

# Output circuit filter (OFL) Specifications

## dV/dt type (A type)

### 1. Use

This option is connected with the output circuit of the inverter and used by the following use.

- Reduction of surge voltage of motor terminal

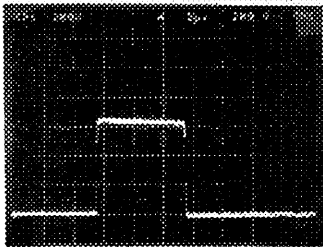
This option prevent the motor insulation is damaged by the surge voltage of 400V series inverter.

### 2. Between sine wave type OFL and dV/dt type OFL

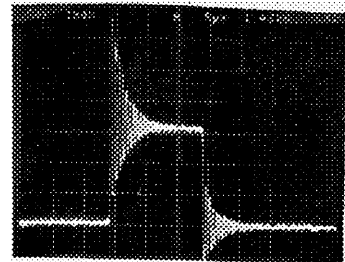
	Sine wave type	dV/dt type (This OFL )
Type name	OFL-000-0	OFL-000-4A
Effect	This OFL make inverter voltage wave to sine wave.	This OFL make dV/dt of inverter voltage to small.
Career frequency	$f_c \geq 6\text{kHz}$	No restriction
Applied inverter	G/P series	G/P series VG series

### 3. Input/Output voltage wave of OFL

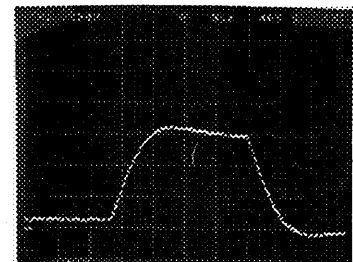
The output voltage wave of OFL is made small dV/dt as shown in the figure below. Even if the output wire is long, the excessive surge voltage is not impressed to the motor terminal. This OFL don't make inverter voltage wave to sine wave. If you need to make sine wave, please use OFL of sine wave type.



Inverter output voltage  
(200V/div 5 μsec/div)



Motor terminal voltage without OFL  
(200V/div 5 μsec/div)



Motor terminal voltage with OFL  
(200V/div 5 μsec/div)

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	CHECKED	'01-11-26	N. Yamada					

4. Condition

- (1) Installation location: Indoor use only. Free from corrosive gases, flammable gases, oil mist, dusts, and direct sunlight
- (2) Ambient temperature : -10~50°C
- (3) Ambient humidity : 5~95%
- (4) Altitude : 1000m or less

5. Specifications

- (1) Common specifications
  - dV/dt output of OFL 500V/μs or less
  - Maximum cable length of output 400m
- (2) Specifications

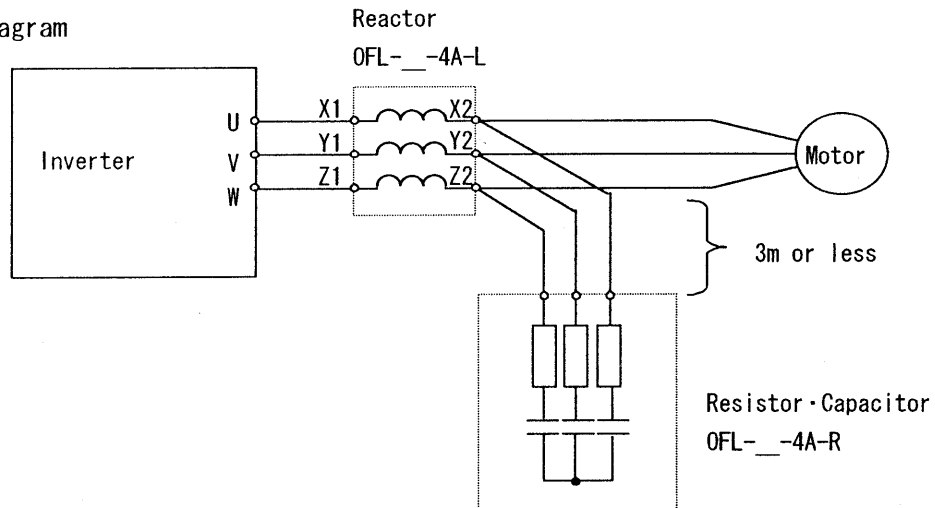
400V series

type name		OFL-30-4A	OFL-37-4A	OFL-45-4A	OFL-55-4A	OFL-75-4A	OFL-90-4A
	Reactor	OFL-30-4A-L	OFL-37-4A-L	OFL-45-4A-L	OFL-55-4A-L	OFL-75-4A-L	OFL-90-4A-L
	Resistor・Capacitor	OFL-30-4A-R	OFL-37-4A-R	OFL-45-4A-R	OFL-55-4A-R	OFL-75-4A-R	OFL-90-4A-R
Applied motor(kW)		30	37	45	55	75	90
Rated current(A)		60	75	91	112	150	176
Overload capability		150% 60sec, 180% 0.5sec					
Maximum output frequency		400Hz					

