

ELECTRIC SILVER WINCH



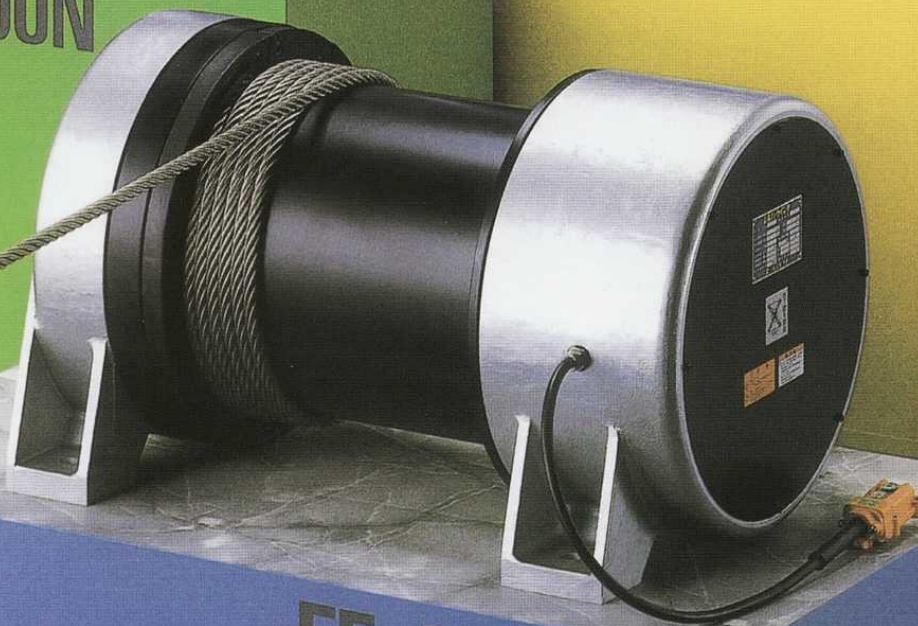
SX-210



FE-1000N



LX-725



FE-2000N

Fuji Mfg Co., Ltd.
(Fuji Seisakusyo)

FE Series

(Three Phases)



Cleared High Level Standards of JIS

■ Features

● Compliance with JIS (Japanese Industrial Standards)

The winches of FE Series have cleared the high level class (Class M6) of JIS B 8813 Standard.

● Compact All-in-One Type

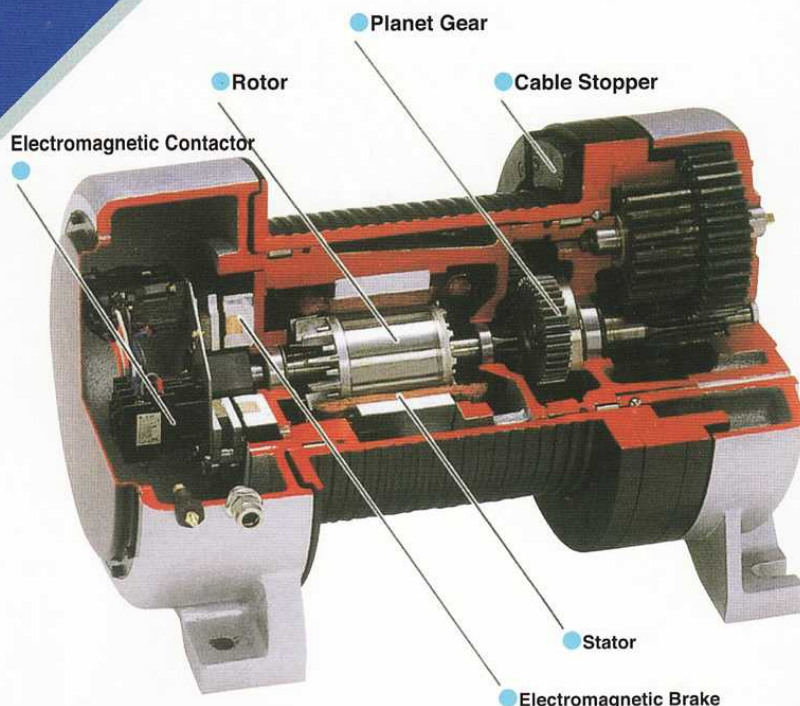
Electric parts such as motors, electromagnetic contactors, etc. are installed inside of the sturdy main frame for drip-proof and dustproof. These winches are the most compact type and designed to protect cables by grooved drums of big diameter and unique cable stoppers. The direction of winding cables is 360-degree.

