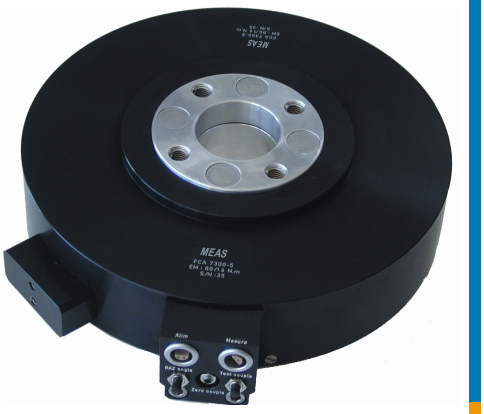


FCA7300

Torque/Speed/Velocity for Steering Wheel

SPECIFICATIONS

- **On-Board Electronics**
- **Five Simultaneous Analog Outputs**
  - **2 Torques**
  - **2 Angles**
  - **1 Angular Velocity**
- **Built-In Shunt Calibration Function**
- **Steer ability maintained at Rupture**
- **Unique Remote Data Acquisition trigger feature**

- Universal – fits all road vehicles
- Rapidly Installed via mounting adapters
- 10x FS Torque overload protection
- Highest accuracy available on the market
- Low fitting depth
- Universal - fits all road vehicles
- Rapidly installed via mounting adapters
- 3000 point optical coder for angle/velocity measurement
- Angular /velocity signals processed
- Internally to give analogue outputs -
- No need for external ttl electronics
- 10 x F.S. torque overload protection
- Optional adjustable steering stops available (self-folding for safety)

FEATURES

APPLICATIONS

- Automotive design & test
- Trucks maintenance testing

The **FCA7300** steering wheels sensors are designed for automotive testing and provide an “all-in” measurement.
This generation of transducers incorporates numerous technological functions, such as:

- Angle reset, torque calibration
- A Start trigger signal to the remote data acquisition system.
- Optical coder processing to prevent the need for external TTL electronics
- Five simultaneous analogue output signals
- Suppression of the bearing friction influence on torque, allowing high accuracy for low torque measurements
- Low profile design retains the same driving conditions as with standard steering wheels.
- The sensor assembly can be operated:
  - The sensor can be screwed on shaft, see drawing page 3.
  - Easily mounted on any road vehicle by optional flanges, please consult factory.
- Optional steering stops adjustable between ±15° to ±165° are available. These stops fold automatically for safety.

GENERAL FEATURES

The FCA 7300 series of measurement steering wheels are the most accurate available on the market today. This new generation of transducers incorporates numerous technological innovations, such as :

Full on-board conditioning electronics, with built-in angle reset, torque calibration function and a facility to send a start trigger signal to the remote data acquisition system.

Optical coder processing electronics are built-in - there is no need for external TTL electronics

Five simultaneous analogue output signals, two torque channels, two angle channels and one angular velocity channel

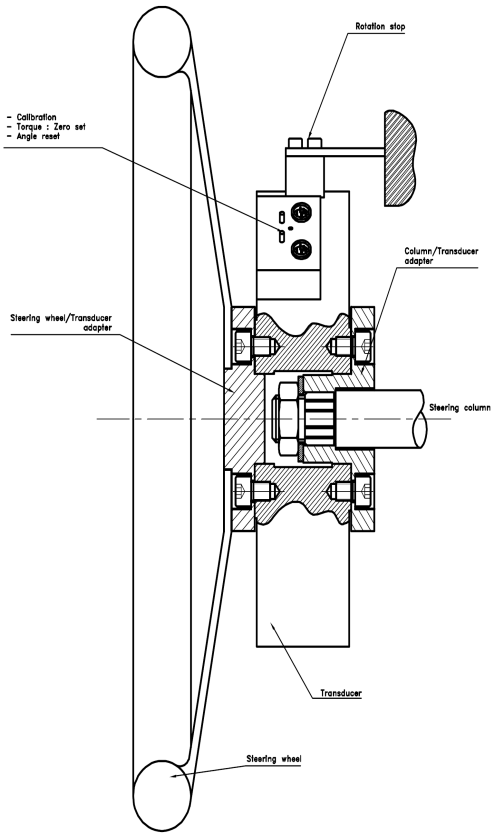
Bearing friction influence on the torque measurement has been eliminated, allowing high accuracy low torque measurements

Low profile design retains the same driving conditions as with standard steering wheels.

