

San-Ei's Power is your Power

San-Ei AIR WINCHES



San-Ei SEIKI SEISAKUSHO CO., LTD., JAPAN
(Machinery Manufacturing Co., Ltd.)

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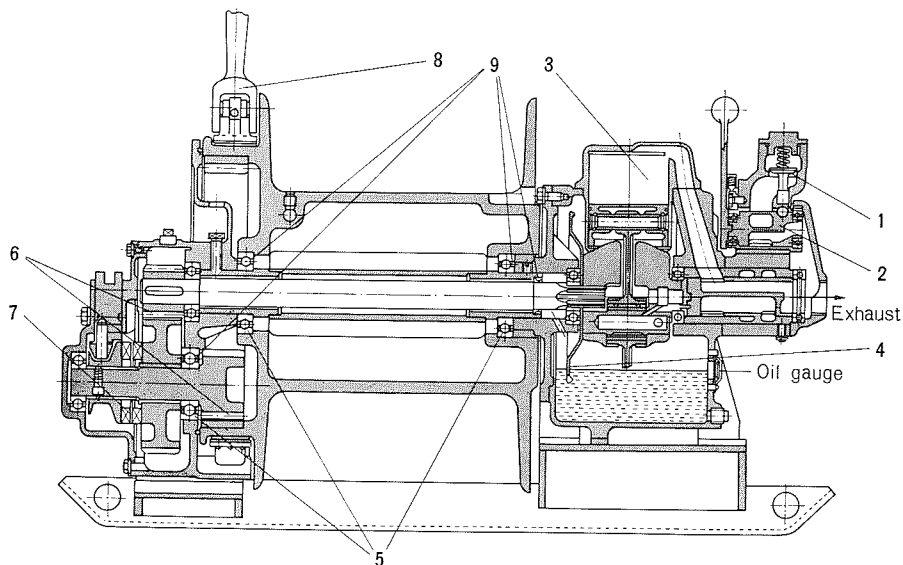
San-Ei Air Winches

BENEFITS and FEATURES

Our long-term experiences and excellent techniques gave a birth to epoch-making air winches. Versatile *SAN-EI's* Models have been widely used in metal mining, construction, shipbuilding, heavy machinery manufacturing, chemicals and other industries.

Every user has been selecting our products with the following benefits and features :

- ※ Easy operation [controll lever only] and safe mechanism [brake] are designed.
- ※ Compact and light weight, they can be moved quickly from one location to another.
- ※ Dusty environment is acceptable for use. ※ No sparks are generated.
- ※ No damage with overheat occurs even for overload.
- ※ Continuous operation at full capacity is available.
- ※ Drum diameter is large enough to prolong life of rope.



- | | |
|---|--|
| ① Poppet / Spool valve is used for the control valve to eliminate air leakage. | ② Reverse revolution is available. Valve handle operation allows free handling of the load, as air flows into the control valve. |
| ③ Strong radial piston air motor is built-in. | ④ Oil disc in the sealed crank case contains oil bath lubricates all sliding parts. |
| ⑤ Ball / roller bearings minimize friction loss. | ⑥ Set-up reduction ratio works on rope pull and rope speed. |
| ⑦ Claw clutch mechanism allows safe, accurate handling in locked ON / OFF positions. | |
| ⑧ Band brake manual or automatic. | ⑨ Sealed ball bearings completely prevent oil leakage from the casings. |

San-Ei Air Winches

HOW TO SELECT

SPECIFICATIONS

Max. output figures are shown with supplied air pressure at 0.6 MPa.

MODEL	W-05	W-10	W-20	W-30	W-50
Motor output (kW)	1.73	7.15	7.15	12.00	12.00
Rope pull (kN)	5	10	20	30	50
Rope speed (m/min)	19	37	19	19	11
Air consumption (Nm ³ /min)	2.0	5.4	5.4	9.0	9.0
Drum capacity [Short drum] (∅ mm. x m)	8x45	10x175 12.5x115	12.5x115	16x160	22.4x115
[Long drum] "	—	10x350 12.5x230	12.5x230	16x320	22.4x230
Weight, Manual Brake					
[Short drum] kg	55	257	266	470	—
[Long drum] "	—	276	287	513	—
Weight, Automatic Brake					
[Short drum] kg	59	267	276	484	780
[Long drum] "	—	288	297	527	873

Air compressor : should be capable of supplying air pressure (at 0.6 MPa) covering 130% more than air consumption, in the case of continuous operation.