● Speed Reduction by Planet Gear

Because a planet gear has been installed, the structure of speed reduction is very small and efficient.

● Advanced Type of Electric Components

The motor is made of F-type insulation (maximum allowable temperature 155°C), therefore the range of heat-resistance is much larger than general motors made of E-type insulation (120°C).



Because the control of motor is indirectly operated with an electromagnetic brake, connections to a limit-switch and so on can be easily done. Furthermore, Thermal Relay has fitted as a standard equipment to prevent motor burnout. Winches for different voltage such as 400V are also available.

● Equipped a High Efficient Electromagnetic Brake

The electromagnetic brake had passed in-house durable tests 300,000 times. The maintenance of winches consequently has become easier. A brake disc is made of non-asbestos material, environmental clean. These winches can be used with Mechatro-FA, and changing speed by inverters is also possible.

● Lift Control Device (at option)

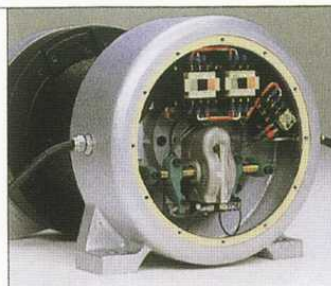
Setting a very unique lift control device is very easy. This device is designed to stop winches without fail at the position required (top/bottom positions) within the cable winding extent. This device is installed in the main frame of winches as well as other electric components.



● Cable Stopper · Guide Side Plate



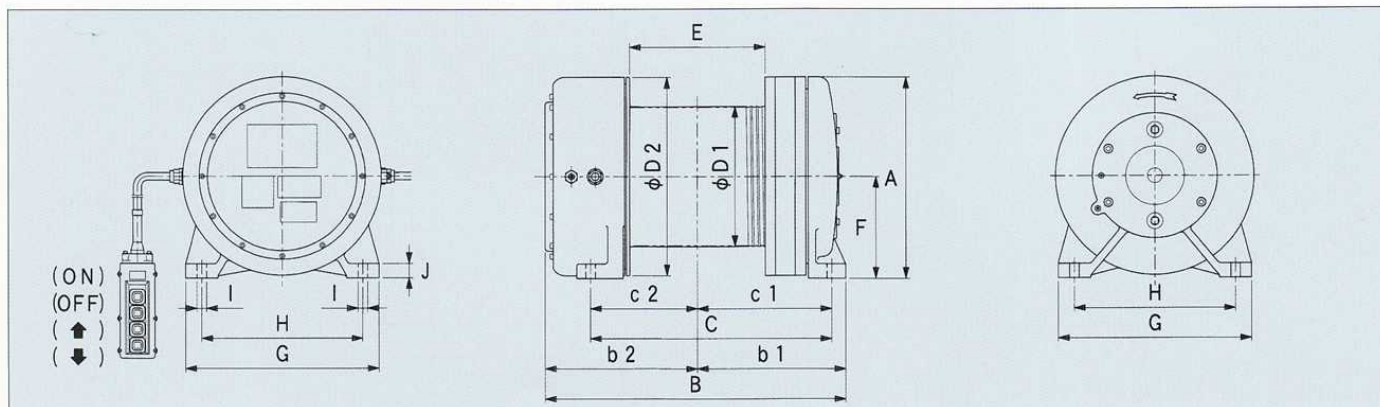
● Planet Gear



● Lift Control Device (at Option)



● Setting Base (at Option)



■ Dimensions

Model	A	B	b1	b2	C	c1	c2	D1	D2	E	F	G	H	I	J
FE-150N	278	452	208.5	243.5	356	185.5	170.5	φ 204	φ 275	216	140.5	270	220	φ 14	18
FE-300N	278	470	229.5	240.5	375	206.5	168.5	φ 206	φ 275	212	140.5	270	220	φ 14	18
FE-250H	375	561	275	286	450	249	201	φ 258	φ 370	256	190	360	300	φ 18	27
FE-500N	375	561	276.5	284.5	450	250.5	199.5	φ 258	φ 370	253	190	360	300	φ 18	27
FE-1000N	375	600	315.5	284.5	471	271.5	199.5	φ 260	φ 370	253	190	360	300	φ 18	27
FE-1000W	375	710	370.5	339.5	581	326.5	254.5	φ 260	φ 370	363	190	360	300	φ 18	27
FE-2000N	555	976	457	519	741	378	363	φ 420	φ 540	450	285	600	500	φ 27	35

■ Specifications (FE Series)

Remark: The numbers in parenthesis indicate the layer of winding cable.

