

WINMAN Gear Pump Brief Introduction

★ Gear Pump of Guorui Hydraulic features floating bush structure with the function of automatic axial clearance compensation. Special abrasion resistance recipe of the bush supplied the long service life; the gear precisely machined ensured the excellent operation with low noise; cold-extrusion profile pump body can endure the pressure over 30Mpa; high strength cast iron of front/back cover is more reliable to operate . It can be widely used in industrial hydraulic system, hydraulic system of mobile mechanism, hydraulic system of aerospace system, hydraulic system on the ship and the hydraulic system on ocean engineering.

WINMAN Gear Pump Character

★ WINMAN gear pump are produced in 7 different versions(0P,1P, 1.5P, 2P, 2.5P, 3P, 3.5P) and in each group different displacement are obtained by change the gears width ,pleas to look performance curve page 5 to page 8.

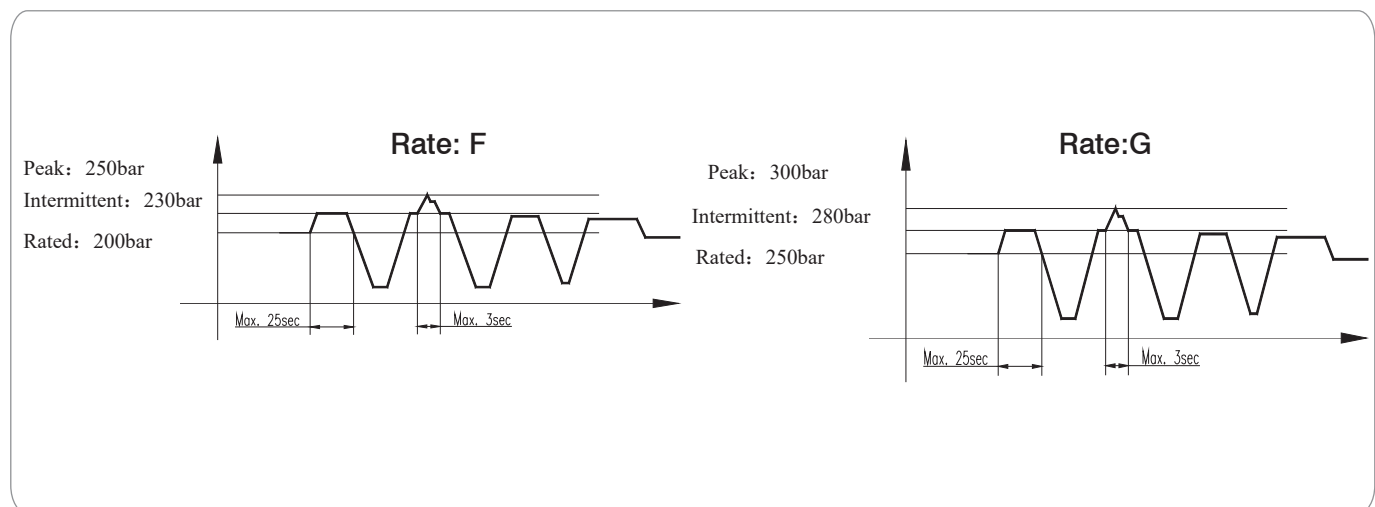
★ pressure :WINMAN can supply two rate F;G of pressure,pleas to look below drawing:

★ efficiencies:volumetric up to 98%.mechanical up to 93%.

★ many different mounting combination about flanges ,shaft ends and ports are fully interchangeable with the main standards of market.

★ seals:all pump can be equipment FPM seals .

★ integrate:all pump can be combination with relief valve and check valve .