Easily mounted on any road vehicle by means of flanges; no disassembly of the steering column is required.

Optional steering stops adjustable between ±15° to ±165° are available. These stops fold automatically for safety: there is no need for the driver to hit a panic button.

Mounting principle of transducer on steering column - no disassembly of column is required. Adapters are not supplied



PERFORMANCE SPECIFICATIONS (typical values at 23±3°C)

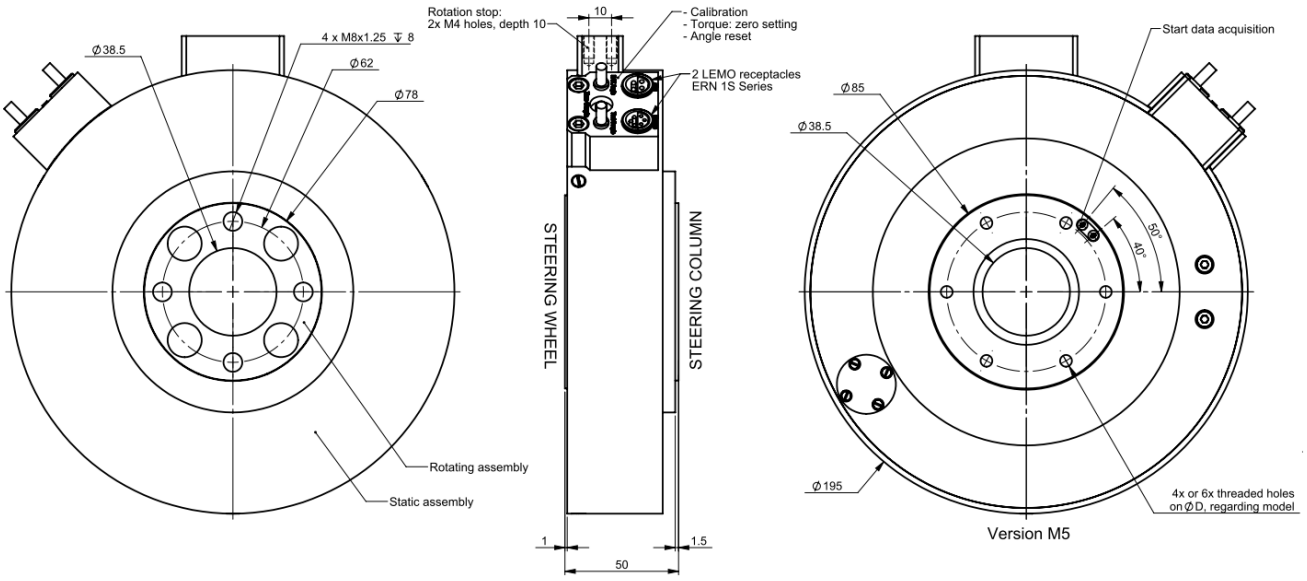
CAPTEUR TYPE *MODEL SENSOR*	**FCA7300**	Ref. FCA7300-xxx_Rev B 570* 577* 670* 673* 862*
UTILISATION *DESCRIPTION*	Couplemètre dynamique + Mesure d'angle et vitesse *Dynamic torquemeter + Angle and speed measuring*	