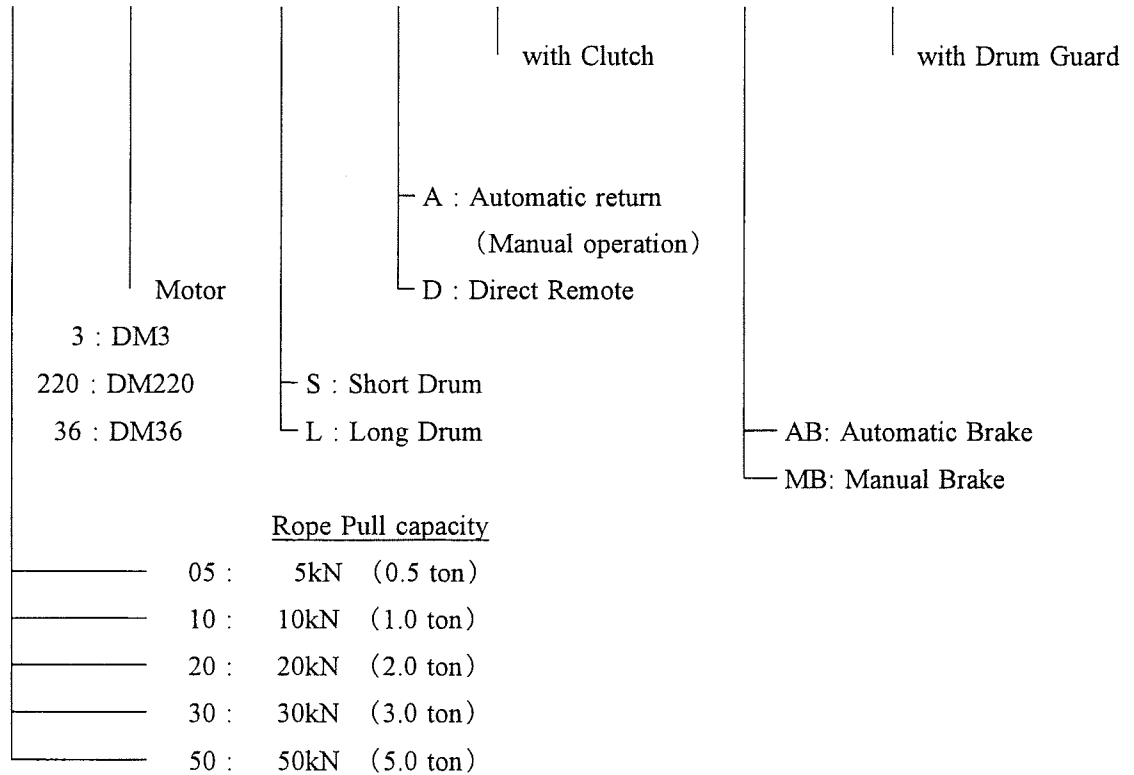
If supplied air pressure is less than 0.6 MPa, use the following **multiplied ratio** to obtain calculated specifications.

Supply air pressure		Rope pull	Rope speed	Air consumption
0.6 MPa		1.0	1.0	1.0
0.5 MPa		0.87	0.91	0.87
0.4 MPa		0.73	0.84	0.70

San-Ei Air Winches

Model No. Identification

W - 10 - 220 - S A C - AB - G



Selection Guide

1-1 Rope pull (capacity) and rope speed

that are major factors differ from each other according to how much rope is on the drum.

The first wrap / layer of rope on the drum receives its highest power at the slowest speed.

Full drum is up to maximum speed with lowest power.

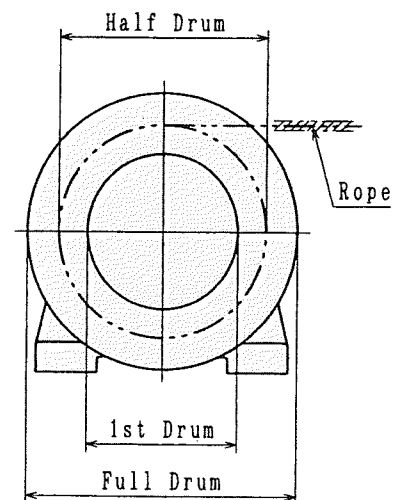
Winch is of Half Drum to be

STANDARD CAPABILITY : D_s .

$$D_s = (D_o + D_f) \times 1/2$$

Drum diameter : D_o

Drum root diameter : D_f



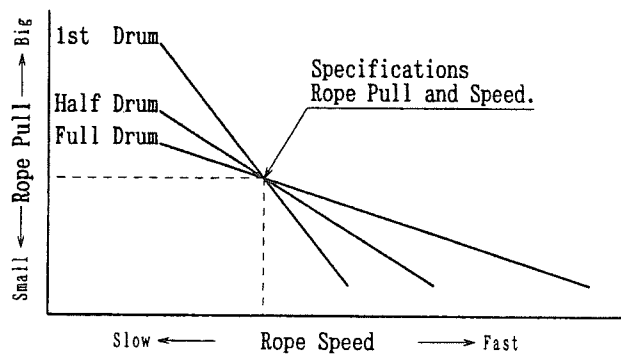
San-Ei Air Winches

1-2 Drum size

(Dia. : diameter)