Gear Pump Use Guide

General

To achieve the performance it necessary not only to meet the catalogue but also to take real care of the design of the hydraulic as a whole ,in particular:

- ★ the design of the hydraulic circle ,especially the suction line , dimension and position of the valves ,the filters the reservoirs and the heat exchanger.
- ★ ensure correct and frequent cleaning and maintenance of the circle and of the hydraulic fluid .
- ★ equip the circuit with suitable alarm and safety devices.
- ★ avoid possible starting under load at lower temperature .
- ★ avoid high pressure at low speed.
- ★ in reason choice oil is major factor.

Hydraulic Fluid

★ Fluid must be specifically for hydraulic equipment , it must be nonfoaming, antioxidant,noncorrosive and have good lubricating features meeting the following requirements:

GB11118-94: L-HM46 or equate NFE-603/DIN51524 II - 85

recommended use: GB11118-94: L-HM46 or equate NFE-603/DIN5152 4 II -85

Minimum Rotational Speed

★ We recommend a minmum rotational speed for every pump group as follows:

0P: 800RPM

1P: 600RPM

1P~2.5P: 500RPM

3P: 400RPM

Hydraulic circuit

- ★ Avoid shard restrictions and small radius bends.
- ★ Place safety relief valve set at correct pressure and with good dynamic characteristic.
- ★ Recommended fluid speed in the inlet line—1.6~5ft/s(0.5~1.5m/s).
- ★ Recommended fluid speed in the delivery line—6.5~20ft/s(2~6m/s).
- ★ Recommended fluid speed in the return line—5~10ft/s(1.5~3m/s).
- ★ Reservoir should have a capacity about twice as much as the volume Of delivered by the pump in one minute.
- ★ The return and inlet pipe must be separated as far as possible and under the minmum level of the oil.
- ★ Install pump in a well cleaned environment,and make sure ,prior starting the system that all pipea and reservoir are perfectly clean it is recommended to filter the new oil at 8-10um,befor filling the reservoir.
- ★ Fill the pump with fluid befor installing and check the direction of rotation .
- ★ For the first run of the pump it is advisable to disconnection the pump diacharg in order to purge the air from the system.

Gear Pump Use Guide

Filter

- ★ By far largest number of premature failures of gear pumps are due to contamination; filtering with clogging indicating and alarms is recommended .
- ★ The initial contamination of the fluid must not exceed class 10 NAS 1638,pass experience has shown that even brand new fluid often exceed this value.in this case it is recommended below:60 um inlet ,and in the return side:

Pressure Standard	P<2000PSI(14MPa)	2000PSI(14MPa)<P<3050PSI(21MPa)	P>3050PSI(21MPa)
NAS1638	10	9	8
ISO4406	19/16	18/15	17/14
Filter	25um	20um	10um

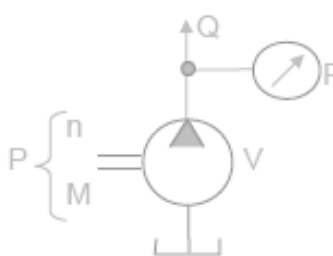
Driving Arrangements

- ★ the pump must be in line with the P.T.O.
- ★ do not apply radial or axial loads on the pump shafts,the use of three coupling is recommended.
- ★ make sure that the absorbed torque does not exceed the max.torque allowed for the shaft.
- ★ belt and gear drive not recommended because they affect the pum performance and life .

General Notes

- ★ This catalog is issued to provide outline information only .we reserve the right to change without any notice the design,fratures.
- ★ Please relat us if you have special request .

