



GEAR COUPLINGS – FGC SERIES

COMPOSITION

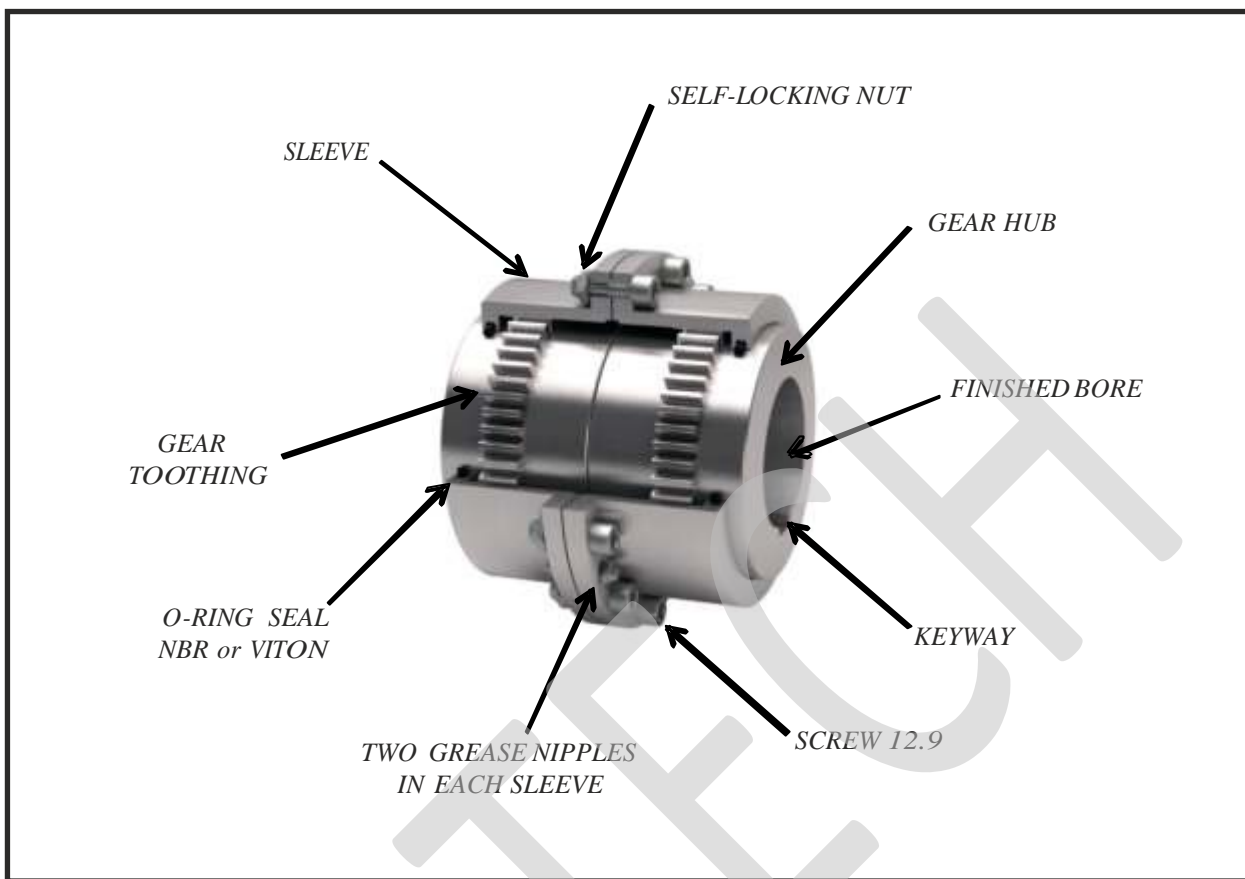


Fig.1



Fig.2

HEAT TREATMENT & RAW MATERIALS

Gear couplings of the FGCseries are manufactured and available made of quenched and tempered steel AISI1045, AISI4140 or stainless steel AISI630. Class 12.9 bolts, galvanized steel grease nipples and o-rings in rubber NBR, Viton and/or silicone, upon request.

DIMENSIONING

a) Calculate the torque to be transmitted, considering service factor SF (see fig.4) and torque factor KD , following the formula on the right;

