

POWER-ASSISTED STEERING SYSTEM APPLICATIONS ACCORDING TO THE BOAT LENGTH

Boat Length LOA	System to Order		
	Planing Hull	Semi Displacement Hull	
		Pleasure	Working
12 - 13,7 mt	System 15	System 17	System 18
13,7 - 15,3 mt	System 16	System 18	System 19
15,3 - 16,8 mt	System 17	System 19	System 20
16,8 - 18 mt	System 18	System 20	System 21
18 - 19,8 mt	System 19	System 21	System 22
19,8 - 21 mt	System 20	System 22	Contact us
21 - 22,9 mt	System 21	System 22	Contact us
22,9 - 24,4 mt	System 22	Contact us	Contact us
24,3 - 26 mt	System 22	Contact us	Contact us

WARNING! The above suggestions shall be intended as indicative. To check the proper application the required max torque must be calculated. If the required information is not available please contact our authorized dealer or service center and submit boat length, maximum speed and rudder dimensions. For planing boats, the above steering systems are suggested for boat speeds between 30 and 45 knots and for semi displacement boat with hull speed between 15 and 20 knots.

Power-Assisted Steering System									
System to Order	Cylinder	Code	Pump	Wheel Turns Lock-to-Lock (MANUAL)	Wheel Turns Lock-to-Lock (Servo-Assisted)	Power Unit	Code	Hydraulic Scheme	
								Main Station	Second station
System 15	CTA80AU CTA80A	IT12681 IT12680	20 cc/rev	10.7	4	C0500/3/0,5U 24Vdc C0500/3/0,5 12Vdc	IT16132 IT12571	SI-600/B	SI-610/B
System 16	CTB110AU CTB110A	IT12686 IT12684	30 cc/rev	9.4	3.8			SI-601/B	SI-611/B
System 17	CTB130AU CTB130A	IT12690 IT12688	30 cc/rev	10.7	4.4	C0500/3/0,5U 24Vdc C0500/3/0,5 24Vdc	IT12572 IT15654	SI-602/B	SI-612/B
			42 cc/rev	7.7	3.1			SI-602/C	SI-612/C
System 18	CTB145AU CTB145A	IT15883 IT12693	30 cc/rev	12	4.9	C0500/4/0,75U 24Vdc C0500/4/0,75 24Vdc	IT16133 IT12573	SI-603/B	SI-613/B
			42 cc/rev	8.6	3.5			SI-603/C	SI-613/C
System 19	CTC200AU CTC200A	IT15885 IT12696	30 cc/rev	16.6	4.3			SI-604/B	SI-614/B
			42 cc/rev	11.9	3			SI-604/C	SI-614/C
System 20	CTC230AU CTC230A	IT15887 IT12699	30 cc/rev	19	4.9	C0500/6/0,75U 24Vdc C0500/6/0,75 24Vdc	IT16134 IT12574	SI-605/B	SI-615/B
			42 cc/rev	13.6	3.5			SI-605/C	SI-615C
System 21	CTC300AU CTC300A	IT15889 IT15715	42 cc/rev	17.8	4.6			SI-606/A	SI-616/A
System 22	CTC400AU CTC400A	IT16136 IT12702	42 cc/rev	24	6.1			SI-606/C	SI-616/C



TRANS-AUTO OY



SYSTEM 15

Components	Model	Code	Qty.
Cylinder	CTA80AU CTA80A	IT12681 IT12680	1
Helm pump	P20BAP P20BA	IT21173 IT16192	1
Fittings for single station		IT12784 IT13685	2
Electrohydraulic power unit	C0500/3/0,5U 12 Vdc C0500/3/0,5U 24 Vdc	IT16132 IT12571	1
	C0500/3/0,5 12 Vdc C0500/3/0,5 24 Vdc	IT12572 IT15654	
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P20BAP P20BA	IT21173 IT16192	1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

