

Nishishiba

Marine & Offshore Equipment

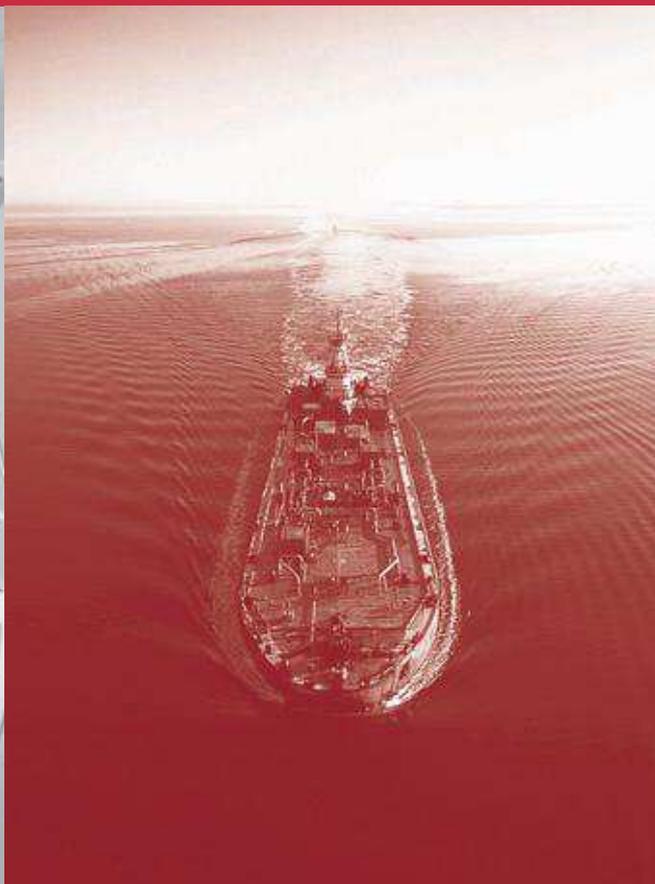


GENERATING SYSTEM

発電装置

Low Voltage AC Generator

交流発電機



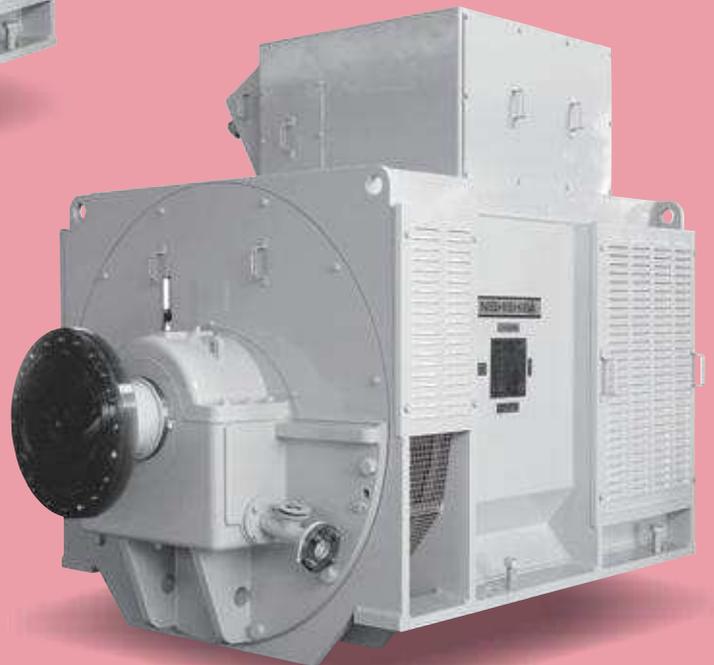
Voltage..... 450V

CONTENTS

| | |
|-----------------------|---|
| SUMMARY | 1 |
| STANDARD | 2 |
| DATA | 4 |



*Standard model
NTAKL-VEB
SINGLE BEARING
Protected drip proof (IP22)*



*Standard model
NTAKL-VCB
DOUBLE BEARING
Protected drip proof (IP22)*

GENERAL

NISHISHIBA

Marine Brushless Generator Upon Advanced Design and Extensive Manufacturing Experience.