Model		FE-150N		FE-300N		FE-250H		FE-500N		FE-1000N		FE-1000W		FE-2000N			
Rated Load on Cable (kgs)	50Hz	1st Layer	180		360		300		600		1200		1200		2400		
		Standard Layer	(3)	161	(2)	334	(4)	254	(3)	522	(2)	1102	(2)	1102	(2)	2217	
		Top Layer	(5)	146	(4)	294	(7)	220	(5)	462	(4)	948	(4)	948	(3)	2061	
Rated Winding Speed of Cable (m/min)	50Hz	1st Layer	18.5		9.0		30.5		16.0		9.0		9.0		13.0		
		Standard Layer	(3)	20.6	(2)	9.6	(4)	36.0	(3)	18.3	(2)	9.7	(2)	9.7	(2)	14.0	
		Top Layer	(5)	22.7	(4)	11.0	(7)	41.5	(5)	20.7	(4)	11.3	(4)	11.3	(3)	15.1	
Cable Winding Length in Total(m)		1st Layer	19.6		15.1		22.9		18.5		15.7		23.0		31.3		
		Standard Layer	(3)	62.3	(2)	31.3	(4)	99.8	(3)	59.6	(2)	32.8	(2)	48.0	(2)	65.2	
		Top Layer	(5)	109.0	(4)	67.0	(7)	189.0	(5)	106.0	(4)	71.0	(4)	104.0	(3)	101.0	
Cable Dia. in Use		φ 6		φ 8		φ 8		φ 10		φ 12		φ 12		φ 18			
Motor	Type	Fully-Sealed and Self-Cooling Type															
	Output	0.75 kW				2.2 kW								7.5 kW			
	Number of Poles	4 P														6 P	
	Rated Voltage and Current	Three phases 380V/50Hz 1.9 A				Three Phases 380V/50Hz 4.9 A								Three Phases 380V/50Hz 19.0 A			
	Insulation	Type F															
Load Hour Factor		25%ED														20%ED	
Braking Ratio		over 150%															
Operation		with 2 or 4 Button Switches (Indirect Operation), Operating at 24 VAC															
D/d		35.0		26.7		33.2		26.8		22.6				24.3			
Reduction Ratio		50.77		106.45		38.18		72.11		130.49				102.09			
Winch Weight (kgs)		74		81		158		159		180		209		720			

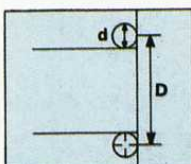
※FE-2000N: Smooth Drum

Accessories

Electromagnetic Switch	Electromagnetic Contactor & Thermal Relay (Klixon Relay only for FE-2000N)		
Power Cord	2CT 0.75mm ² ×4plys×3m	2CT 2mm ² ×4plys×3m	2CT 14mm ² ×4plys×3m
Operating Cord	2CT 0.75mm ² ×4plys×5m	2CT 2mm ² ×4plys×5m	
Operating Switch	2 or 4 Waterproof Button Switches for Indirect Operation(250V×5A)		

Remark: Winding Length has the length of 20m in extra.

- Standard layer means the layer on which cables are wound and pressed tightly to each other in alignment. (Drum Dia. + Drum Flange Dia.) / 2
- Rated load on cable means the maximum tension of cables to be loaded on the standard layer.
- Rated winding speed of cable means the cable speed to be wound on the standard layer at the rated load on cable .
- Load hour factor means the total operating hours of a motor with loads against the operating hours of the motor, including hours not being operated. It is indicated in parts per hundred.
- The class of winches and D/d of drums
D : The diameter of cable pitch circle on the 1st layer
d : The diameter of cable



Class	M1	M2	M3	M4	M5	M6	M7	M8
D/d	11.2	12.5	14.0	16.0	18.0	20.0	22.4	25.0

■ Class (The classes of winches based on loading ratio and operating hours)

Loads	Total Operating Hours (h)									
Nominal Loads Spectral Coefficient (Km)	200	400	800	1600	3200	6300	12500	25000	50000	100000
Light										
0.125 Giving rated load on cables is very rare. This structure is usually for light loads.			M1	M2	M3	M4	M5	M6	M7	M8
Middle										
0.25 Giving rated load on cables is quite often. This structure is usually for middle class weight loads.		M1	M2	M3	M4	M5	M6	M7	M8	
Heavy										
0.25 Giving rated load on cables is quite often. This structure usually is for heavy loads.	M1	M2	M3	M4	M5	M6	M7	M8		
Super Heavy										
1.00 This structure is always given Tensile Force on Cables.	M2	M3	M4	M5	M6	M7	M8			

● Extract from Japanese Industrial Standards (JIS B 8813-199)

SX Series (Single Phase)

TX Series (Three Phases)



Achieved Super Lightweight and Compact Winches

Features

Super Lightweight and Parallel Structure

The components of aluminum cast and plastic made the winches very light. Furthermore, the winches are designed to be compact with unique winding drums and driving motors assembled in parallel.

