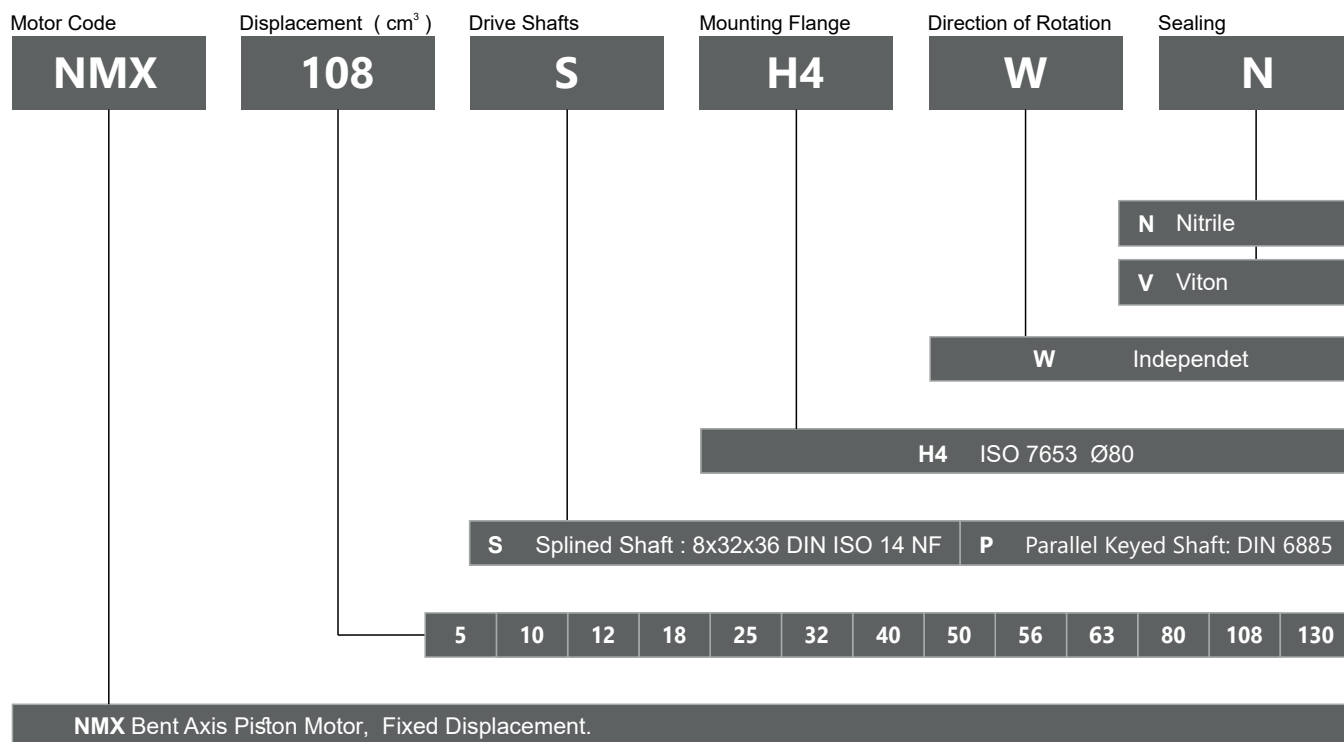


# Ordering Code of NMX Motors



## Formulas

|                                   |             |                                                                                                  |                                     |
|-----------------------------------|-------------|--------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Pump Output Flow</b>           | <b>GPM</b>  | $GPM = (Speed \text{ (rpm)} \times disp. \text{ (cu. in.)}) / 231$                               | $GPM = (n \times d) / 231$          |
| <b>Pump Input Horsepower</b>      | <b>HP</b>   | $HP = GPM \times Pressure \text{ (psi)} / 1714 \times Efficiency$                                | $HP = (Q \times P) / 1714 \times E$ |
| <b>Pump Efficiency</b>            | <b>E</b>    | Overall Efficiency = Output HP / Input HP                                                        | Eoverall = HPOut / HPIn X 100       |
|                                   |             | Overall Efficiency = Volumetric Eff. × Mechanical Eff.                                           | EOverall = EffVol. × EffMech.       |
| <b>Pump Volumetric Efficiency</b> | <b>E</b>    | Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) × 100 | EffVol. = QAct. / QTheo. X 100      |
| <b>Pump Mechanical Efficiency</b> | <b>E</b>    | Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive × 100               | EffMech = TTheo. / TAct. × 100      |
| <b>Pump Displacement</b>          | <b>CIPR</b> | Displcmnt (In.3 / rev.) = Flow Rate (GPM) × 231 / Pump RPM                                       | CIPR = GPM × 231 / RPM              |
| <b>Pump Torque</b>                | <b>T</b>    | Torque = Horsepower × 63025 / RPM                                                                | T = 63025 × HP / RPM                |
|                                   |             | Torque = Pressure (PSIG) × Pump Displacement (CIPR) / 2π                                         | T = P × CIPR / 6.28                 |

**Horsepower for driving a pump** : For every 1 hp of drive, the equivalent of 1 gpm @ 1500 psi can be produced.

**Horsepower for idling a pump** : To idle a pump when it is unloaded will require about 5% of it's full rated power

**Wattage for heating hydraulic oil** : Each watt will raise the temperature of 1 gallon of oil by 1° F. per hour.

**Flow velocity in hydraulic lines** : Pump suction lines 2 to 4 feet per second, pressure lines up to 500 psi - 10 to 15 ft./sec., pressure lines 500 to 3000 psi - 15 to 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.