

Customer**Supplier**

Company name
Editor
Phone number
E-mail

Fields of Application

Water supply and booster stations
Irrigation, overhead irrigation and draining
Filling and emptying of tanks and containers
Circulating of hot and cold water in HVAC systems
Pumping of condensate
Water circulating for swimming pools
Sanitary and cleaning installations
For industrial applications and public services
Fresh water supply on ships

**Design Specification**

NMM series pumps are volute casing, single stage, end suction, monoblock type centrifugal pumps with closed impeller and mechanical seal.

Main dimensions and the nominal flow rates of the pumps comply with the DIN 24255 and EN 733 standards.

Single entry, closed impeller is hydraulically thrust compensated and dynamically balanced.

Pump and motor are separate components. Motor shaft is passed into the pump shaft for coupling. After a certain motor power, a coupling system is used between the motor shaft and pump shaft.

Maintenance is very much easier, the impeller shaft and other rotating parts being removable with no need to disconnect the suction and delivery pipes, due to back pull-out design.

Maximum interchangeability of components, identical parts can be used along various pumps of the NMM series, which greatly simplifies and reduces stock of spare parts in addition to reduced delivery times.

Single-stage centrifugal pump coupled by means of a support, to a standard asynchronous motor, closed type, with external ventilation.

NMM series are fitted with mechanical shaft seal and pump shaft is supported by motor bearings.

Technical Data

| | |
|--------------------|-----------------------------|
| Suction Flange | : DN50 - DN150 |
| Discharge Flange | : DN32 - DN125 |
| Operating Pressure | : 10 bar |
| Temperature Range | : Up to 120 °C |
| Speed Range | : 1450 - 3500 rpm |
| Flow Range | : 5 - 400 m ³ /h |
| Head Range | : 4 - 105 m |

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Operating data specification

| | | | | | |
|-----------------------------|-------|--------------------|--------------------------|-----|-------------------|
| Pumped fluid | Water | | Rated flow | | m ³ /h |
| Solids | | | Rated head | | m |
| Kind | | | Geodetic head | | m |
| Percentage of solid content | 0 | | Available system NPSH | | m |
| pH value | | | Inlet pressure (pin) | 0 | kPa |
| Temperature | 20 | °C | Altitude above sea level | 100 | m |
| Density | 998.3 | kg/m ³ | Max. operating pressure | 548 | kPa |
| Kin. viscosity | 1.005 | mm ² /s | Max. diff. pressure | 548 | kPa |
| Vapour pressure | 2.34 | kPa | | | |

Pump

| | | | | | |
|------------------------|--|-------|-----------------------|------|-------------------|
| Make | MAS DAF | | Impeller type | | |
| Pump type | NMM 65-200 | | Impeller construction | | |
| Frame size | | | Impeller Ø | | |
| Design | End Suction Monoblock Type | | Max. | 218 | mm |
| Self priming | <input checked="" type="checkbox"/> No | | designed | 193 | mm |
| Speed | 2940 | 1/min | Min. | 179 | mm |
| Stages | 1 | | Flow | | |
| Suction port | | | Nominal | 106 | m ³ /h |
| Pressure rating | PN16 | | Max. | 156 | m ³ /h |
| Nominal pipe size | DN80 | | Min. | 0 | m ³ /h |
| Standard | DIN | | Head | | |
| Discharge port | | | Nominal | 45.8 | m |
| Pressure rating | PN16 | | Min. | 25.5 | m |
| Nominal pipe size | DN65 | | Max. | 56 | m |
| Standard | DIN | | Shut off head | 56 | m |
| Shaft power | | kW | NPSH3 | | m |
| Shaft power P2(Q=max.) | 22.3 | kW | Efficiency | | % |

Motor

| | |
|----------------------|----------------------------|
| Make/Type | 22 KW-2900 RPM / 160L-C |
| Specific design | IE3 / 50 Hz / Pole pairs 1 |
| Rated power | 22 kW |
| Electric voltage | 3~ 400 V |
| Speed | 2950 1/min |
| Electric current | 38 A |
| Frame size | 160L |
| Degree of protection | IP 55 |
| Type of protection | |
| Explosion protection | |

Coupling

| | |
|---------------|----|
| Make/Type | |
| Series | |
| Spacer length | mm |
| Frame size | |

