



宏旭

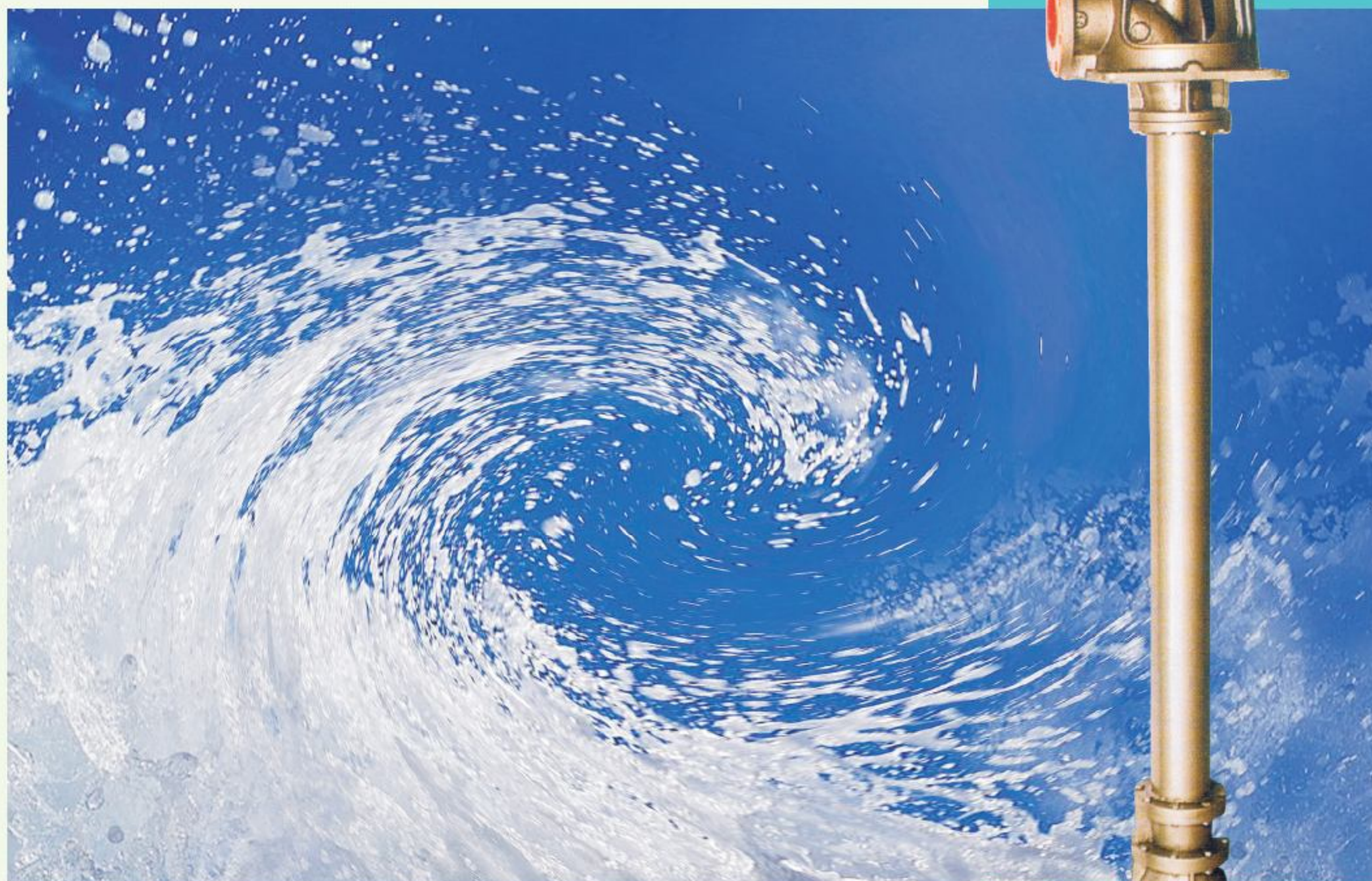
HORNG SHIUH

豎軸式

離心泵浦

VERTICAL CENTRIFUGAL

PUMP



FST

特點

- 1 效率高**
與一般臥式泵浦比較，此型泵浦的效率最高，所需動力最小，可節省運轉費用。
- 2 吸入揚程不受限制**
一般陸上型泵浦的吸入揚程都在9M以內，本型泵浦葉輪深入水中，故吸入揚程不受限制。
- 3 按裝面積最小**
如採用立式馬達，則直接裝設於出口座上，而大幅減少泵浦裝設所佔用的面積。
- 4 軸馬力變化小**
此型泵浦的軸馬力隨著出水量大小，而不會有顯著的變化，操作時比陸上型泵浦更穩定可靠。
- 5 操作方便**
因葉輪置於水面下，不必利用輔助措施(如真空泵浦)即可隨時啟動送水，可遙控操作。
- 6 保養容易**
構造簡單，組成件少，保養維修容易。

Features

- 1.Highest Efficiency**
Compared to a general horizontal pump, this type of pump exhibits higher efficiency and requires less power, so as to save operating cost.
- 2.Unlimited lifting head**
Normally, the lifting head of conventional land-type pump is limited to within 9m. In comparison, this type of pump is submerged in water and will not be limited by the lifting head.
- 3.Smallest installation occupancy**
When using a vertical-type motor, it can be directly mounted on the discharge block to significantly reduce the area required for mounting the pump.
- 4.Less variation of shaft horsepower**
The shaft horsepower type of pump will not present visible change along with the level of discharge. In operation, it is more stable and reliable compared to the land-type pump.
- 5.Convenient for operation**
As the impeller is configured under water, it can be started for supplying water without the aid of auxiliary device (e.g. vacuum pump); further, it is also available for remote operation.
- 6.Easier for maintenance**
Being simple in construction and with few components, it is easier for servicing and maintenance.

用途

農業，園藝深井抽水等灌溉用。
原水、海水等抽送用。
工廠、事業單位等各種用途給水用。

Application

- Agricultural and gardening irrigation and deep well pumping.
- Raw water and seawater pumping.
- Factory, industrial facility water supply.

主要構造

本高效率豎軸多段式泵浦，主要有下列組件：

- 1 入水殼**
以阻力最小的鐘形(類似喇叭口)做成吸入口形狀，而提高泵浦性能。
- 2 導輪**
在本多段式泵浦段與段之間，特別增設擴散式通道的導輪，以大幅提高泵浦效率。
- 3 葉輪**
本型葉輪各部份係經詳細的流場計算，嚴謹的鑄造過程，使葉輪各處表面內外光滑平順，是本型泵浦獲致最高效率的主要原因。且各個葉輪均經動平衡校正，使泵浦在運轉時平穩不振動。

Main Components

This High-efficient Vertical Shaft Multi-step Pump consists of the following components:

- 1.Suction bellmouth**
Designed in a bellmouth shape (similar to trumpet shape) it presents the smallest resistance for enhancing the performance of the pump.
- 2.Guide Vane**
Diffusing-type channel Guide Vane is specially added between the steps of this multi-step pump to significantly enhance the pump efficiency.
- 3.Impeller**
The detailed flowing field has been computed for each portion of the impeller. In addition, stringent casting process is also executed to present flat and smooth internal and external surfaces and is the main reason for achieving the highest efficiency for this type of pump. Further, dynamic balance calibration is also performed for each individual impeller to allow the pump to run steadily without vibration.

4 軸心
由三部份(泵軸、柱軸、頂軸)所組成，以高級鋼料和不銹鋼為素材，經精密加工製成，強度夠、耐用性高。在結構設計上，開放式直軸使維修方便。除此之外，可依據特殊需要，在軸外側多加一層保護管，亦即密閉式設計，以隔離泵浦軸心和原液。

5 柱管
採用耐銹性極優的碳鋼管(SGP)製成，每支標準長度2M，管與管以凸緣對接，接合處加裝中間拖架，以精確固定軸的中心位置。

6 出口座
特殊的流道設計，流體垂直向上轉為水平送出時，能量耗損最小。

7 軸承
軸向推力設計-採用最高級的止推軸承，其大小和負荷量均經審慎的評估，使設計壽命達20,000.小時以上。

8 潤滑
開放式軸心
如原水為不含雜質、常溫或者其他特殊性質者，直接以原水作為柱管以下各處軸承的潤滑液。
密閉式軸心
可依特殊使用場合，而有多種設計供選擇。

4. Shaft
It is composed of three sections, the Pump Shaft, Column Shaft and Head Shaft, which are manufactured from high-class steel and stainless steel. They are fabricated through precision processing to exhibit tough strength and higher durability. In structural design, the open-type straight shaft is also easier for maintenance. Further, another layer of protection tube can also be mounted on the shaft according to specific demand, i.e. closed type of design for separating the pump shaft and the liquid.

5. Column Pipe
It is fabricated from carbon steel (SGP) that possesses excellent corrosion resistance. The standard length of each pipe is 2m and all pipes are butt-connected with a flange, with an shafting bracket mounted at the jointing area to accurately secure the center position of the shaft.

6. Discharge Head
Special flowing path design to achieve minimum energy consumption when the fluid turns from upward vertical flowing to horizontal conveying.

7. Bearings
Axial thrust design: The highest class of thrust bearings are selected for which, their dimensions and load have been evaluated as achieving over 20,000 hours of design life.

8. Lubrication
Open-type Shaft
If the raw water being pumped contains no impurities and is presenting room temperature or other special properties, then the raw water will be used as the liquid for lubricating the bearings under the column pipe.
Closed-type Shaft
Several designs are provided for option according to specific application.