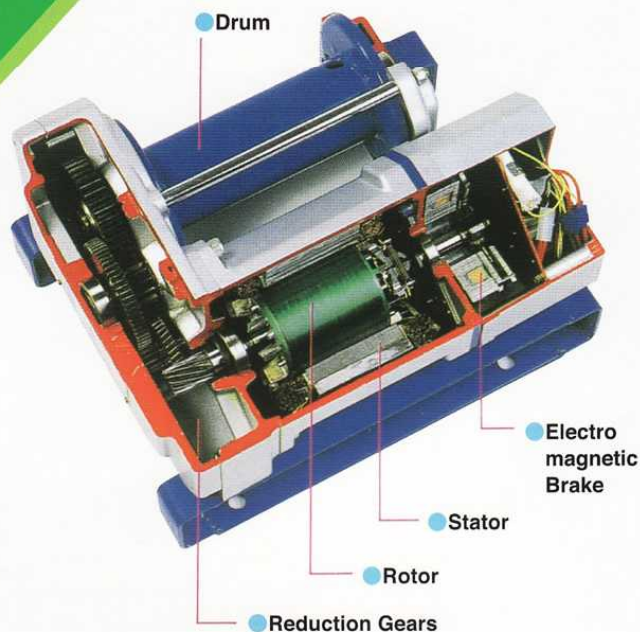
The winches can be installed in very narrow spaces.

Dust-Drip-proof and Rust Resistance

Motors and reduction gears are installed in aluminum cast cases, and electromagnetic brake, braking power units and capacitors (only SX Series) are in engineering plastic cases: which resulted in making the winches resistant well against dust, drip and rust.

Grease Lubrication

An urea grease of high quality lasts for so long time that frequent lubrications is not needed. It is free to install the winches at any position, such as on floors, on walls or even upside down. The winches were designed to be quiet and compact mobility.



(Except the case of installing on floors, clients are requested to contact us in advance due to the problems such as weep holes.)

High Quality Built-in Motor

Built-in motors are installed in aluminum cast cases and supplied with F-Type insulation (durable up to max. 155°C) and B-Type insulation (durable up to max. 130°C).

Safe and High Efficiency Electromagnetic Brake

As well as FE Series, the winches had passed in-house durable tests 300,000 times. Despite of their small sizes, these winches have been improved for strong braking power, operating accuracy and a longer life span. A brake plate is made of earth friendly materials of non-asbestos.