type name		OFL-110-4A	OFL-132-4A	OFL-160-4A	OFL-200-4A	OFL-220-4A	OFL-280-4A
	Reactor	OFL-110-4A-L	OFL-132-4A-L	OFL-160-4A-L	OFL-200-4A-L	OFL-220-4A-L	OFL-280-4A-L
	Resistor・Capacitor	OFL-110-5A-R	OFL-132-5A-R	OFL-160-5A-R	OFL-200-5A-R	OFL-220-5A-R	OFL-280-5A-R
Applied motor(kW)		110	132	160	200	220	280
Rated current(A)		210	253	304	377	415	520
Overload capability		150% 60sec, 180% 0.5sec					
Maximum output frequency		400Hz					

type name		OFL-315-4A	OFL-355-4A	OFL-400-4A	OFL-450-4A	OFL-500-4A
	Reactor	OFL-315-4A-L	OFL-355-4A-L	OFL-400-4A-L	OFL-450-4A-L	OFL-500-4A-L
	Resistor・Capacitor	OFL-400-4A-R	OFL-400-4A-R	OFL-400-4A-R	OFL-500-4A-R	OFL-500-4A-R
Applied motor(kW)		315	355	400	450	500
Rated current(A)		585	650	740	840	960
Overload capability		150% 60sec, 180% 0.5sec				
Maximum output frequency		400Hz				

6. Schematic diagram



- Please use 2mm<sup>2</sup> or more wire.
- And please wire to the resistor and capacitor within 3m.

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# 7. Dimension and parts specifications

## 1) Reactor

Type name	Reactor							G	⌀	Mass (kg)	Loss (W)	Inductance (mH)	Fig.No.
	W	WP	Dimension (mm)			H							
			D	DP	DT								
400V	OFL-30-4A-L	210	70	175	140	90	210	8	6.4	12	100	0.263	Fig1
	OFL-37-4A-L	220	75	190	150	95	220	8	6.4	15	110	0.237	Fig1
	OFL-45-4A-L	220	70	195	155	140	265	10	8.4	17	150	0.194	Fig2
	OFL-55-4A-L	260	85	200	160	150	275	10	8.4	22	170	0.16	Fig2
	OFL-75-4A-L	260	85	210	170	150	290	12	10.5	25	180	0.122	Fig2
	OFL-90-4A-L	260	85	210	170	155	290	12	10.5	28	190	0.097	Fig2
	OFL-110-4A-L	300	100	230	190	170	330	12	10.5	38	240	0.104	Fig2
	OFL-132-4A-L	300	100	240	200	170	340	12	13	42	260	0.0792	Fig2
	OFL-160-4A-L	300	100	240	200	180	340	12	13	48	300	0.0678	Fig2
	OFL-200-4A-L	320	105	270	220	190	350	15	13	60	330	0.0557	Fig2
	OFL-220-4A-L	340	115	300	250	190	390	15	13	70	400	0.0533	Fig2
	OFL-280-4A-L	350	115	300	250	200	430	15	13	78	450	0.0387	Fig2
	OFL-315-4A-L	440	150	275	230	170	450	15	15	90	650	0.0372	Fig3
	OFL-355-4A-L	440	150	290	245	175	480	15	15	100	680	0.0330	Fig3
	OFL-400-4A-L	440	150	295	240	175	510	15	15	110	750	0.0293	Fig3
OFL-450-4A-L	440	150	325	270	195	470	15	15	125	750	0.0261	Fig3	
OFL-500-4A-L	440	150	335	280	210	500	15	15	145	850	0.0235	Fig3	