傳動方式

- (1) 標準方式
使用立式(凸緣型)馬達直接傳動。
- (2) 特殊選用配備
汽、柴油引擎-使用皮帶或者齒輪方式聯結。

Transmission Method

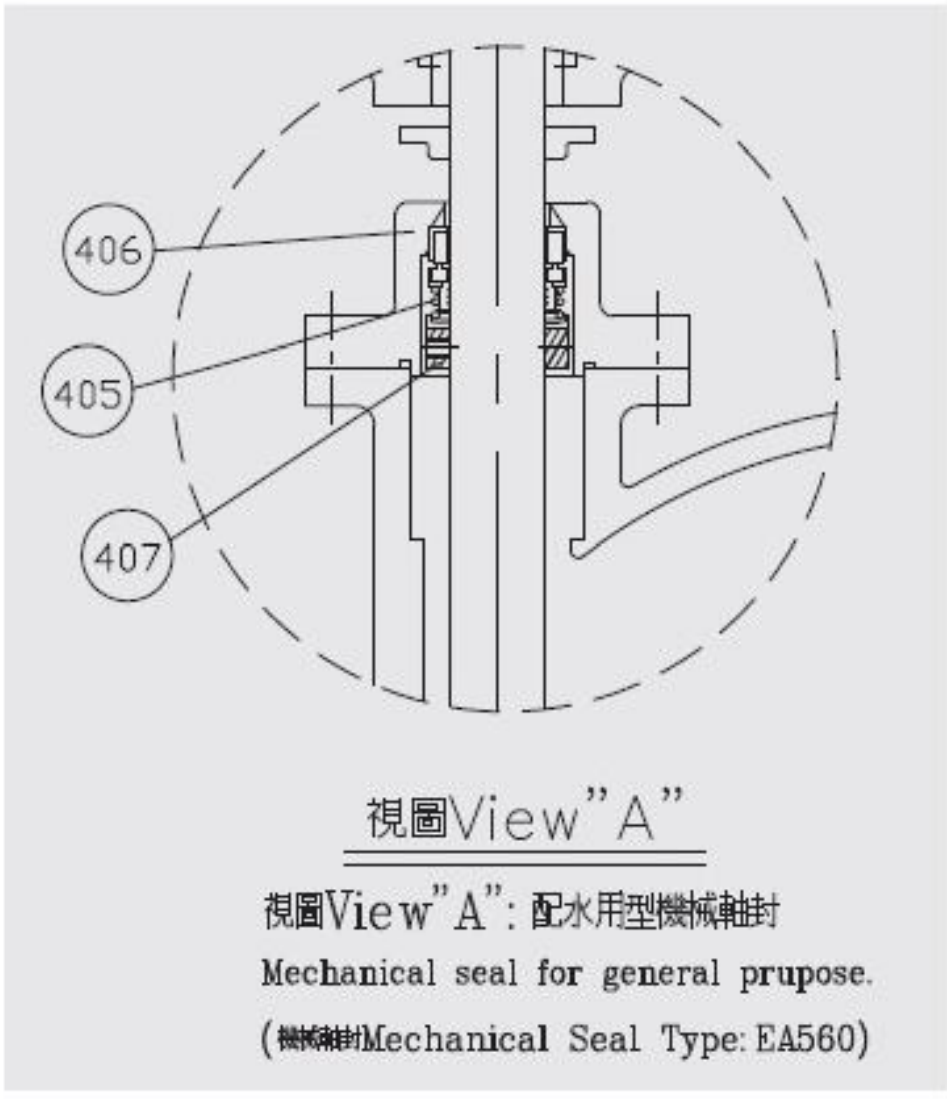
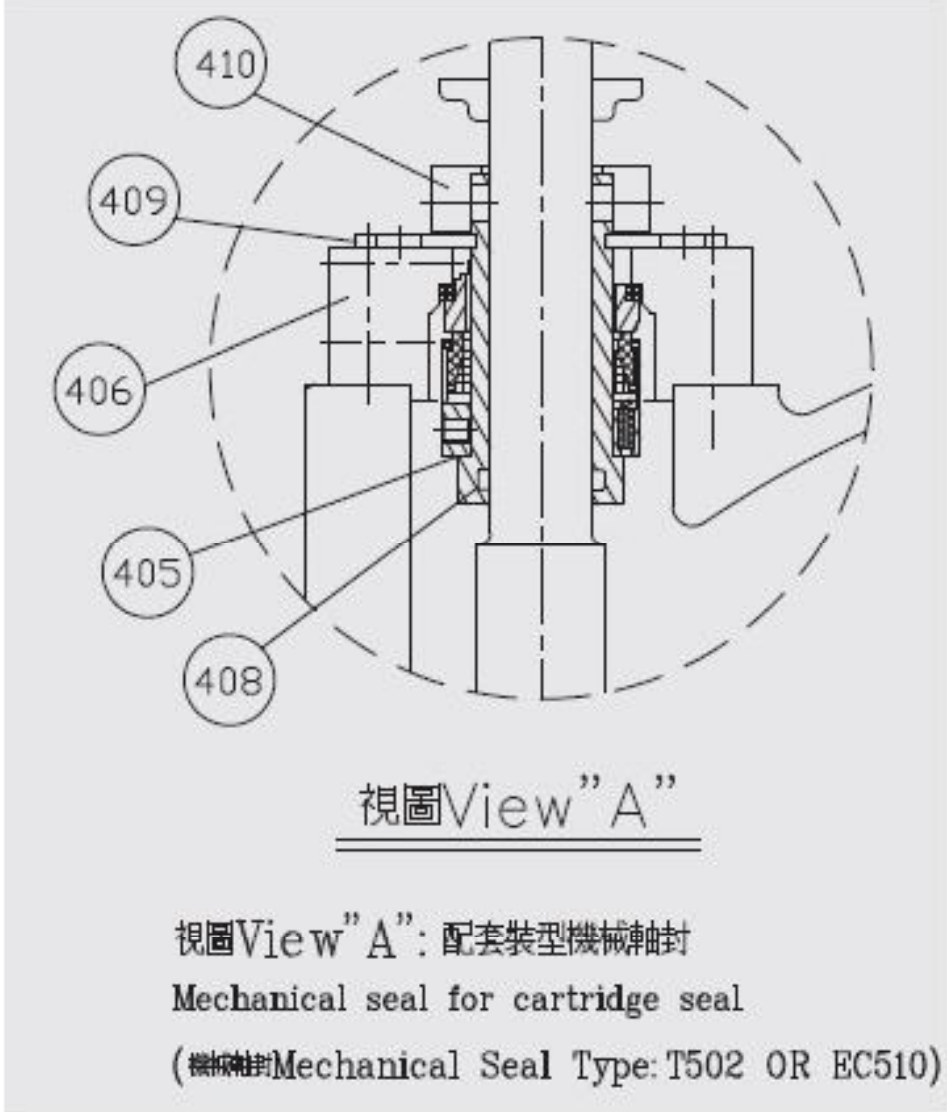
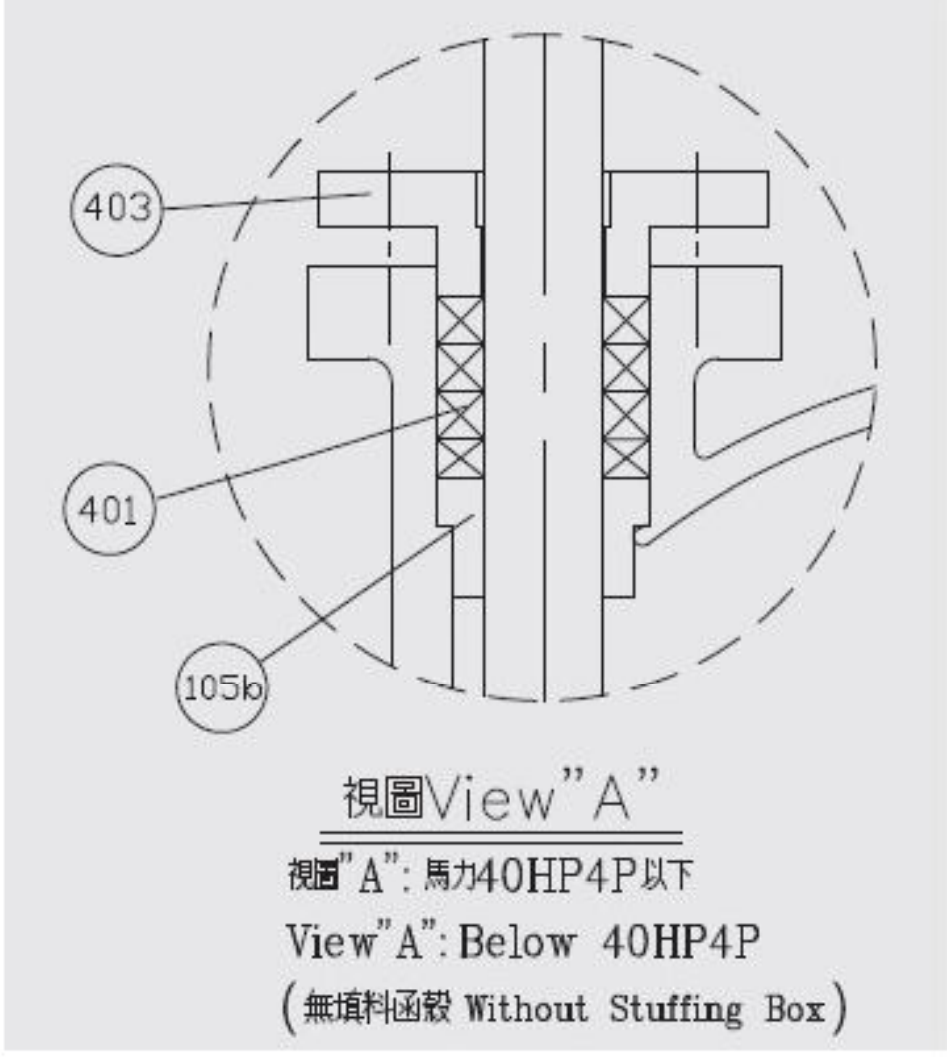
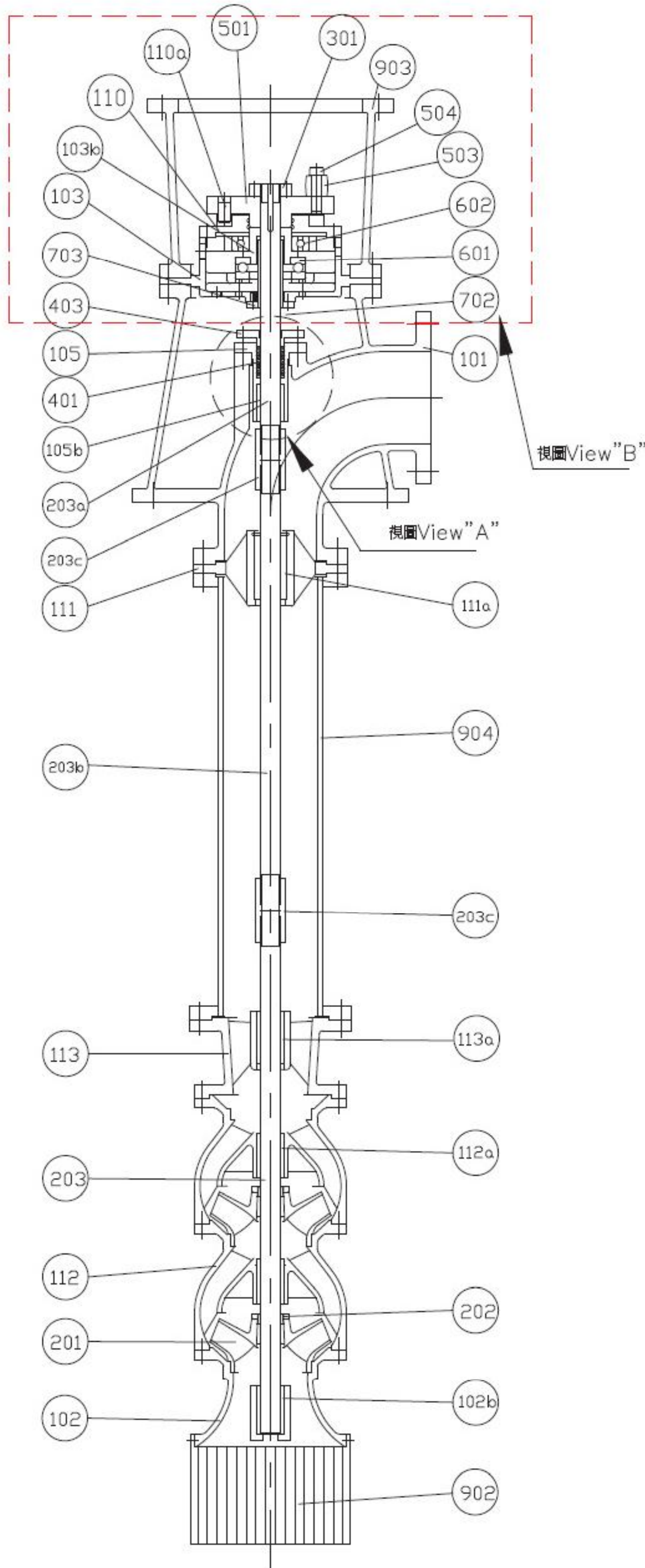
- (1) Standard method
Transmitted by Vertical (flange-type) motor directly.
- (2) Special component
Gasoline, diesel engine - Coupled with the belt or the gear.

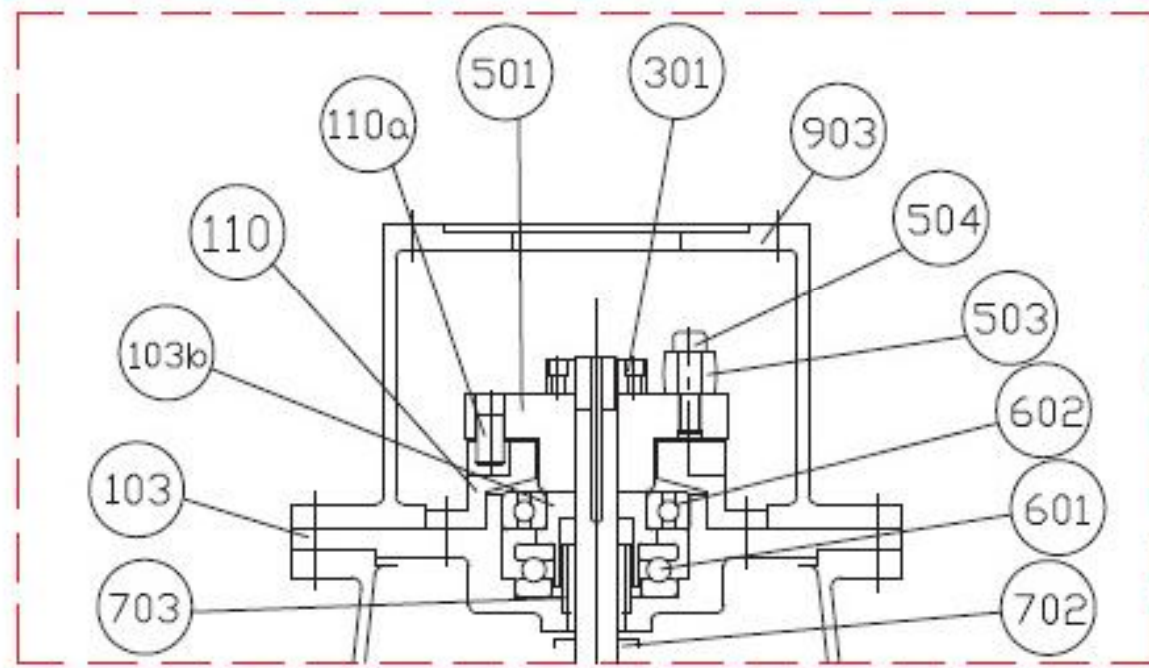
迴轉方向

由泵浦上方看，反時鐘方向迴轉。

Rotating Direction

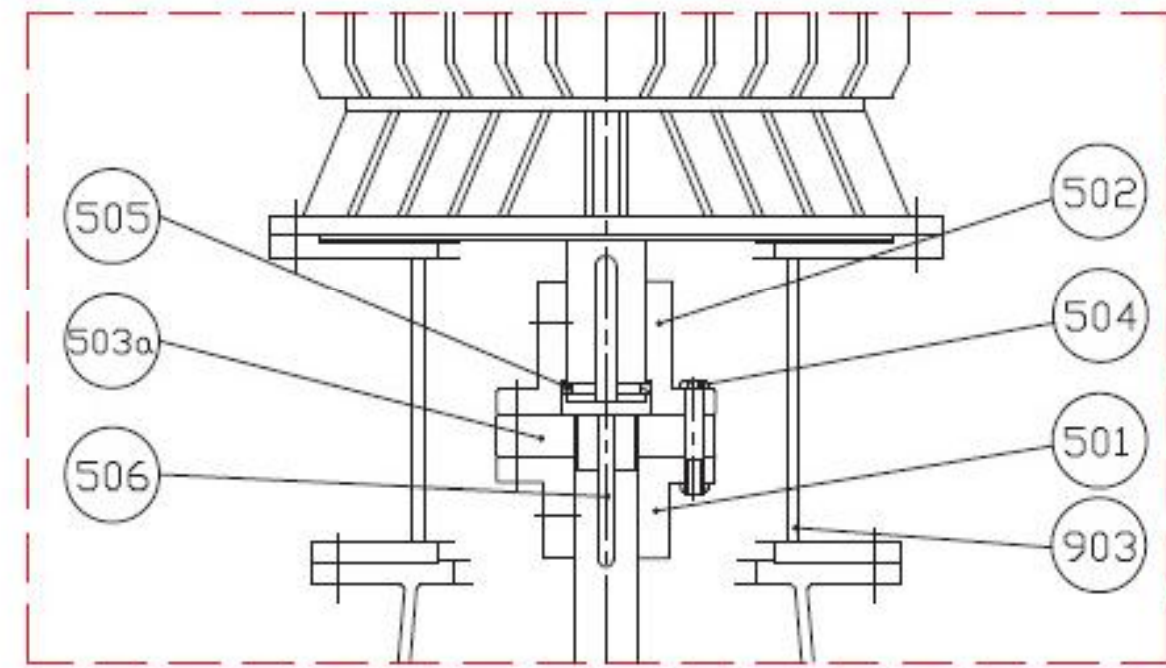
Counter-clockwise rotating when viewed from above the pump.





視圖View "B"

馬力30HP4P以下, 軸承箱VT-180以下 (軸承用牛油潤滑)
 Below 30HP4P, Bearing housing: below VT-180
 (Lubricated with bearing grease)



視圖View "B"

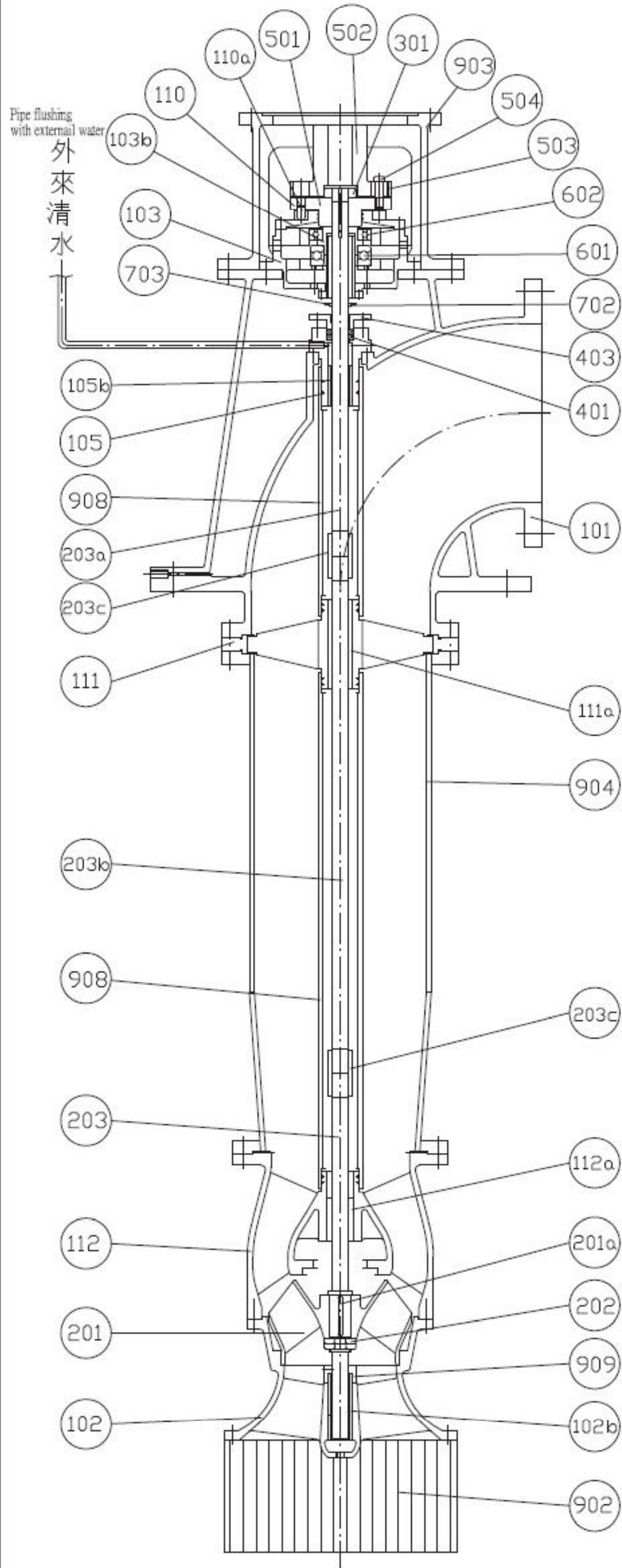
馬力200HP4P以上(軸推力由馬達承受)
 Over 200HP4P
 (the shaft thrust sustained by the motor)