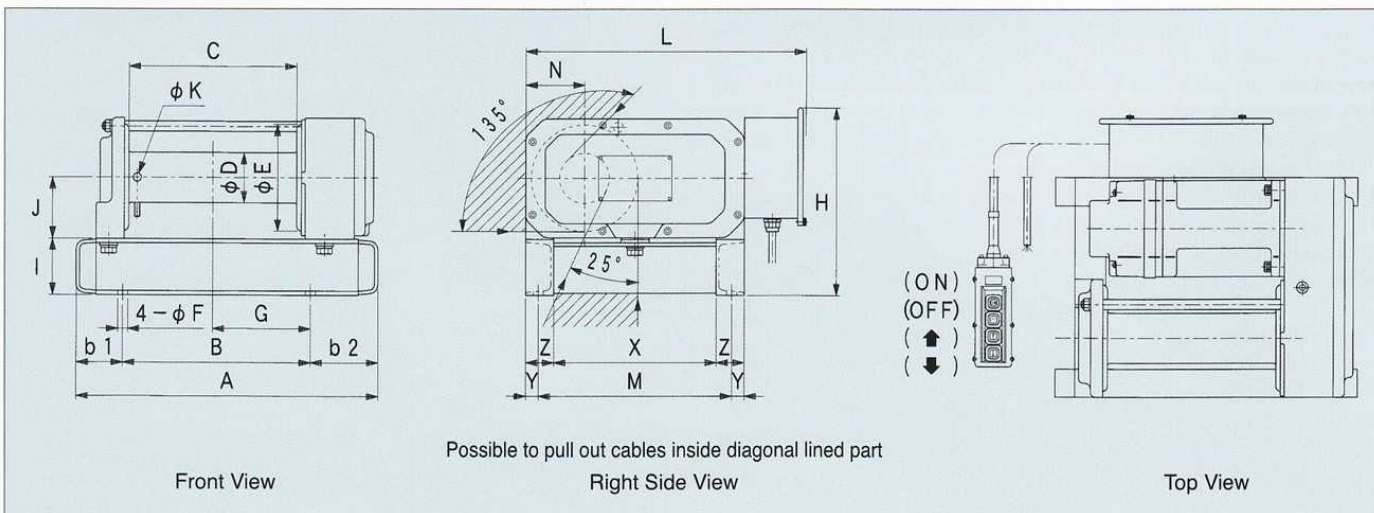
Easy to Attach Cables

Attaching cable can be done easily, i.e. insert a cable to a cable hole of a drum and tighten a locking bolt.



Dimensions

(Top) SX-101/103/201/203 TX-301/303								(Bottom) SX-205/210 TX-305/310/403/405/410/503/505/510											
A	B	b ₁	b ₂	C	D	E	F	G	H	I	J	K	L	M	N	X	Y	Z	
415	270	80	65	200	φ 76.3	φ 142	φ 15	140.5	240	75	84	φ 10	430	285	80	240	17.5	40	
538	335	82.5	120.5	300	φ 89.1	φ 190	φ 18	174.5	315	100	109	φ 15	500	345	105	290	22.5	50	



Specifications (SX Series)

Remark: The numbers in parenthesis indicated the maximum winding layers.

Model				SX-101		SX-103		SX-201		SX-203		SX-205		SX-210		
Rated Load on Cable (kgs)	50Hz	1st Layer		180		300		180		300		600		1,000		
		3rd Layer		180		300		180		300		600		1,000		
		Top Layer	(5)	145		(5) 291		(5) 145		(5) 291		(5) 437		(5) 931		
Rated Winding Speed of Cable (m/min)	50Hz	1st Layer		8.7		4.2		14.8		7.1		4.0		1.6		
		3rd Layer		11.4		5.5		19.3		9.3		5.4		2.3		
		Top Layer	(5)	14.1		(5) 6.8		(5) 23.8		(5) 11.5		(6) 7.4		(5) 3.0		
Cable Winding Length in Total (m)			1st Layer		7.5		7.5		7.5		7.5		10.5		8.5	
			3rd Layer		26.1		26.1		26.1		26.1		36.9		30.8	
			Top Layer	(5)	49.4		(5) 49.4		(5) 49.4		(5) 49.4		(6) 89.6		(5) 60.6	
Cable Dia, in Use				ϕ 6								ϕ 8		ϕ 10		
Motor	Type			Capacitor Activated				Capacitor Activated & Operated								
	Output			0.4kW				0.75kW								
	Number of Poles			4 P												
	Rated Voltage & Current			Single Phase 220V 50Hz, 4.1A				Single Phase 220V/50Hz 5.0A								
	Insulation			Type B												
Load Hour Factor				25%ED												
Braking Ratio				over 150%												
Operation				with 2 or 4 Button Switches (Indirect Operation), Operating at 24 VAC												
Reduction Ratio				42.19		86.85		25.05		51.57		107.14		261.91		
Winch Weight (kgs)				42		42		45		45		70		72		

Accessories

Power Cord / Operating Cord	2mm ² ×2 plys×2m with plug / 0.75mm ² ×4 plys×3m
Operating Switch / Ground	2 or 4 Waterproof Push Button Switches for Direct Operation / 2mm ² ×1mm with clip

Specifications (TX Series)

Remark: The numbers in parenthesis indicated the maximum winding layers.