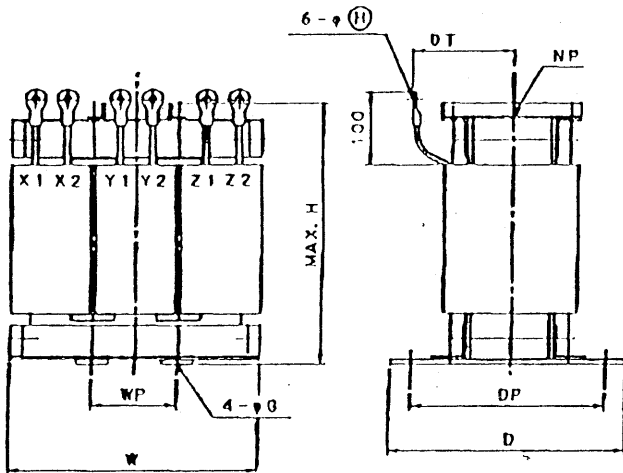


Fig 1

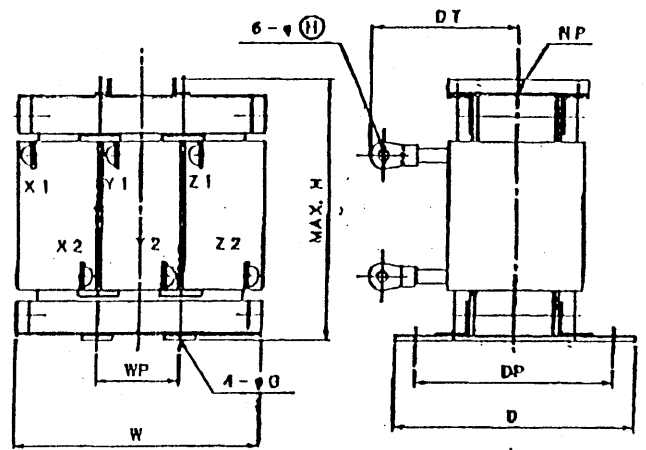


Fig 2

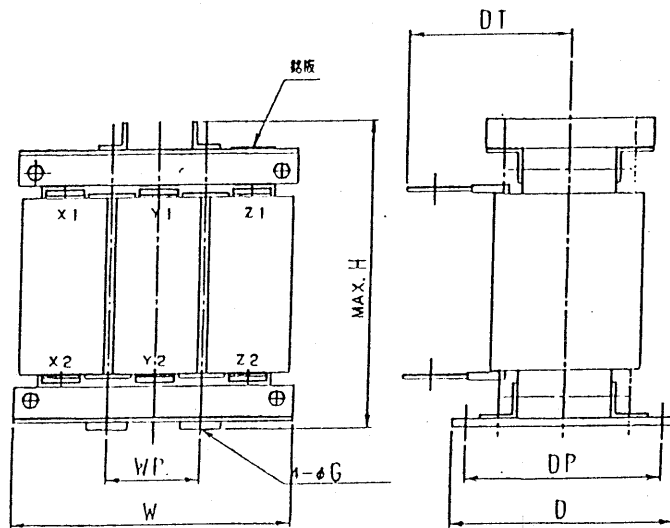


Fig 3

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2) Resistor · Capacitor

Type name		Resistor · Capacitor			Capacitor Capacity	Mass (kg)	Fig.No.
		Quantity of resistor	Resistance(total)	Loss (3phase)			
400V	OFL-30-4A-R	400W × 3	100 Ω	470 W	0.1 μ F	3	Fig4
	OFL-37-4A-R	400W × 6	90 Ω	500 W	0.1 μ F	5.5	Fig5
	OFL-45-4A-R	400W × 6	72 Ω	660 W	0.15 μ F	5.5	Fig5
	OFL-55-4A-R	400W × 6	60 Ω	740 W	0.15 μ F	5.5	Fig5
	OFL-75-4A-R	600W × 9	45 Ω	1020 W	0.22 μ F	10	Fig6
	OFL-90-4A-R	600W × 9	36 Ω	1170 W	0.22 μ F	10	Fig6
	OFL-110-4A-R	600W × 9	36 Ω	1170 W	0.22 μ F	10	Fig6
	OFL-132-4A-R	600W × 9	30 Ω	1540 W	0.33 μ F	10	Fig6
	OFL-160-4A-R	600W × 12	26 Ω	1910 W	0.47 μ F	13	Fig7
	OFL-200-4A-R	600W × 15	21 Ω	2190 W	0.47 μ F	16	Fig8
	OFL-220-4A-R	600W × 15	21 Ω	2190 W	0.47 μ F	16	Fig8
	OFL-280-4A-R	600W × 18	15 Ω	3120 W	0.68 μ F	19	Fig9
	OFL-400-4A-R	220W × 30	12 Ω	2640 W	0.825 μ F	36	Fig10
	OFL-500-4A-R	220W × 30	12 Ω	3400 W	1.1 μ F	36	Fig10