零件表(Materials of Construction)

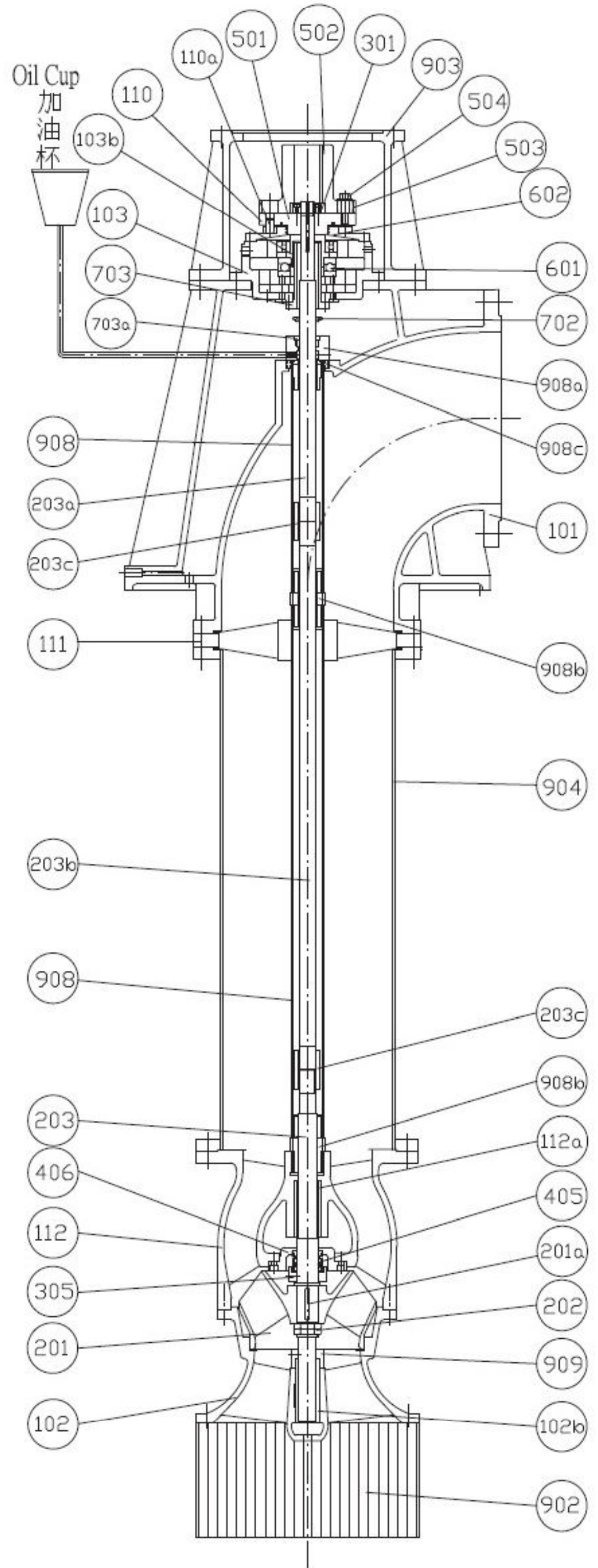
| 編號 No. | 名稱 Component | 材料Material | | | 編號 No. | 名稱 Component | 材料Material | | |
|-----------|--------------------------|----------------|-------------------|-------------------|-----------|---------------------------|------------|--------|--------|
| | | A | B | C | | | A | B | C |
| 101 | 出口座 Discharge head | FC200 | SCS13A | SCS14A | 401 | 填料蓋 Gland | FC200 | SCS13A | SCS14A |
| 102 | 入口殼 Suction bellmouth | FC200 | SCS13A | SCS14A | 403 | 填料 Packing | V#133 | V#7133 | V#7133 |
| 102b | 水中軸承 Bearing | Bc+Rubber | TEFLON+ CARBON | TEFLON+ CARBON | 405 | 機械軸封 Mechanical Seal | | | |
| 103 | 軸承箱 Bearing housing | FC200 | FC200 | FC200 | 406 | 軸封押蓋 Seal Cover | FC200 | SUS304 | SUS316 |
| 103b | 軸承裡襯 Bearing block | SS400 | SS400 | SS400 | 407 | 軸封固定環 Seal seat | BC6 | SUS304 | SUS316 |
| 105 | 填料函殼 Stuffing Box | FC200 | SCS13A | SCS14A | 408 | 軸套筒 Sleeve | SUS304 | SUS304 | SUS316 |
| 105b | 軸套 Sleeve | BC6 | TEFLON+ CARBON | TEFLON+ CARBON | 409 | 墊片 Seat | SUS304 | SUS304 | SUS316 |
| 110 | 逆止盤 Ratchet wheel | FC200 | FC200 | FC200 | 410 | 固定環 Seat | SUS304 | SUS304 | SUS316 |
| 110a | 逆止桿 Ratchet Bar | SUS410 | SUS410 | SUS410 | 501 | 聯軸器 Coupling | FC200 | FC200 | FC200 |
| 110 | 中間托架 Shafting bracket | FC200 | SCS13A | SCS14A | 502 | 聯軸器 Coupling | FC200 | FC200 | FC200 |
| 110a | 水中軸承 Bearing | Bc+Rubber | TEFLON+ CARBON | TEFLON+ CARBON | 503 | 聯軸器橡膠 Coupling bushing | Rubber | Rubber | Rubber |
| 112 | 導輪 Guide Vane | FC200 | SCS13A | SCS14A | 503a | 調整片 | SS400 | SS400 | SS400 |
| 112a | 水中軸承 Bearing | BC6\ Bc+Rubber | TEFLON+ CARBON | TEFLON+ CARBON | 504 | 聯軸器螺栓 Bolt and Nut | SS400 | SS400 | SS400 |
| 113 | 出口殼 Discharge Casing | FC200 | SCS13A | SCS14A | 505 | 分割環 Lantern ring | SS400 | SS400 | SS400 |
| 113a | 水中軸承 Bearing | BC6 | TEFLON+ CARBON | TEFLON+ CARBON | 506 | 聯軸器鍵 Coupling Pin | SS400 | SS400 | SS400 |
| 201 | 葉輪 Impeller | BC6 | SCS13A | SCS14A | 601 | 止推軸承 Thrust Bearing | | | |
| 202 | 斜套 Adapter | SS400 | SUS304 | SUS316 | 602 | 球軸承 Ball Bearing | | | |
| 203 | 泵軸 Pump Shaft | SUS410 | SUS304 | SUS316 | 702 | 擋水環 Water slinger | Rubber | Rubber | Rubber |
| 203a | 頂軸 Head Shaft | SUS410 | SUS304 | SUS316 | 703 | 封油管 Oil Guard Pipe | SS400 | SS400 | SS400 |
| 203b | 柱軸 Line Shaft | SUS410 | SUS304 | SUS316 | 902 | 濾網 Strainer | SUS304 | SUS304 | SUS316 |
| 203c | 軸接頭 Shaft Coupling | SS400 | SUS304 | SUS316 | 903 | 馬達座 Motor Pedestal | FC200 | FC200 | FC200 |
| 301 | 調整螺母 Shaft adjusting | SS400 | SS400 | SS400 | 904 | 柱管 Column pipe | SGP | SUS304 | SUS316 |

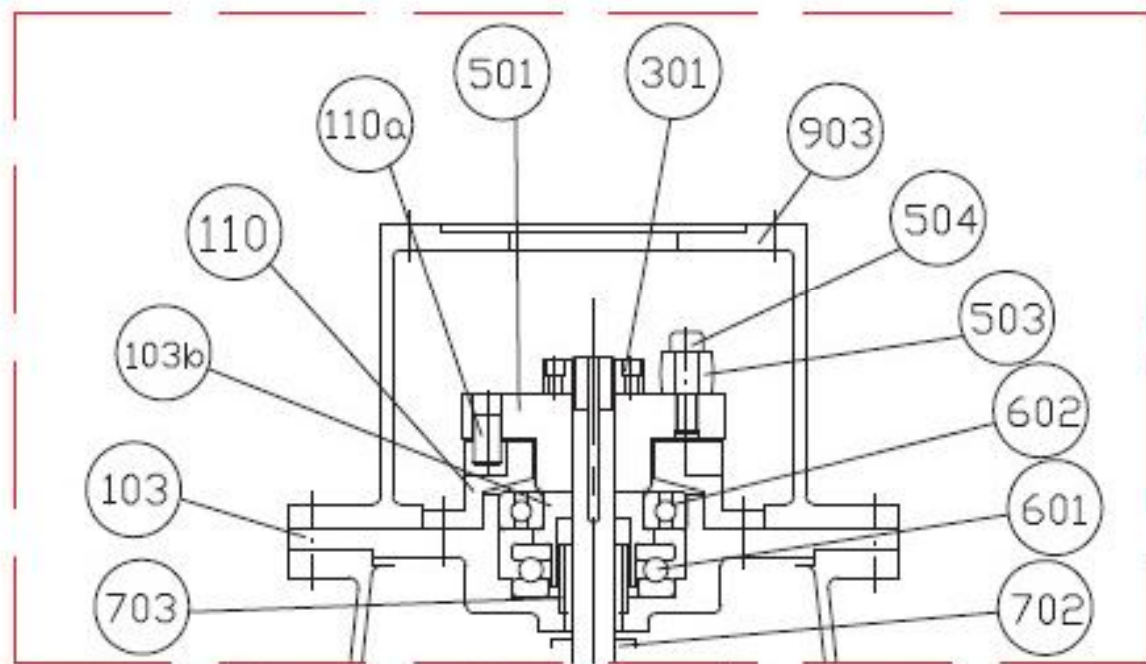
****填料式 Gland Packing****

(大流量用泵浦 Large Flow Pump)

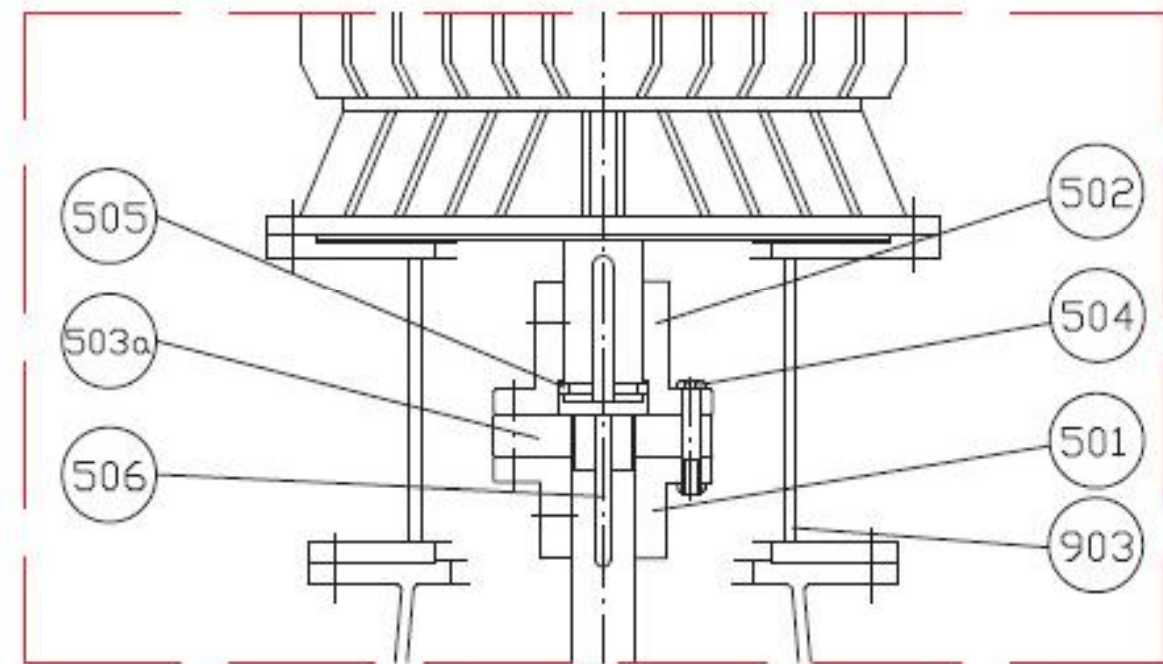


****軸封式 Mechanical Seal****





馬力30HP4P以下, 軸承箱VT-180以下 (軸承用牛油潤滑)
Below 30HP4P, Bearing housing: below VT-180
(Lubricated with bearing grease)



馬力200HP4P以上(軸推力由馬達承受)
Over 200HP4P
(the shaft thrust sustained by the motor)