Model		TX-301	TX-303	TX-305	TX-310	TX-403	TX-405	TX-410	TX-503	TX-505	TX-510	
Rated Load on Cable (kgs)	50 Hz	1st Layer	180	300	600	1,000	360	600	1,000	360	600	1,000
		3rd Layer	180	300	600	1,000	360	600	1,000	360	600	1,000
		Top Layer	(5) 145	(5) 291	(6) 437	(5) 931	(8) 236	(6) 437	(5) 931	(8) 236	(6) 437	(5) 931
Rated Winding Speed of Cable (m/min)	50 Hz	1st Layer	14.8	7.1	4.0	1.6	12.8	7.8	4.0	18.0	11.1	5.7
		3rd Layer	19.3	9.3	5.4	2.3	16.2	10.4	5.7	22.8	14.7	8.0
		Top Layer	(5) 23.8	(5) 11.5	(6) 7.4	(5) 3.0	(8) 24.7	(6) 14.4	(5) 7.3	(8) 34.8	(6) 20.2	(5) 10.3
Cable Winding Length in Total (m)		1st Layer	7.5	7.5	10.5	8.5	13.2	10.5	8.5	13.2	10.5	8.5
		3rd Layer	26.1	26.1	36.9	30.8	45.0	36.9	30.8	45.0	36.9	30.8
		Top Layer	(5) 49.4	(5) 49.4	(6) 89.6	(5) 60.0	(8) 155.2	(6) 89.6	(5) 60.0	(8) 155.2	(6) 89.6	(5) 60.0
Cable Dia, in Use		ϕ 6		ϕ 8	ϕ 10	ϕ 6	ϕ 8	ϕ 10	ϕ 6	ϕ 8	ϕ 10	
Motor	Type	Fully-Sealed and Self-Cooling Type										
	Output	0.75kW					1.5kW			2.2kW		
	Number of Poles	4P										
	Rated Voltage & Current	Three Phases 380V 50Hz, 1.9A					Three Phases 380V 50Hz, 3.5A			Three Phases 380V 50Hz, 4.7A		
	Insulation	Type B					Type F					
Load Hour Factor		25%ED										
Braking Ratio		over 150%										
Operation		with 2 or 4 Button Switches (Indirect Operation), Operating at 24 VAC										
Reduction Ratio		25.05	51.57	107.14	261.91	32.74	54.28	107.14	23.28	38.59	76.18	
Winch Weight (kgs)		43	43	68	70	75	75	77	77	77	78	

Accessories

Power Cord / Operating Cord	0.75 mm ² ×4 plys×2m / 0.75 mm ² ×4 plys×3m	2 mm ² ×4 plys×2m / 0.75 mm ² ×4 plys×3m
Operating Switch	2 or 4 Waterproof Push Button Switches for Direct Operation	

LX Series

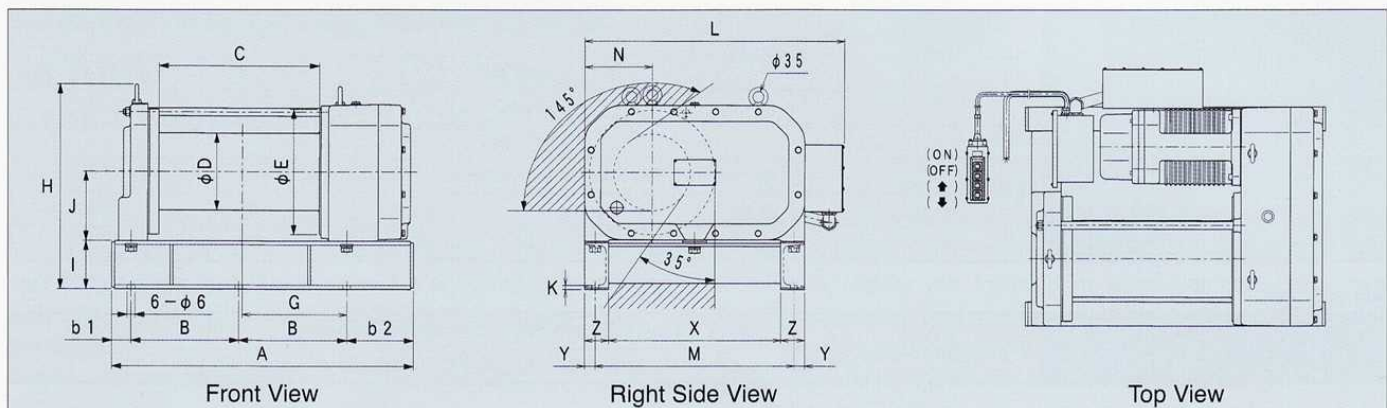
(Three Phases)

Versatile Application in Upgraded TX Series

Functional for Heavy Duty Work of 1.5 Ton–2.5 Ton

■ Features

- Compliance with Japanese Industrial Standards. D/d exceeding 14 times (M3)
- Super lightweight with motors and drums in parallel arrangement
- Soundless operation by helical gears and lubrication grease
- Duplex protection of motor by Klixon Relay and Thermal Relay, and indirect operation(only 600 and 700 Models)



(Except the case of setting the winches on floors, because of problems with greases, clients are requested to contact us in advance of setting.)

