTY ELECTRIC CHAIN HOIST**

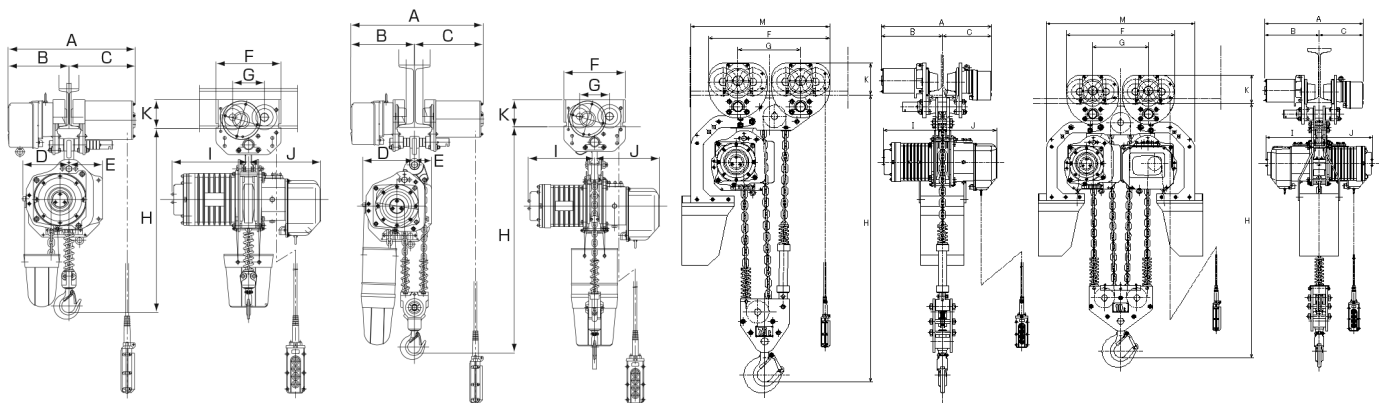
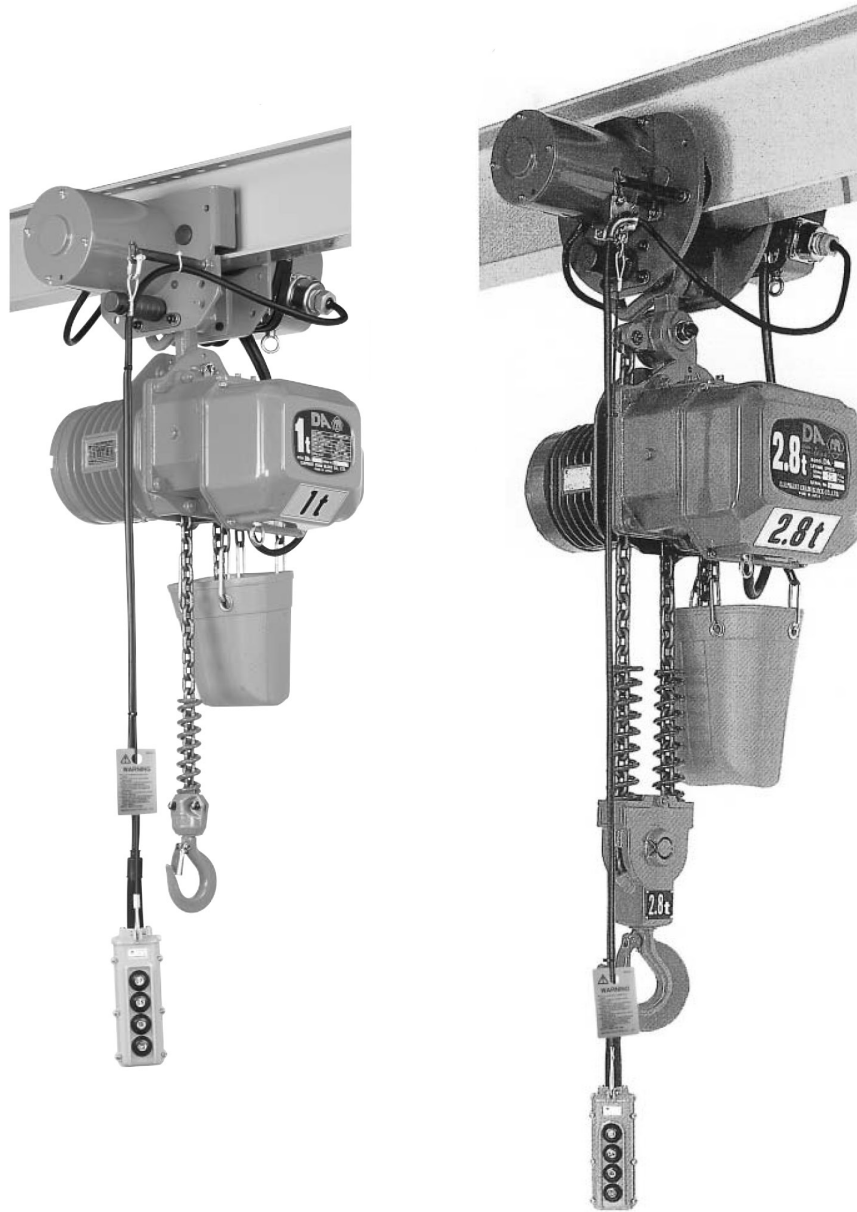
Model	A	B	C	D	E	F
DA / DB-0.25	20.7 / 22.1	10.5 / 10.8	10.2 / 11.3	10.8	6.6	4.2
DA / DB-0.5	20.7 / 23.2	10.5 / 11.9	10.2 / 11.3	10.8	6.6	4.2
DA / DB-1W	20.7 / 23.2	10.5 / 11.9	10.2 / 11.3	10.8	8.1	2.6
DA / DB-1S	22.2 / 24.3	11.4 / 12.6	10.7 / 11.7	11.8	6.8	5
DA / DB-1.5	25.7 / 28.2	13.4 / 14.6	12.3 / 13.5	14.6	7.8	6.8
DA / DB-2W	22.2 / 24.3	11.4 / 12.6	10.7 / 11.7	11.8	8.6	3.2
DA / DB-2S	25.7 / 28.2	13.4 / 14.6	12.3 / 13.5	14.6	7.8	6.8
DA / DB-2.5	25.7 / 28.2	13.4 / 14.6	12.3 / 13.5	14.6	7.8	6.8
DA / DB-3	25.7 / 28.2	13.4 / 14.6	12.3 / 13.5	14.6	10.1	4.4
DA / DB-5	25.7 / 28.2	13.4 / 14.6	12.3 / 13.5	14.7	10.7	4.02
DA-10	26.9	13.4	13.4	37.8	10.7	*