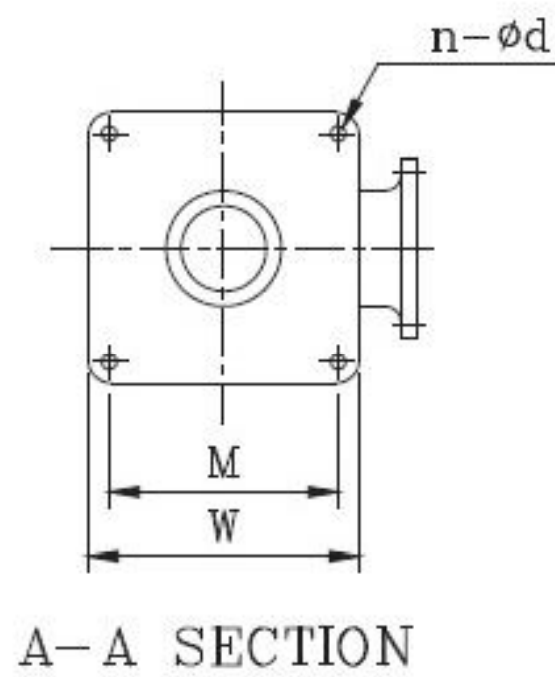
零件表(Materials of Construction)

| 編號 No. | 名稱 Component | 材料 Material | | | 編號 No. | 名稱 Component | 材料 Material | | |
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| | | A | B | C | | | A | B | C |
| 101 | 出口座 Discharge head | FC200 | SCS13A | SCS14A | 405 | 機械油封 Mechanical Seal | | | |
| 102 | 入口殼 Suction bellmouth | FC200 | SCS13A | SCS14A | 406 | 軸封押蓋 Seal Cover | FC200 | SCS13A | SCS14A |
| 102b | 水中軸承 Bearing | BC6 | Teflon+ Carbon | Teflon+ Carbon | 501 | 聯軸器 Coupling | FC200 | FC200 | FC200 |
| 103 | 軸承箱 Bearing housing | FC200 | FC200 | FC200 | 502 | 聯軸器 Coupling | FC200 | FC200 | FC200 |
| 103b | 軸承裡襯 Bearing block | SS400 | SS400 | SS400 | 503 | 聯軸器橡膠 Coupling bushing | Rubber | Rubber | Rubber |
| 105 | 填料函殼 Stuffing Box | FC200 | SCS13A | SCS14A | 503a | 調整片 Adjuster | SS400 | SS400 | SS400 |
| 105b | 軸套 Sleeve | BC6 | Teflon+ Carbon | Teflon+ Carbon | 504 | 聯軸器螺栓 Bolt and Nut | SS400 | SS400 | SS400 |
| 110 | 逆止盤 Ratchet wheel | FC200 | FC200 | FC200 | 505 | 分割環 Lantern ring | SS400 | SS400 | SS400 |
| 110a | 逆止桿 Ratchet Bar | SUS410 | SUS410 | SUS410 | 506 | 聯軸器鍵 Coupling Pin | SS400 | SS400 | SS400 |
| 110 | 中間托架 Shafting bracket | FC200 | SCS13A | SCS14A | 601 | 止推軸承 Thrust Bearing | | | |
| 110a | 水中軸承 Bearing | BC6+ Rubber | BC6+ Rubber | BC6+ Rubber | 602 | 球軸承 Ball Bearing | | | |
| 112 | 導輪 Guide Vane | FC200 | SCS13A | SCS14A | 702 | 擋水環 Water slinger | Rubber | Rubber | Rubber |
| 112a | 水中軸承 Bearing | BC6 | Teflon+ Carbon | Teflon+ Carbon | 703 | 封油管 Oil Guard Pipe | SS400 | SS400 | SS400 |
| 201 | 葉輪 Impeller | FC200 | SCS13A | SCS14A | 703a | 油封 Oil Seal | Rubber | Rubber | Rubber |
| 201a | 葉輪鍵 Impeller key | SUS304 | SUS304 | SUS316 | 902 | 濾網 Strainer | SUS304 | SUS304 | SUS316 |
| 202 | 固定螺母 Imp. Bolt | BC6 | SUS304 | SUS316 | 903 | 馬達座 Motor Pedestal | FC200 | FC200 | FC200 |
| 203 | 泵軸 Pump Shaft | SUS410 | SUS304 | SUS316 | 904 | 柱管 Column pipe | SGP | SUS304 | SUS316 |
| 203a | 頂軸 Head Shaft | SUS410 | SUS304 | SUS316 | 908 | 內襯管 Protective tube | SUS304 | SUS304 | SUS316 |
| 203b | 柱軸 Line Shaft | SUS410 | SUS304 | SUS316 | 908a | 內襯管押蓋 Protective tube cover | BC6 | SUS304 | SUS316 |
| 203c | 軸接頭 Shaft Coupling | SS400 | SS400 | SS400 | 908b | 內襯管接頭 Protective tube coupling | BC6 | SUS304 | SUS316 |
| 301 | 調整螺母 Shaft adjusting | SS400 | SS400 | SS400 | 908c | 內襯管墊圈 Protective tube Gasket | BC6 | SUS304 | SUS316 |
| 305 | 墊圈 Gasket | BC6 | SUS304 | SUS316 | 909 | 防沙帽 Anti-Sand protector | BC6 | SCS13A | SCS14A |
| 401 | 填料蓋 Gland | FC200 | SCS13A | SCS14A | | | | | |
| 403 | 填料 Packing | V#133 | V#7133 | V#7133 | | | | | |

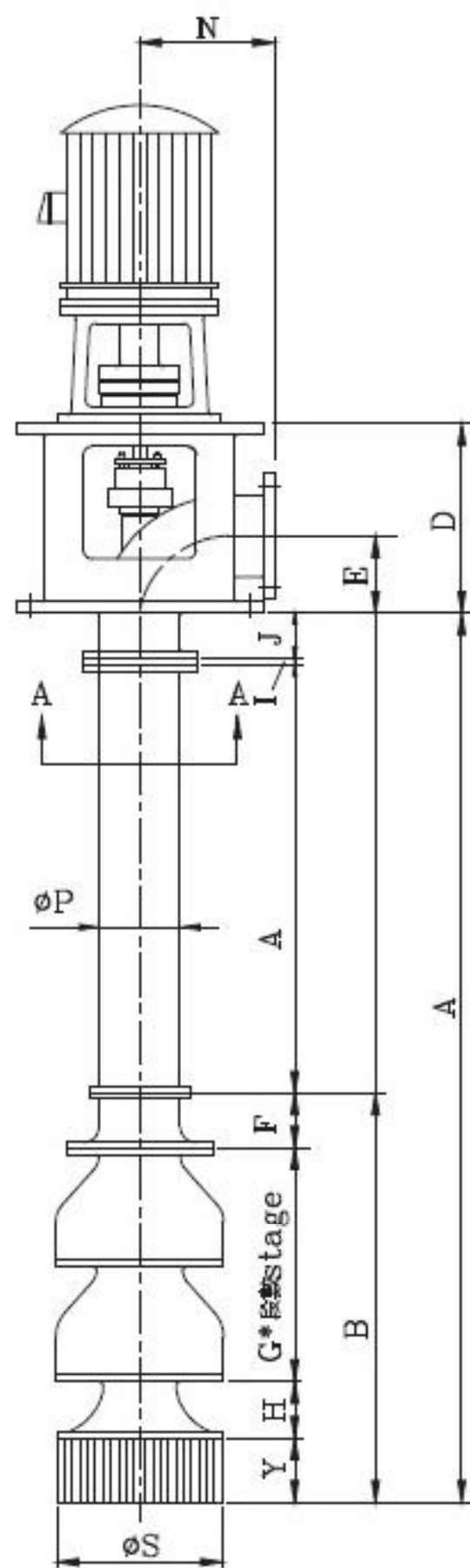
豎軸泵軸外型尺寸圖

(VERTICAL CENTRIFUGAL PUMP DIMENSIONS)

Unit: mm



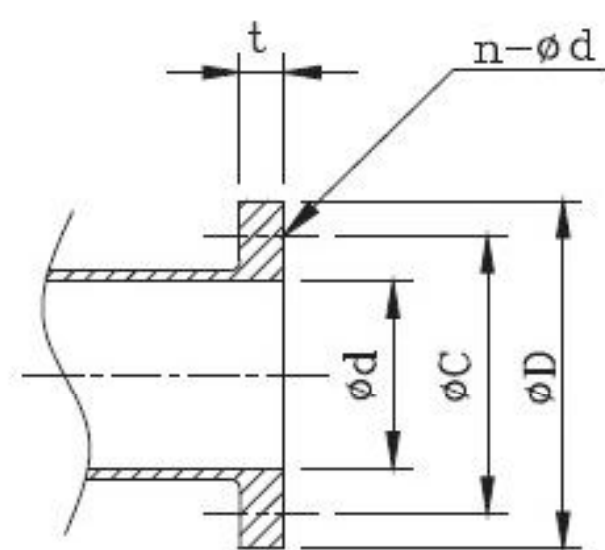
A-A SECTION



| 型式 Model | 尺寸 Dim. | 口徑 Caliber | φP | D | E | J | N | M | W | n-φd | Y | φS | H | G | F | I | 備註 Remark |
|-------------|------------|---------------|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|----|--------------------------------|
| VT-80 | | φ80 | 80 | 285 | 115 | 90 | 242 | 380 | 300 | 4-φ15 | 100 | 180 | 120 | 135 | 100 | 0 | |
| | | φ100 | 100 | 314 | 132 | 90 | 260 | 380 | 300 | 4-φ15 | 100 | 180 | 120 | 135 | 100 | 0 | |
| VT-100 | | φ100 | 100 | 314 | 132 | 90 | 260 | 380 | 300 | 4-φ15 | 100 | 200 | 140 | 165 | 100 | 0 | |
| | | φ125 | 125 | 314 | 130 | 90 | 268 | 380 | 300 | 4-φ15 | 100 | 200 | 140 | 165 | 100 | 0 | |
| VT-125 | | φ125 | 125 | 314 | 130 | 90 | 268 | 380 | 300 | 4-φ15 | 150 | 235 | 150 | 195 | 100 | 0 | |
| | | φ150 | 150 | 353 | 170 | 100 | 260 | 450 | 380 | 4-φ19 | 150 | 235 | 150 | 195 | 100 | 14 | 40Hp (註) 以下 (include) Below |
| VT-151 | | φ150 | 150 | 420 | 170 | 100 | 300 | 550 | 480 | 4-φ23 | 150 | 235 | 150 | 195 | 100 | 14 | 50Hp (註) 以上 (include) Over |
| | | φ200 | 200 | 460 | 200 | 120 | 330 | 520 | 450 | 4-φ23 | 150 | 280 | 180 | 228 | 150 | 15 | 40Hp (註) 以下 (include) Below |
| VT-152 | | φ200 | 200 | 520 | 200 | 100 | 330 | 600 | 500 | 4-φ23 | 150 | 280 | 180 | 228 | 150 | 15 | 50Hp (註) 以上 (include) Over |
| | | φ150 | 150 | 353 | 170 | 100 | 260 | 450 | 380 | 4-φ19 | 150 | 300 | 180 | 260 | 150 | 14 | 40Hp (註) 以下 (include) Below |
| VT-200 | | φ150 | 150 | 420 | 170 | 100 | 300 | 550 | 480 | 4-φ23 | 150 | 300 | 180 | 260 | 150 | 14 | 50Hp (註) 以上 (include) Over |
| | | φ200 | 200 | 460 | 200 | 120 | 330 | 520 | 450 | 4-φ23 | 150 | 300 | 180 | 260 | 150 | 15 | 40Hp (註) 以下 (include) Below |
| VT-201 | | φ200 | 200 | 520 | 200 | 100 | 330 | 600 | 500 | 4-φ23 | 150 | 300 | 180 | 260 | 150 | 15 | 50Hp (註) 以上 (include) Over |
| | | φ250 | 250 | 570 | 250 | 100 | 350 | 600 | 500 | 4-φ23 | 200 | 330 | 200 | 300 | 170 | 15 | 40Hp (註) 以下 (include) Below |
| VT-202 | | φ200 | 200 | 460 | 200 | 120 | 330 | 520 | 450 | 4-φ23 | 250 | 360 | 180 | 330 | 170 | 15 | 50Hp (註) 以上 (include) Over |
| | | φ250 | 250 | 570 | 250 | 100 | 350 | 600 | 500 | 4-φ23 | 250 | 360 | 180 | 330 | 170 | 18 | |

法蘭尺寸 (FLANGE DIMENSIONS)

Unit: mm

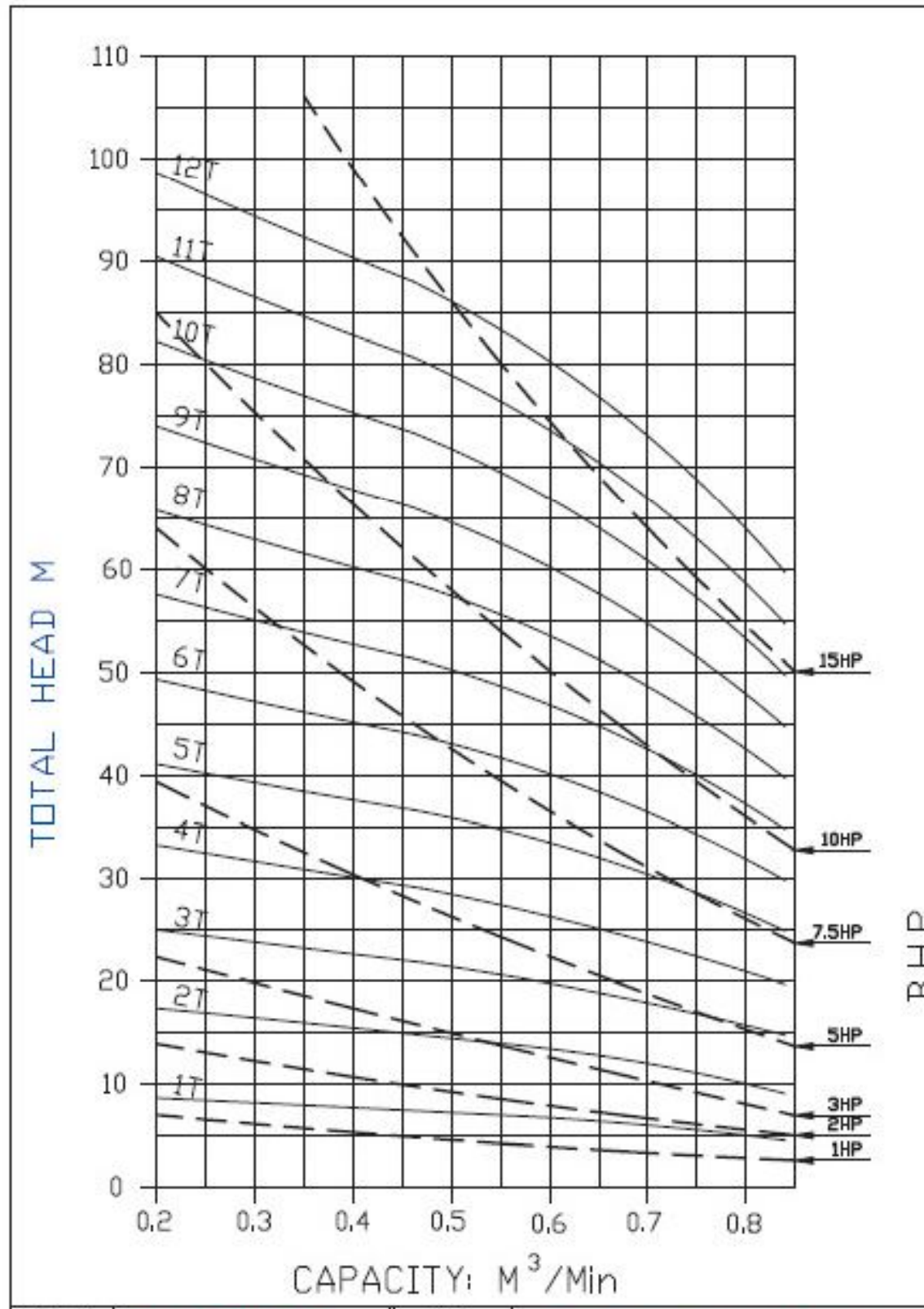


| 口徑 Caliber | 日規 Japanese Spec: JIS 10kg/cm ² | | | | 美規 US Spec: ANSI#150FF | | | |
|---------------|--|-----|----|--------|------------------------|-------|----|--------|
| φd | φD | φC | φt | n-φd | φD | φC | φt | n-φd |
| φ80 | 185 | 150 | 22 | 8-φ19 | 190 | 152.5 | 24 | 4-φ19 |
| φ100 | 210 | 175 | 24 | 8-φ19 | 229 | 190.5 | 24 | 8-φ19 |
| φ125 | 250 | 210 | 24 | 8-φ23 | 254 | 216 | 24 | 8-φ22 |
| φ150 | 280 | 240 | 26 | 8-φ23 | 279 | 241.5 | 26 | 8-φ22 |
| φ200 | 330 | 290 | 26 | 12-φ23 | 343 | 298.5 | 29 | 8-φ22 |
| φ250 | 400 | 355 | 30 | 12-φ25 | 406 | 362 | 30 | 12-φ25 |