SYSTEM 16

Components	Model	Code	Qty.
Cylinder	CTB110AU CTB110A	IT12686 IT12684	1
Helm pump	P30BAP P30BA	IT21174 IT16193	1
Fittings for single station		IT12784 IT13685	2
Electrohydraulic power unit	C0500/3/0,5U 12 Vdc C0500/3/0,5 24 Vdc	IT16132 IT12571	1
	C0500/3/0,5U 24 Vdc C0500/3/0,5 24 Vdc	IT12572 IT15654	
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P30BAP P30BA	IT21174 IT16193	1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

PUMP-CYLINDER COMBINATION

Choose combination between pump and cylinder according to the desired number of wheel turns lock-to-lock.

Note: the requested effort on the steering wheel is inversely proportional to the wheel turns number lock-to-lock:

- less wheel turns, more effort
- more wheel turns, less effort

HELM PUMP



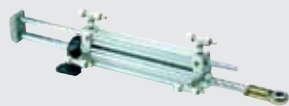
(*)
P20BAP Cod. IT21173
P20BA Cod. IT16192



(*)
P30BAP Cod. IT21174
P30BA Cod. IT16193



(*)
P42BAP Cod. IT21175
P42BA Cod. IT16194



CTA80AU - Cod. / Part # 12681
CTA80A - Cod. / Part # 12680

of wheel turns
Manual: 10,7
Servo-control system: 4,0
Suggested min hose (**)
Tiller: 200 mm / 7.8 in.
Angle: 35 + 35
Torque:
107,36 Kgm / 92,97 lb.in.
Min. wheel diam.:
350 mm - 13,77 in.



CTB110AU - Cod. / Part # 12686
CTB110A - Cod. / Part # 12684

of wheel turns
Manual: 9,4
Servo-control system: 3,8
Suggested min hose (**)
Tiller: 153 mm / 6.0 in.
Angle: 35 + 35
Torque:
140.85 Kgm / 121,97 lb.in.
Min. wheel diam.:
350 mm - 13,77 in.



No. of wheel turns: 20,2
Copper tube d.e. 18x1,5 mm
Tiller: 350 mm / 13,78 in.
Angle: 35° + 35°
Torque:
1928 Kgm / 167640 lb.in.
Min. wheel diam.:
1000 mm - 39,37 in.

(*) For more details, see the basic helm section starting on page 9 to choose the desired mounting configuration.

(**) For the choice of the hydraulic hose, please see the relative scheme.

SYSTEM 17

Components	Model	Code	Qty.
Cylinder	CTB130AU CTB130A	IT12690 IT12688	1
Helm pump	P30BAP P30BA	IT21174 IT16193	1
	P42BAP P42BA	IT21175 IT16194	1
Fittings for single station		IT12784	2
		IT13685	1
Electrohydraulic power unit	C0500/3/0,5U 12 Vdc C0500/3/0,5 12 Vdc C0500/3/0,5U 24 Vdc C0500/3/0,5 24 Vdc	IT16132 IT12572	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P30BAP P30BA	IT21174 IT16193	1
	P42BAP P42BA	IT21175 IT16194	1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

SYSTEM 18








Components	Model	Code	Qty.
Cylinder	CTB145AU CTB145A	IT15883 IT12693	1
Helm pump	P30BAP P30BA	IT21174 IT16193	1
	P42BAP P42BAP	IT21175 IT16194	1
Fittings for single station		IT12784	2
		IT13685	1
Electrohydraulic power unit	C0500/4/0,75U 24 Vdc C0500/4/0,75 24 Vdc	IT16133 IT12573	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P30BAP P30BA	IT21174 IT16193	1
	P42BAP P42BA	IT21175 IT16194	1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

PUMP-CYLINDER COMBINATION

Choose combination between pump and cylinder according to the desired number of wheel turns lock-to-lock.