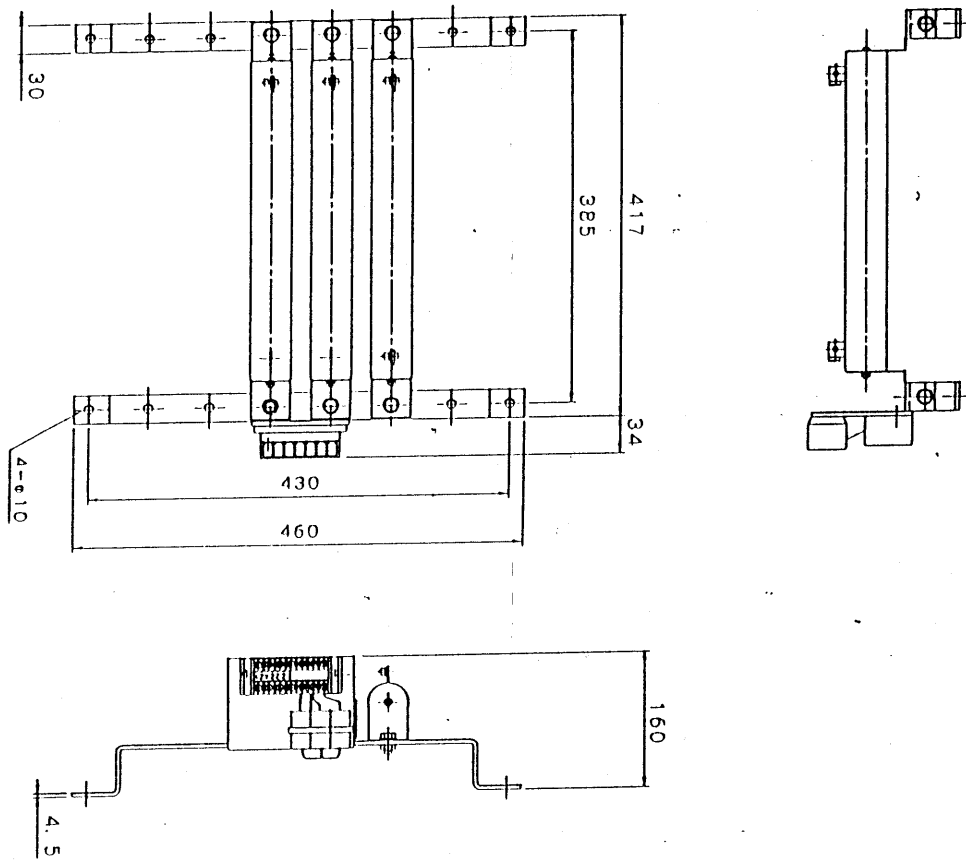


Fig 4

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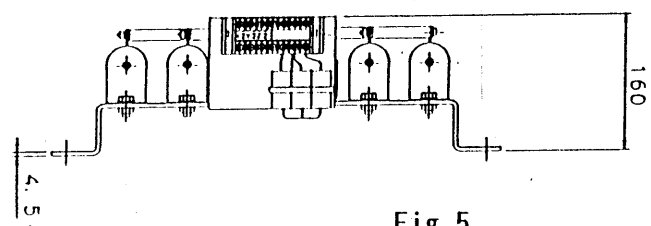
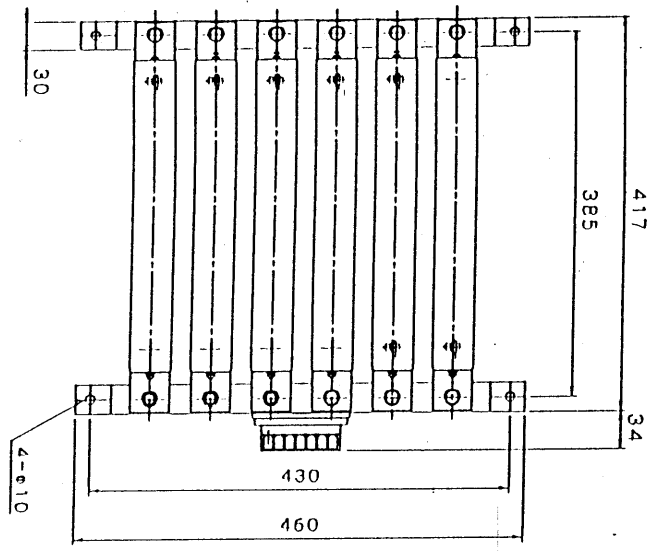