Calculated Formula



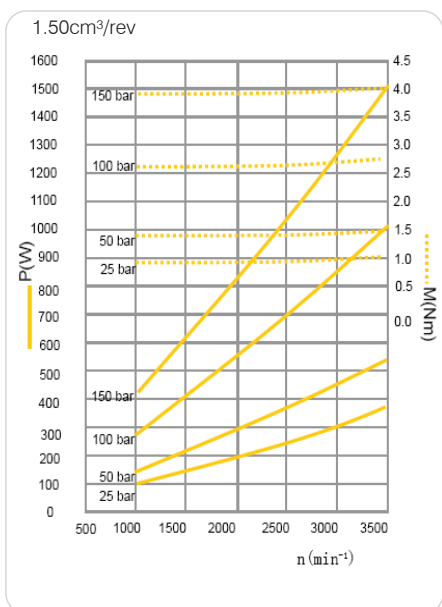
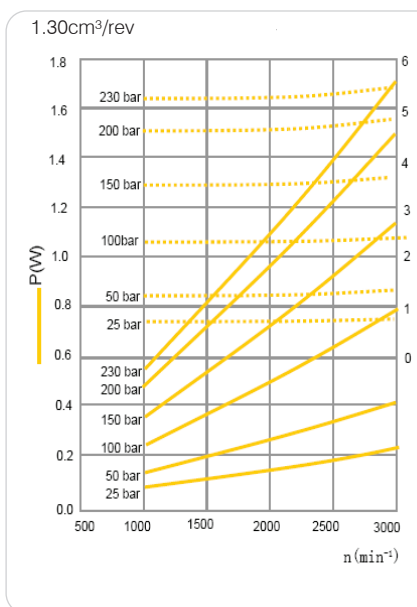
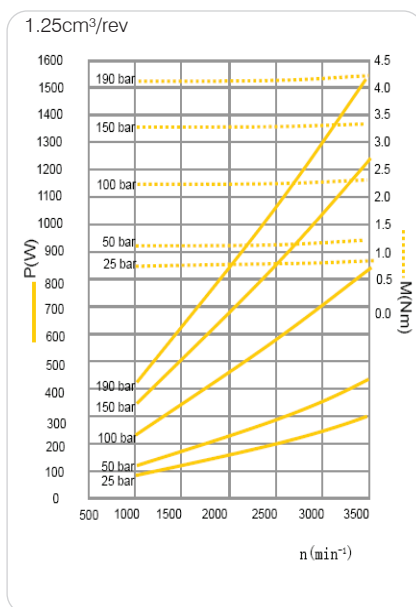
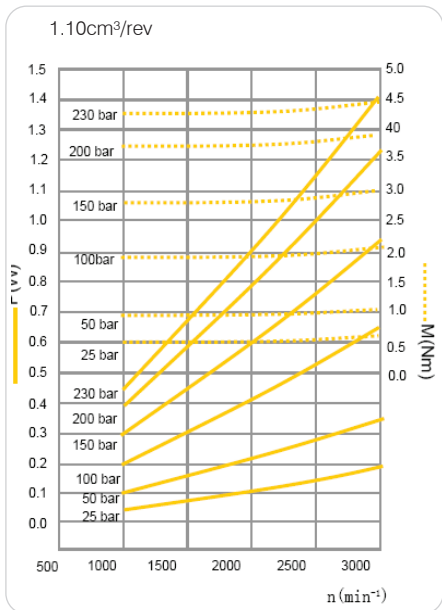
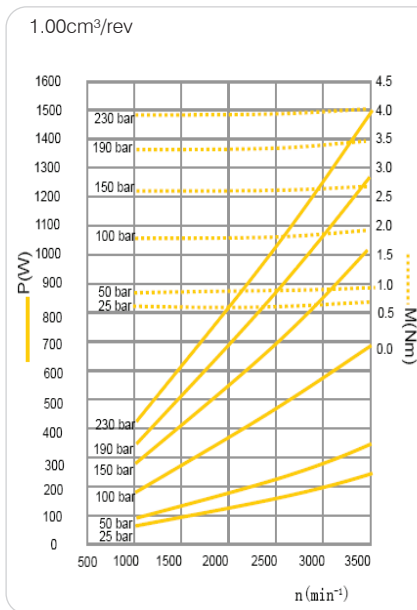