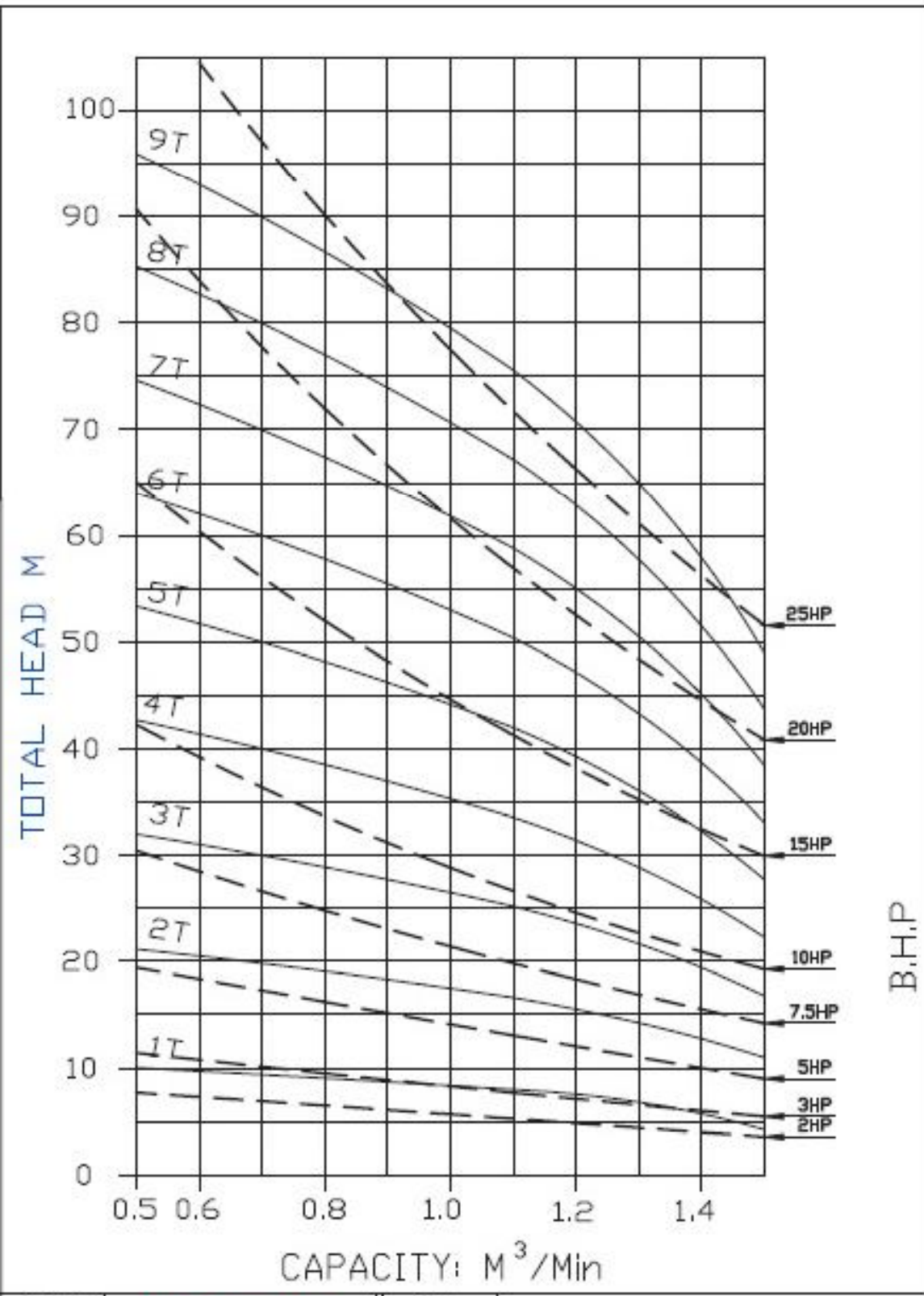
性能曲線圖 60HZ

Performance Curve 60HZ

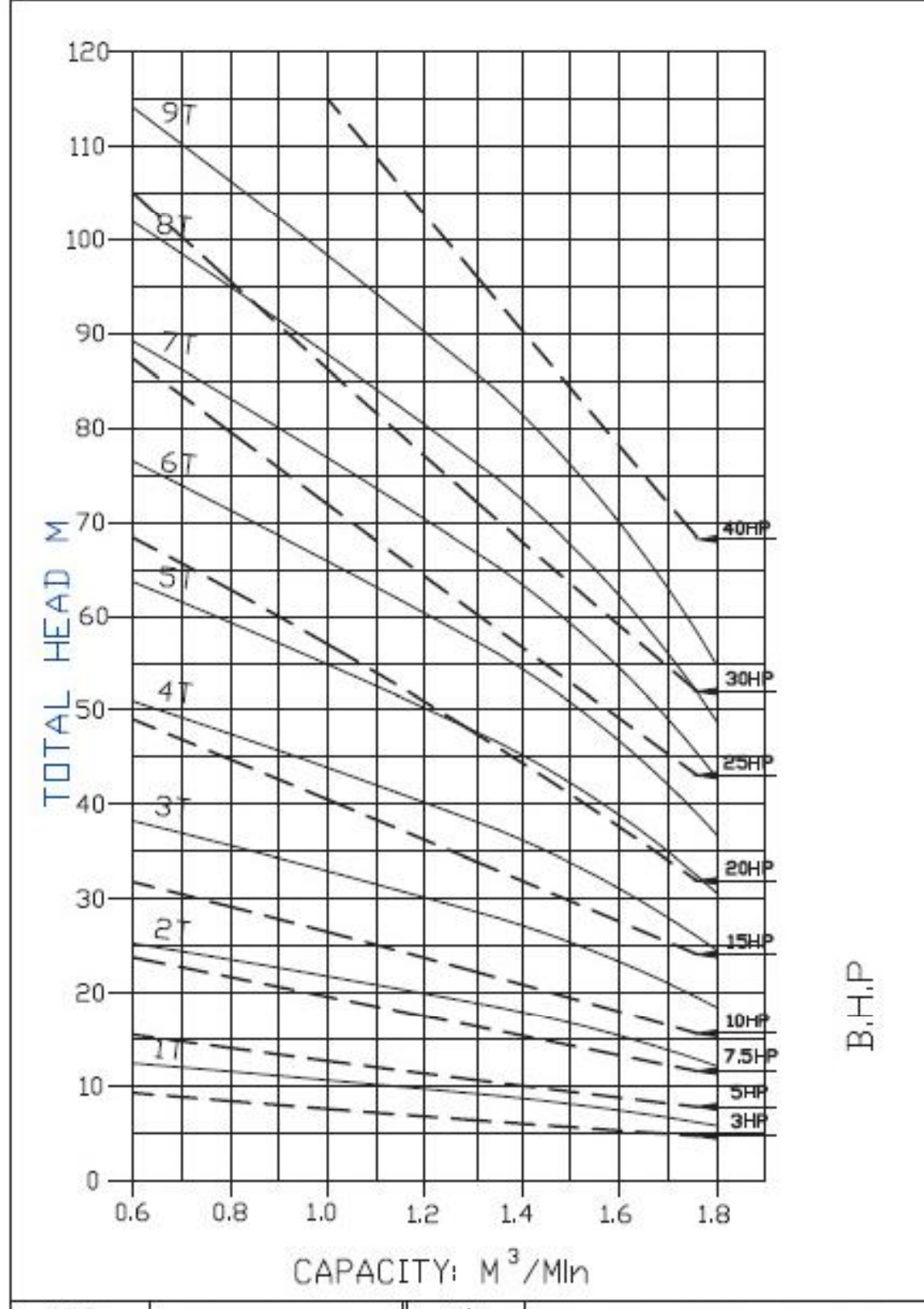
—— 段數(N. Stage) - - - - - 馬力數(Horse power) 回轉數(Pump Speed):1750RPM



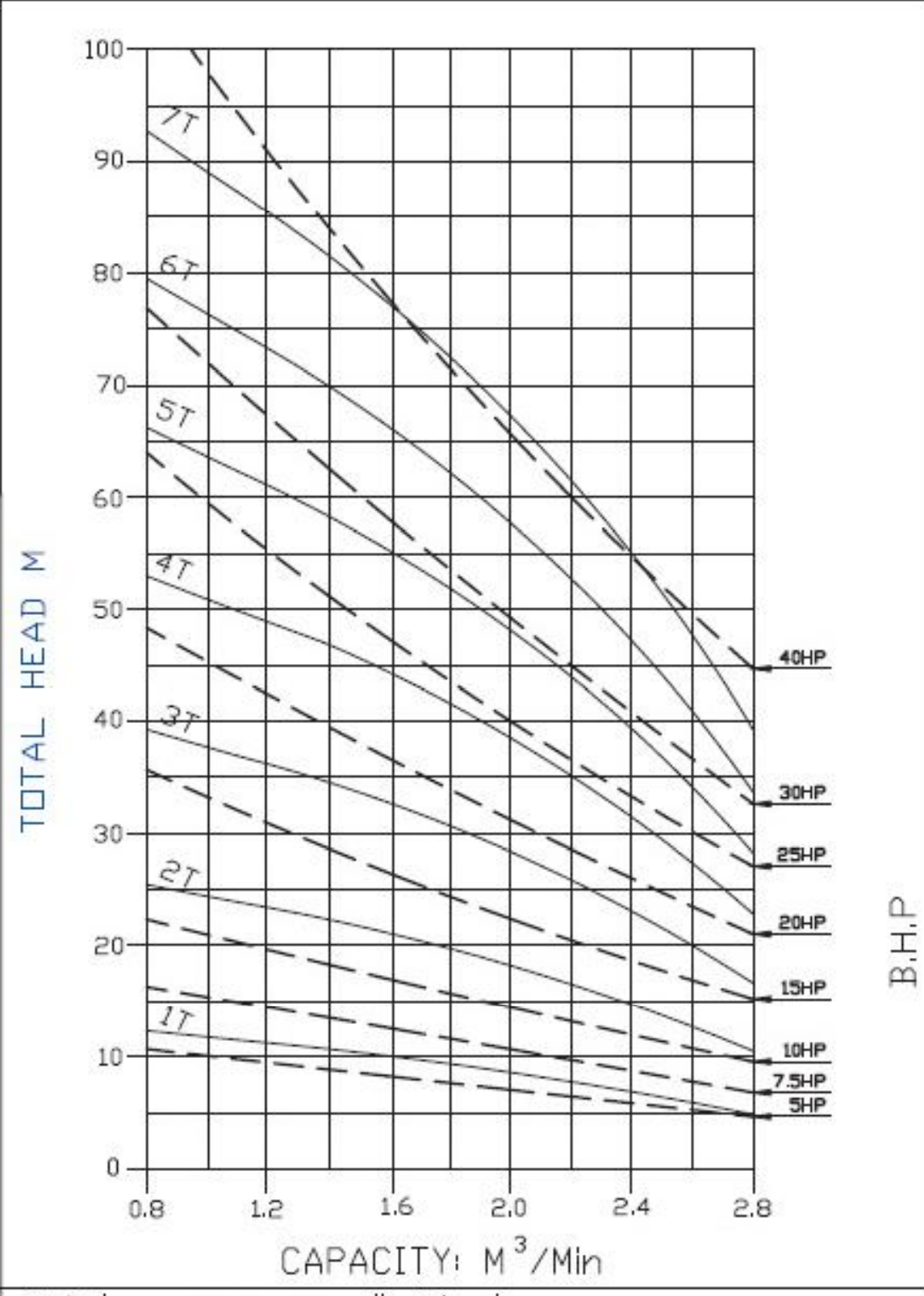
型式 MODEL **FST80** 葉輪 Impeller VT-80 $\phi 147 * \phi 140$ (全) (Full)



型式 MODEL **FST101** 葉輪 Impeller VT-101B $\phi 170 * \phi 156$ (全) (Full)



型式 MODEL **FST101** 葉輪 Impeller VT-100 $\phi 184 * \phi 166$ (全) (Full)