Fig 5

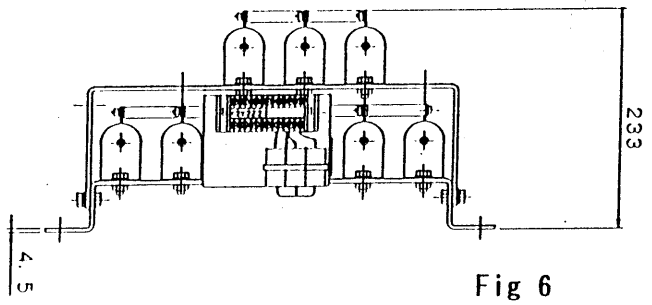
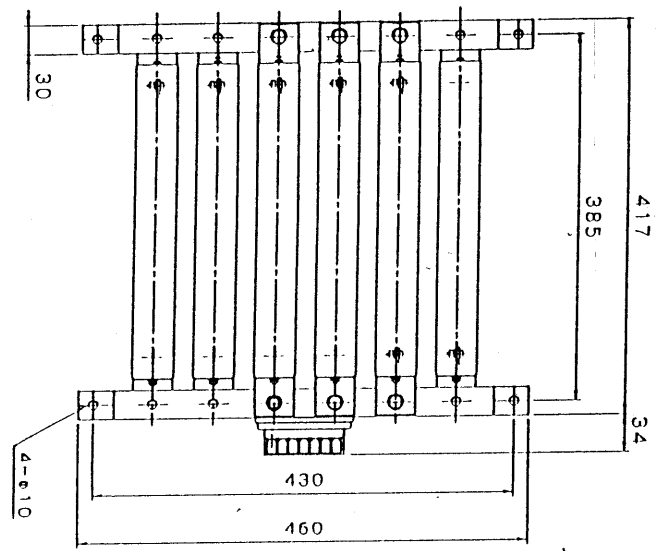
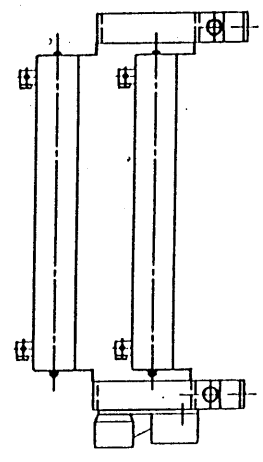
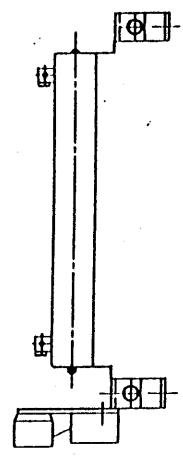


Fig 6



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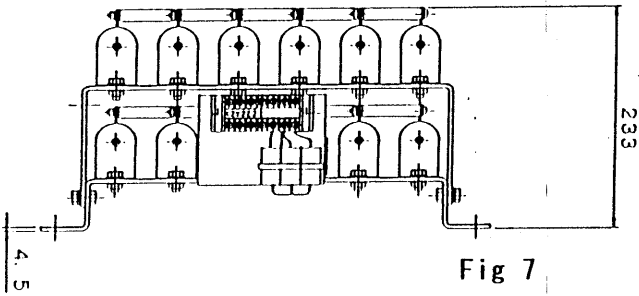
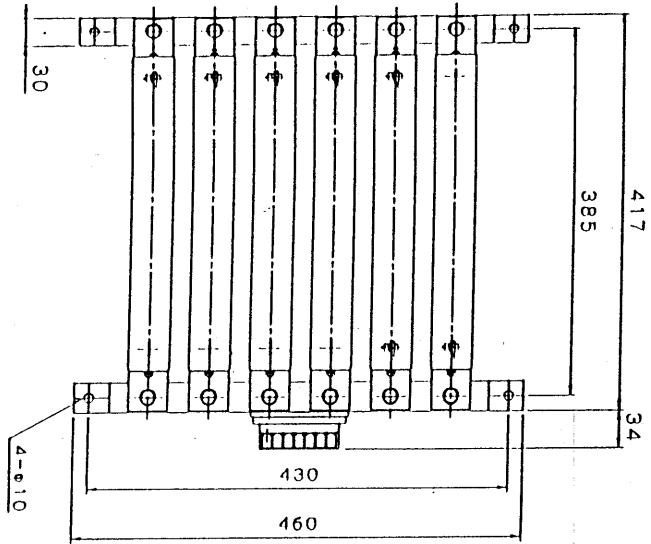