Materials

| | | | |
|-------------|--------------------------|---------------|--|
| Pump | | Shaft seal | AQ1EGG |
| Pump Casing | GJL-250 (GG25) | Material code | AQ1EGG |
| Impeller | GJL-250 (GG25) | Seal face | Carbon graphite antimony impregnated (A) |
| Shaft | A 276 Type 420 (X20Cr13) | Seat | Silicon carbide (Q1, eSiC-Q7) |
| | | Elastomer | EPDM (E) |
| | | Metal parts | CrNiMo steel (G) |

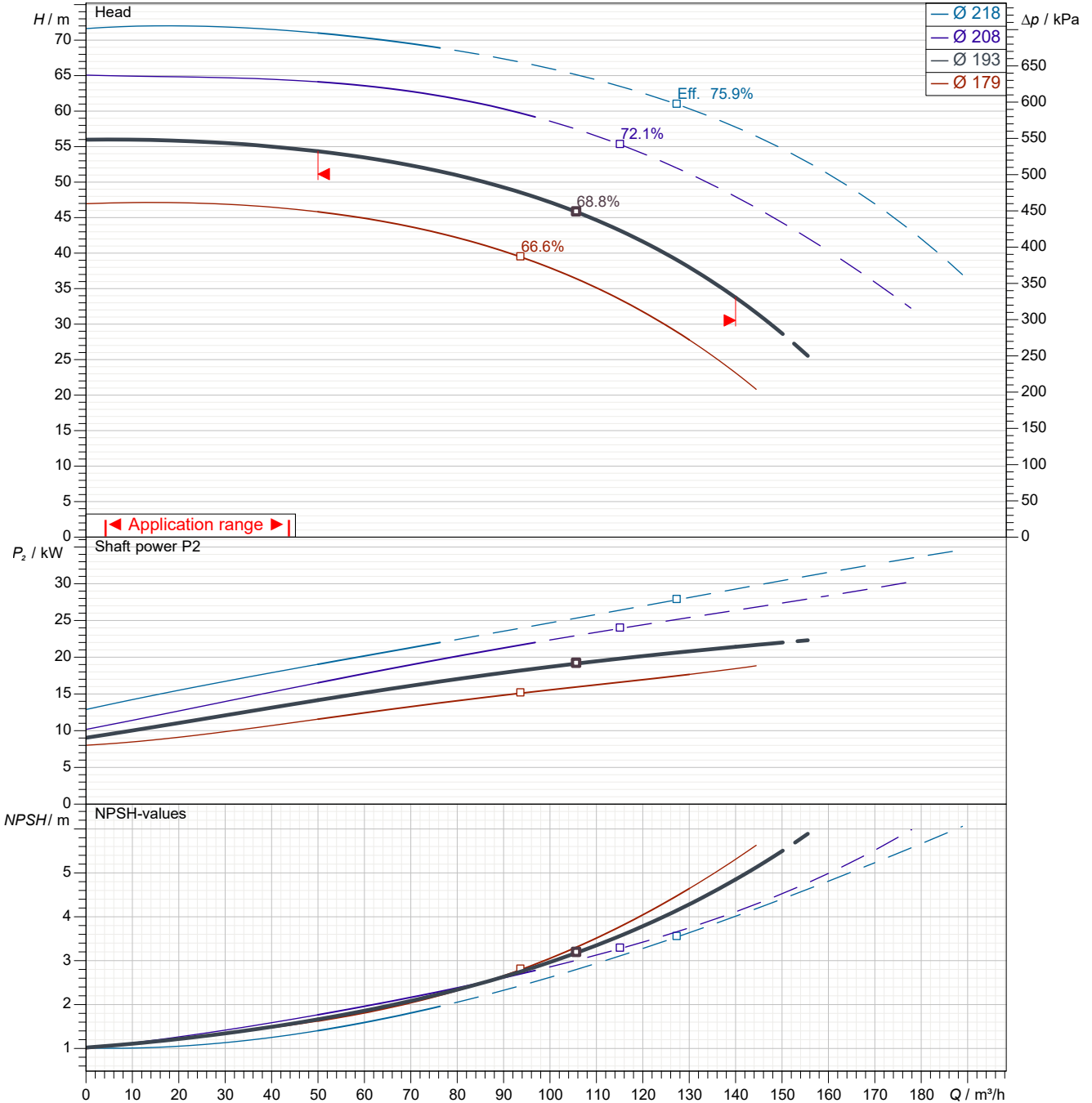
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Power data referred to: Water; 20°C; 998.3kg/m³; 1.005mm²/s Sense of rotation Clockwise from the drive end