西芝の船用ブラシレス発電機は“船用電気機器のトップメーカー”として長年月の豊富な経験と実績をもとに、小型、高性能で高信頼性を有する製品として多くの船舶に搭載されています。

FEATURE

特 徴

•Works certified by major classification

JG: Japanese Government
NK: Nippon Kaiji Kyokai
ABS: American Bureau of Shipping
BV: Bureau Veritas
CR: China Corporation Register of Shipping
DNV: Det Norske Veritas
LR: Lloyd's Register of Shipping

●主要船級協会認定工場

JG, NK, ABS, BV, CR, DNV, LRの認定工場に指定されています。

•Total quality control "ISO9001"

Total quality control system of our works guarantees highest quality, reliability and performance.

●厳密な品質管理

ISO9001システムの導入により高信頼性及び高性能を実現しています。

•Advanced design

- High efficiency
- Smaller in size and light weight
- Quick voltage recovery
- Reliable insulation of class F

●最近の技術を駆使した新設計

- 高効率
- 小型軽量
- 優れた電圧応答性能
- 高信頼性のF種絶縁

STANDARD SPECIFICATION AND OPTION

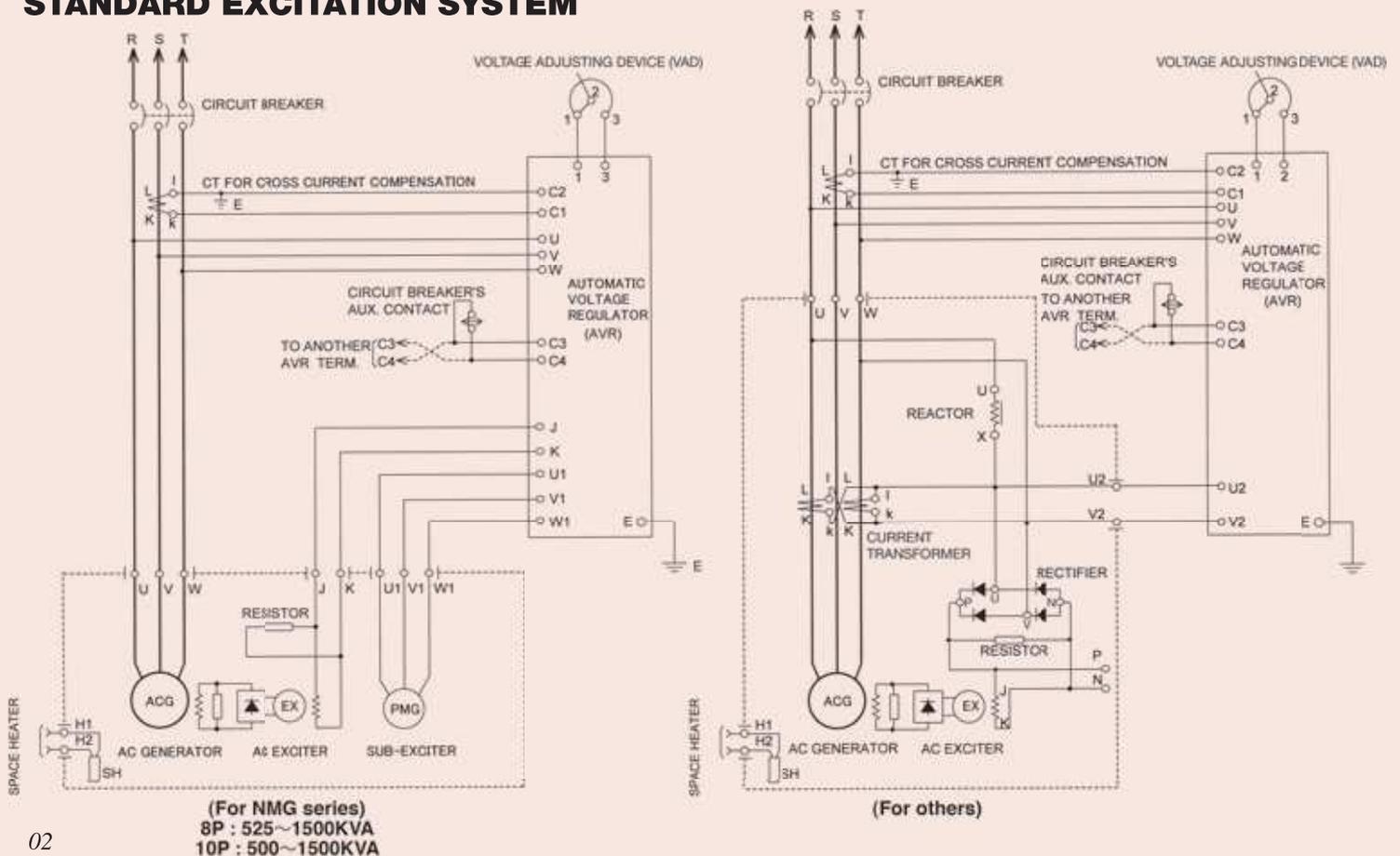
Following table shows the typical specification, other specification is also available.