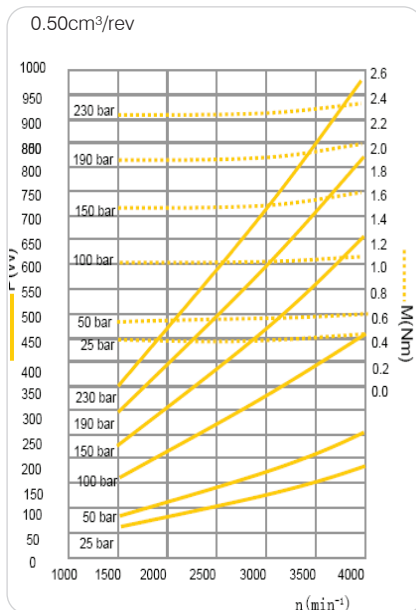
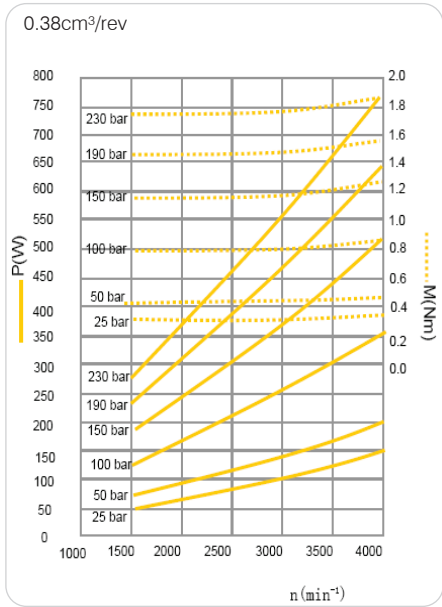
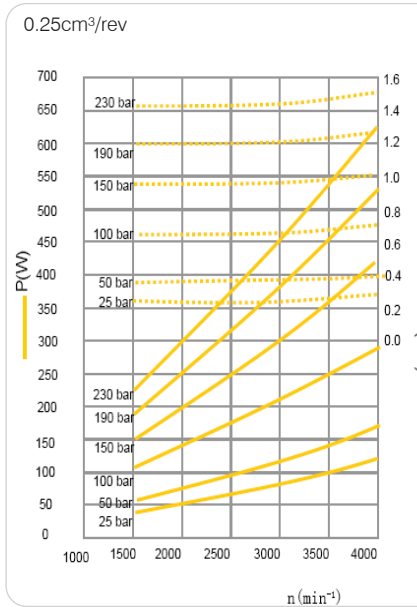
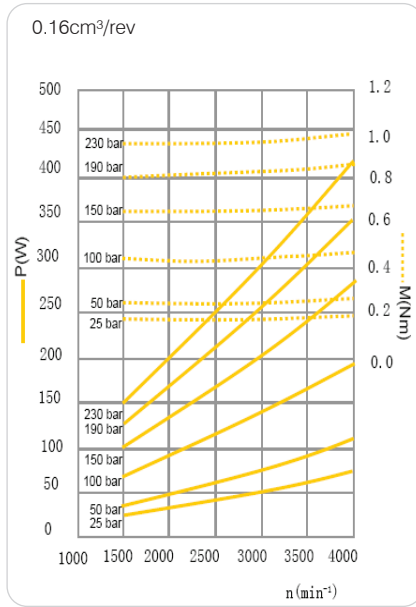
$$Q = V \cdot n \cdot \eta_v \cdot 10^{-3}$$