Missing or invalid parameter (REFDIAM)



Pump curves in accordance with ISO 9906 2B

| | | | | |
|-----------------|-------|--------------------|-------------|-------------------|
| Pumped fluid | Water | | Rated flow | m ³ /h |
| Temperature | 20 | °C | Rated head | m |
| Density | 998.3 | kg/m ³ | Shaft power | kW |
| Kin. viscosity | 1.005 | mm ² /s | Speed | 2940 1/min |
| Vapour pressure | 2.34 | kPa | NPSH3 | m |
| Impeller Ø | 193 | mm | Efficiency | % |

Subject to change

Projec

Issue date
2022-04-07

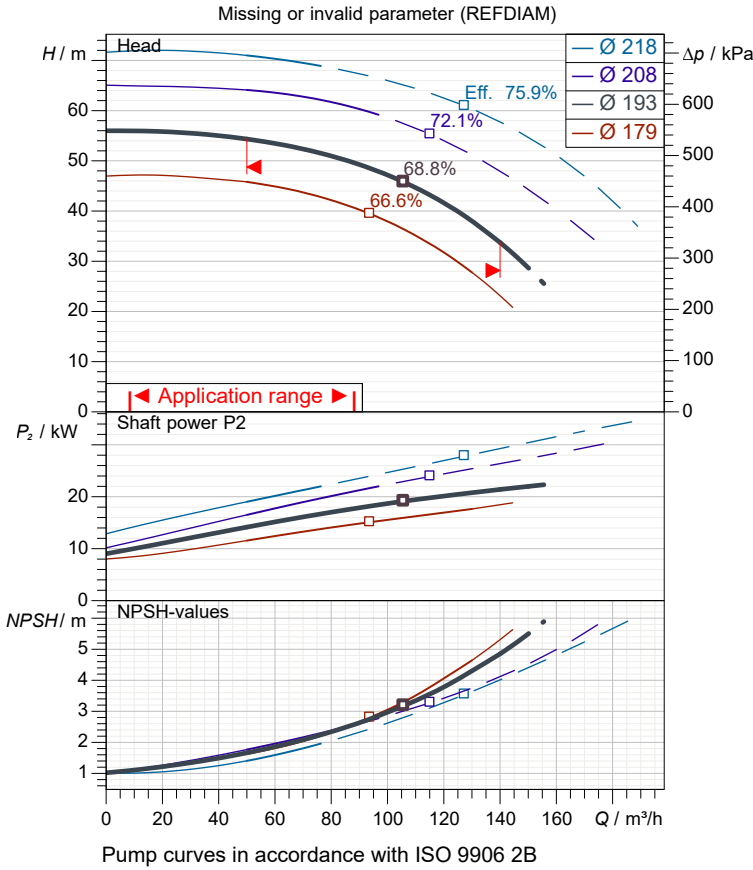
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Performance curves



Pump

| | |
|-------------------|----------------------------|
| Make | MAS DAF |
| Pump type | NMM 65-200 |
| Design | End Suction Monoblock Type |
| Suction port | |
| Pressure rating | PN16 |
| Nominal pipe size | DN80 |
| Standard | DIN |
| Discharge port | |
| Pressure rating | PN16 |
| Nominal pipe size | DN65 |
| Standard | DIN |

Operating data specification

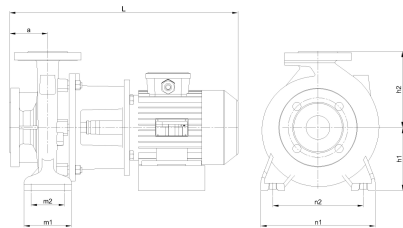
| | | |
|-----------------|-------|--------------------|
| Pumped fluid | Water | |
| Temperature | 20 | °C |
| Density | 998.3 | kg/m ³ |
| Kin. viscosity | 1.005 | mm ² /s |
| Vapour pressure | 2.34 | kPa |
| Rated flow | | m ³ /h |
| Rated head | | m |
| Shaft power | | kW |
| Speed | 2940 | 1/min |
| NPSH3 | | m |
| Efficiency | | % |
| Impeller Ø | 193 | mm |