\* The Dimensions D and E Depends on the Lift

\* For Top and Bottom Hook Specifications See Page 47

\* Specifications and Dimensions are Subject to Change Without Notice





250kg~2.5ton

The drawing of electric trolley 2.5t is different from above drawing.

1w~5ton

The drawing of electric trolley 3t, 5t is different from above drawing.

7.5ton

10ton



**SPECIFICATIONS - DAM/DBM HEAVY DUTY ELECTRIC CHAIN HOIST**

Model	W.L.L. (lbs)	W.L.L. (mt)	Test Load (mt)	Standard Lift (ft)	Lifting Motor Output (H.P.) (DB) High:Low Speed	Traversing Motorized Trolley Motor Output (H.P.)	Lifting Speed (ft/min) (DB) High:Low Speed		Traversing Speed (ft/min)		Minimum Distance H (in)	Traversing Motorized Trolley Beam Range (in)	Trolley Min. Radius (in)	Net Wt. (lbs)	
							50Hz	60Hz	High Speed 50 Hz / 60 Hz	Low Speed 50 Hz / 60 Hz					
DAM-0.25	550	0.25	0.313	10 20	0.68	0.54	26	31	65 / 78	33 / 39	2.95 - 5.91	43.3 [31.4]	161		
DAM-0.5	1100	0.5	0.625	10 20	1.22		24	28					22.4	22.8	
DAM-1W	2200	1	1.25	10 20	1.22		12	14					29.1	29.1	
DAM-1S	2200	1	1.25	10 20	2.31		22	27					24.4	24.4	
DAM-1.5	3500	1.5	1.88	10 20	4.62		29	34			30.7	30.7	3.94 - 5.91	59 [31.4]	434
DAM-2W	4400	2	2.5	10 20	2.31		11	13			31.2	31.2			
DAM-2S	4400	2	2.5	10 20	4.62		23	27			28.9	28.9	434		
DAM-2.5	5500	2.5	3.13	10	4.62		18	21			29.5	29.5	423		
DAM-3	6600	3	3.75	10	4.62		1.02	14			17	37.8	37.8	461	
DAM-5	11000	5	6.25	10	4.62		9	11			41.3	41.3	542		
DAM-7.5	16500	7.5	9.38	10	4.62	1.02 x 2	6	7	47.4	5.00 - 7.00	*	1058			
DAM-10	22000	10	12.5	10	4.62 x 2		9	10	46.6		46.6	*	1365		
DBM-0.25	550	0.25	0.313	10 20	0.68 : 0.23	0.54	26 : 9	31 : 10	65 / 78	33 / 39	2.95 - 4.92	43.3 [39.4]	192		
DBM-0.5	1100	0.5	0.625	10 20	1.22 : 0.41		24 : 8	28 : 9					22.8	22.8	
DBM-1W	2200	1	1.25	10 20	1.22 : 0.41		12 : 4	14 : 5					29.1	29.1	
DBM-1S	2200	1	1.25	10 20	2.31 : 0.77		22 : 7	27 : 9					24.4	24.4	
DBM-1.5	3500	1.5	1.88	10 20	4.62 : 1.55		29 : 10	34 : 11			30.7	30.7	3.94 - 5.91	59 [31.4]	470
DBM-2W	4400	2	2.5	10 20	2.31 : 0.77		11 : 4	13 : 4			31.2	31.2			
DBM-2S	4400	2	2.5	10 20	4.62 : 1.55		23 : 8	27 : 9			28.9	28.9	478		
DBM-2.5	5500	2.5	3.13	10	4.62 : 1.55		18 : 6	21 : 7			29.5	29.5	461		
DBM-3	6600	3	3.75	10	4.62 : 1.55		1.02	14 : 5			17 : 6	37.8	37.8	498	
DBM-5	11000	5	6.25	10	4.62 : 1.55		9 : 3	11 : 3			41.3	41.3	4.92 - 6.89	78.7 [39.4]	580

\* If You Require 6 Button Pendant Control in Place of 4 Button, a "C" Should be Added to the End of the Model Name

\* The Length of Power Cord 4Core Cable is 16'

\* Standard Push Button Cord is 2' Less than Lift

\* Contact the Factory for Special Beam Widths for Motorized Trolley

\* Special Motorized Trolleys Can be Supplied where the Trolley Minimum Radius is the Number Bracketed Off

**DIMENSIONS (IN.) - DAM/DBM HEAVY DUTY ELECTRIC CHAIN HOIST**

MODEL	A	B	C	γ	D	E	F	G	I	J	K	M
DAM / DMB-0.25	19.0+2β	9.8+β	9.0+β	2.9	6.6	4.3	9.5	4.7	10.5 / 10.9	10.3 / 11.3	4.3	-
DAM / DMB-0.5	19.0+2β	9.8+β	9.0+β	2.9	6.6	4.3	9.5	4.7	10.5 / 11.0	10.3 / 11.3	4.3	-
DAM / DMB-1W	19.0+2β	9.8+β	9.0+β	2.9	8.1	2.7	9.5	4.7	10.5 / 11.0	10.3 / 11.3	4.3	-
DAM / DMB-1S	19.0+2β	9.8+β	9.0+β	2.9	6.8	5	9.5	4.7	11.4 / 12.5	10.8 / 11.7	4.3	-
DAM / DMB-1.5	20.0+2β	10.5+β	9.7+β	3.9	7.8	6.9	11.3	5.8	13.5 / 14.6	12.3 / 13.6	4.8	-
DAM / DMB-2W	20.0+2β	10.5+β	9.7+β	3.9	8.6	3.2	11.3	5.8	11.4 / 12.5	10.8 / 11.7	4.8	-
DAM / DMB-2S	20.0+2β	10.5+β	9.7+β	3.9	7.7	6.9	11.3	5.8	13.5 / 14.6	12.3 / 13.6	4.8	-
DAM / DMB-2.5	22.5+2β	12.7+β	9.8+β	3.9	7.7	6.9	12.4	6.3	13.5 / 14.6	12.3 / 13.6	6.6	-
DAM / DMB-3	22.5+2β	12.7+β	9.8+β	3.9	10.2	4.5	12.4	6.3	13.5 / 14.6	12.3 / 13.6	6.6	-
DAM / DMB-5	24+2β	13.4+β	13.4+β	4.9	10.7	4	13.2	6.7	13.5 / 14.6	12.3 / 13.6	6.8	-
DAM-7.5 & DAM-10	24+2β	13.4+β	13.4+β	4.9	-	-	27.4	14.2	13.5 / 14.6	12.3 / 13.5	6.8	31.4 & 37.8