■ Dimensions

	1.....LX-415/515				2.....LX-615/715				3.....LX-420/520/425/525				4.....LX-620/720/625/725						
	A	B	b ₁	b ₂	C	D	E	F	G	H	I	J	K	L	M	N	X	Y	Z
1	875	326.5	53	169	500	φ 189	φ 305	φ 18	331	551	125	186	8	670	538	167	468	30	65
2	875	326.5	53	169	500	φ 189	φ 305	φ 18	331	551	125	186	8	719	538	167	468	30	65
3	940	336	60	208	500	φ 240	φ 390	φ 24	335	637	150	215	12.5	760	619	210	535	33	75
4	940	336	60	208	500	φ 240	φ 390	φ 24	335	637	150	215	12.5	809	619	210	535	33	75

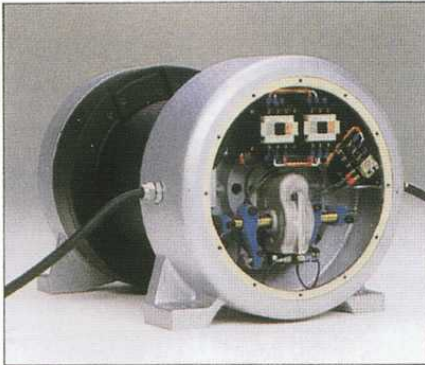
■ Specifications (LX Series)

Remark: The numbers in parenthesis indicate the layer of winding cable.

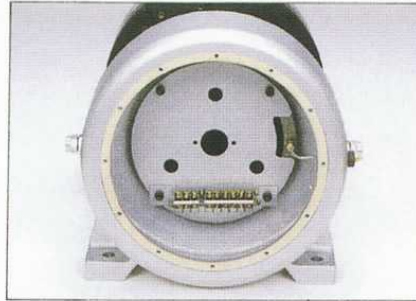
Model			LX-415	LX-420	LX-425	LX-515	LX-520	LX-525	LX-615	LX-620	LX-625	LX-715	LX-720	LX-725	
Rated Load on Cable (kgs)	50 Hz	1st Layer	1,500	2,000	2,500	1,500	2,000	2,500	1,500	2,000	2,500	1,500	2,000	2,500	
		Standard Layer	(3) 1,500	(3) 2,000	(3) 2,500	(3) 1,500	(3) 2,000	(3) 2,500	(3) 1,500	(3) 2,000	(3) 2,500	(3) 1,500	(3) 2,000	(3) 2,500	
		Top Layer	(4) 1,353	(4) 1,818	(4) 2,254	(4) 1,353	(4) 1,818	(4) 2,254	(4) 1,353	(4) 1,818	(4) 2,254	(4) 1,353	(4) 1,818	(4) 2,254	
Rated Winding Speed of Cable (m/min)	50 Hz	1st Layer	2.5	1.9	1.5	3.6	2.7	2.2	6.5	4.8	3.9	9.3	6.9	5.7	
		Standard Layer	(3) 3.2	(3) 2.4	(3) 2.0	(3) 4.7	(3) 3.4	(3) 2.9	(3) 8.3	(3) 6.1	(3) 5.1	(3) 11.9	(3) 8.7	(3) 7.3	
		Top Layer	(4) 3.5	(4) 2.6	(4) 2.2	(4) 5.2	(4) 3.7	(4) 3.2	(4) 9.1	(4) 6.7	(4) 5.6	(4) 13.1	(4) 9.5	(4) 8.0	
Cable Winding Length in Total(m)		1st Layer	21.0	23.1	20.6	21.0	23.1	20.6	21.0	23.1	20.6	21.0	23.1	20.6	
		Standard Layer	(3) 71.7	(3) 78.0	(3) 70.4	(3) 71.7	(3) 78.0	(3) 70.4	(3) 71.7	(3) 78.0	(3) 70.4	(3) 71.7	(3) 78.0	(3) 70.4	
		Top Layer	(4) 101.4	(4) 109.8	(4) 99.6	(4) 101.4	(4) 109.8	(4) 99.6	(4) 101.4	(4) 109.8	(4) 99.6	(4) 101.4	(4) 109.8	(4) 99.6	
Cable Dia, in Use			φ 14	φ 16	φ 18	φ 14	φ 16	φ 18	φ 14	φ 16	φ 18	φ 14	φ 16	φ 18	
Motor	Output	1.5kW				2.2kW				3.7kW				5.5kW	
	Rated Voltage & Current	3 Phases 380V 50Hz 3.5A				3 Phases 380V 50Hz 4.7A				3 Phases 380V 50Hz 7.9A				3 Phases 380V 50Hz 12A	
Operation			Electromagnetic contactor with 2 or 4 Button Switches, Operating at 24 VAC												
Circuit Protection			Thermal Relay						Thermal Relay and Klixon Relay						
Power and Switch Cords			2mm ² ×4 plys×2m / 0.75 mm ² ×4 plys×3m						5.5mm ² ×4 plys×2m / 0.75mm ² ×4 plys×3m						
Winch Weight (kgs)			230	330	337	233	333	340	260	360	367	262	362	369	

Can provide consultation for a variety of devices with special specifications!