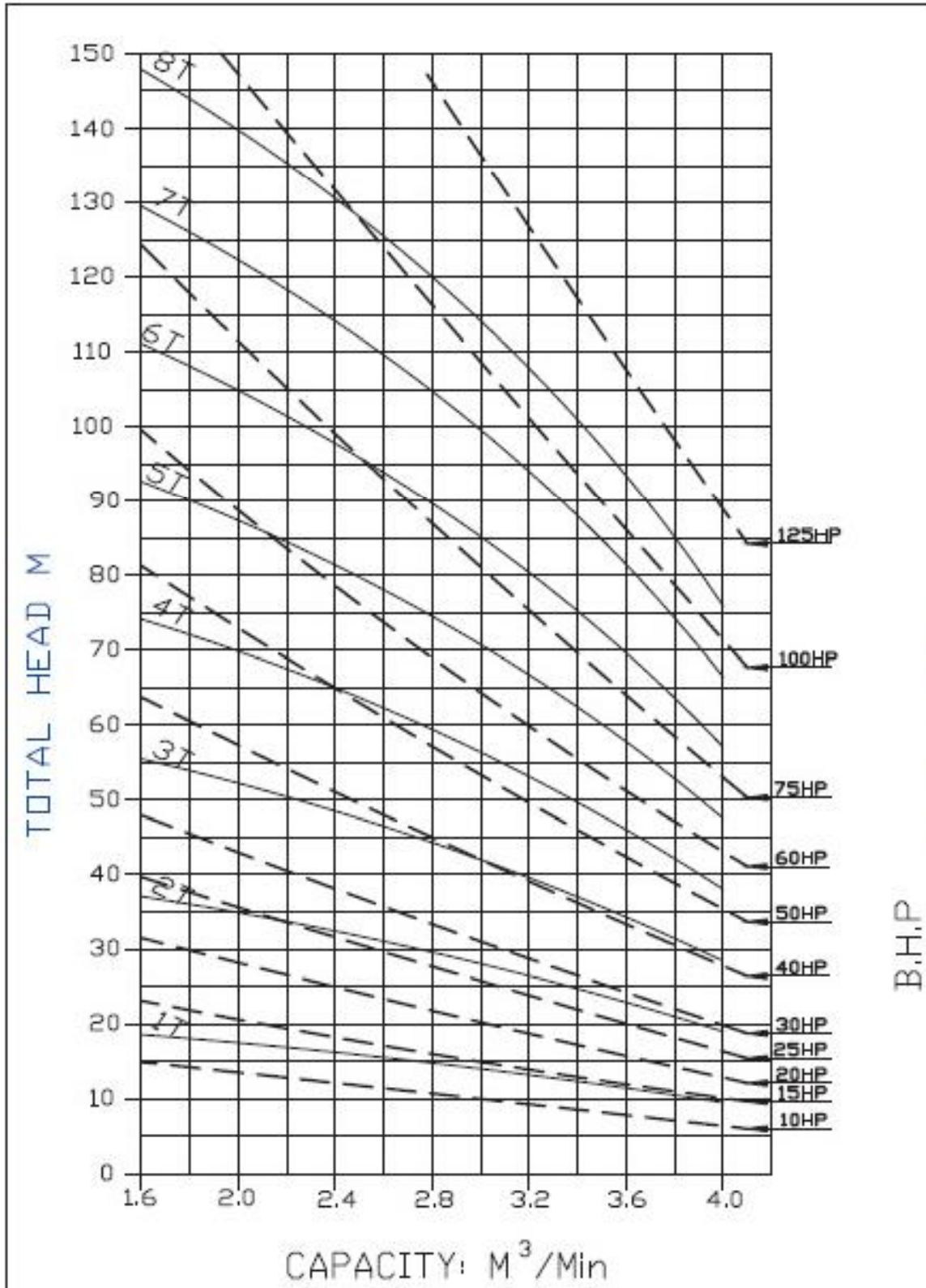


型式 MODEL **FST125** 葉輪 Impeller VT-125 $\phi 189 * \phi 168$

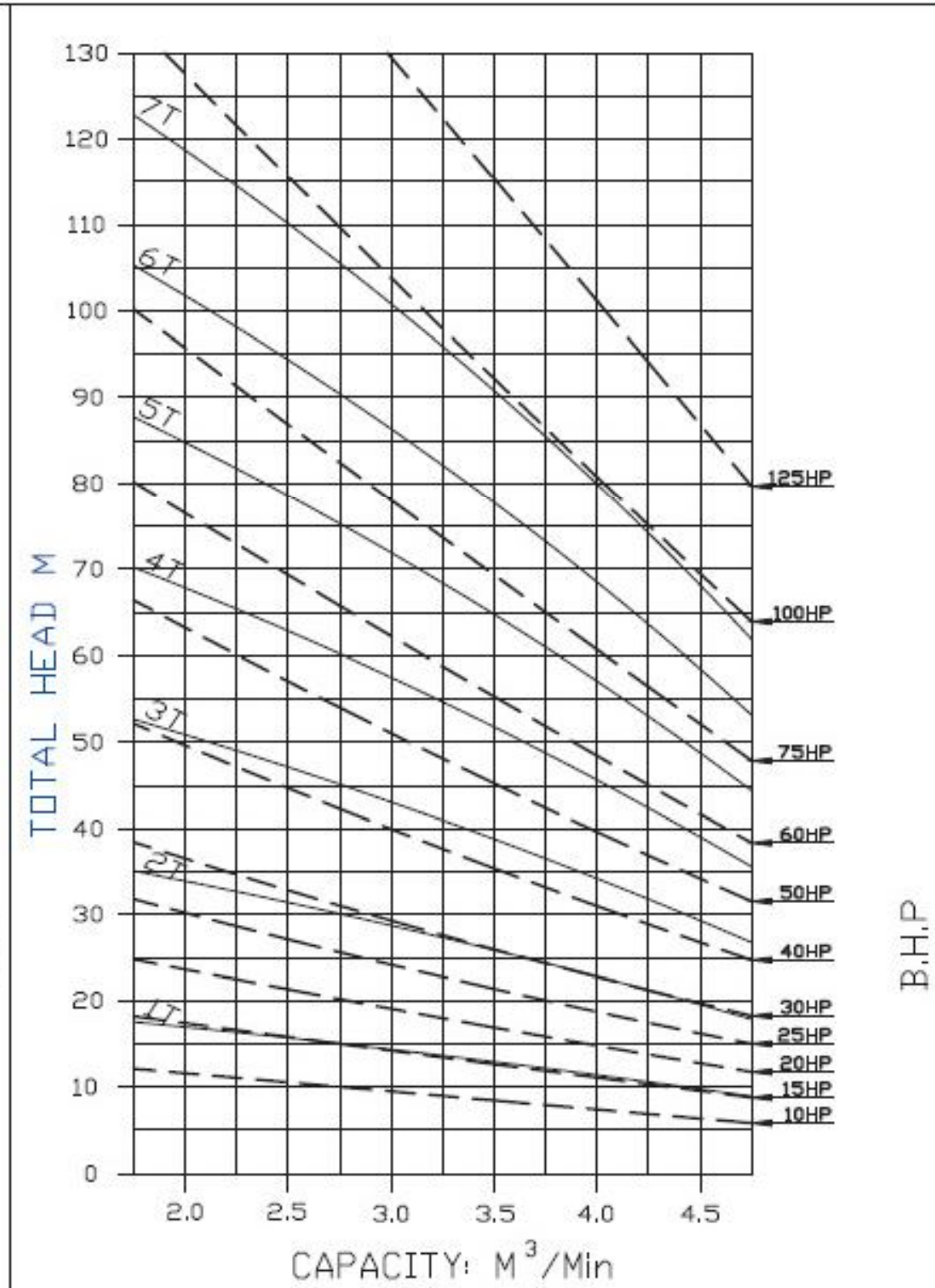
性能曲線圖60HZ

Performance Curve 60HZ

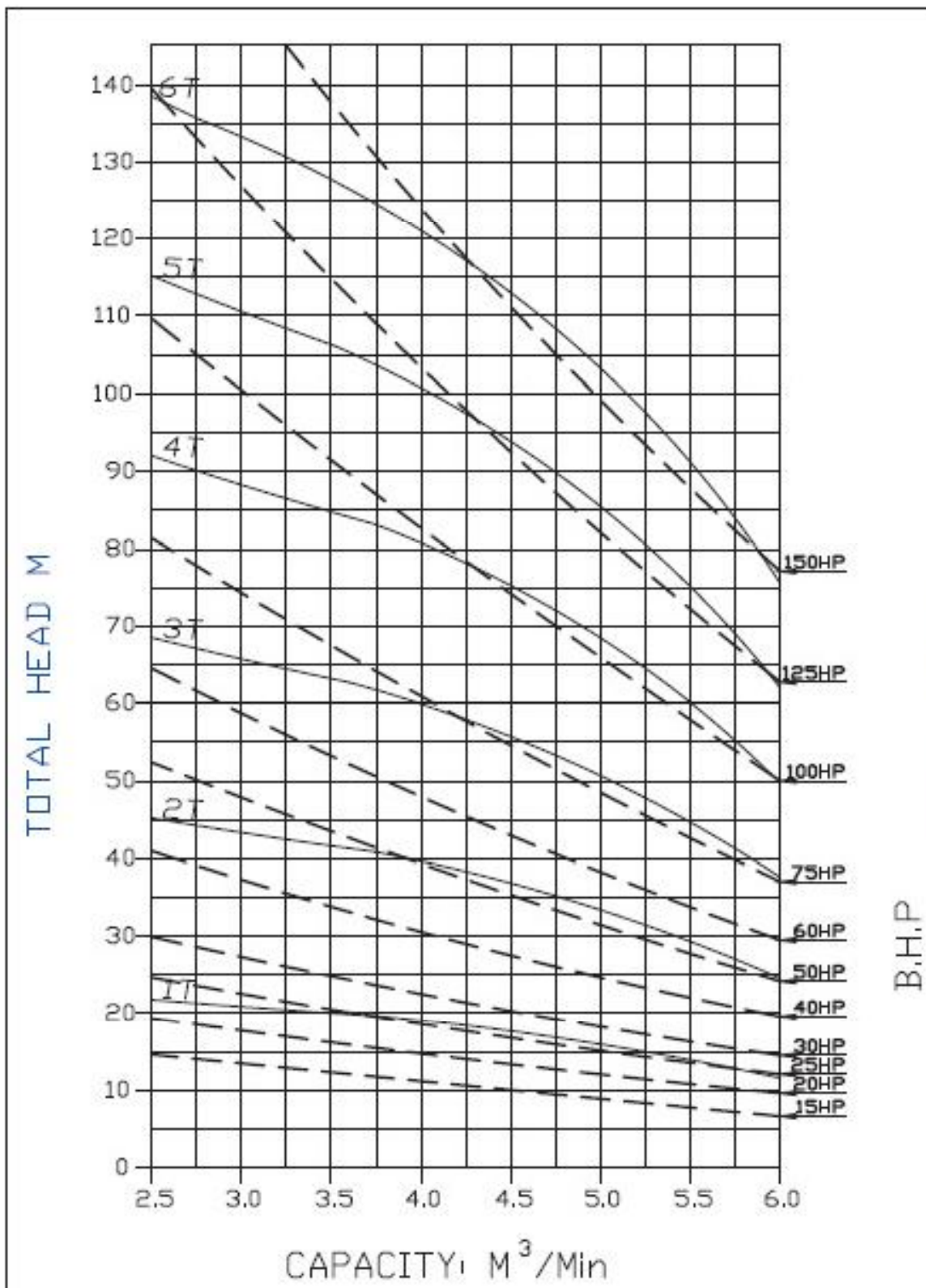
—— 段數(N. Stage) - - - - - 馬力數(Horse power) 回轉數(Pump Speed):1750RPM



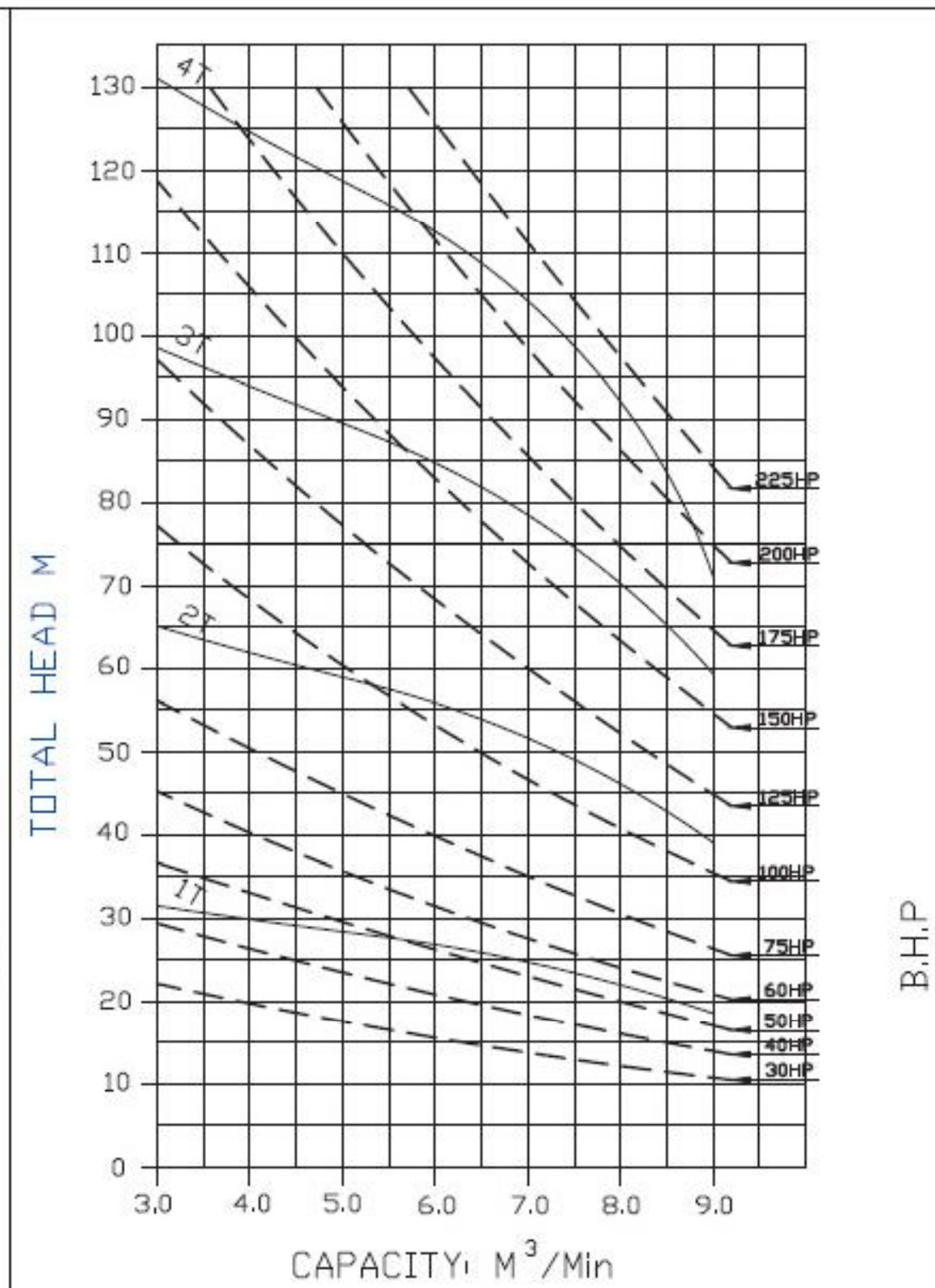
型式 MODEL **FST151** 葉輪 Impeller **VT-150** $\phi 228 \times \phi 212$