\* The Dimensions D and E Depend on the Lift

\* For the Dimensions β and γ, see page 40

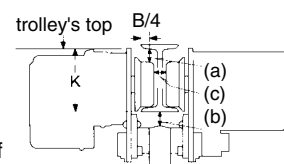
\* The Dimension K is in case that "Traversing I Beam Width" is Minimum



## COMBINATION OF ELECTRIC TROLLEYS WITH TRAVERSING RAILS

Trolley model W.L.L. (ton) (number of falls)	Min. I-beam width (C)	I-beam H×B×t <sub>1</sub> /t <sub>2</sub> (mm) I (cm <sup>4</sup> )																					
			600×190×16/35 130000	600×190×13/25 98400	450×175×13/26 48800	450×175×11/20 39200	400×150×12.5/25 31700	400×150×10/18 24100	350×150×12/24 22400	350×150×9/15 15200	300×150×11.5/22 14700	300×150×10/18.5 12700	300×150×8/13 9480	250×125×10/19 7310	250×125×7.5/12.5 5180	200×150×9/16 4460	200×100×7/10 2170	180×100×6/10 1670	150×125×8.5/14 1760	150×75×5.5/9.5 819	125×75×5.5/9.5 538	100×75×5/8 281	
0.25 · 0.5	17	(a)										207	218	156	169	112	124	104	66	75	50		
		(b)						308		264		21	27	21	27	24	30	30	26	30	30		
1S · 1W	17	(a)					288	302	240	258	194	201	212	150	163	106	118	98	54	63			
		(b)					20	28	22	31	24	27	33	27	33	30	36	36	31	36			
1.5 · 2S · 2W	26	(a)			314	326	266	280	218	236	172	179	190	128	141		96						
		(b)			15	21	16	23	17	26	19	22	28	22	28	31							
2.5 · 3W	47	(a)			300	312	252	266	204	222	158	165	176	114	127	70							
		(b)			10	16	11	18	12	21	14	17	23	17	23	20							
5	33	(a)	426	446	294	306	246		198		152			108									
		(b)	13	23	22	18	23		24		26			29									
7.5	58	(a)	420	446	294	306	246		198		152												
		(b)	7	17	16	22	17		18		20												
10	58	(a)	426	446	294	306	246		198		152												
		(b)	7	23	16	22	17		18		20												

- For understanding the descriptions at the upper row of the Table:
  - As for the rails belonging to the blue indicated zone, the standard type trolleys can be fitted to each of them.
  - As for the rails belonging to the gray-indicated zone, such trolleys as having special dimensions to meet them must be prepared separately.
- For understanding the descriptions at the medium row of the Table:
 Each of the figures indicated at this row shows the distance [a](unit:mm) of the sketch at right side. This distance [a] may be zero or negative depending on the combination of the standard trolley with some types of rails: for this case, no figure is given here because such combination can't be put in actual application. In the case of the combination indicated with a blue figure, the trolley's top is higher than the rail's top so that the trolley may touch the ceiling suspending the rail ( $H \leq K$ ):pay attention to this.
- For understanding the descriptions at the lower row of the Table:
 Each of the figures indicated at this row shows the distance [b](unit:mm) of the sketch at the right side. The distance [b] may be zero or negative depending on the combination of the standard trolley with some type of rails: for this case, no figure is given here because such combination can't be put in actual application. Also for the rails whose thickness  $t_2$  is too thin to hold the rated load, no figure is given.