- We recommend attach a lift control device in case setting the upper limit/lower limit is required.



- A winch without electric components at special specification of setting a terminal block is available for connecting the winch to clients, control circuits. In FE series, the main frame of winches can be used as a terminal box.



- For winding longer cable, a flange with big diameter is available for FE series and a drum with wide width is available for SX, TX, LX series.

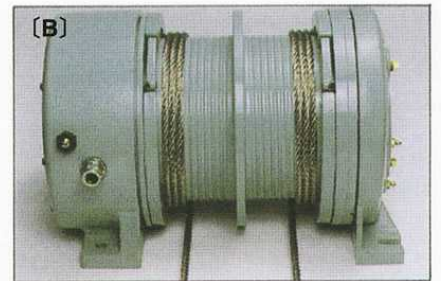


- The winches can be converted to different voltages.

Model	Frequency (Hz)	Voltage
SX (Single Phase)	50 60	100·110·115·120 200·230·240
FE	50	200·220·400·415 420·440
TX (Three Phases)		
LX	60	200·220·400·420 440·460·480

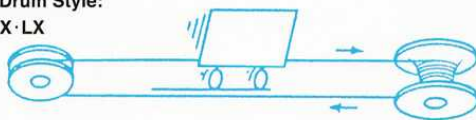
- For winding 2 cables at a time, a modified model of lead drum to left-right reversal is recommended. It has a partition and 2 cable stoppers.

- Specified paint color coating is also available. Salt-proof painting is recommended to use at places where have salt pollution.



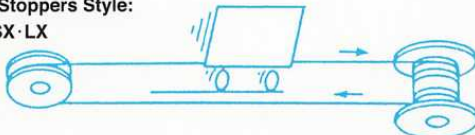
- For moving 2 dollies broadwise, there are following means:

- (A) Capstan Drum Style:
FE·TX·SX·LX



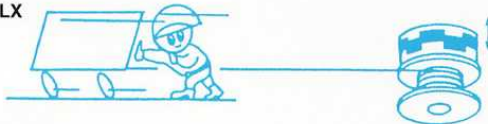
- Needs tensions
- Can not use a lift control device

- (B) 2 Cable Stoppers Style:
FE·TX·SX·LX

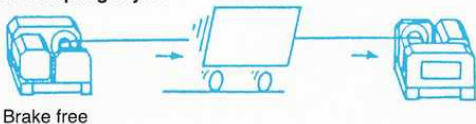


- Can use a lift control device
- Winding length in the 1st layer is limited.

- (C) Clutch Style:
TX·SX·LX

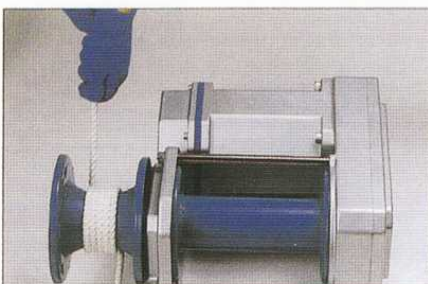


- (D) Two Winches Coupling Style:
FE·TX·SX·LX

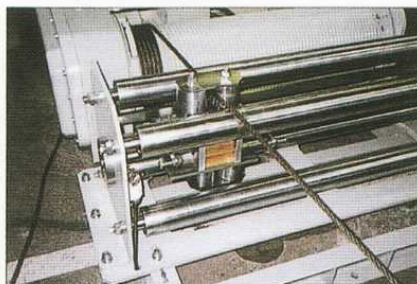


- Can use a lift control device

- For pulling out cables, one-bracket-capstan drum is convenient.



- Various kinds of traverse guide can be designed and produced.



Other devices and equipments can be designed and produced in accordance with client's special specifications.

Plenty of Uses in Accordance with Purposes



●LX for lifting a fish boat



●FE set to a derrick crane



● FE for drying a fire-fighting hose



●FE for hoisting national flags in the Nagano Olympics

Attention: Please read operator manuals before use of products and use the products in accordance with the manuals.

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