下記の表は標準的な仕様を示しております。下記以外の仕様についても対応可能です。

| ITEM | STANDARD SPECIFICATION | OPTION |
|---|--|------------------------------|
| 1.Rule | JG, NK, ABS, BV, CCS, CR, DNV, GL, KR, LR | |
| 2.Ambient temperature | 45°C or 50°C | |
| 3.Relative humidity | 95% or less | |
| 4.Enclosure | IP22 (Drip proof) | IP23, IP44 |
| 5.Cooling system | IC01 (Self ventilation) | IC410 |
| 6.Voltage | 450V | 415V, 380V, 225V, |
| 7.Frequency | 60Hz | 50Hz |
| 8.Rating | Continuous | |
| 9.Insulation | Class F (temperature rise F) | Class F (temperature rise B) |
| 10.Bearing | Sleeve or ball Refer to construction | |
| 11.Excitation system | Brushless excitation system | |
| 12.Transient volt. Drop | Not more than 15%, suddenly thrown on 80% of rating current. | |
| 13.Recovery time of volt. Drop | Within 1 sec. | |
| 14.Voltage regulation | Within ±2.5% | |
| 15.Adjusting range of rating voltage | Within ±5.0% | |
| 16.Strength of over current | 150% 15 sec. | |
| 17.Negative-phase-sequence current capability | 15% or less | |
| 18.Strength of over speed | 120% 2 min. | |

| 項目 | 標準仕様 | オプション |
|------------|---|------------------|
| 1.適用規則 | JG, NK, ABS, BV, CCS, CR, DNV, GL, KR, LR | |
| 2.周囲温度 | 45°C又は50°C | |
| 3.相対湿度 | 95%以下 | |
| 4.外被形式 | IP22 (防滴形) | IP23, IP44 |
| 5.冷却方式 | IC01 (自己通風) | IC410 |
| 6.電圧 | 450V | 415V, 380V, 225V |
| 7.周波数 | 60Hz | 50Hz |
| 8.定格 | 連続 | |
| 9.絶縁種別 | F種絶縁 (温度上昇F種) | F種絶縁 (温度上昇B種) |
| 10.軸受 | スリーブ又はボール | |
| 11.励磁方式 | ブラシレス | |
| 12.瞬時電圧変動率 | 15%以下、(80%負荷投入) | |
| 13.電圧復帰時間 | 1秒以内 | |
| 14.総合電圧変動率 | ±2.5%以内 | |
| 15.電圧調整範囲 | ±5.0%以内 | |
| 16.過電流耐量 | 150%15秒 | |
| 17.逆相電流耐量 | 15%以下 | |
| 18.過速度耐量 | 120%2分 | |

STANDARD EXCITATION SYSTEM



STANDARD ACCESSORY AND OPTION

Following table shows the standard accessory, other accessories are also available.