$$M = p \cdot V / 62.83 \cdot \eta_m$$

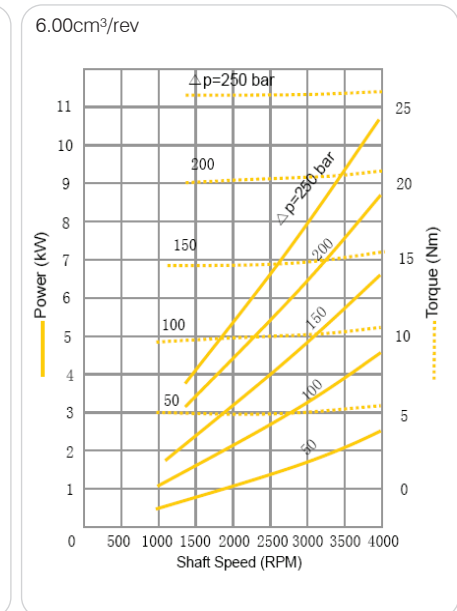
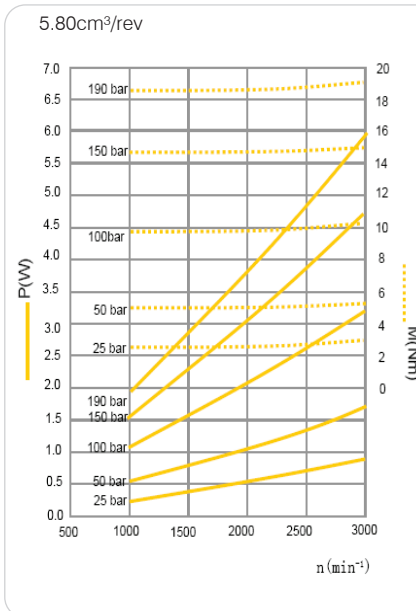
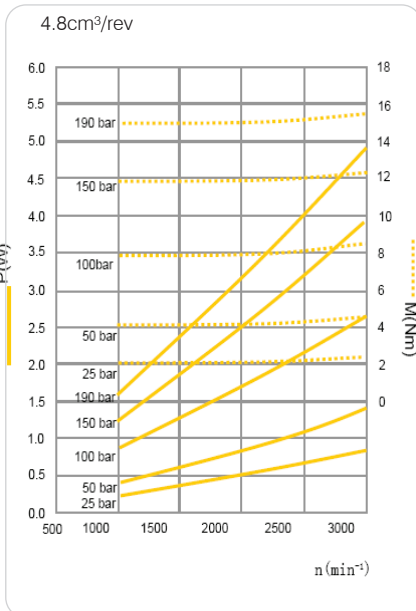
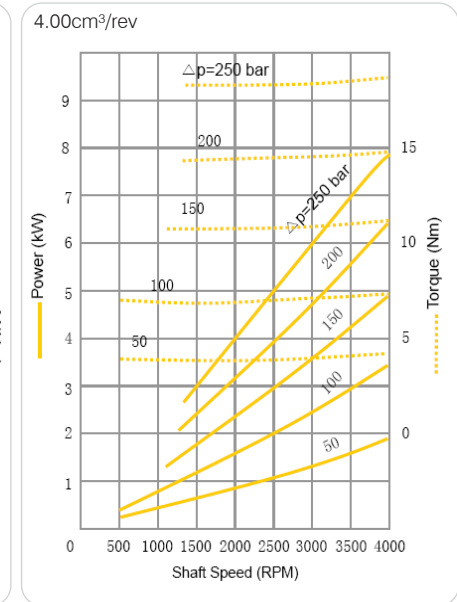
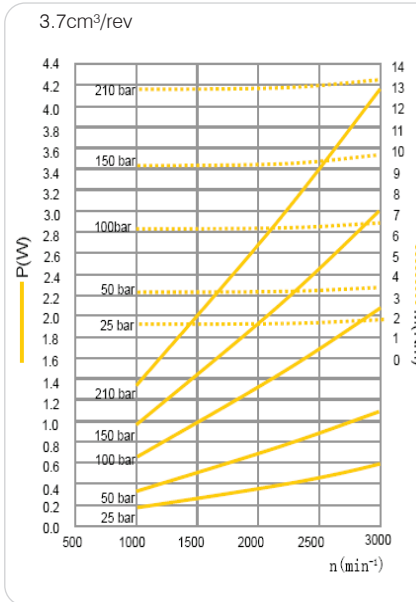