If there is even one blank at either of the upper, medium and lower rows of the Table, this means that such relevant rail can't be used together with the trolleys.  
In this way, referring to the Table, you will see what type of rail(I beam) is suited to the trolley you have selected.  
Then it is needed to check if such rail satisfies the following condition: even if it is given a 125% of the rated safety load, its deflection amount shall be 1/1200 of its support span or less. That is, the I beam to be selected shall have its moment of inertia of the longitudinal section (Ix) be as follows:

$I_x$ : Moment of inertia of the longitudinal section  $\geq 119.1 \times W \times L^2$   
In which,  
W: W.L.L.×1.25+Chain block's own weight(ton)  
L: Support span(m)

For "Combination of Electric Trolleys with Traversing Rails", the following must be taken note of:  
At the medium row of the table:  
In the case of the combination indicated with a gray zone, the relation  $H \leq K$  applies to both plain trolley and geared trolley.  
In the case of the combination indicated with a blue zone, the relation  $H \leq K$  applies only to the geared trolley.



## NOTES ON THE WIRING DIAGRAM

1. Our electric chain blocks(with the trolleys included), either DA type or DB type, are usually designed to operate on the 3-phase power source.  
The electrical parts used for our chain blocks are all the precision ones which can normally operate even with an accidental voltage drop (with a 10% reduction of the rated voltage)

2. As standard, our lifting motor (LM) and trolley motor (TM) are respectively assured of the following ratings.

	Kind of Insulation	Short time duty	Intermittent duty
LM	E	30 minutes	40% ED, Number of starts : 240/h
TM	E	15 minutes	25% ED, Number of starts : 240/h

In the case of the DB type, however, its rating will be like:

Short time duty		Intermittent duty	
High speed	Low speed	High speed	Low speed
30 minutes	15 minutes	40% ED, Number of starts : 240/h	20% ED, Number of starts : 120/h

3. As to the 4-core power cord, or the 7-core cable cord used for the DAGC, DBGC, DAPC or DBPC type, they are each usually of 5m in length. The cords of other length than the above, or of special dimensions, are available upon request.

4. When connecting the power cord to the power source, take care of its correct phase so that the lifting motor can rotate in UP direction and DN direction according to the push of the UP button and DN button on the control switch. If the connection phase is reversed, the negative phase protector starts to work to prevent the lifting motor from rotating in either direction. If this occurs, exchange the connection phase of the black and red leads from each other: at the time, avoid changing the wire connections in the control switch, chain block and trolley.

5. The running direction of the electric trolley and/or the saddle has been decided at the shipment, and it may be changed, at your site, by changing the wire connection at the control switch case.

## HOIST CLASSIFICATION

	JIS/ISO classification	FEM classification	ASME classification	International protection
DA	M5	2m	H3	IP54
DB	M5	2m	H3	IP54