下記の表は標準的な付属品を示しております。下記以外の付属品についても対応可能です。

| ITEM | QUANTITY | APPLICATION | REMARK'S |
|------------------------------------|-----------|-------------------------------|---------------------------------------|
| 1. Generator fitting bolts | 1 set | Standard | |
| 2. Adjusting bolts and liner | 1 set | Standard | |
| 3. Thermo meter for bearing | 1 pc./brg | Standard | °C scale |
| 4. Temp. detector for bearing | 1 pc./brg | Option | Pt 100 Ω |
| 5. Air filter | 1 set | Standard | |
| 6. Anticondensation heater | 1 set | Standard | |
| 7. Embedded temp. detector | 6 pces | Option | Pt 100 Ω, 3 for regular, 3 for spare |
| 8. CTs for differential protection | 3 pces | according to rule requirement | |
| 9. Water cooled air cooler | 1 set | Option | with zinc anodes and leakage detector |

| 項目 | 数量 | 区分 | 備考 |
|----------------|-------|---------|-------------------|
| 1. 発電機据え付けボルト | 1式 | 標準装備 | |
| 2. 調整ボルト及びライナー | 1式 | 標準装備 | |
| 3. 軸受温度計 | 1個/軸受 | 標準装備 | °Cスケール |
| 4. 軸受温度センサー | 1式/軸受 | オプション | Pt100 Ω |
| 5. エアフィルタ | 1式 | 標準装備 | |
| 6. スペースヒータ | 1式 | 標準装備 | |
| 7. 埋め込み温度センサー | 6個 | オプション | Pt100 Ω、3個常用、3個予備 |
| 8. 比率差動検出用CT | 3個 | 適用規格による | |
| 9. 水冷空気冷却器 | 1式 | オプション | 防食亜鉛電極、漏洩検知器付 |

STANDARD SPARE PARTS AND OPTION

Following table shows the typical spare parts, other spare parts are also available.

下記の表は標準的な予備品を示しております。下記以外の予備品についても対応可能です。

| | |
|--------------------------------------|--------------------|
| 1. Bearing | 1/4 per each type |
| 2. Rectifier element | 1 set per ship |
| 3. Air filter | 1 set per ship |
| 4. Resistor element | 1/10 per each type |
| 5. Space heater element | 1/10 per each type |
| 6. Automatic voltage regulator (AVR) | 1 set per ship |
| 7. Voltage adjusting device (VAD) | 1 set per ship |

| | | |
|------------------|----|------|
| 1. 軸受 | 各種 | 1/4 |
| 2. 整流器素子 | 各種 | 1台分 |
| 3. エアフィルタ | 各種 | 1台分 |
| 4. 抵抗素子 | 各種 | 1/10 |
| 5. スペースヒータエレメント | 各種 | 1/10 |
| 6. 自動電圧調整器 (AVR) | 各種 | 1台分 |
| 7. 電圧設定器 (VAD) | 各種 | 1台分 |

TYPE-FORM

NTAKL - □□□

- Nishishiba Three phase brush less generator 西芝三相ブラシレス発電機
- Enclosure
 - V : Drip proof 防滴形
 - R : Air/water cooler mounted 空冷/水冷空気冷却器付
- Number of bearing
 - C : Double bearing 両軸受
 - E : Single bearing 片軸受
- Kind of bearing
 - K : Ball bearing ころがり軸受
 - B : Sleeve bearing, bracket type スリーブ軸受、ブラケット形
 - P : Sleeve bearing, pedestal type スリーブ軸受、ベディスタル形

APPLICATION OF OUTPUT AND POLES

Following table shows the typical specification, other specification is also available.