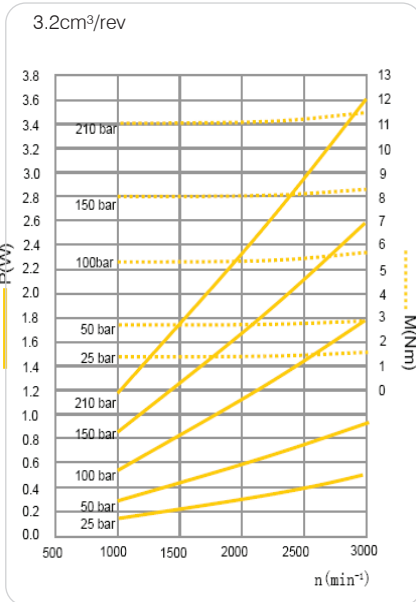
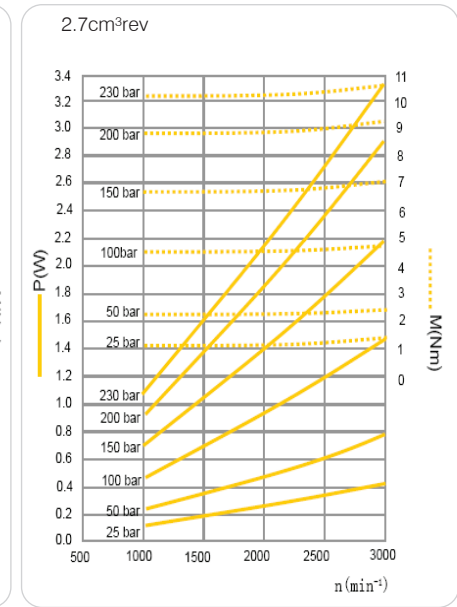
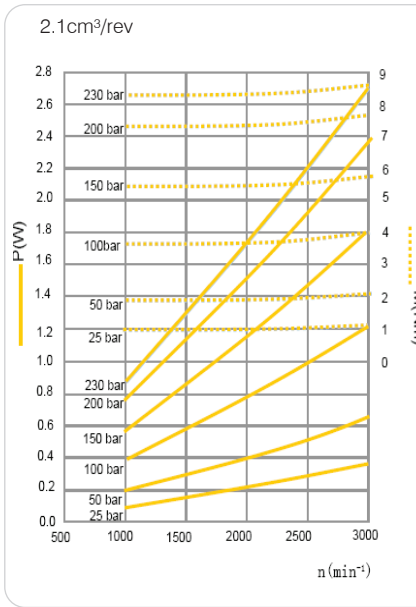
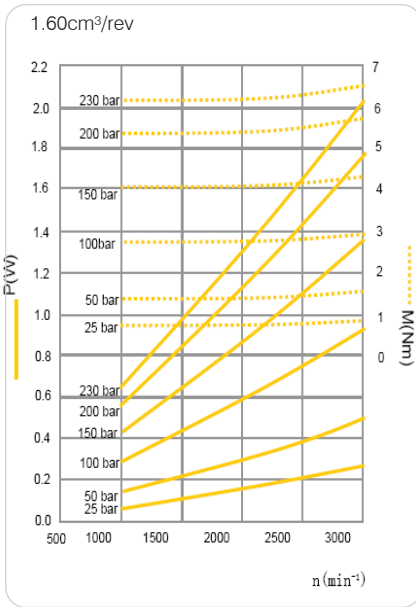
$$P = p \cdot V \cdot n / 600 \cdot 1000 \cdot \eta_t$$