Motor

| | |
|----------------------|----------------------------|
| Make/Type | 22 KW-2900 RPM / 160L-C |
| Specific design | IE3 / 50 Hz / Pole pairs 1 |
| Rated power | 22 kW |
| Speed | 2950 1/min |
| Electric voltage | 3~ 400 V |
| Electric current | 38 A |
| Degree of protection | IP 55 |

Materials

| | |
|---------------|--|
| Shaft seal | AQ1EGG |
| Material code | AQ1EGG |
| Seal face | Carbon graphite antimony impregnated (A) |
| Seat | Silicon carbide (Q1, eSiC-Q7) |
| Elastomer | EPDM (E) |
| Metal parts | CrNiMo steel (G) |



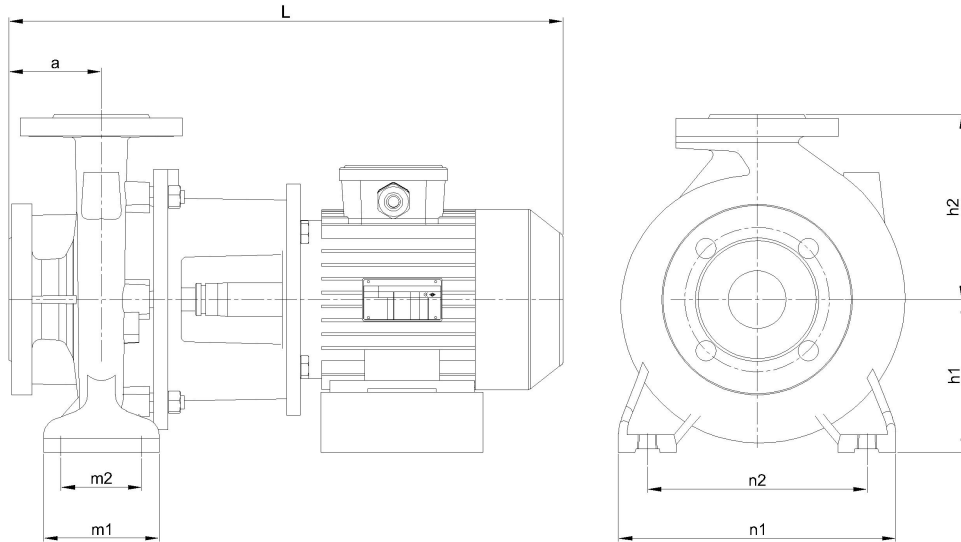
| Dimensions | mm |
|------------|-----|
| a | 100 |
| h1 | 180 |
| h2 | 225 |
| L | 867 |
| m1 | 125 |
| m2 | 95 |
| n1 | 320 |
| n2 | 250 |

| | |
|-------------|--------------------------|
| Pump Casing | GJL-250 (GG25) |
| Impeller | GJL-250 (GG25) |
| Shaft | A 276 Type 420 (X20Cr13) |

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| Dimensions | mm |
|------------|-----|
| a | 100 |
| h1 | 180 |
| h2 | 225 |
| L | 867 |
| m1 | 125 |
| m2 | 95 |
| n1 | 320 |
| n2 | 250 |