下記の表は標準的な仕様を示しております。下記以外の仕様についても対応可能です。

| Output 定格出力 (kVA) | | 200 | 400 | 600 | 800 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | |
|-------------------------|-----|-------------------|-----|-----|---------|-------|-------|--------------------|-------|-------|--|
| | | Low Voltage Range | | | | | | High Voltage Range | | | |
| Pole 極数 | 4P | VEK | | | | | | | | | |
| | 6P | VEK/VCK | | | | | | | | | |
| | 8P | | | | VEB/VCB | | | | | | |
| | 10P | | | | VEB/VCB | | | VCP | | | |

Standard series
標準シリーズ
 Available option
オプション

■4P Single Ball Bearing
TYPE : NTAKL-VEK

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|---------|---------|--------|-------|-----|-----|-----|-----|-----|------|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | |
| 1800/ 1500 | 30 | 24 | G035AKE | 810 | 314 | 496 | 425 | 260 | 780 | — | 200 | 310 | Fig. 1 |
| | 37.5 | 30 | G035BKE | 930 | 374 | 556 | 425 | 380 | 780 | — | 200 | 360 | |
| | 60 | 48 | G035BKE | 930 | 374 | 556 | 425 | 380 | 780 | — | 200 | 400 | |
| | 87.5 | 70 | G043AKE | 934 | 394 | 540 | 505 | 410 | 860 | — | 250 | 530 | |
| | 150 | 115 | G043BKE | 1075 | 465 | 610 | 515 | 510 | 860 | — | 250 | 690 | |
| | 200 | 160 | G048BKE | 1175 | 490 | 685 | 565 | 620 | 910 | — | 280 | 850 | |
| | 225 | 180 | G048BKE | 1175 | 490 | 650 | 645 | 620 | 910 | — | 280 | 920 | |
| | 275 | 220 | G055AKE | 1115.4 | 465.4 | 650 | 645 | 660 | 990 | — | 315 | 1120 | |
| 350 | 280 | G055BKE | 1195.4 | 505.4 | 690 | 645 | 660 | 915 | — | 315 | 1350 | | |

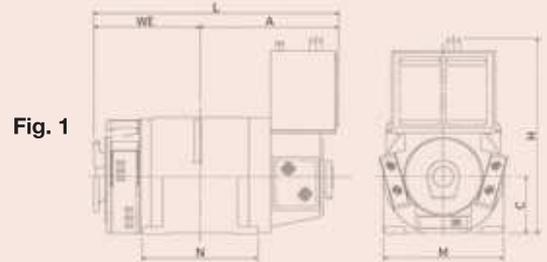


Fig. 1

■6P Double Ball Bearing (SCG Series)
TYPE : NTAKL-VCK

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | W | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|---------|---------|------|-----|-----|-----|------|------|------|-----|------|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | | |
| 1200/ 1000 | 100 | 80 | G048AKC | 1060 | 525 | 535 | 570 | 670 | 640 | 960 | 0 | 280 | 700 | Fig. 2 |
| | 125 | 100 | G048AKC | 1060 | 525 | 535 | 570 | 670 | 640 | 960 | 0 | 280 | 880 | |
| | 150 | 120 | G055AKC | 1130 | 555 | 575 | 650 | 750 | 725 | 1000 | 40 | 280 | 1050 | |
| | 200 | 160 | G061AKC | 1184 | 565 | 519 | 730 | 840 | 720 | 1065 | 60 | 300 | 1350 | |
| | 300 | 240 | G061BKC | 1274 | 710 | 564 | 730 | 840 | 810 | 1065 | 60 | 300 | 1600 | |
| | 400 | 320 | G070AKC | 1295 | 740 | 555 | 840 | — | 850 | 1145 | 90 | 330 | 1750 | |
| | 500 | 400 | G070BKC | 1475 | 860 | 615 | 840 | — | 970 | 1295 | 90 | 330 | 2100 | Fig. 3 |
| 562.5 | 450 | G070CKC | 1545 | 885 | 660 | 840 | — | 1020 | 1295 | 90 | 330 | 2230 | | |