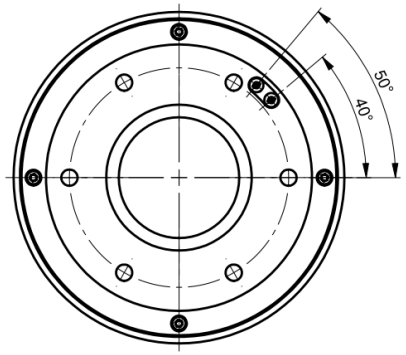
ETENDUE DE MESURE *RANGE*	___Nm/____Nm - ±___°/±_____° - 1080°/s
SURCHARGE ADMISSIBLE *OVERANGE*	Voir Tableau See Table
TENSION D'ALIMENTATION *EXCITATION*	10 / 28 Vcc *10 / 28 Vdc*
SIGNAL A L'ETENDUE DE MESURE *SIGNAL OUTPUT AT FULL SCALE*	±10V / 10V (Pour couples et angles / pour vitesse) *±10V / 10V (For torques and angles / for velocity)*
DESEQUILIBRE *OFFSET*	0V ±0.5V *0V ±0.5V*
LINEARITE + HYSTERESIS *LINEARITY + HYSTERESIS*	< ± 0.15% de l'EM <±0.3% à partir de 100Nm < ± *0.15% de l'EM* <±0.3% after 100Nm
ISOLEMENT à 50Vcc *INSULATION at 50 Vdc*	> 100 MΩ *> 100 MΩ*
INDICE DE PROTECTION *PROTECTION*	IP50
PLAGE D'UTILISATION EN TEMPERATURE (OTR) *OPERATING TEMPERATURE RANGE (OTR)*	-20°C à +80°C *-20°C to +80°C*
PLAGE DE COMPENSATION EN TEMPERATURE (CTR) *COMPENSATED TEMPERATURE RANGE (CTR)*	0°C à +60°C *0°C to +60°C*
DERIVE DE ZERO DANS LA PLAGE COMPENSEE *ZERO SHIFT WITHIN CTR*	< 0.5 % de l'étendue de mesure / 50°C < *0.5* % full scale / 50°C
DERIVE DE SENSIBILITE DANS LA PLAGE COMPENSEE *SENSITIVITY SHIFT WITHIN CTR*	< 1 % de la valeur lue / 50°C *< 1 % of reading / 50°C*
SORTIE ELECTRIQUE *ELECTRICAL OUTPUT*	Embases LEMO 4b et 6b *4p & 6p LEMO receptacles*
FICHE MOBILE *MATING CONNECTOR*	Oui *Yes*
TYPE ET LONGUEUR DE CABLE *CABLE OUTPUT*	

OBSERVATIONS : * Voir plan joint pour les étendues de mesures du FCA7300
NOTES : * *See attached drawing for configure FCA7300* ranges

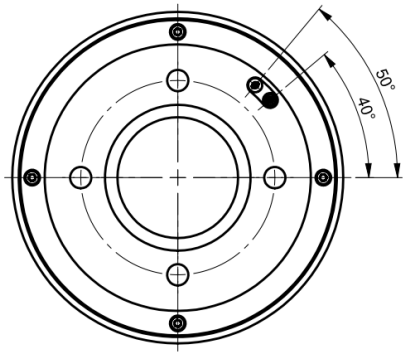
EM / Range (Nm)	10	20	30	40	50	60	80	100	150	200	250
Surch./Overrange (Nm)	100	200	300	300	300	300	120	150	225	300	300