$$T = \frac{P \times 9,55}{n} \times SF \times KD \quad [\text{kNm}]$$

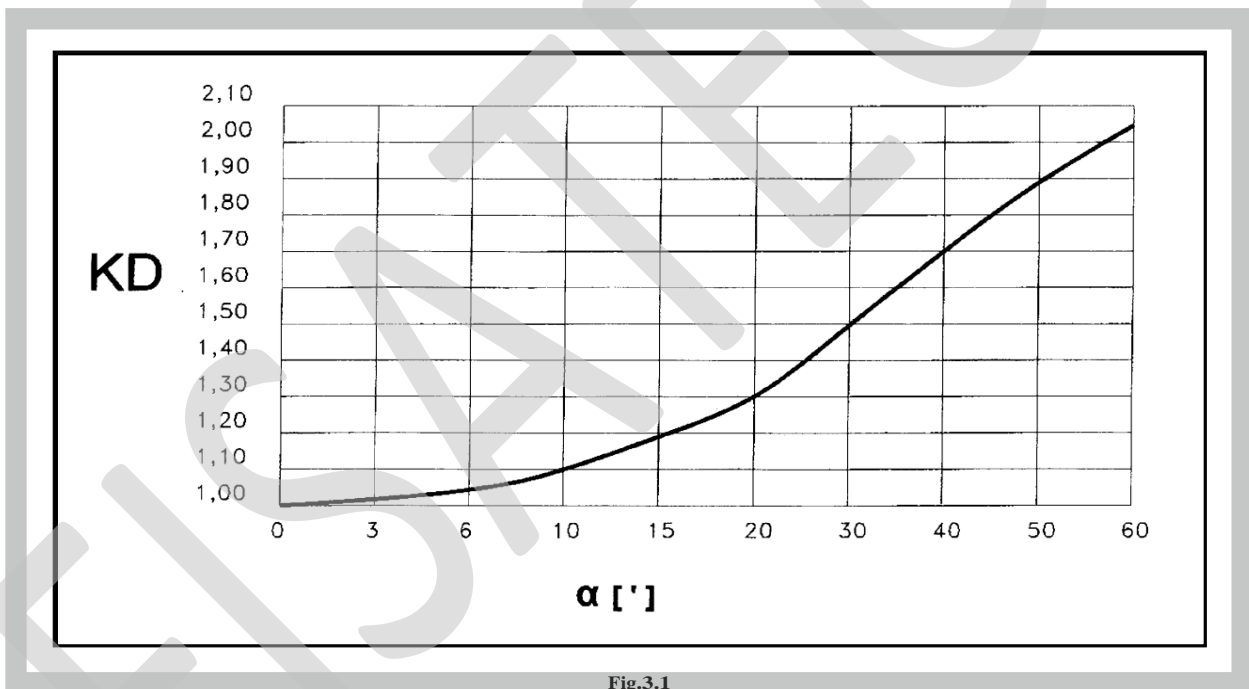
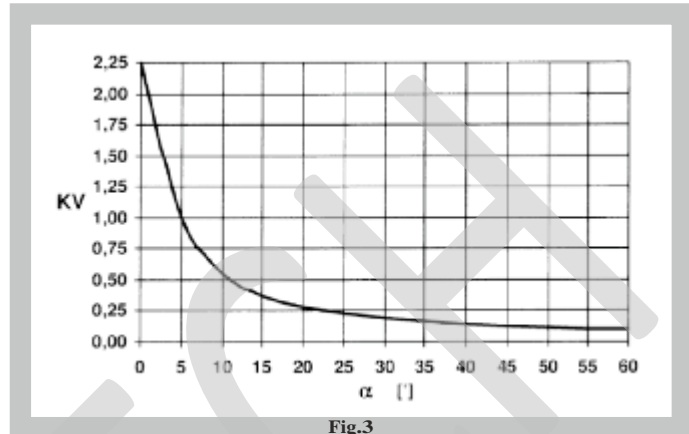
P = absorbed power [kW]

N = speed [rpm]

T = application torque [kNm]

b) Confirm the preliminary selection by cross checking the diameter of the shafts to be fitted onto the hubs;

c) Check that max speed n has to be equal or lower than the selected size coupling max speed multiplied by the speed factor KV , depending on operating misalignment α , shown on fig.3;



SERVICE FACTOR

SERVICE FACTOR "SF"		Reciprocating compressors	2
		Cold strip mills	
		Calenders	
Agitators for pure liquids	1.5	Travelling cranes	2.5
Electric generators		Winders	
Fans		Presses	
Centrifugal pumps		Tapping machines	
Belt conveyors	1.75	Crushers	3
Cas-work pumps		Calenders	
Double acting pumps		Rubber mixers	
Gear pumps		Roller tables	
Bucket belt conveyors		Hot rolling mills	
Chain belt conveyors		Screwdown controls	
Screw belt conveyors		Coilers	
Centrifugal compressors	Reversing cold mills		