Model	Drum Size (mm.)			Rope anchor hole Dia.
	Dia. x	Root Dia. x	Width	
W-05-3	120	220	114	10
W-10-220-S	180	410	178	16
W-10-220-L	180	410	356	16
W-20-220-S	180	410	178	16
W-20-220-L	180	410	356	16
W-30-36S	240	530	240	20
W-30-36L	240	530	480	20
W-50-36S	330	600	300	28
W-50-36L	330	600	600	28

2. Load determines maximum rope pull necessary. Refer to Page 2 Specifications so you may select a model with capacity greater than the determined rope pull.
3. Your calculation up to the required rope speed refers to the chart below :



If your required rope speed is less than the figures you calculate, select a model with large enough capacity referred to rope speed in Specifications.

4. Rope selection

4-1 For safe working load, five (5) times as much **BREAKING STRENGTH** rope as load is recommended. The chart below will help in selection : (unit ; Ton)

Rope Dia. (mm)	8	9	10	11.2	12.5	14	16	18	20	22.4	25
Breaking Strength	4.42	5.59	6.9	8.6	10.8	13.5	17.7	22.4	27.6	34.6	43.2
Safe working Load	0.8	1.1	1.3	1.7	2.1	2.7	3.5	4.4	5.5	6.9	8.6

San-Ei Air Winches

4-2 **Maximum length of rope** that varies according to rope diameter is shown for each Model, when winch is tightly wound. (unit : meter)

Model	Rope Diameter (mm.)											
	6.3	8	9	10	11.2	12.5	14	16	18	20	22.4	25
W-05-3	65	45	30	—	—	—	—	—	—	—	—	—
-10-220-S	—	—	210	175	145	117	—	—	—	—	—	—
-10-220-L	—	—	420	350	290	234	—	—	—	—	—	—
-20-220-S	—	—	—	—	145	117	90	—	—	—	—	—
-20-220-L	—	—	—	—	290	234	180	—	—	—	—	—
-30-36-S	—	—	—	—	—	—	200	160	125	—	—	—
-30-36-L	—	—	—	—	—	—	400	320	250	—	—	—
-50-36-S	—	—	—	—	—	—	—	—	165	125	115	85
-50-36-L	—	—	—	—	—	—	—	—	330	250	230	170

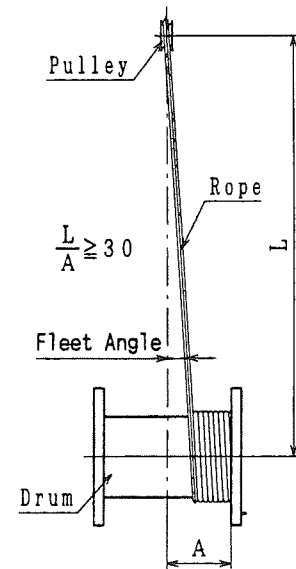
The adequate rope length in actual working is 80% of this length.

6. **Fleet angle** is an important angle in the rope wind-up straightened onto the drum. The angle between the line of sheave and rope to drum is called fleet angle. (See Fig. at right)

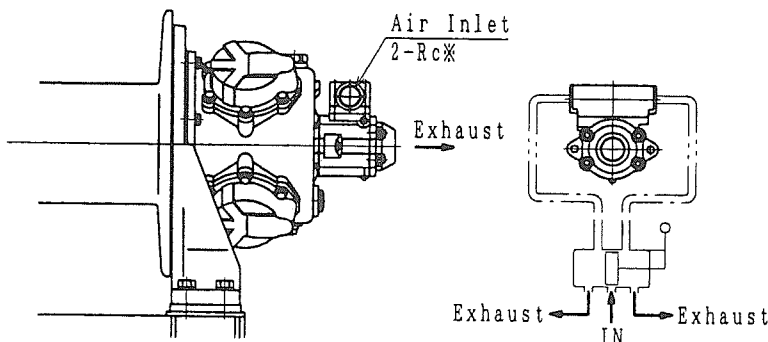
The best angle is NOT more than 2°

When sheave is in the center line of drum and is positioned [30 times as long in distance as drum width]

away from the drum, the best fleet angle is obtained.