DIMENSIONS





M6 Version

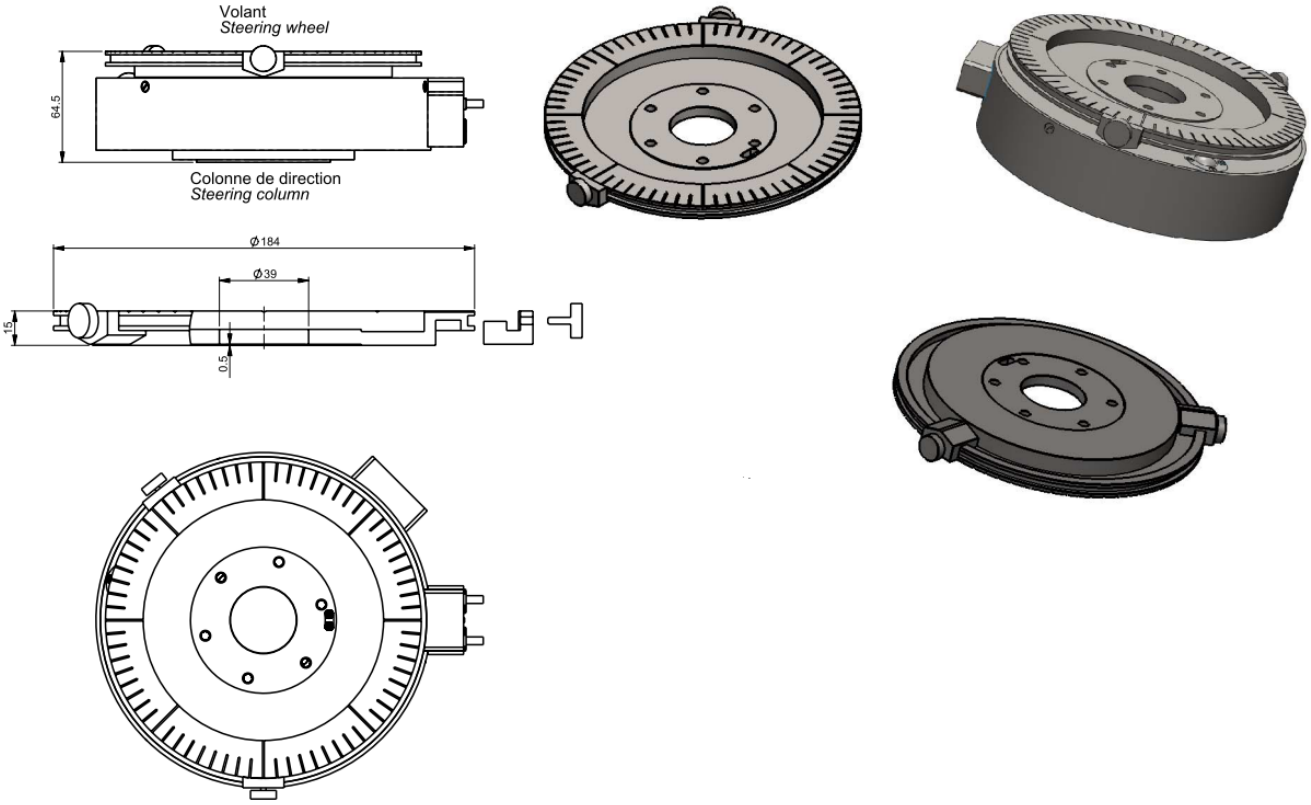


M8 Version

FCA7300-xxx-xx/xxx-xxx/xxxx

- xxx: 570: 6x M5 holes at 60° on Ø70, depth 8
  577: 6x M5 holes at 60° on Ø77, depth 8
  670: 6x M6 holes at 60° on Ø70, depth 8
  673: 6x M6 holes at 60° on Ø73, depth 8
  862: 4x M8 holes at 90° on Ø62, depth 8
- xx: Low torque: 10% mini of High torque
- xxx: High torque - M5: 10Nm to 150Nm
  M6: 10Nm to 250Nm
  M8: 10Nm to 250Nm
- xx: Low Angle: ±30°mini (±50°mini for 1800°)
- xxxx: High Angle: ±1080° (standard) / ±1800° max

