



# FC6A140/180

## Transmission

### ELECTRONIC FEATURES

SAE J1939 communications with vehicle systems, including:

- Engines
- OEM dashboards
- Antilock braking systems
- Traction control systems
- Caterpillar® ET service tool

Electronic drivers and switch inputs

- PTO operation
- Starter interlock
- Backup alarm
- Range and speed indication

Shift Selector

- 6 button, dual display
- Lever, dual display

Cat Messenger Display compatibility

- Transmission and engine status display
- Transmission and engine diagnostic display
- Reprogramming of selected engine and transmission customer parameters

Customer Parameter Programming

- PTO functions
- Range selection inhibits
- Special vehicle operation modes
- Engine retarder operation modes

### SPECIFICATIONS

	140	180
Max. Gross Input Power-kW(hp)		
■ City Transit Bus	220(295)	261(350)
■ Tour Bus	252(338)	317(425)
■ School Bus	252(338)	317(425)
■ Motor Homes	252(338)	317(425)
■ Port Tractor	220(295)	261(350)
■ Road Truck	220(295)	261(350)
■ Airport Shuttle	220(295)	261(350)
■ Refuse Truck/Concrete Mixer	190(255)	239(320)
■ Emergency Vehicle/ Fire Truck	252(338)	317(425)
■ Special Vehicle	252(338)	317(425)
Max. Gross Input Torque - N·m (lb-ft)		
■ City Transit Bus	1255(926)	1700(1250)
■ Tour Bus	1430(1055)	1830(1350)
■ School Bus	1430(1055)	1830(1350)
■ Motor Homes	1430(1055)	1830(1350)
■ Port Tractor	1196(882)	1620(1195)
■ Road Truck	1255(926)	1700(1250)
■ Airport Shuttle	1255(926)	1700(1250)
■ Refuse Truck/Concrete Mixer	1196(882)	1620(1195)
■ Emergency Vehicle/ Fire Truck	1430(1055)	1830(1350)
■ Special Vehicle	1430(1055)	1830(1350)
Rated Input Speed - rpm	2400	
Minimum Input Speed - rpm	600	
Maximum Input Speed - rpm	2800	

### TORQUE CONVERTER

Model	TC36833	TC36731	TC36531
Stall Torque Ratios	1.9	2.3	2.6

### STANDARD EQUIPMENT

- Electronic Control Unit (ECU)
- Electronic data link, SAE J1939, SAE J1587
- Electrical system 12V, 24V
- Integral torque converter
- Oil filler tube/dipstick location right
- Oil level sensor
- SAE No.2 bell housing

### ACCESSORY EQUIPMENT

- Cat® Messenger Display
- Oil filter options: transmission or remote mounted cartridge available

### GEARS

Forward/Reverse	6F/1R
-----------------	-------

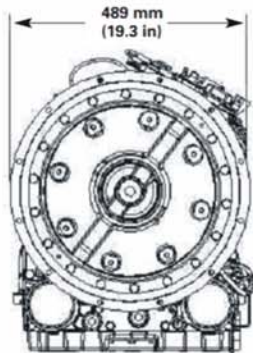
### PLANETARY GEAR RATIOS

1F	2F	3F	4F	5F	6F	1R	Overall
3.76	1.96	1.37	1.00	0.77	0.65	-3.97	5.78

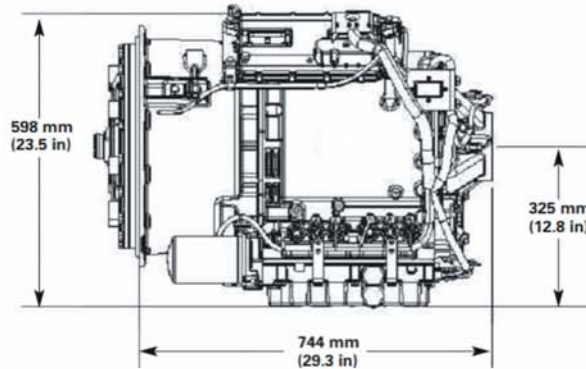
# FC6A140/180 TRANSMISSION



## DIMENSION & WEIGHT



Standard



### CLUTCHES

- Clutches - electro-hydraulic fully modulated, oil cooled, multidisc
- Clutch modulation control - Cat® Electronic Clutch Pressure Control (ECPC)

### INSTALLATION CONNECTIONS

- 2 cooler lines (in/out) front/rear
- 2 electrical connectors

### OIL FLUIDS

#### Fluids

- Shell-Fast II ATF special for XI'an FC AT for extended intervals
- Dexron® IIIH ATF

#### Max sump oil temperatures

- Continuous: 200°F ( 93°C )
- Intermittent: 250°F ( 121°C )

#### Refill volume (excludes lines and cooler)

- Without Retarder: 16L (4.2 gal)
- With Retarder: 18L (4.8 gal)

### TRANSMISSION ROTATION

- Input rotation - SAE J824 standard
- Output rotation - forward, same as input reverse, opposite of input

### Dimension & Weight

Dimension & Weight	Length*	Depth**	Weight***
Standard	744mm(29.3in)	325mm(12.8in)	270kg(594lbs)
With Side PTO Interface	838mm(33.0in)	325mm(12.8in)	302kg(665lbs)
With Side and Rear PTO Interface	838mm(33.0in)	325mm(12.8in)	309kg(680lbs)
With Retarder	762mm(30.0in)	325mm(12.8in)	310kg(683lbs)
With Side PTO Interface and Retarder	856mm(33.7in)	325mm(12.8in)	342kg(754lbs)

\*from the flywheel housing rear interface to the output shaft end face.

\*\*From the transmission centerline to the bottom.

\*\*\*Dry (approx), does not include ECU, output yoke, or adaptation hardware.

### MOUNTINGS

- Input connection - SAE No.2 dry flywheel housing with flexplate converter drive
- Output connection (yoke) - ISO 8667 T180

### INTEGRAL OUTPUT RETARDER – CAPACITY (OPTION)

Type	Torque	Power
Class3	3000N · m(2214 lb-ft)	625kW(838 hp)
Class2	2400N · m(1771 lb-ft)	500kW(670 hp)
Class1	1950N · m(1439 lb-ft)	406kW(544 hp)

### PTO INTERFACE (OPTION)

Mounting Positions	Max Continuous Torque	Rotation	Ratio (x Engine Speed)
1 or 8 O'clock Side PTO	678N · m(500 lb-ft)	Same as transmission input	1
Rear PTO	810N · m(600 lb-ft)	Opposite of transmission input	1.25
Multiple PTO Total	949N · m(700 lb-ft)	–	–

### OPTIONS

- Integral output retarder
- Side 1&8 o'clock and rear PTO interface
- SAE #1 dry flywheel housing connection