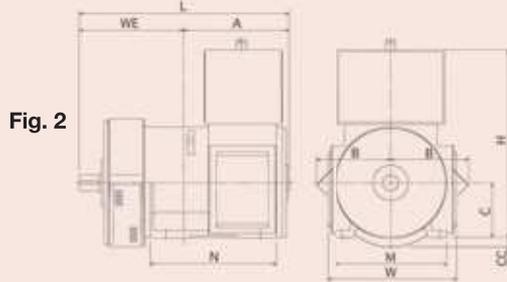


Fig. 2

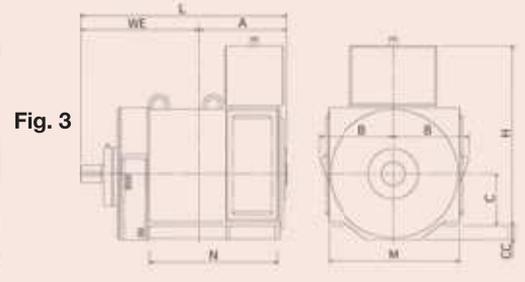


Fig. 3

■6P Single Ball Bearing (SCG Series)
TYPE : NTAKL-VEK

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | W | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|---------|---------|------|-----|-----|-----|------|------|------|-----|------|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | | |
| 1200/ 1000 | 100 | 80 | G048AKE | 996 | 421 | 575 | 570 | 670 | 640 | 960 | 0 | 280 | 700 | Fig. 4 |
| | 125 | 100 | G048AKE | 996 | 431 | 565 | 570 | 670 | 640 | 960 | 0 | 280 | 750 | |
| | 150 | 120 | G055AKE | 1066 | 451 | 615 | 650 | 750 | 725 | 1000 | 40 | 280 | 980 | |
| | 200 | 160 | G061AKE | 1064 | 524 | 540 | 730 | 840 | 720 | 1065 | 60 | 300 | 1350 | |
| | 300 | 240 | G061BKE | 1116 | 531 | 585 | 730 | 840 | 810 | 1065 | 60 | 300 | 1600 | |
| | 300 | 240 | G061BKE | 1116 | 531 | 585 | 730 | 840 | 810 | 1065 | 60 | 300 | 1600 | |
| | 400 | 320 | G070AKE | 1151 | 546 | 605 | 840 | — | 850 | 1300 | 90 | 330 | 1750 | Fig. 5 |
| | 500 | 400 | G070BKE | 1271 | 606 | 655 | 840 | — | 970 | 1295 | 90 | 330 | 2160 | |
| 625 | 500 | G070CKE | 1320 | 631 | 689 | 840 | — | 1020 | 1295 | 90 | 330 | 2290 | | |