V [cm³/r] Q [l/min] p [bar] n [r/min] P [kW] M [Nm]

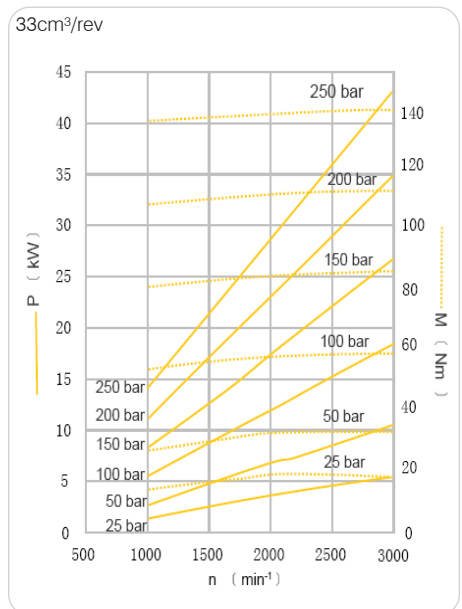
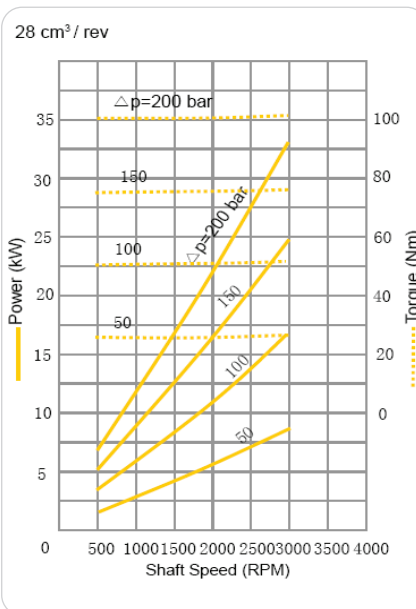
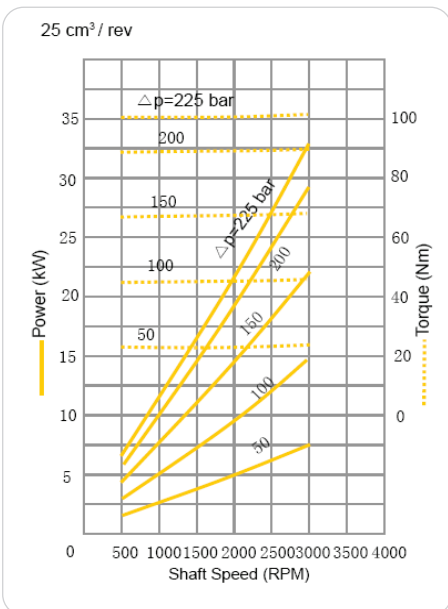
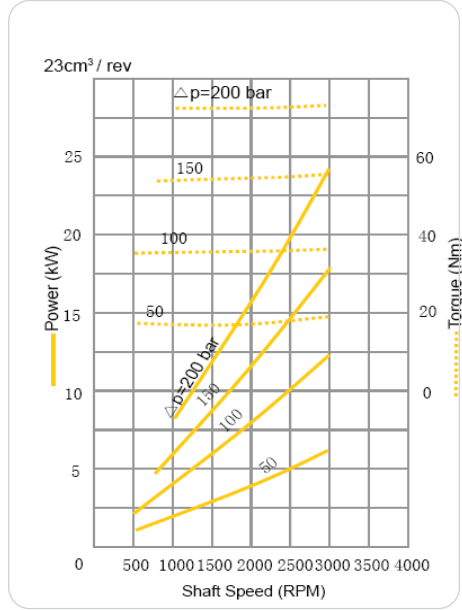