Fig 7

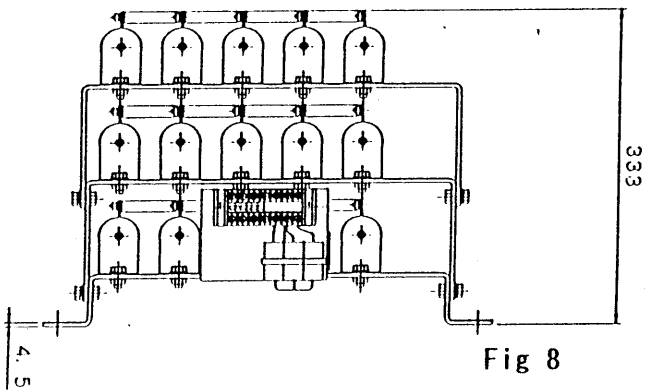
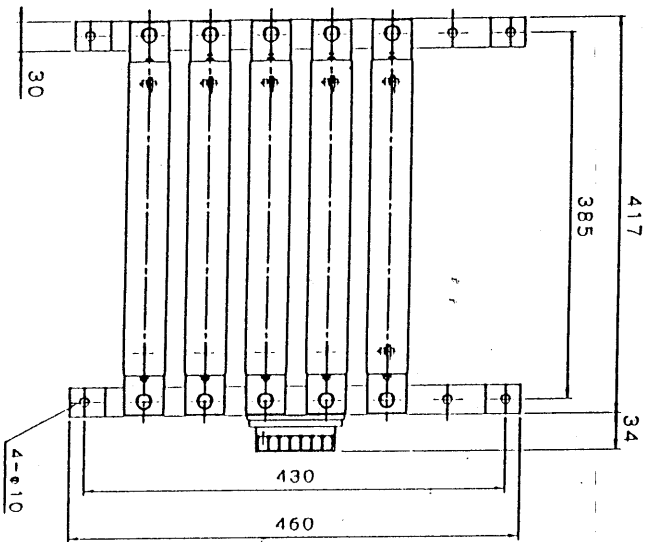
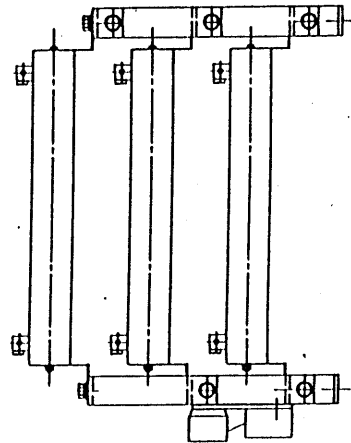
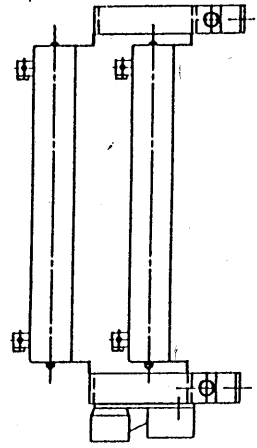