7. **Direct remote control** operation is featured for **your choice** as follows :

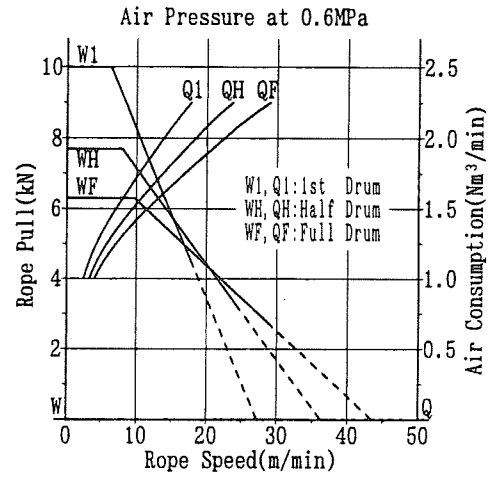
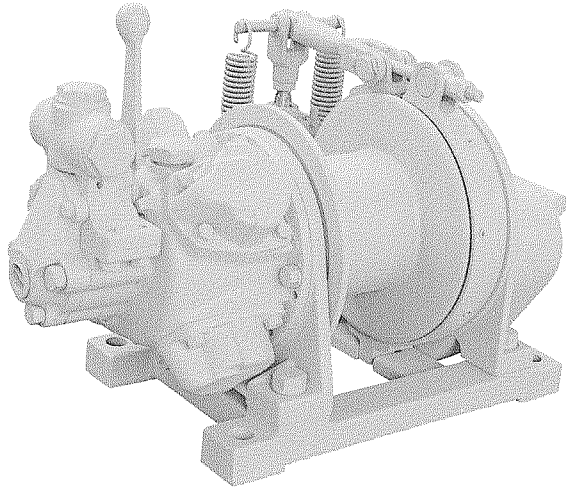


<Inlet Port Size>
 W-05 : Rc 3/4
 W-10 : Rc 1
 W-20 : Rc 1
 W-30 : Rc 1 1/2
 W-50 : Rc 1 1/2

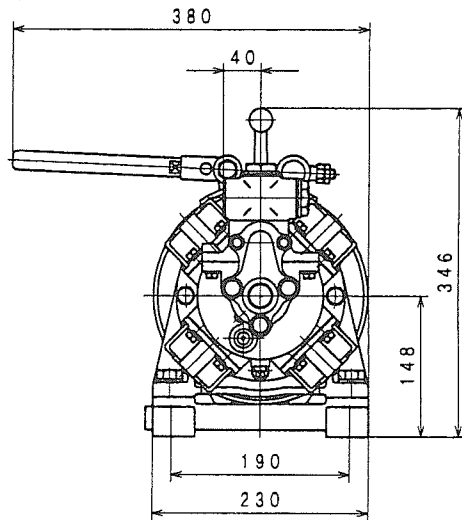
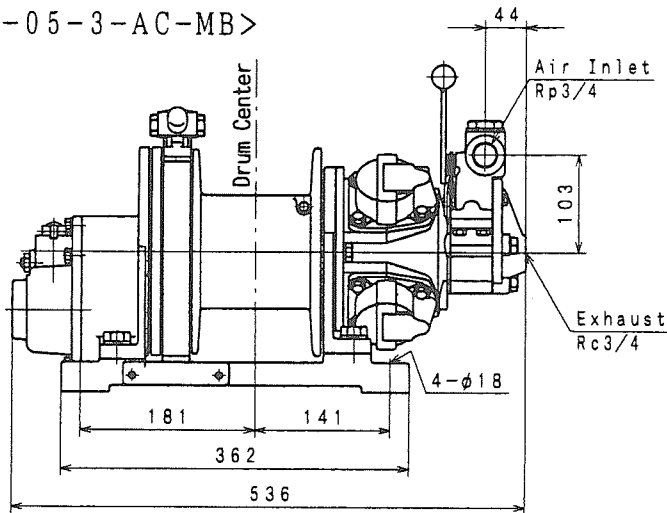
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Model CONFIGURATION/PERFORMANCE/DIMENSION

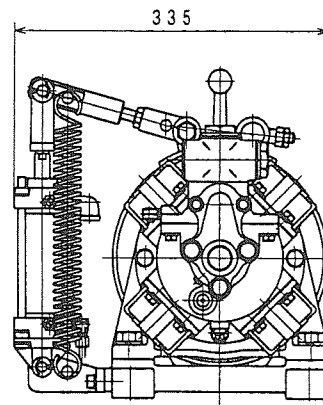
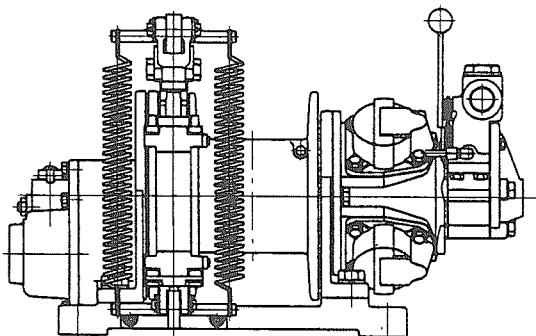
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<W-05-3-AC-MB>