Note: the requested effort on the steering wheel is inversely proportional to the wheel turns number lock-to-lock:

- less wheel turns, more effort
- more wheel turns, less effort

		HELM PUMP		
				
	(*) P20BAP Cod. IT21173 P20BA Cod. IT16192	(*) P30BAP Cod. IT21174 P30BA Cod. IT16193	(*) P42BAP Cod. IT21175 P42BA Cod. IT16194	
	CTB130AU - Cod. / Part # 12690 CTB130A - Cod. / Part # 12688	# of wheel turns Manual: 10,7 Servo-control system: 4,4 Suggested min hose (**) Tiller: 180 mm / 7.0 in. Angle: 35 + 35 Torque: 161,42 Kgm / 13978 lb.in. Min. wheel diam.: 350 mm - 13,77 in.		# of wheel turns Manual: 7,7 Servo-control system: 3,2 Suggested min hose (**) Tiller: 180 mm / 7.0 in. Angle: 35 + 35 Torque: 161,42 Kgm / 13978 lb.in. Min. wheel diam.: 450 mm - 17,71 in.
	CTB145AU - Cod. / Part # 15883 CTB145A - Cod. / Part # 12693	# of wheel turns Manual: 12 Servo-control system: 4,9 Suggested min hose (**) Tiller: 200 mm / 7.8 in. Angle: 35 + 35 Torque: 180,41 Kgm / 15623 lb.in. Min. wheel diam.: 350 mm - 13,77 in.		# of wheel turns Manual: 8,6 Servo-control system: 3,5 Suggested min hose (**) Tiller: 200 mm / 7.8 in. Angle: 35 + 35 Torque: 180,41 Kgm / 15623 lb.in. Min. wheel diam.: 450 mm - 17,71 in.

(*) For more details, see the basic helm section starting on page 9 to choose the desired mounting configuration.

(**) For the choice of the hydraulic hose, please see the relative scheme.

SYSTEM 19

Components	Model	Code	Qty.
Cylinder	CTC200AU CTC200A	IT15885 IT12696	1
Helm pump	P30BAP P30BA P42BAP P42BA	IT21174 IT16193 IT21175 IT16194	1 1
Fittings for single station		IT12784 IT13685	2
Electrohydraulic power unit	C0500/6/0,75U 24 Vdc C0500/6/0,75 24 Vdc	IT16134 IT12574	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P30BAP P30BA P42BAP P42BA	IT21174 IT21175	1 1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

SYSTEM 20








Components	Model	Code	Qty.
Cylinder	CTC230AU CTC230A	IT15887 IT12699	1
Helm pump	P30BAP P30BA P42BAP P42BA	IT21174 IT16193 IT21175 IT16194	1 1
Fittings for single station		IT12784 IT13685	2
Electrohydraulic power unit	C0500/6/0,75U 24 Vdc C0500/6/0,75 24 Vdc	IT16134 IT12574	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P30BAP P30BA P42BAP P42BA	IT21174 IT16193 IT21175 IT16194	1 1
Fittings kit for additional station		IT23376 IT23942	1
Hydraulic oil	VG22	IT21334	1

PUMP-CYLINDER COMBINATION

Choose combination between pump and cylinder according to the desired number of wheel turns lock-to-lock.

Note: the requested effort on the steering wheel is inversely proportional to the wheel turns number lock-to-lock:

- less wheel turns, more effort
- more wheel turns, less effort

		HELM PUMP		
				
	(*) P20BAP Cod. IT21173 P20BA Cod. IT16192	(*) P30BAP Cod. IT21174 P30BA Cod. IT16193	(*) P42BAP Cod. IT21175 P42BA Cod. IT16194	
	CTC200AU - Cod. / Part # 15885 CTC200A - Cod. / Part # 12696	# of wheel turns Manual: 16,6 Servo-control system: 4,3 Suggested min hose (**) Tiller: 175 mm / 6.9 in. Angle: 35 + 35 Torque: 249,93 Kgm / 21643 lb.in. Min. wheel diam.: 350 mm - 13,77 in.		# of wheel turns Manual: 11,9 Servo-control system: 3,1 Suggested min hose (**) Tiller: 175 mm / 6.9 in. Angle: 35 + 35 Torque: 249,93 Kgm / 21643 lb.in. Min. wheel diam.: 450 mm - 17,71 in.
	CTC230AU - Cod. / Part # 15887 CTC230A - Cod. / Part # 12699	# of wheel turns Manual: 12 Servo-control system: 4,9 Suggested min hose (**) Tiller: 200 mm / 7.8 in. Angle: 35 + 35 Torque: 180,41 Kgm / 15623 lb.in. Min. wheel diam.: 350 mm - 13,77 in.		# of wheel turns Manual: 13,6 Servo-control system: 3,5 Suggested min hose (**) Tiller: 200 mm / 7.8 in. Angle: 35 + 35 Torque: 284,92 Kgm / 24674 lb.in. Min. wheel diam.: 450 mm - 17,71 in.

(*) For more details, see the basic helm section starting on page 9 to choose the desired mounting configuration.

(**) For the choice of the hydraulic hose, please see the relative scheme.

SYSTEM 21

Components	Model	Code	Qty.
Cylinder	CTC300AU CTC300A	IT15889 IT15715	1
Helm pump	P42BAP P42BA	IT21175 IT16194	1
Fittings for single station		IT12784 IT13685	2 1
Electrohydraulic power unit	C0500/6/0,75U 24 Vdc C0500/6/0,75 24 Vdc	IT16134 IT12574	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P42BAP P42BA	IT21175 IT16194	1
Fittings kit for additional station		IT23944 IT23943	1
Hydraulic oil	VG22	IT21334	1

SYSTEM 22

Components	Model	Code	Qty.
Cylinder	CTC400AU CTC400A	IT16136 IT12702	1
Helm pump	P42BAP P42BA	IT21175 IT16194	1
Fittings for single station		IT12784 IT13685	2
Electrohydraulic power unit	C0500/6/0,75U 24 Vdc C0500/6/0,75 24 Vdc	IT16134 IT12574	1
Hydraulic oil	VG22	IT21334	3
In case of a second station please add:			
2° station helm pump	P42BAP P42BA	IT21175 IT16194	1
Fittings kit for additional station		IT23944 IT23943	1
Hydraulic oil	VG22	IT21334	1

PUMP-CYLINDER COMBINATION

Choose combination between pump and cylinder according to the desired number of wheel turns lock-to-lock.

Note: the requested effort on the steering wheel is inversely proportional to the wheel turns number lock-to-lock:

- less wheel turns, more effort
- more wheel turns, less effort

HELM PUMP



(*)
P20BAP Cod. IT21173
P20BA Cod. IT16192



(*)
P30BAP Cod. IT21174
P30BA Cod. IT16193



(*)
P42BAP Cod. IT21175
P42BA Cod. IT16194



CTC300AU - Cod. / Part # 15889
CTC300A - Cod. / Part # 15715



CTC400AU - Cod. / Part # 16136
CTC400A - Cod. / Part # 12702

of wheel turns
Manual: 17,8
Servo-control system: 4,6
Suggested min hose (**)
Tiller: 260 mm / 10,2 in.
Angle: 35 + 35
Torque: 374,89 Kgm / 32465 lb.in.
Min. wheel diam.: 450 mm - 17,71 in.



of wheel turns
Manual: 24,0
Servo-control system: 6,1
Suggested min hose (**)
Tiller: 350 mm / 13,7 in.
Angle: 35 + 35
Torque: 499,85 Kgm / 43287 lb.in.
Min. wheel diam.: 450 mm - 17,71 in.



(*) For more details, see the basic helm section starting on page 9 to choose the desired mounting configuration.

(**) For the choice of the hydraulic hose, please see the relative scheme.