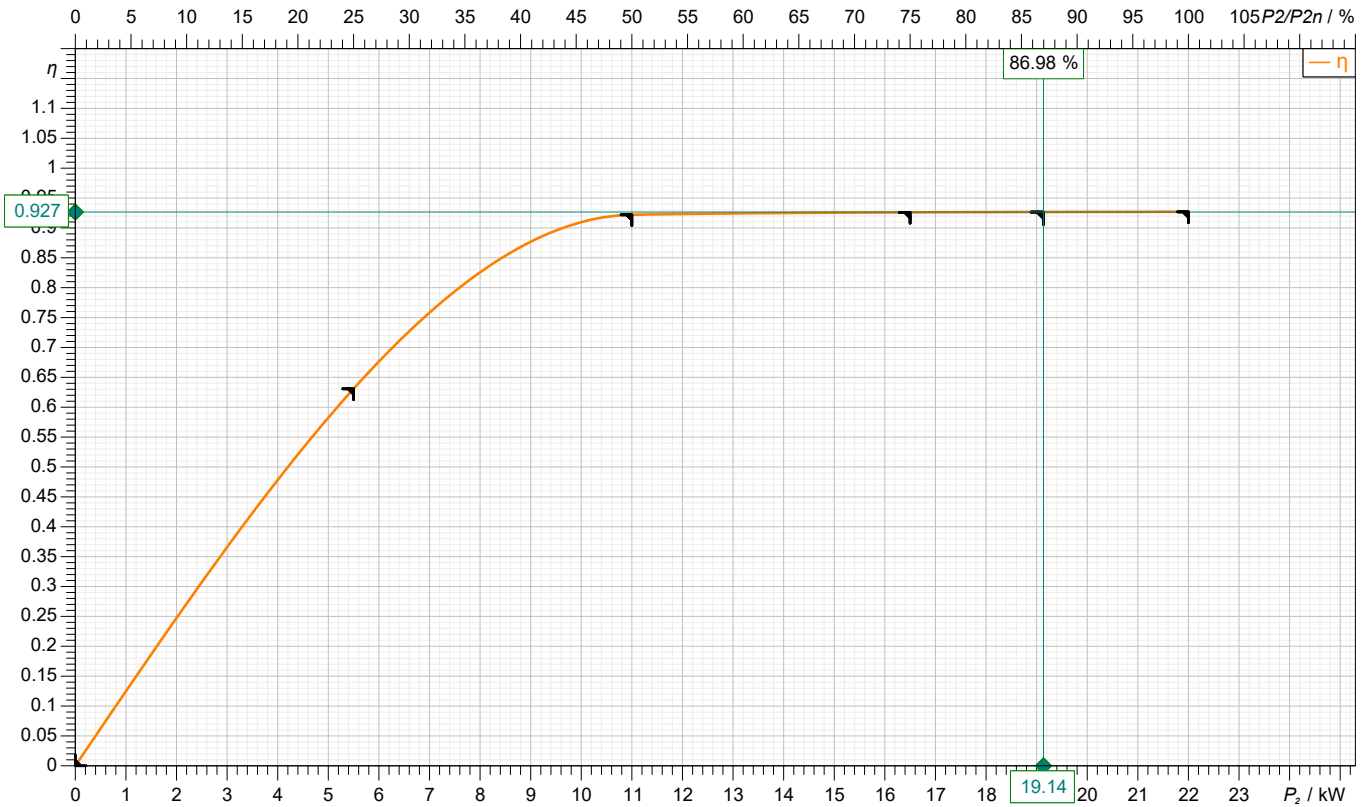
| Inlet / outlet | |
|----------------|----------------|
| Suction port | Discharge port |
| DN80 | DN65 |
| PN16 | PN16 |

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motor data



| Symbol | No load | 25 % | 50 % | 75 % | 100 % | 125 % |
|------------|---------|-------|-------|-------|-------|-------|
| P_2 / kW | 0 | 5.5 | 11 | 16.5 | 22 | |
| P_i / kW | | 8.717 | 11.93 | 17.82 | 23.73 | |
| η / % | 0 | 63.09 | 92.2 | 92.6 | 92.7 | |

Motor

| | | | |
|------------------|----------------------------|----------------------|-----------|
| Make/Type | 22 KW-2900 RPM / 160L-C | Degree of protection | IP 55 |
| Specific design | IE3 / 50 Hz / Pole pairs 1 | Type of protection | |
| Rated power | 22 kW | Explosion protection | |
| Electric voltage | 3~ 400 V | Service factor | 1.15 |
| Number of poles | 2 | Starting current | |
| Speed | 2950 1/min | Starting torque | |
| Electric current | 38 A | Moment of inertia | |
| Power factor | 0.9 | No. starts per hour | |
| Frame size | 160L | Rated torque | 71.2 Nm |
| Efficiency class | IE3 | Insulation class | F (155C°) |

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Suction connection

DN80
PN16

Discharge connection

DN65
PN16

| Dimensions | mm |
|------------|------|
| b | 20 |
| D | 200 |
| d2 | 18 |
| d4 | 160 |
| d5 | 90.5 |
| DN | 80 |
| f | 2 |
| k | 160 |
| n | 8 |

| Dimensions | mm |
|------------|------|
| b | 20 |
| D | 185 |
| d2 | 18 |
| d4 | 122 |
| d5 | 77.5 |
| DN | 65 |
| f | 2 |
| k | 145 |
| n | 8 |



Spare part list
NMM 65-200

Revision number

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Subject to change

Projec

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Spare part list
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