ANGULAR STEERING STOPS

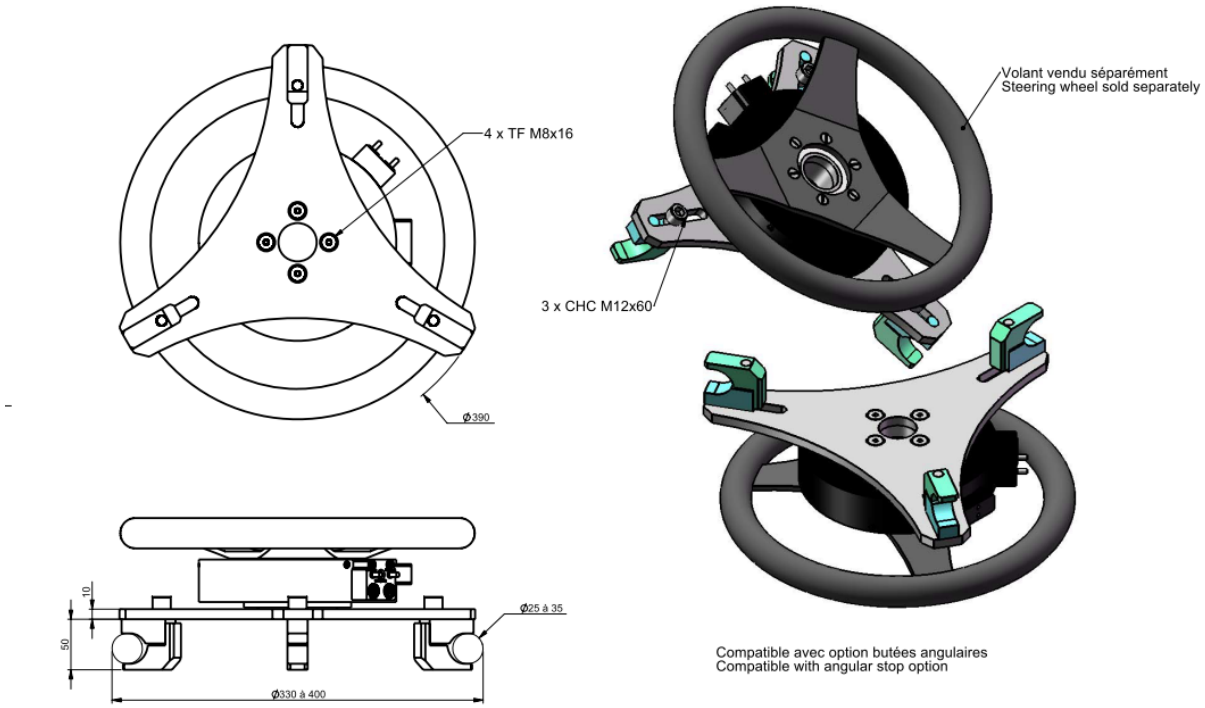


Designation	Part Number
FCA7300-570-STEERING STOPS	EFCA7-X-X00001
FCA7300-577-STEERING STOPS	EFCA7-X-X00002
FCA7300-670-STEERING STOPS	EFCA7-X-X00003
FCA7300-673-STEERING STOPS	EFCA7-X-X00004
FCA7300-862-STEERING STOPS	EFCA7-X-X00005

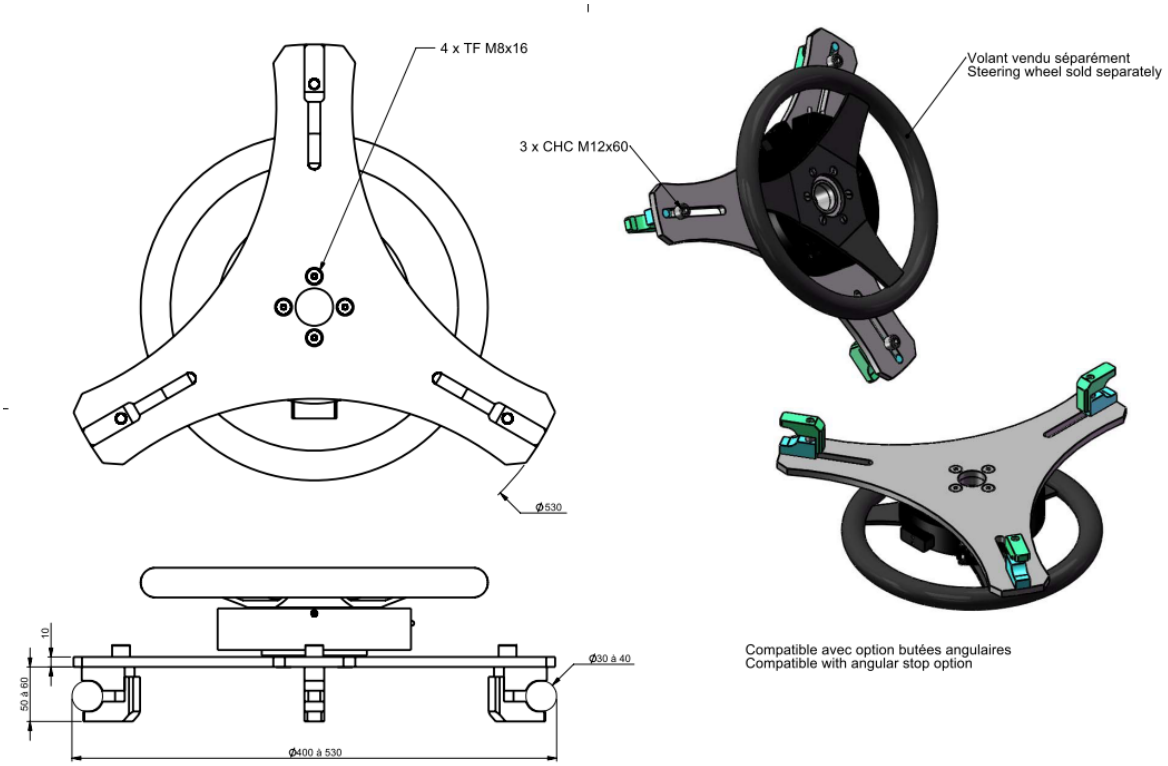
Plage de réglage: ±15° à ±165°
Pour des raisons de sécurité, les butées mécaniques se déconnectent lorsque le couple prédéfini est atteint