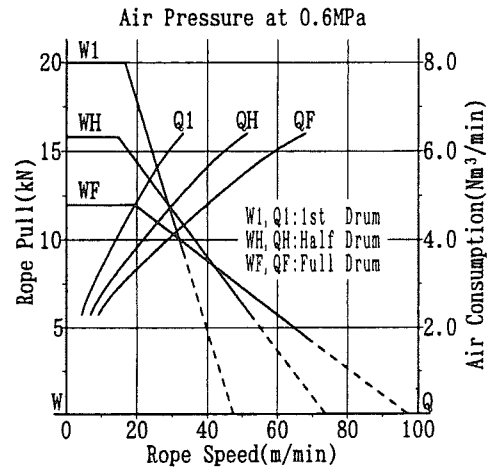
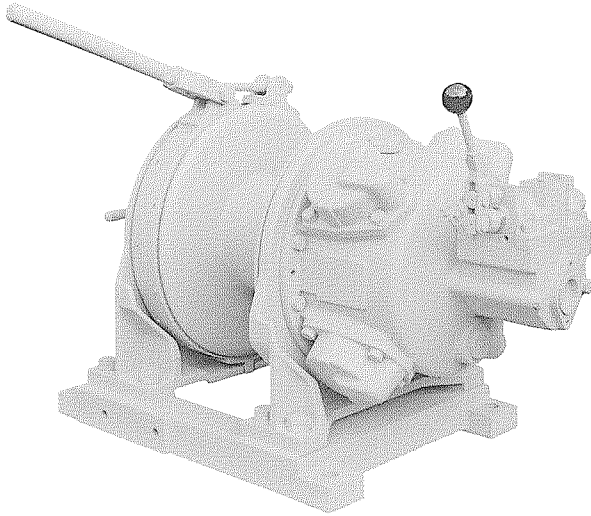


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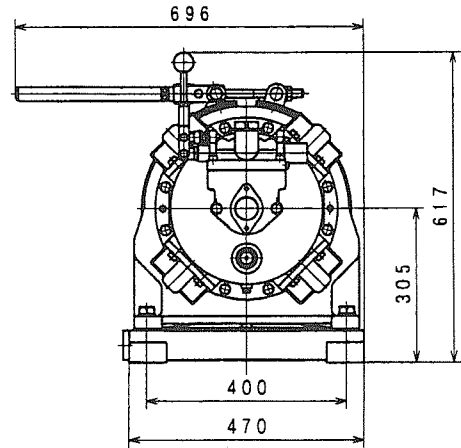
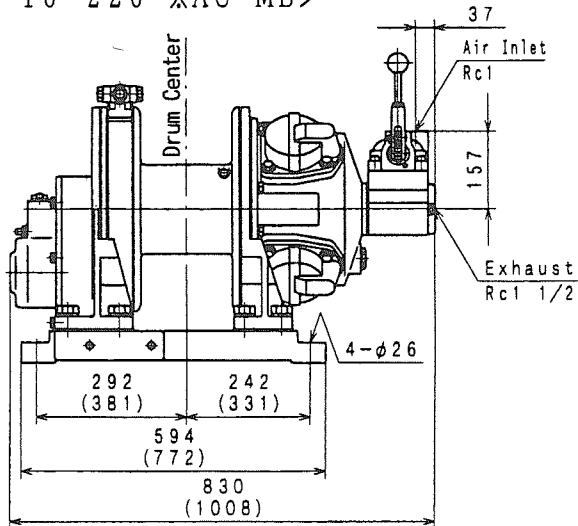


San-Ei Air Winches

Capacity 10 kN <W-10-MB>

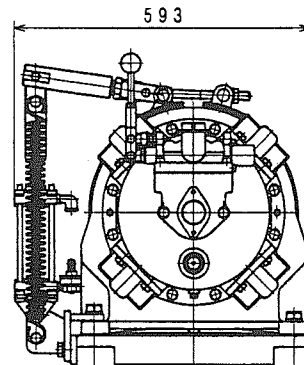
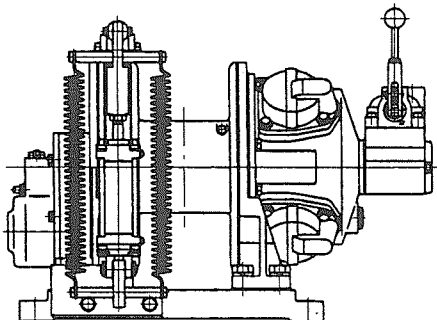