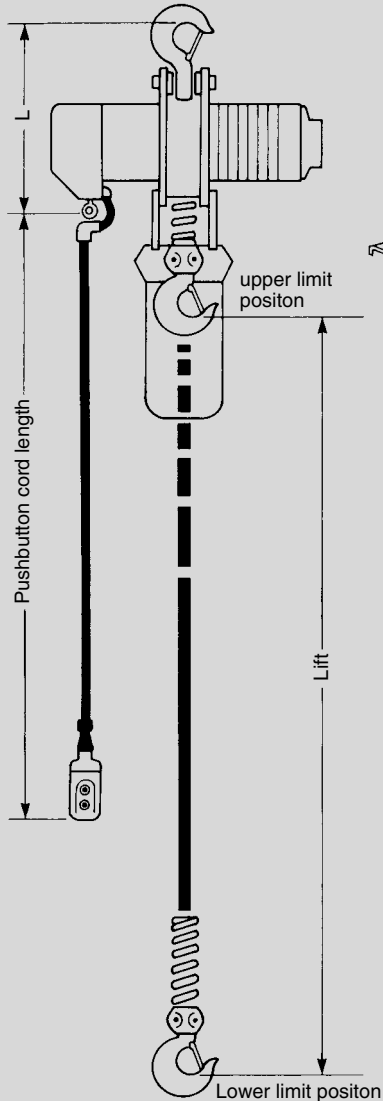




## DEFINITION OF WORDS

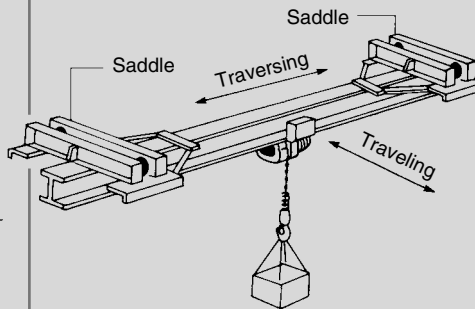
### Lift and Length of Pushbutton Switch Cord

As the electric chain block is operated, its bottom hook moves up and down and the longest distance of this motion is called a "lift". In other words, the lift refers to the distance between the bottom hook's highest position (with the upper limit switch actuated) and its lowest position (with the lower limit switch actuated).  
 The length of the pushbutton switch cord refers to the distance between the bottom of dimension L and the lower surface of the pushbutton switch case.



### Traversing, Traveling with Trolley and Saddle.

The electric chain block, while hoisting any of loads, may be moved in lateral or longitudinal direction when used in combination with a trolley or saddles which is fitted on a rail. Usually, the trolley is used for a lateral motion of the electric chain block and saddles for a longitudinal motion of it. And when the chain block moves laterally, we call it as "traversing" and when it moves longitudinally, we call it "traveling". Depending on your job requirements, the ELEPHANT electric chain blocks may be combined with different types of saddles of our own; refer to our catalog "ELEPHANT Electric Saddles".

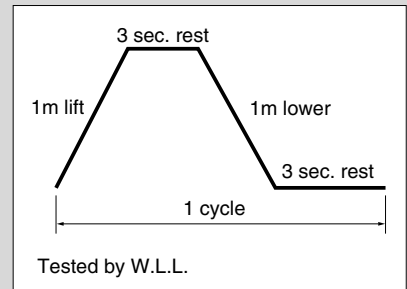


### Short Time Duty Rating and Intermittent Duty Rating

As a criterion to indicate the strength and durability of our electric chain blocks. We have specified the ratings of the short time duty and intermittent duty concerning their included electric motors—see the page 12 of catalogs.

#### • Short Time Duty Rating

"Short time duty rating" means the limited time that the admissible temperature limit of its electric motor won't be exceeded, when the electric chain block is operated continuously on the below cycle.

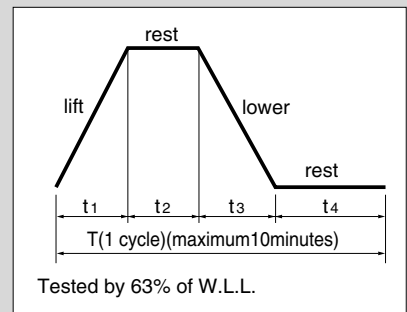


#### • Intermittent Duty Rating

Compared with "short time duty rating", the temperature of motor rises gradually by properly giving rests to the chain block between its operating periods (lifting and lowering). The percentage duty cycle ED is found as follows.

$$\%ED = \frac{\text{Operating periods}(t_1+t_3)}{\text{Operating} + \text{Rest periods}(T)} \times 100$$

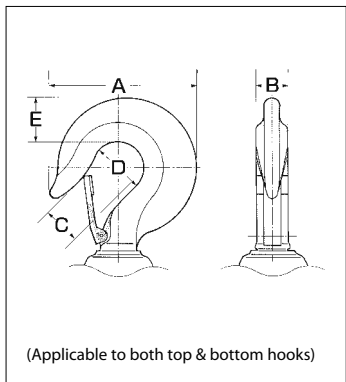
based on the maximum cycle period of 10 minutes. The number of starts/h also affects the rise of temperature. Thus these two factors are specified to show the intermittent duty rating of the electric chain block under the specification of which the electric motor can be operated safely without exceeding its admissible temperature limit.



\* The specification and dimensions may be changed without prior notice for improvement.