Adjustable steering stops: ±15° to ±165°
For safety reasons, steering stops automaticly set off when defined torque is reached

STEERING WHEEL ADAPTER (Ø330 to 400)

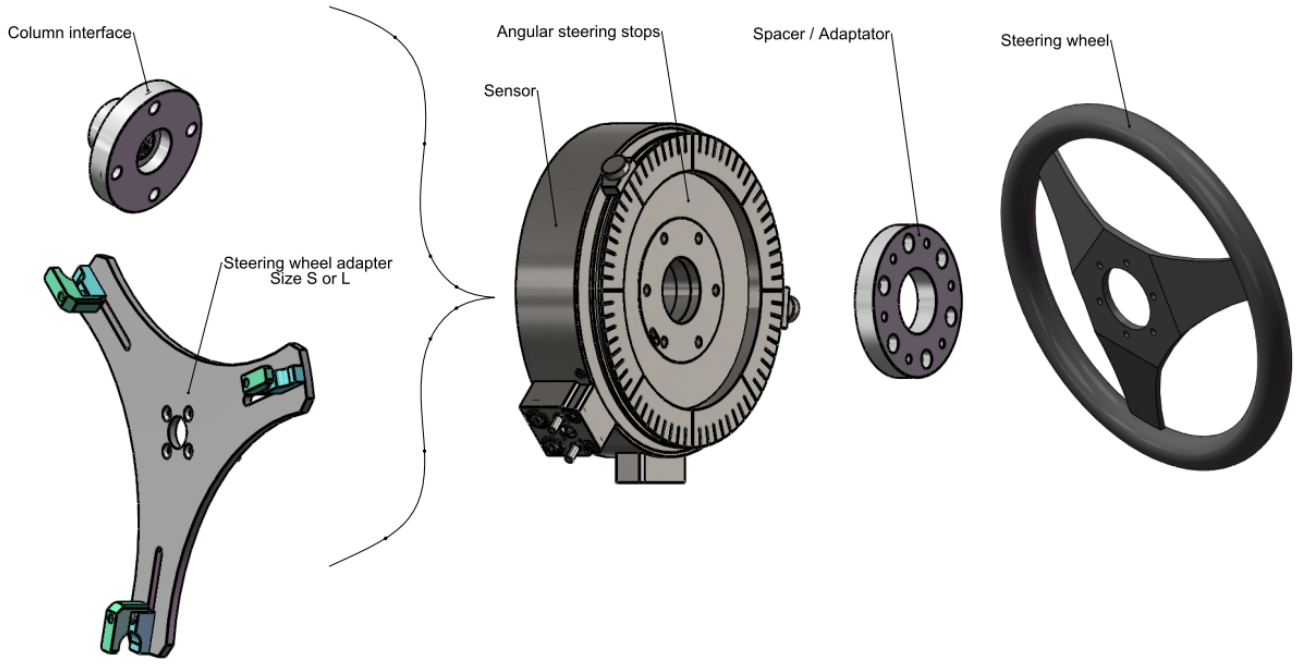


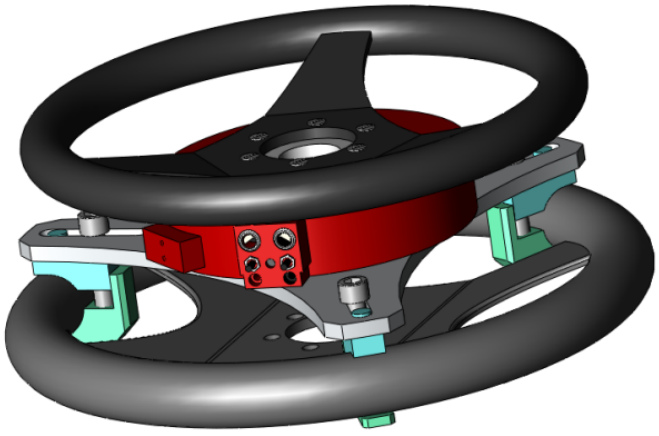
STEERING WHEEL ADAPTER (Ø400 to 530)



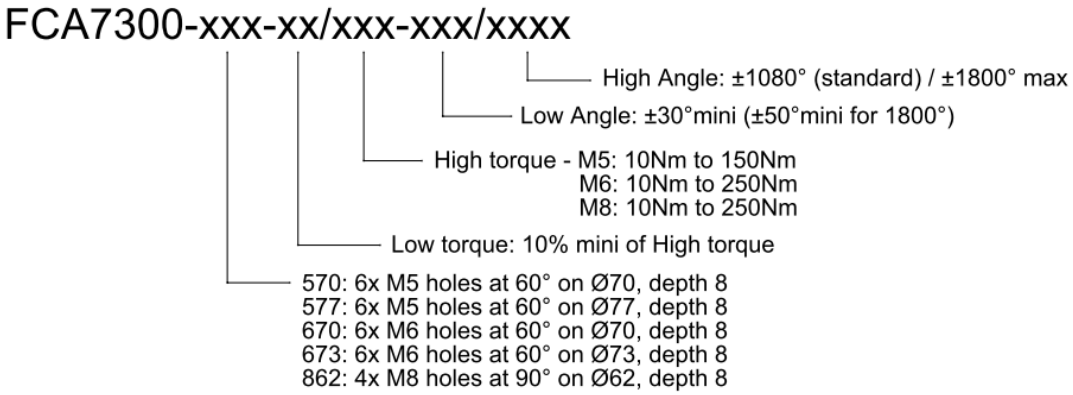
FCA7300 ASSEMBLY & OPTIONS

SENSOR		AVAILABLE OPTIONS				
Max FSO	*Steering wheel interface fixation*	*Column interface*	*Steering wheel S or L adapter*	*Angular steering stops*	*Spacer sensor / steering wheel (only with angular steering stops)*	*Steering wheel supplied*
150 Nm	6xM5 on Ø70	Yes To be defined following customer interface column	Yes S: Ø 330 to 400mm PN: EFCA-7-X-X00006 L: Ø 400 to 530mm PN: EFCA-7-X-X00007	Yes PN: EFCA-7-X-X00001	570 / 570 PN: ZFN7300064	N0
150 Nm	6xM5 on Ø77			Yes PN: EFCA-7-X-X00002	577 / 577 PN: ZFN7300065	N0
250 Nm	**6xM6 on Ø70**			**Yes** **PN: EFCA-7-X-X00003**	**670 / 670** PN: ZFN7300057	**Yes** **(Ø 350 and 380mm)**
250 Nm	6xM6 on Ø73			Yes PN: EFCA-7-X-X00004	673 / 673 PN: ZFN7300066	N0
250 Nm	4xM8 on Ø62			Yes PN: EFCA-7-X-X00005	862 / 862 PN: ZFN7300067	N0
Other specific request	Other specific request					





ORDERING INFORMATION



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