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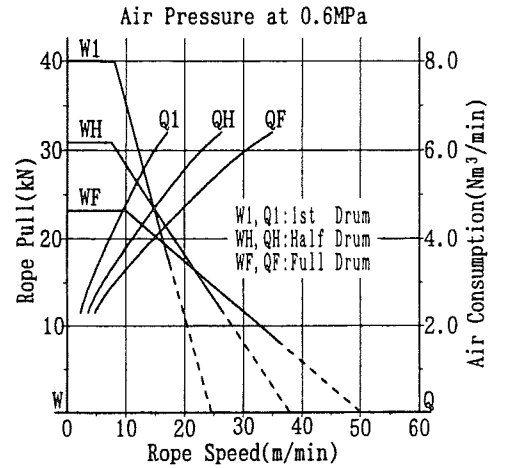
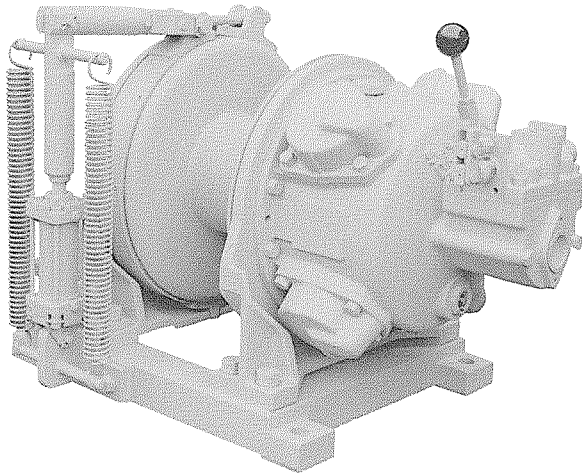
Note
 Brackets () are Long Drum Size.

<W-10-220-※AC-AB>

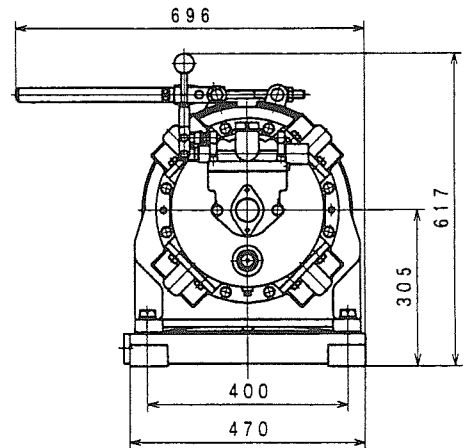
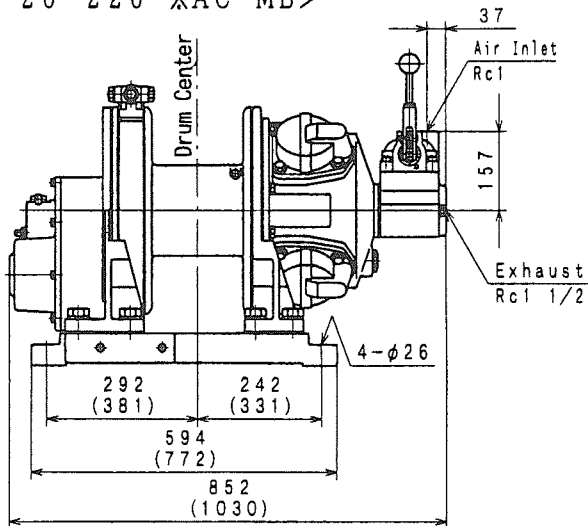


San-Ei Air Winches

Capacity 20 kN <W-20-AB>

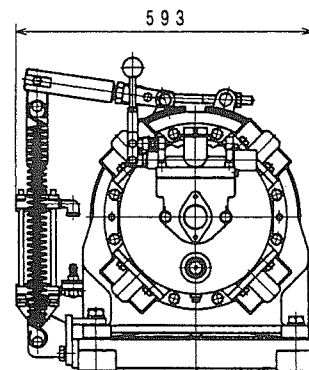
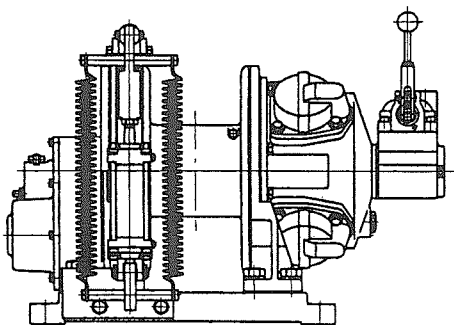


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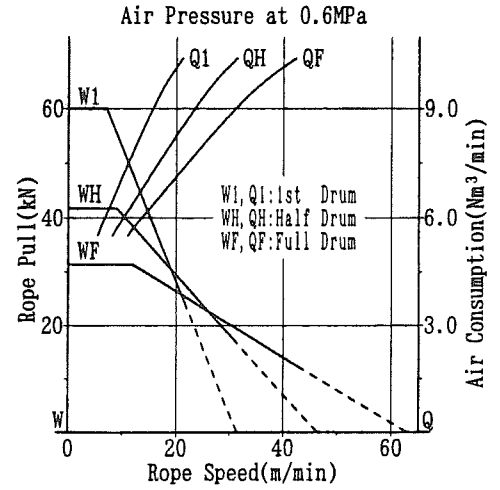
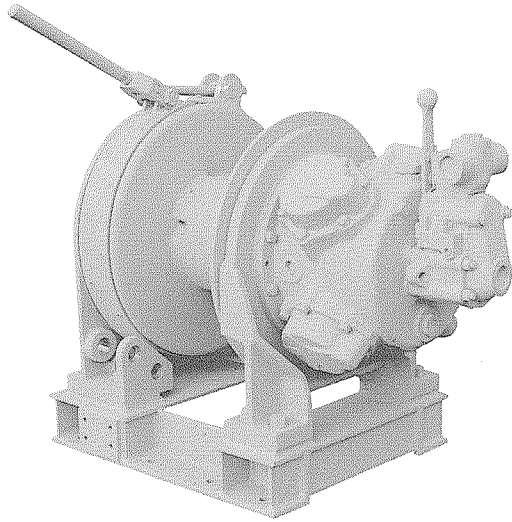
Note
 Brackets() are Long Drum Size.