Fig 8



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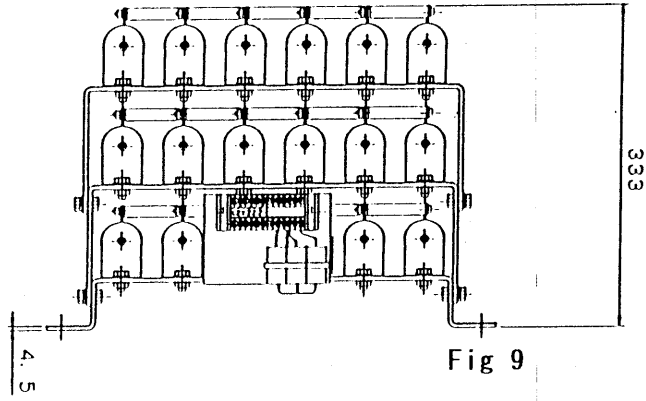
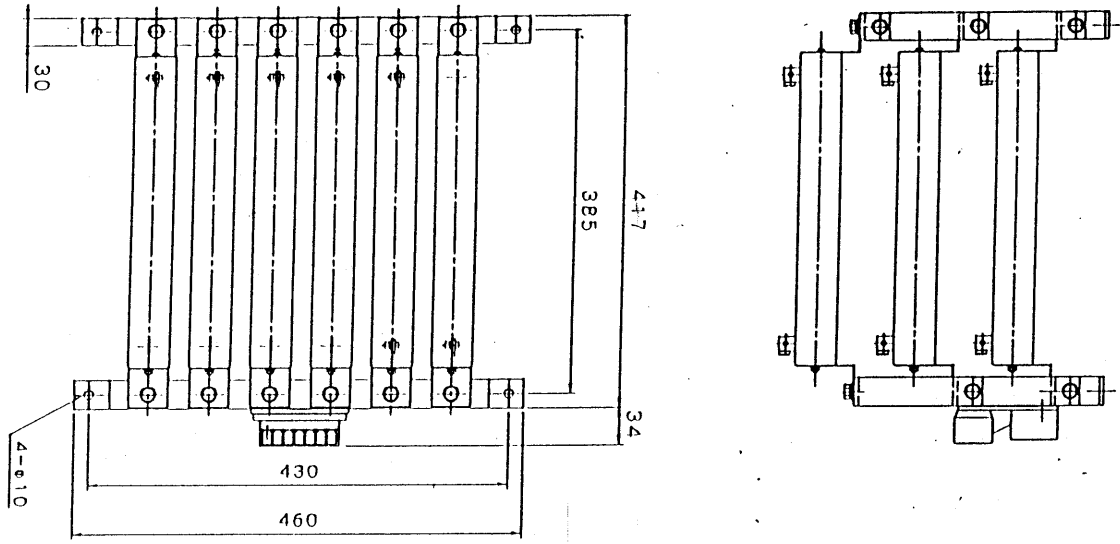


Fig 9

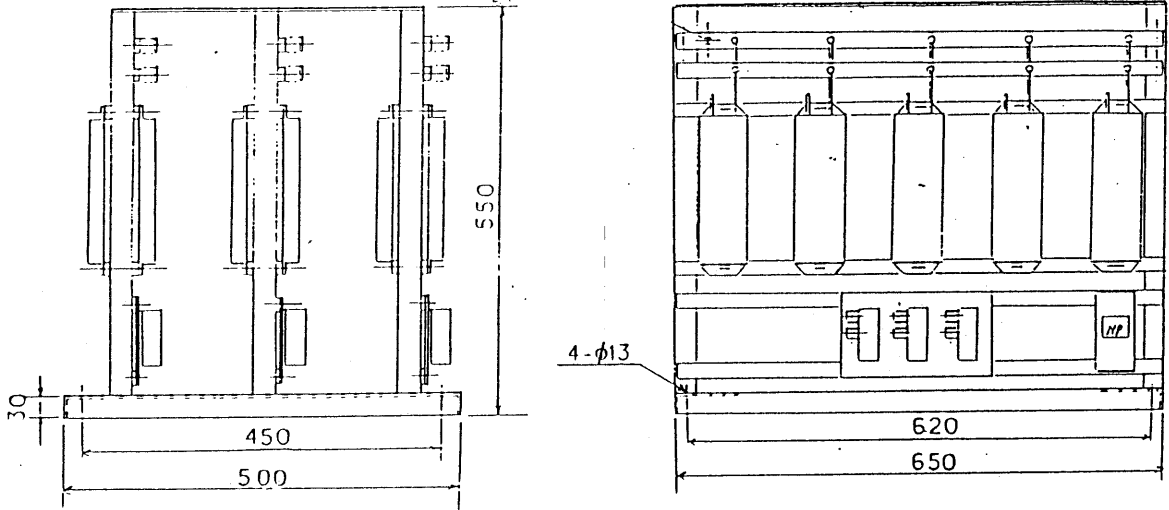


Fig 10

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