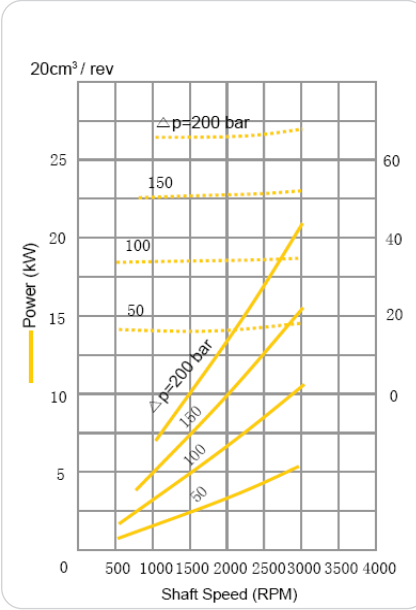
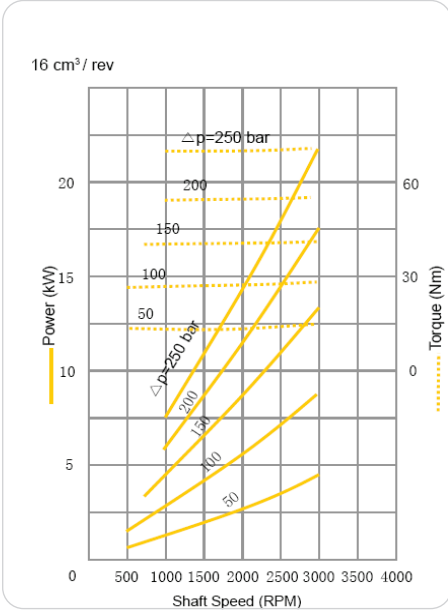
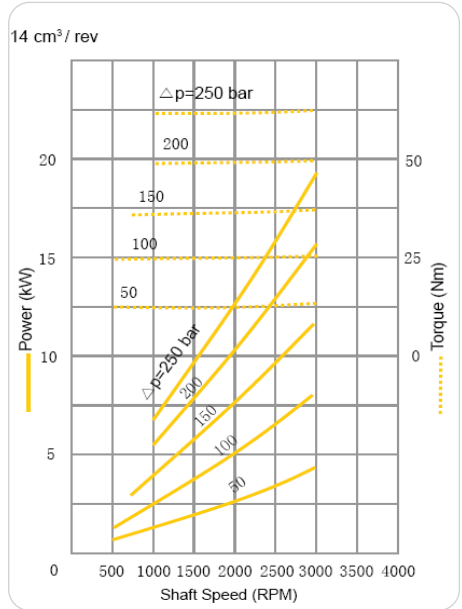
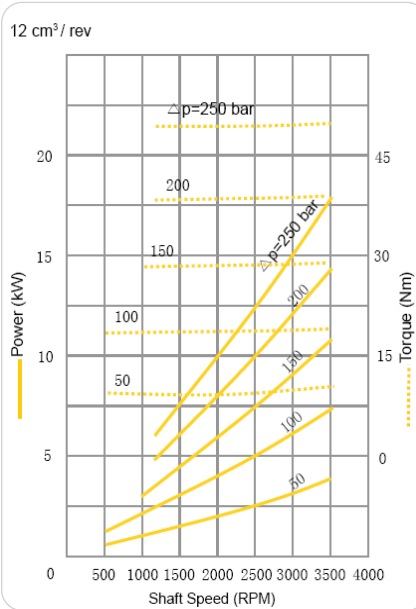
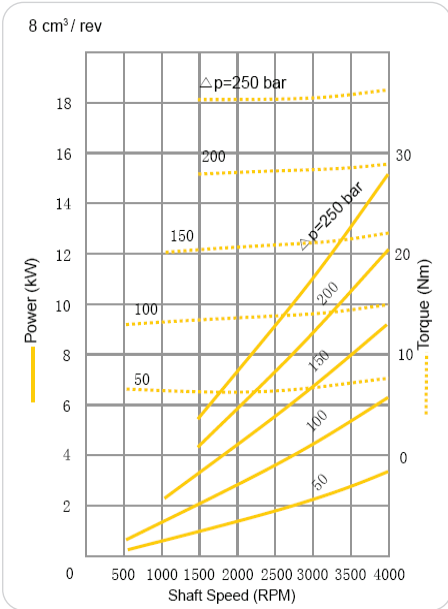
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