<W-20-220-※AC-AB>

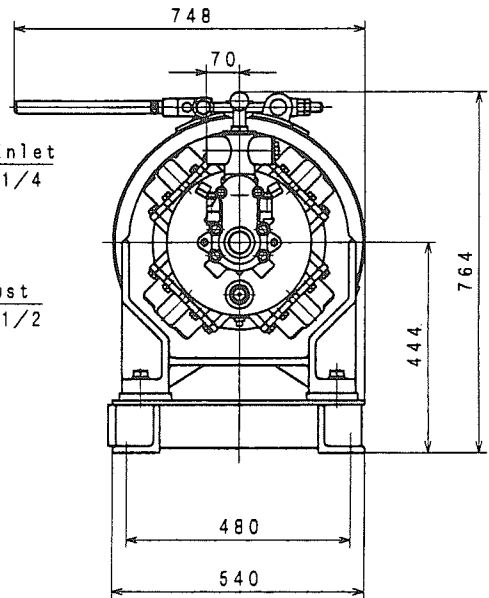
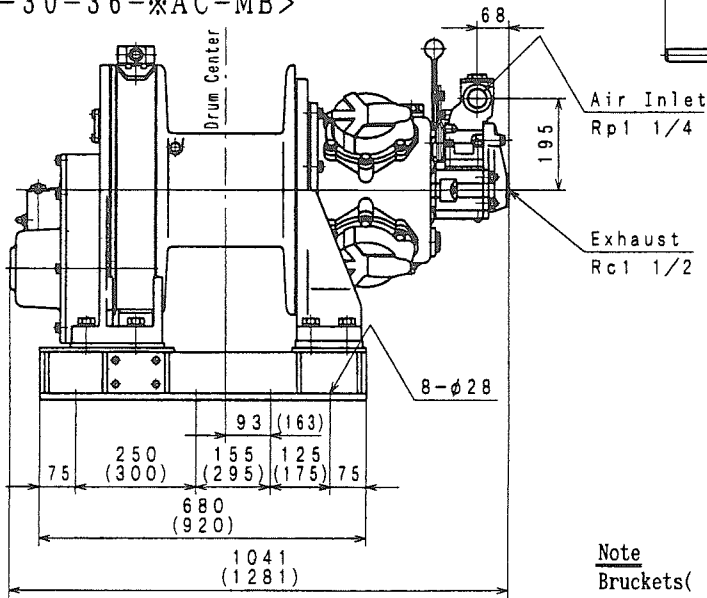


San-Ei Air Winches

Capacity 30 kN <W-30-MB>

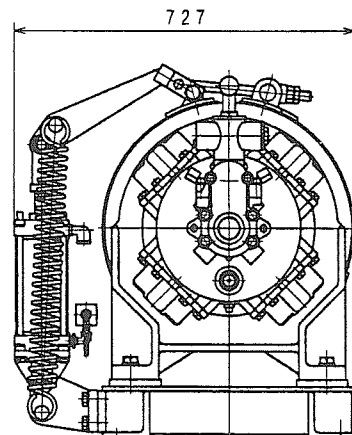
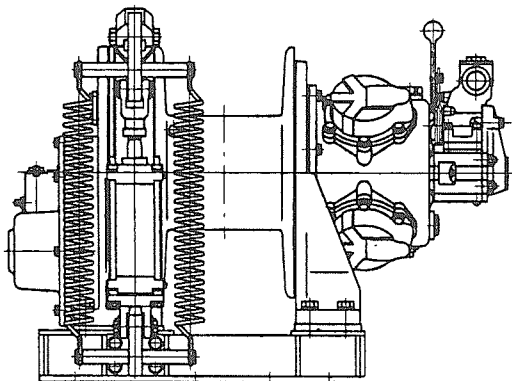