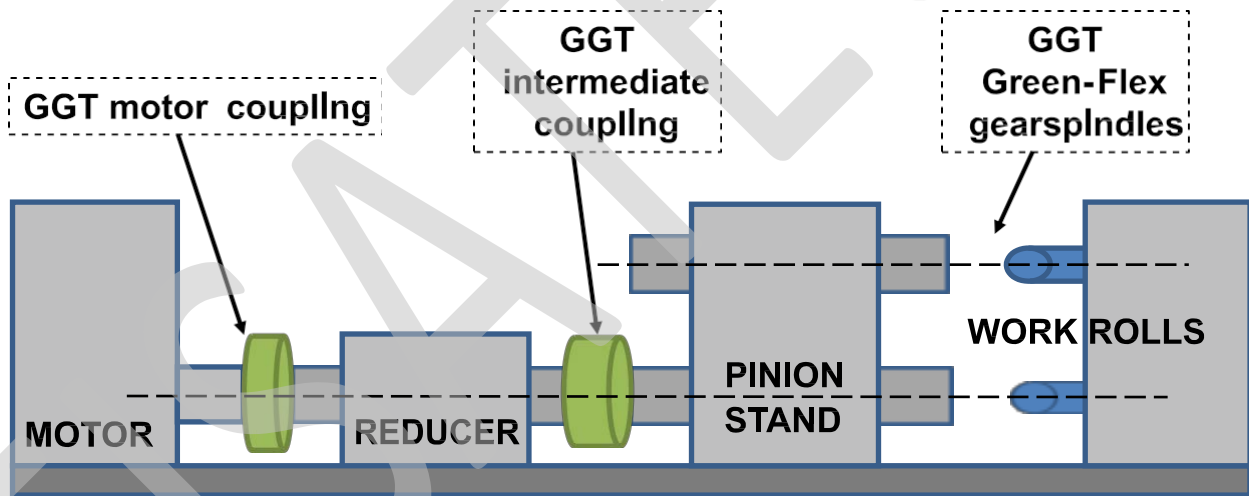


Fig.4.1 Kinematic chain

MISALIGNMENT

The principle of operation of the gear couplings, synthetically illustrated in Figure 2, is based on fitting of the external toothing of the hub with the internal toothing of the sleeve, which allows the transmission of torque between the flanges. The relative offset is compensated by the axial movement of the internal gear teeth on the outer toothing.

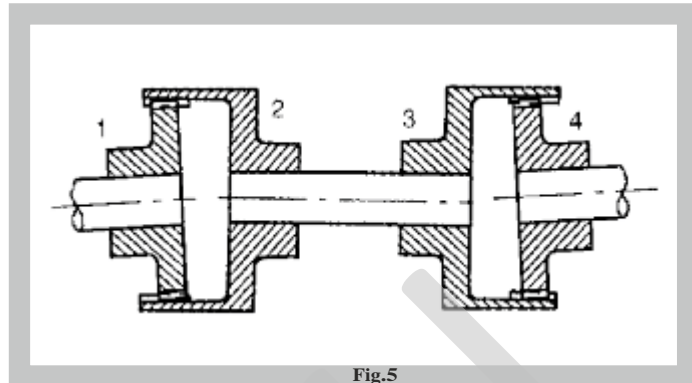


Fig.5

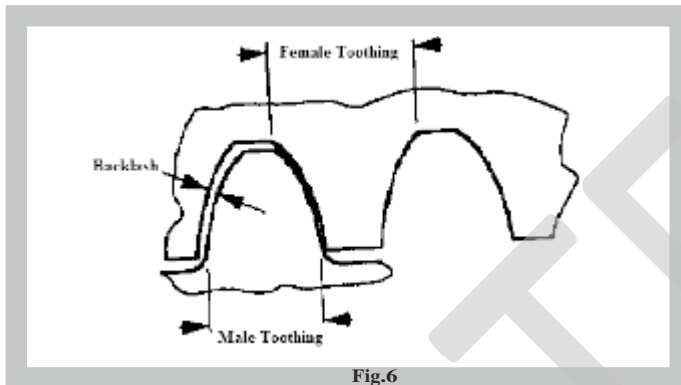


Fig.6

Using the crowned teeth, our gear couplings ensure optimal connections and torsionally rigid, between the most various machines and devices, even with moderate misalignment, axial and radial displacements.

Max dynamic misalignment compensated by this toothing:

- Standard Gear Couplings: $0^{\circ}20'$
- With additional heat treatment: $0^{\circ}30'$

TOOTHING

The crowned gear teeth of these gear couplings, FGC series, have been designed to ensure conditions of misalignment in a larger contact surface.

The displacement of the used profile determines the increase of the thickness of the tooth and therefore the resistance of the teeth.

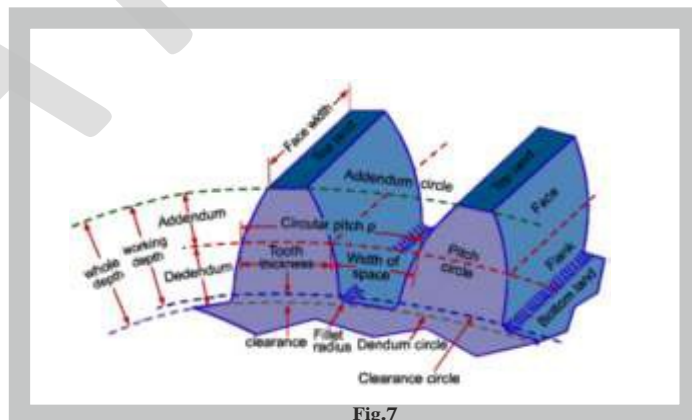


Fig.7