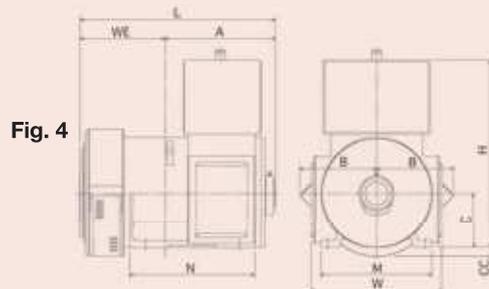


Fig. 4

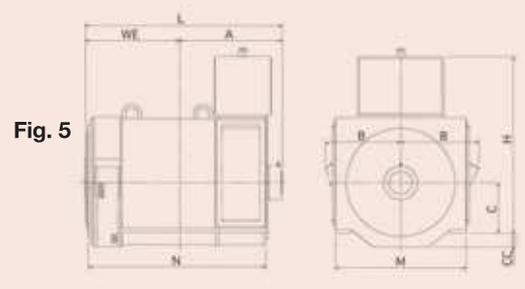


Fig. 5

■8P Single Sleeve Bearing (NMG Series)
TYPE : NTAKL-VEB

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|------|--------|------|------|-----|------|------|------|-----|-----|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | |
| 900/ 750 | 525 | 420 | 08NA | 1690 | 945 | 745 | 1050 | 1135 | 1455 | 105 | 400 | 2500 | Fig. 6 |
| | 625 | 500 | 08NB | 1780 | 1005 | 775 | 1050 | 1195 | 1455 | 105 | 400 | 2850 | |
| | 762.5 | 610 | 08NC | 1895 | 1055 | 840 | 1050 | 1325 | 1455 | 105 | 400 | 3100 | |
| | 1000 | 800 | 09NA | 1915 | 1060 | 855 | 1150 | 1300 | 1560 | 110 | 450 | 3750 | |
| | 1250 | 1000 | 09NB | 1985 | 1080 | 905 | 1150 | 1400 | 1560 | 110 | 450 | 4200 | |
| | 1500 | 1200 | 10NA | 2050 | 1130 | 920 | 1330 | 1435 | 1775 | 130 | 500 | 4950 | |

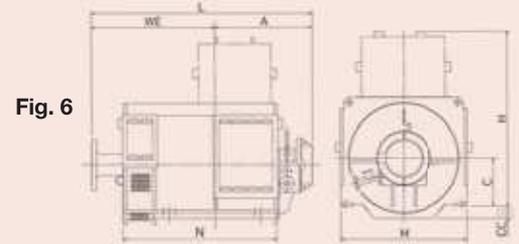


Fig. 6

■8P Double Sleeve Bearing (NMG Series)
TYPE : NTAKL-VCB

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|------|--------|------|------|-----|------|------|------|-----|-----|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | |
| 900/ 750 | 525 | 420 | 08NA | 1815 | 1070 | 745 | 1050 | 1135 | 1455 | 105 | 400 | 2550 | Fig. 7 |
| | 625 | 500 | 08NB | 1875 | 1100 | 775 | 1050 | 1195 | 1455 | 105 | 400 | 2800 | |
| | 762.5 | 610 | 08NC | 2045 | 1205 | 840 | 1050 | 1325 | 1455 | 105 | 400 | 3150 | |
| | 1000 | 800 | 09NA | 2110 | 1255 | 855 | 1150 | 1300 | 1560 | 110 | 450 | 3900 | |
| | 1250 | 1000 | 09NB | 2180 | 1275 | 905 | 1150 | 1400 | 1560 | 110 | 450 | 4350 | |
| | 1500 | 1200 | 10NA | 2230 | 1310 | 920 | 1330 | 1435 | 1675 | 130 | 500 | 5100 | |

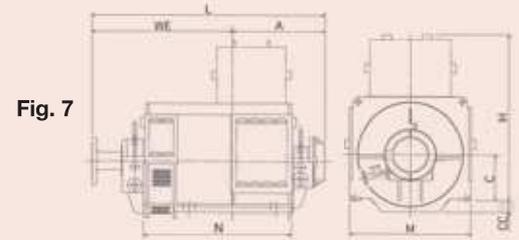


Fig. 7

■10P Single Sleeve Bearing (NMG Series)
TYPE : NTAKL-VEB

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|------|--------|------|------|-----|------|------|------|-----|-----|--------------|--------|
| | 60Hz | 50Hz | | | | | | | | | | | |
| 720/ 600 | 525 | 400 | 08NB | 1780 | 1005 | 775 | 1050 | 1195 | 1455 | 105 | 400 | 2800 | Fig. 8 |
| | 625 | 500 | 08NC | 1910 | 1070 | 840 | 1050 | 1325 | 1455 | 105 | 400 | 3100 | |
| | 762.5 | 610 | 09NA | 1935 | 1080 | 855 | 1150 | 1300 | 1560 | 110 | 450 | 3750 | |
| | 1000 | 800 | 09NB | 2065 | 1160 | 905 | 1150 | 1400 | 1560 | 110 | 450 | 4150 | |
| | 1250 | 1000 | 10NA | 2190 | 1270 | 920 | 1330 | 1435 | 1675 | 130 | 500 | 5150 | |
| | 1500 | 1200 | 10NB | 2125 | 1165 | 960 | 1330 | 1510 | 1675 | 130 | 500 | 5750 | |