型式 MODEL **FST151** 葉輪 Impeller **VT-151A** $\phi 216 \times \phi 192$



型式 MODEL **FST152** 葉輪 Impeller **VT-152B** $\phi 246 \times \phi 220$

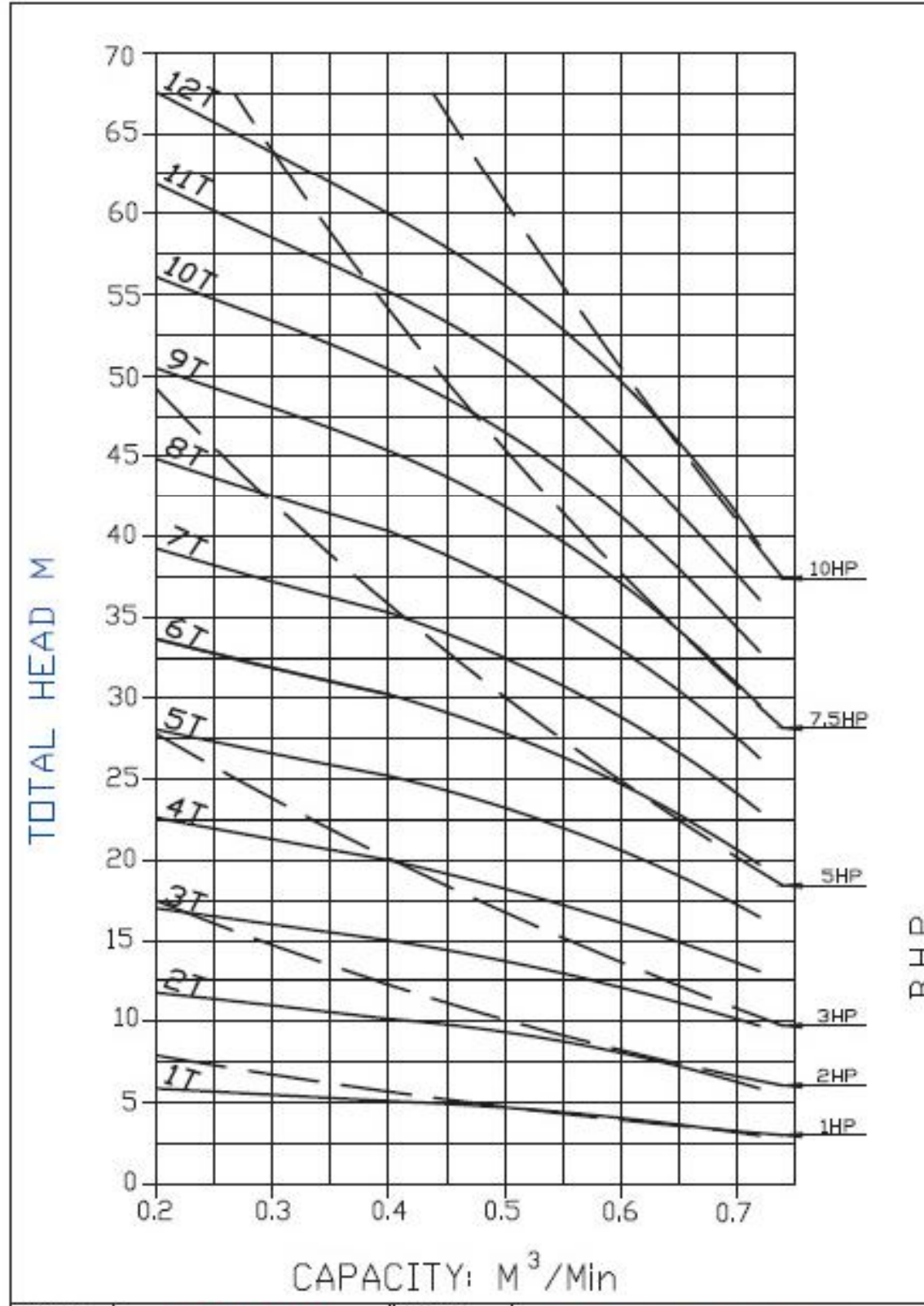


型式 MODEL **FST202** 葉輪 Impeller **VT-202** $\phi 288 \times \phi 260$

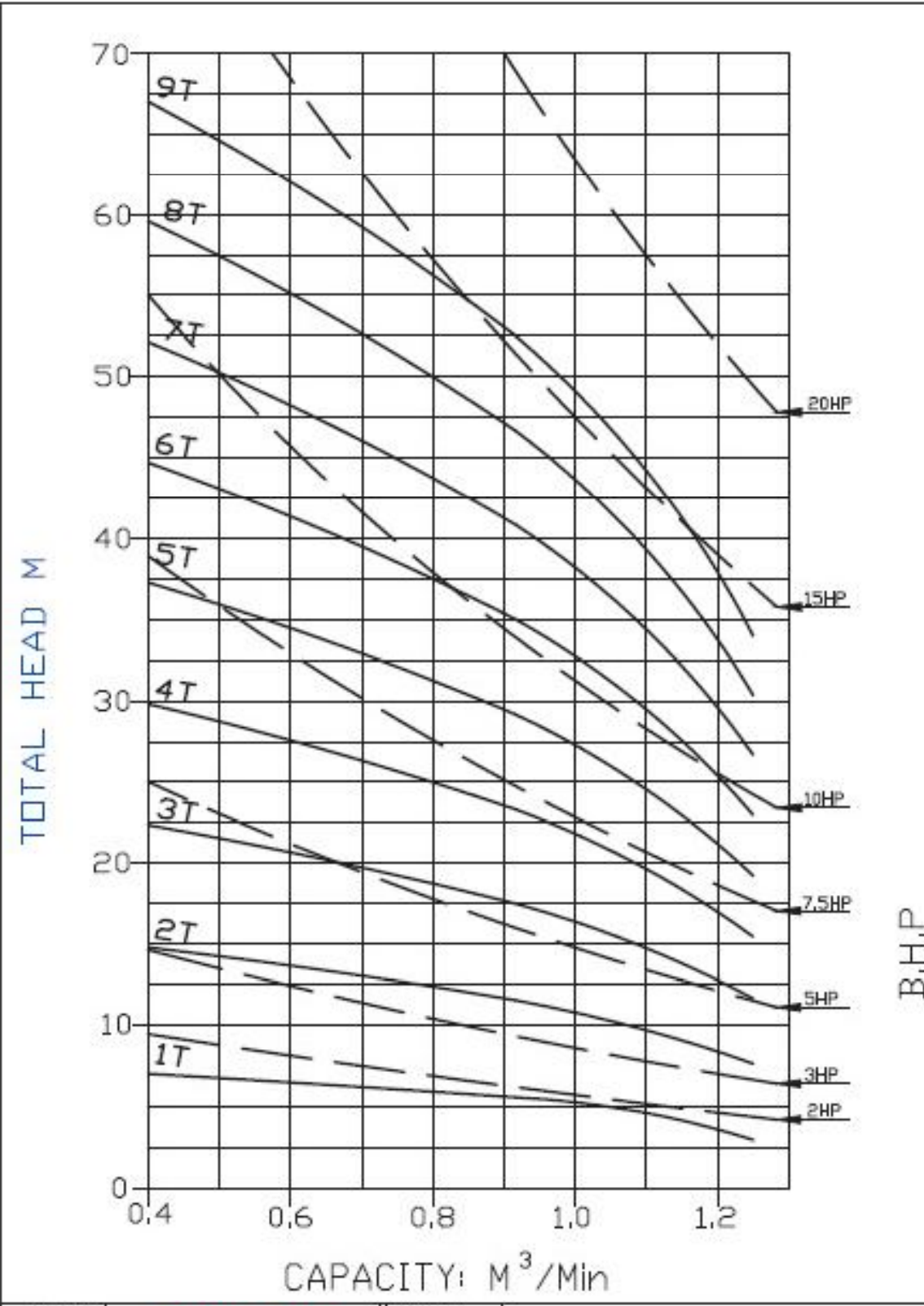
性能曲線圖50HZ

Performance Curve 50HZ

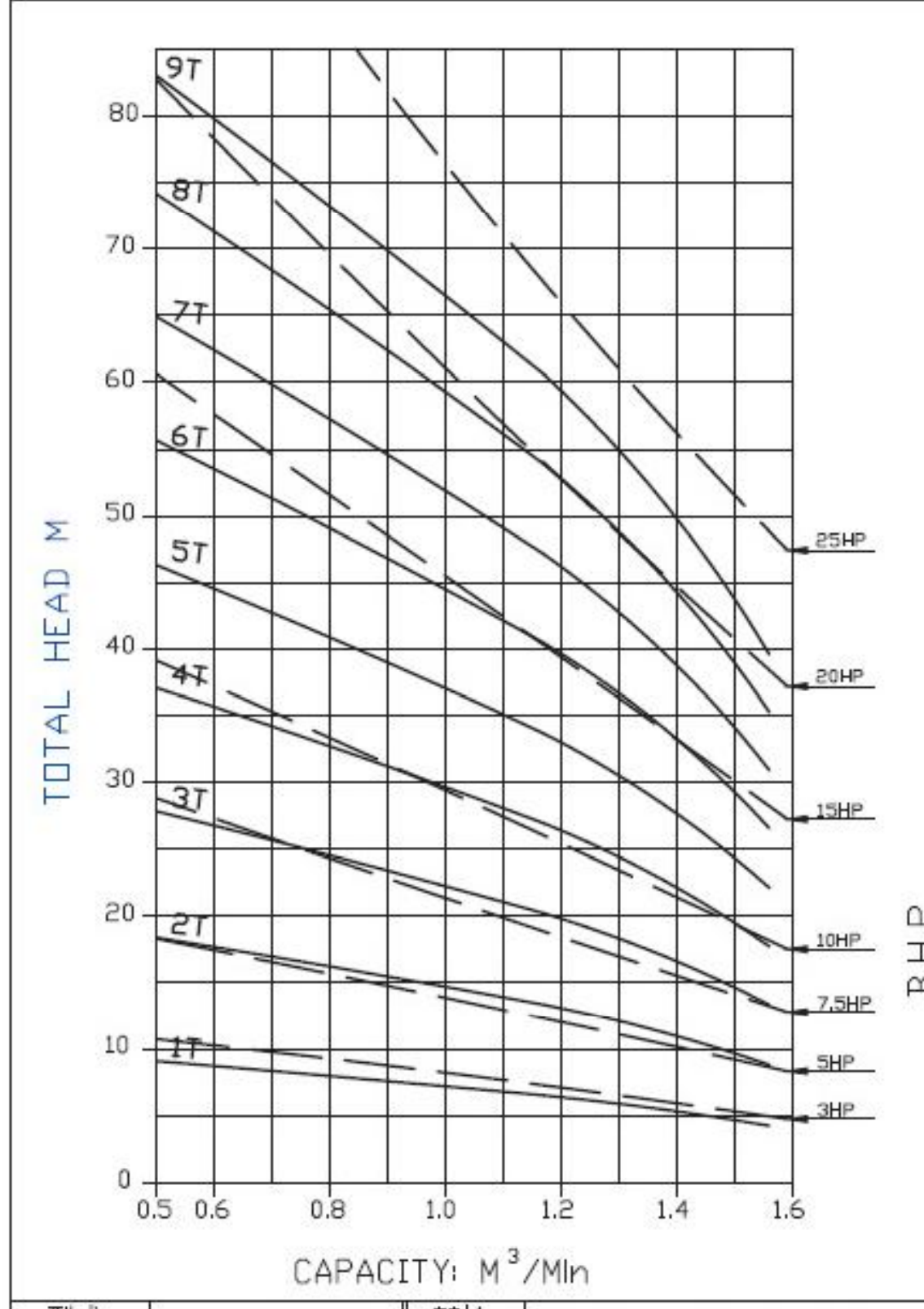
—— 段數(N. Stage) - - - - - 馬力數(Horse power) 回轉數(Pump Speed):1450RPM



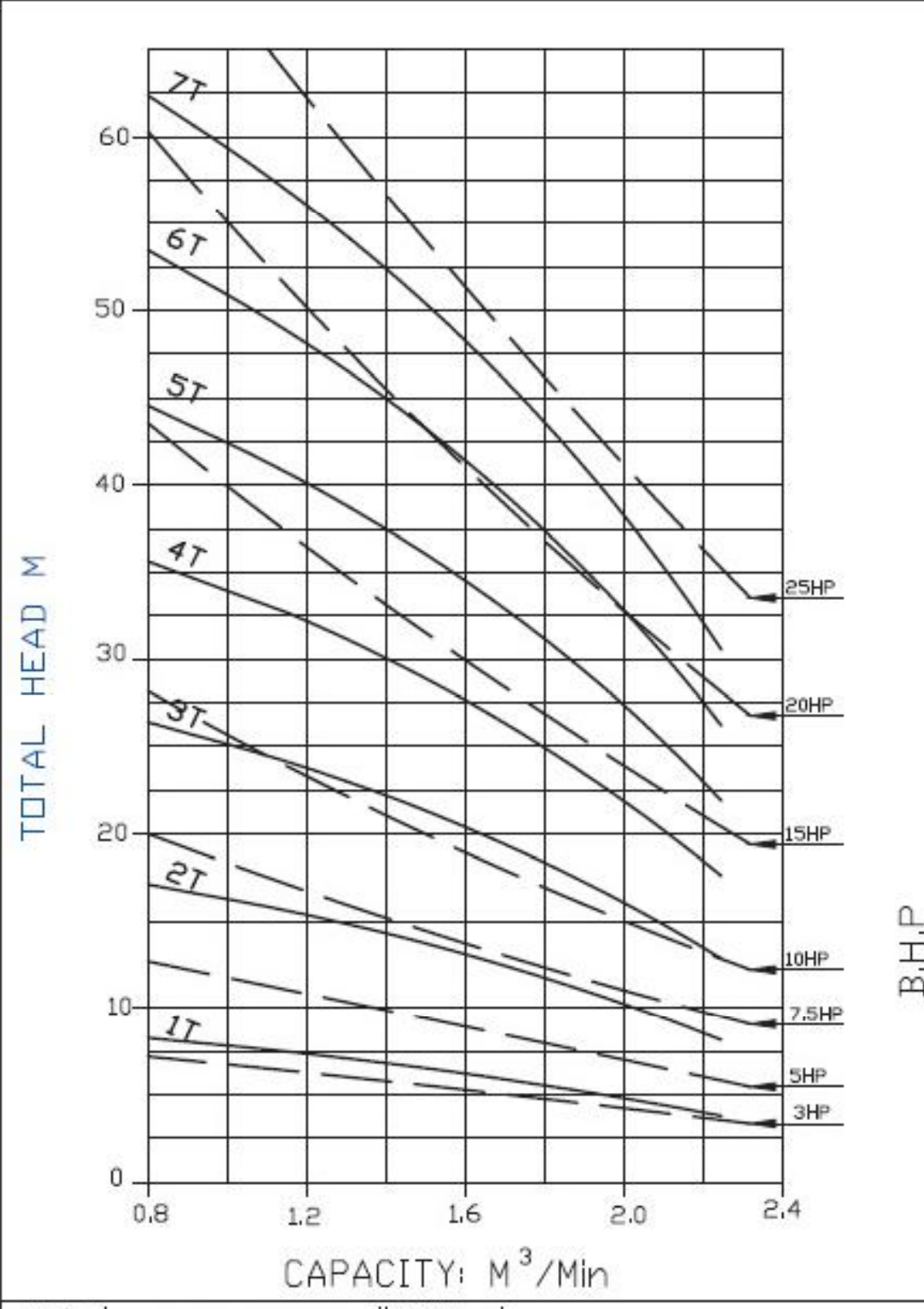
型式 Model **FST80** 葉輪 Impeller VT-80 $\phi 147 * \phi 140$ (全)(full)



型式 Model **FST101** 葉輪 Impeller VT-101B $\phi 170 * \phi 156$ (全)(full)



型式 Model **FST101** 葉輪 Impeller VT-100 $\phi 184 * \phi 166$ (全)(full)