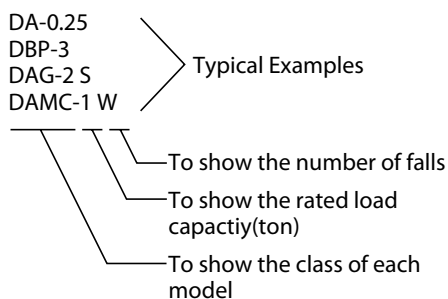
HOOK DIMENSIONS • BOTTOM HOOK WEIGHT • LOAD CHAIN WEIGHT



Max working load (mt) & number of falls	0.25	0.49	0.5	1S	1W	1.5	2S	2W	2.5	2S	2W	7.5	10
DIMENSION (in)													
A	2.9	3.3		4.05	5.3	5.3	5.3	6.49	7.2	9.0	9.0		
B	.59	.55		.59	1.0	1.0	1.0	1.37	1.37	1.88	1.88		
C	1.0	1.0		1.18	1.45	1.45	1.45	1.88	2.28	2.8	2.8		
D	1.3	1.69		1.96	2.55	2.55	2.55	2.36	2.75	3.3	3.3		
E	.7	.7		.98	1.37	1.37	1.37	1.9	2.08	2.48	2.48		
Bottom hook weight (lbs)	1.5	1.7	3.7	8	7.7	7.7	12	7.7	25	39	143	176	
No. of fall load chain	1	1	1	2	1	1	2	1	2	2	3	4	
Load chain weight (lbs)	Per 3.2'			1.89	4.3	5.8	2.4	5.86	4.3	5.86	5.86	5.86	
	Per 3.2' lift	1.4	1.89	2.4	3.79	4.85	4.85	8.6	11.75	17.6	23.5		

Hooks are produced through a hot forging process and so the dimensions may have some errors : ± 2% for 0.25 ~5t hook and ± 3% for the 7.5 and/or 10t hook.

Reading of Model/Code



Class code:

- It identifies the type (single speed or dual speed type), the number of buttons on the control switches and kinds of trolleys (electric, geared or plain). See the sketches at right.

Rated load capacity:

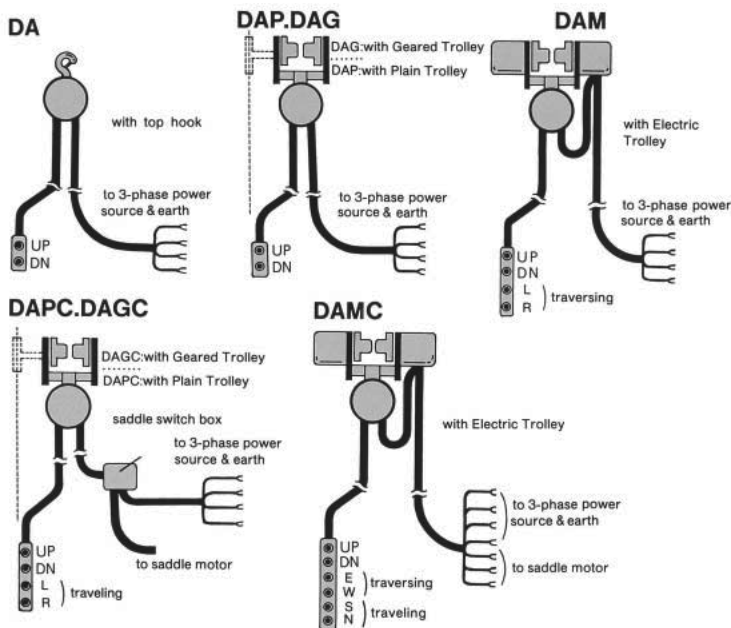
- It shows the rated load capacity(ton) of the relevant chain block.

Number of falls:

- It identifies whether the relevant chain block is the 1-fall type or the 2-fall type block(S=1, W=2).

Note: Indication of the number of falls is omitted for certain model in the case where it has been specified according to its rated load capacity.

Class Code



- Usually the pushbuttons located on the control switch are labeled as "UP", "DN", "L", "R", "E", "W", "S" and "N". The other types of labeling are available upon request.
- In the case of the dual speed type (DB type), the chain block can be wound UP and DOWN at either high speed or low speed. The UP and Down buttons are each of push-push type: at the first push, it provided low speed operation and at the second push, it provides high speed operation.

\* The specification and dimensions may be changed without prior notice for improvement.