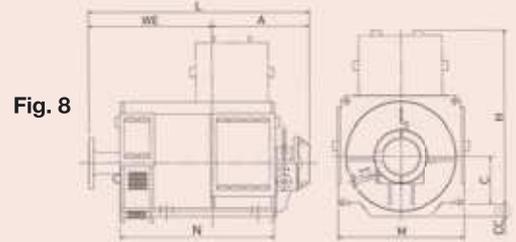


Fig. 8

■10P Double Sleeve Bearing
TYPE : NTAKL-VCB (NMG Series) /VCP (N21 Series)

| SPEED (min ⁻¹) | OUTPUT (kVA) | | Fr. No | L | WE | A | M | N | H | CC | C | MASS (kg) | DWG |
|-------------------------------|-----------------|------|--------|------|------|------|------|------|------|-----|-----|--------------|---------|
| | 60Hz | 50Hz | | | | | | | | | | | |
| 720/ 600 | 500 | 400 | 08NB | 1940 | 1165 | 775 | 1050 | 1195 | 1455 | 105 | 400 | 2850 | Fig. 9 |
| | 625 | 500 | 08NC | 2085 | 1245 | 840 | 1050 | 1325 | 1455 | 105 | 400 | 3100 | |
| | 762.5 | 610 | 09NA | 2110 | 1255 | 855 | 1150 | 1300 | 1560 | 110 | 450 | 3900 | |
| | 1000 | 800 | 09NB | 2180 | 1275 | 905 | 1150 | 1400 | 1560 | 110 | 450 | 4300 | |
| | 1250 | 1000 | 10NA | 2360 | 1440 | 920 | 1330 | 1435 | 1675 | 130 | 500 | 5500 | |
| | 1500 | 1200 | 10NB | 2455 | 1495 | 960 | 1330 | 1510 | 1675 | 130 | 500 | 6100 | |
| | 2000 | — | 12MA | 2705 | 1505 | 1200 | 1600 | 2380 | 2050 | 150 | 600 | 8100 | Fig. 10 |
| | 2500 | — | 12MB | 2715 | 1455 | 1260 | 1600 | 2500 | 2050 | 150 | 600 | 9000 | |
| | 2750 | — | 12MB | 2715 | 1455 | 1260 | 1600 | 2500 | 2050 | 150 | 600 | 9200 | |

VCB NMG Series

VCP N21 Series

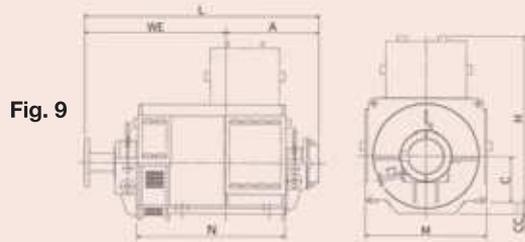


Fig. 9

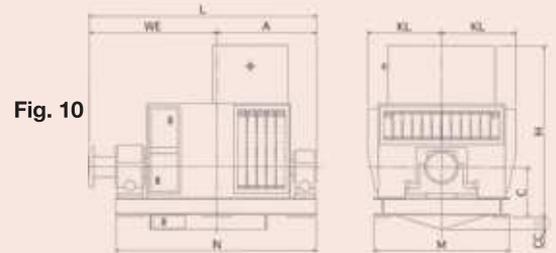


Fig. 10



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安全に関するご注意
Safety Precautions

- 正しく安全にお使いいただくために、ご使用前に必ず取扱説明書をよくお読み下さい。
- Operators should read the INSTRUCTION MANUAL before starting operation on safe use of the product.

- 資料の内容は、お断りなしに変更することがありますのでご了承下さい。
- The data given in this catalogue are subject to change without notice.