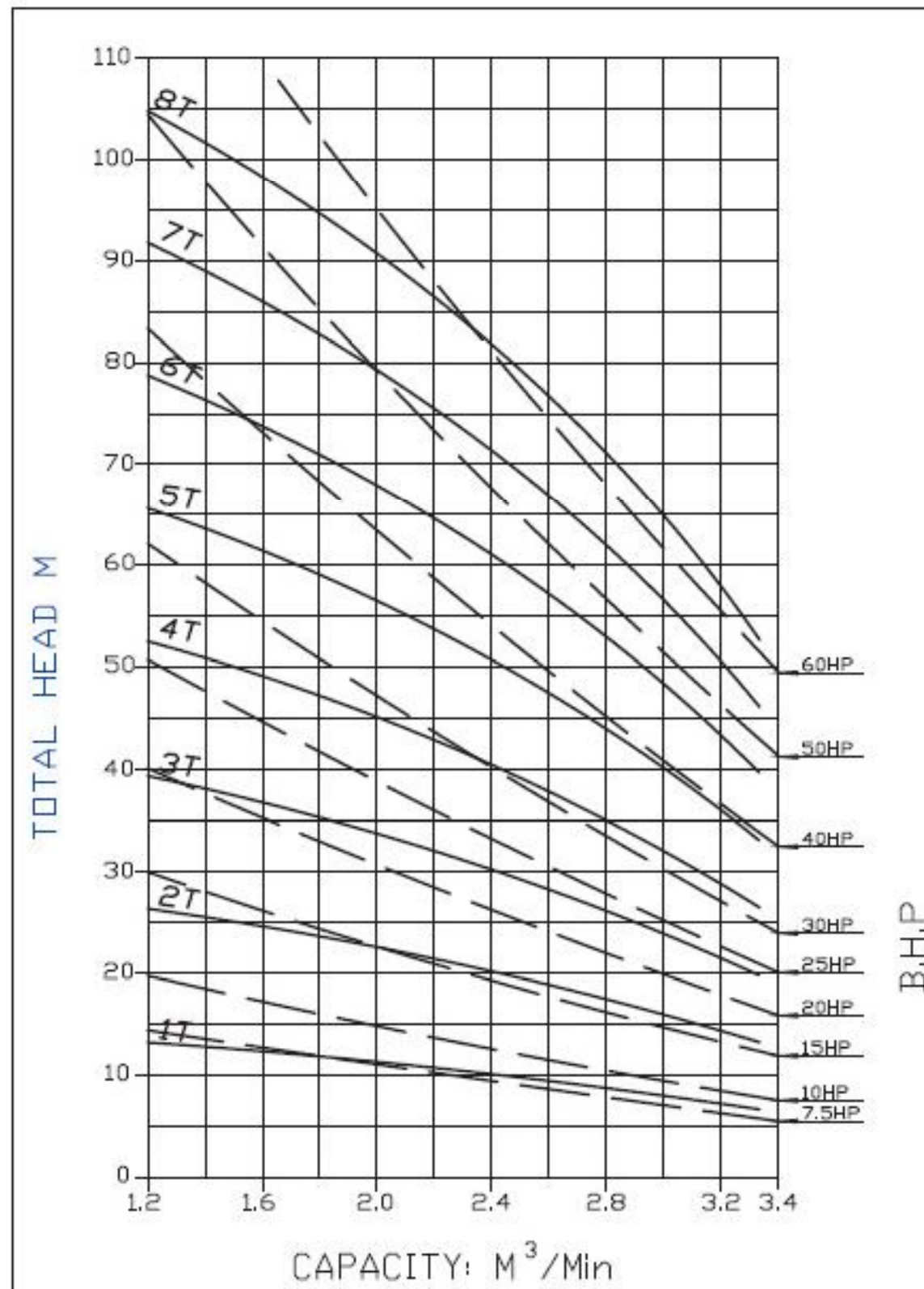


型式 Model **FST125** 葉輪 Impeller VT-125 $\phi 189 * \phi 168$

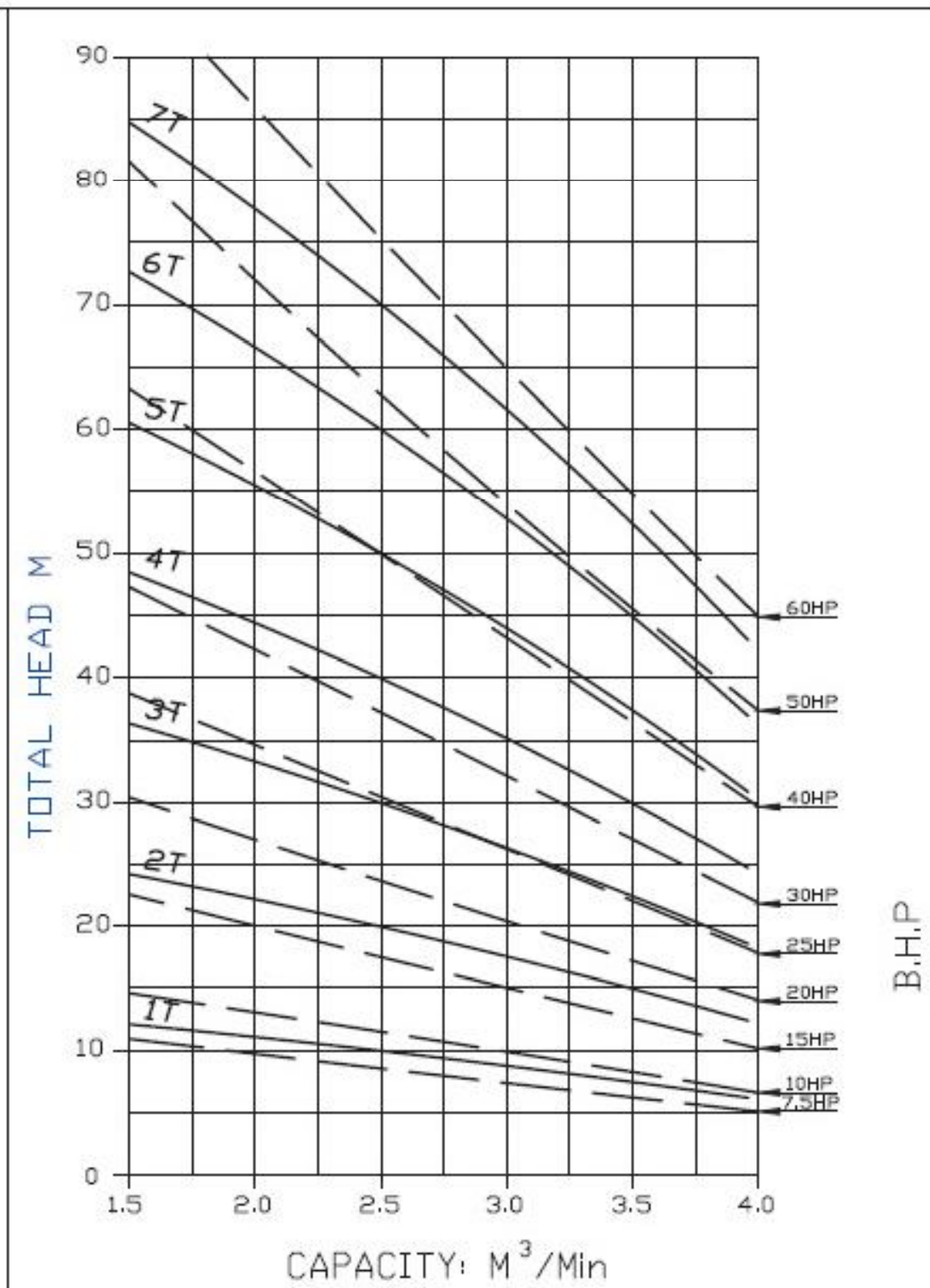
性能曲線圖50HZ

Performance Curve 50HZ

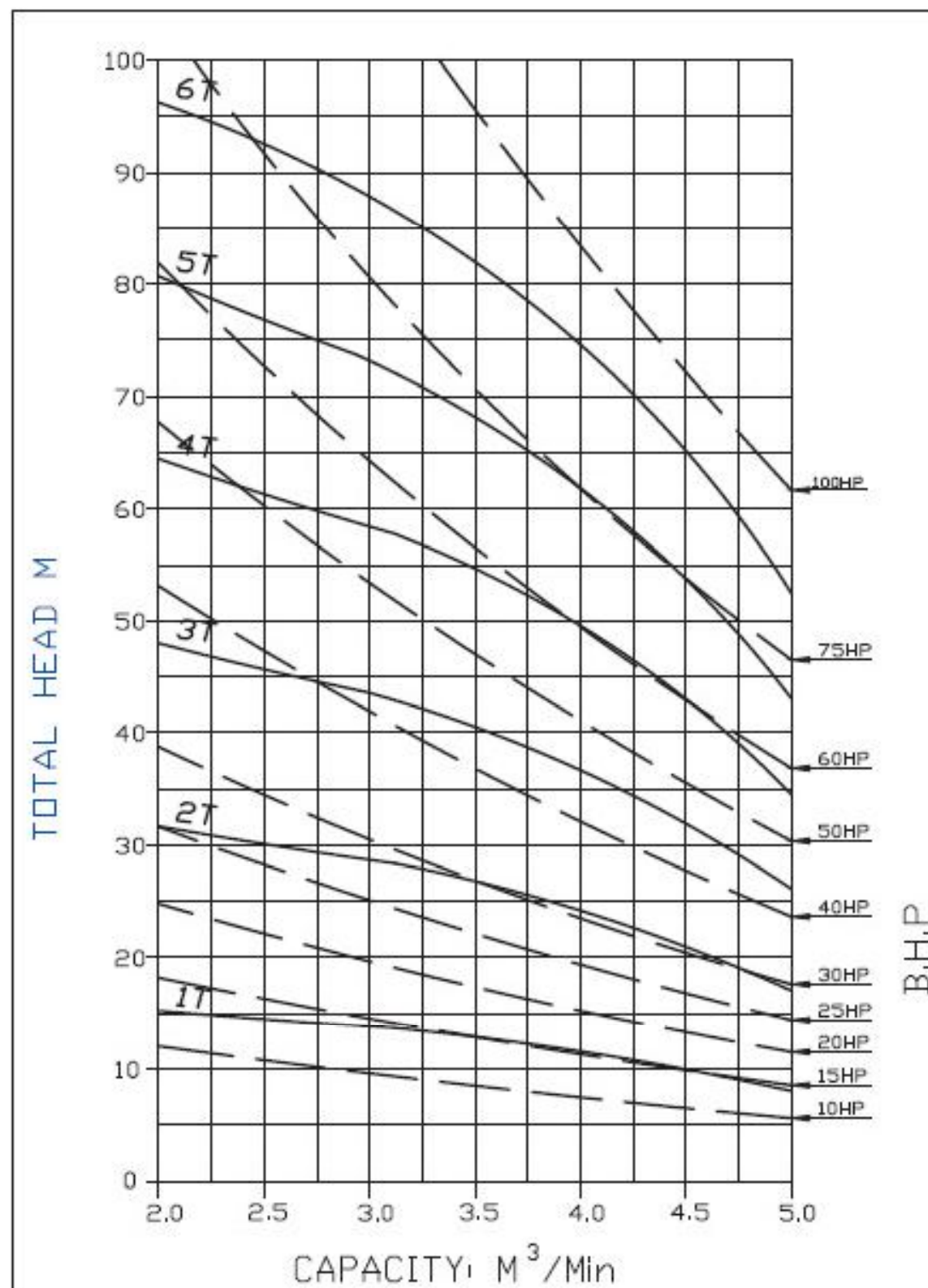
—— 段數(N. Stage) - - - - - 馬力數(Horse power) 回轉數(Pump Speed):1450RPM



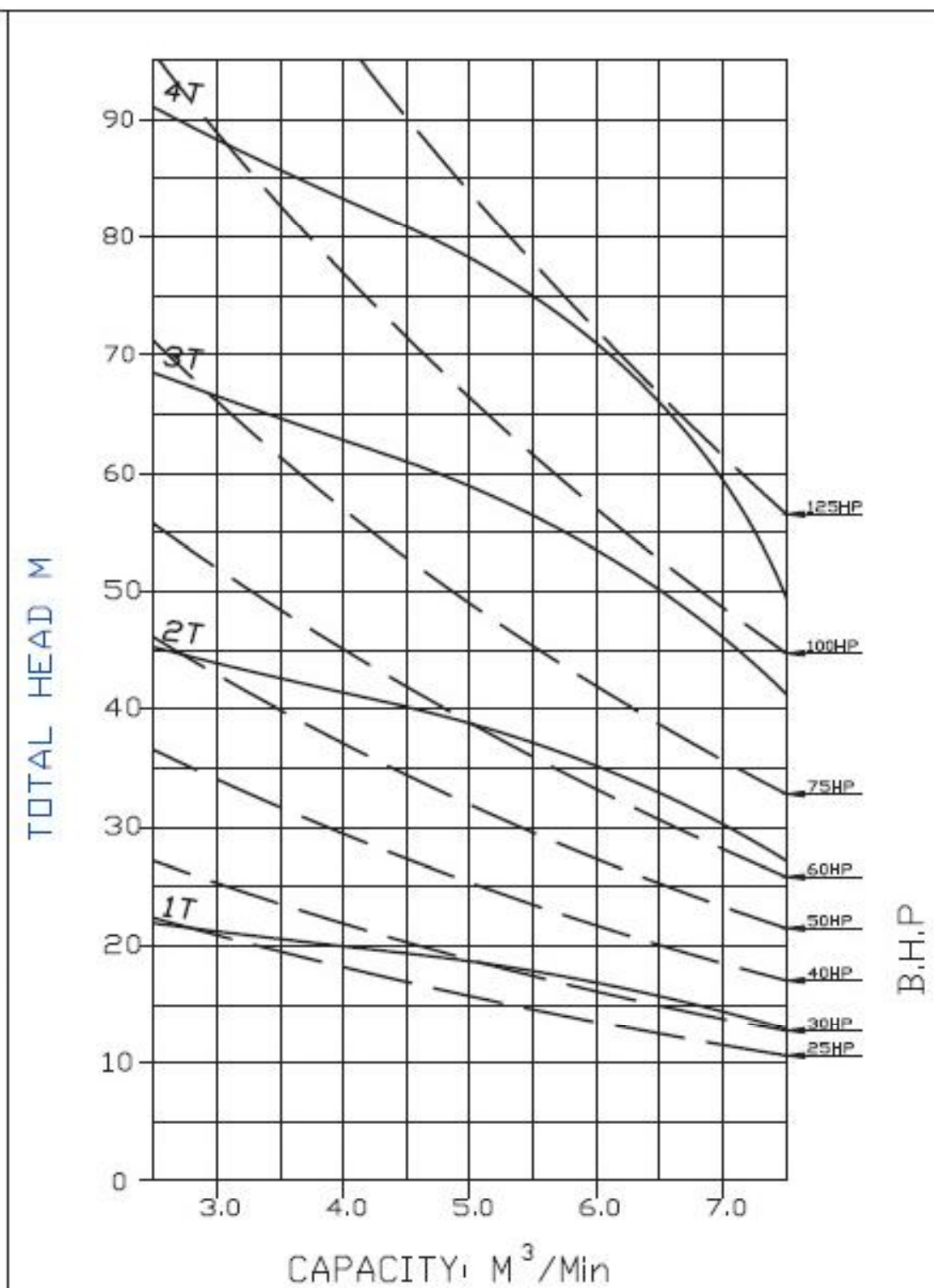
型式 Model **FST151** 葉輪 Impeller **VT-150** $\phi 228 * \phi 212$



型式 Model **FST151** 葉輪 Impeller **VT-151A** $\phi 216 * \phi 192$



型式 Model **FST152** 葉輪 Impeller **VT-152B** $\phi 246 * \phi 220$



型式 Model **FST202** 葉輪 Impeller **VT-202** $\phi 288 * \phi 260$

如蒙洽詢請指示下列各項

Request for information

- 1.液體：_____
- 2.出水量：_____M³/Min.(US.GPM)
- 3.總揚程：_____M(ft)
- 4.液體溫度：_____°C(°F)
- 5.液體黏度：_____
- 6.比重：_____
- 7.酸鹼度：_____
- 8.運轉溫度下之蒸汽壓力：
_____kg/cm²(PSIA)
- 9.可用之淨有效吸入揚程：_____M(ft)
- 10.泵浦回轉數：_____rpm
- 11.額定馬力：_____KW(HP) _____ Pole
_____ Phase, _____ Hz, _____ volts

When making an enquiry, please indicate the details of the following information:

- 1.Liquid : _____
- 2.Capacity : _____M³/Min. (US.GPM)
- 3.Total head : _____M(ft)
- 4.Temperature of Liquid: _____ °C (°F)
- 5.Viscosity of Liquid: _____
- 6.Specific Gravity: _____
- 7.PH : _____
- 8.Vapor pressure at operating temperature :
_____kg/cm²(PSIA)
- 9.NPSH available : _____ M(ft)
- 10.Pump speed : _____ rpm
- 11.Rated Power : _____ KW(HP) _____ Pole
_____ Phase, _____ Hz, _____ volts

主要產品

Main Product Line

一般給水排水泵浦
空調冷凍用泵浦
鍋爐給水高壓泵浦
含固體雜質液輸送泵浦
石化液製程輸送泵浦
酸鹼液輸送泵浦
深水井抽水泵浦

General water supply/drainage pump
Air-conditioning freezing pump
Boiler water supply high-pressure pump
Solid impurities contained liquid conveying pump
Petrochemical liquid process conveying pump
Acid/alkaline liquid conveying pump
Deep well suction pump

THAILAND : THAI PINNACLE ENGINEERING CO.,LTD
8/1 SOI 3-10 PETCHKASEM 77 PETCHKASEM ROAD
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<http://www.thaipinnacle.com>
E-mail : sale@thaipinnacle.com