<W-30-36-※AC-MB>



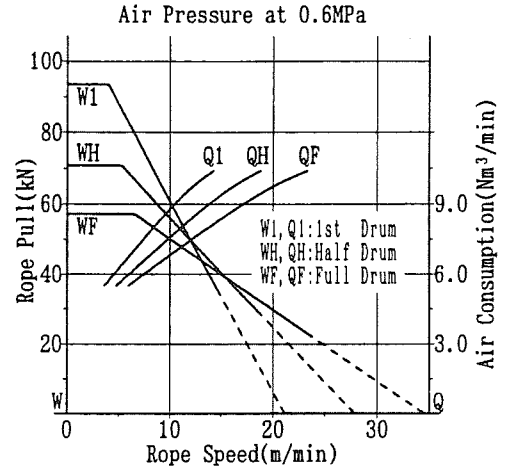
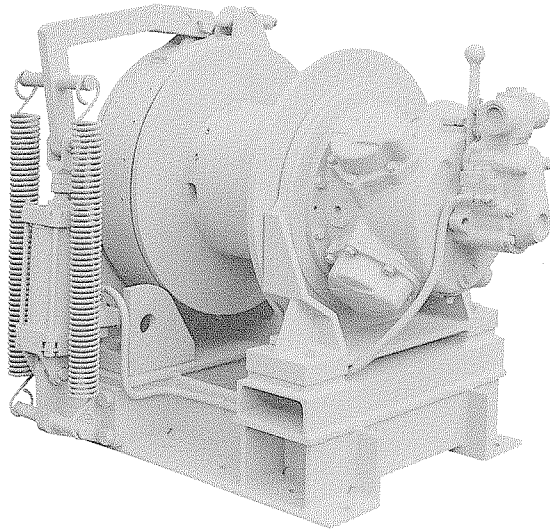
Note
 Brackets () are Long Drum Size.

<W-30-36-※AC-AB>

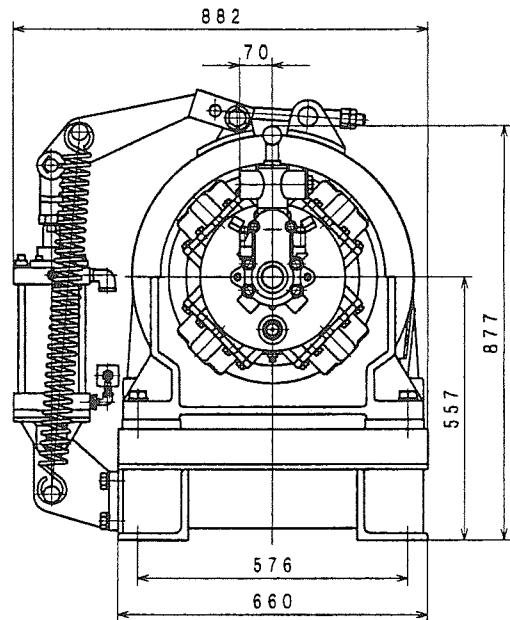
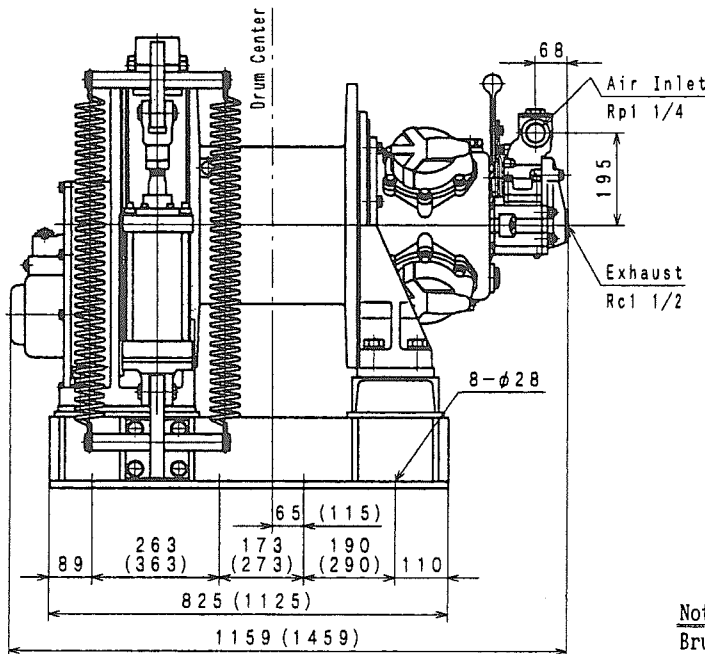


San-Ei Air Winches

Capacity 50 kN <W-50-AB>



<W-50-36-※AC-AB>



Note
Brackets () are Long Drum Size.

CUSTOMS ORDER

On the top of our Standard models, **Customs order model** is ready to supply.

Your inquiry with specifications is most welcome. An adequate model is offered soon.

WARRANTY

SAN-EI warrants air winches for defective materials and production for **one year** from the date of shipment (NOT date of user's installation / commissioning)

This warranty does not apply to air winches that have been misused, abused, maintained improperly or damaged intentionally by users.

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