S. A. M-Tech

Ship Accessories & Marine Technology

ISO 9001:2008 인증 | 유럽(CE)인증 | 선박안전기술공단(KST) 인증 | ABYC MEMBER | 한국선급(KR) 인증 | 러시아선급(RS) 인증

Engine Control Lever

SB Type (Two-Lever)

◆ 수출로 인정받는 최고의 제품

SB Type 레버는 Governor (가바나)용과 Clutch (클러치)용으로 만들어져 있다.
Gorvernor (가바나) 레버는 빨간 손잡이에 브레이크가 내장되어 있다. 이 손잡이를 오른쪽으로 돌리면 브레이크가 걸리고, 왼쪽으로 돌리면 풀린다.
Clutch(클러치)레버는 검은 손잡이를 중립,전진,후진의 위치가 감지되도록 멈춤쇠가 만들어져 있다.

The SB-Type control head is a heavy duty unit with a positive brake and shut off position for heavy throttle. The throttle lever activated by turning in a clockwise direction.
The clutch lever has a black knob and a detent so that the operator can feel the positions of neutral, forward and reverse.

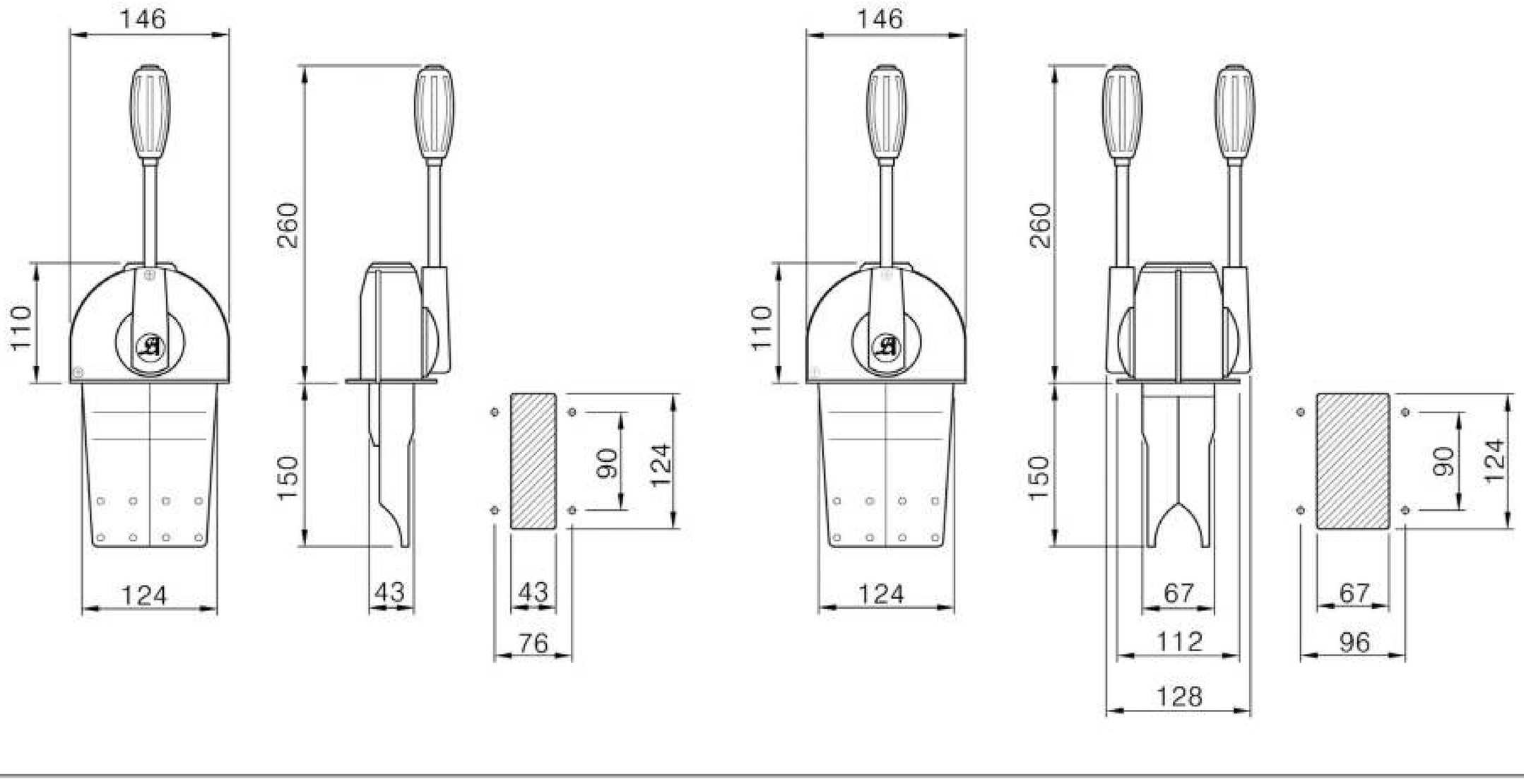
Engine Control Lever

SB-T-Single
(For Throttle)

SB-C-Single
(For Clutch)

SB-Twin
(For Single Engine)

Dimension



Engine Control Lever

ST Type (Single-Lever)

◆ 유럽과 미국 검사 규격에 합격한 수출형 모델

ST Type 콘트롤 레버는 우발적인 기어 작동으로부터 예방을 하며 쉽고, 안전하게 사용 가능하다.
클러치를 중립에서 워밍업 할 수 있는 기능과 중립스위치 장착으로 우발적인 출발을 예방한다.

The ST-Type control head is enables easy and safe shifting by preventing accidental gear engagement unless engine is idling. Pull-out handle disengages shift for warm-up Neurtal safety switch prevents in-gear starting.

Engine Control Lever

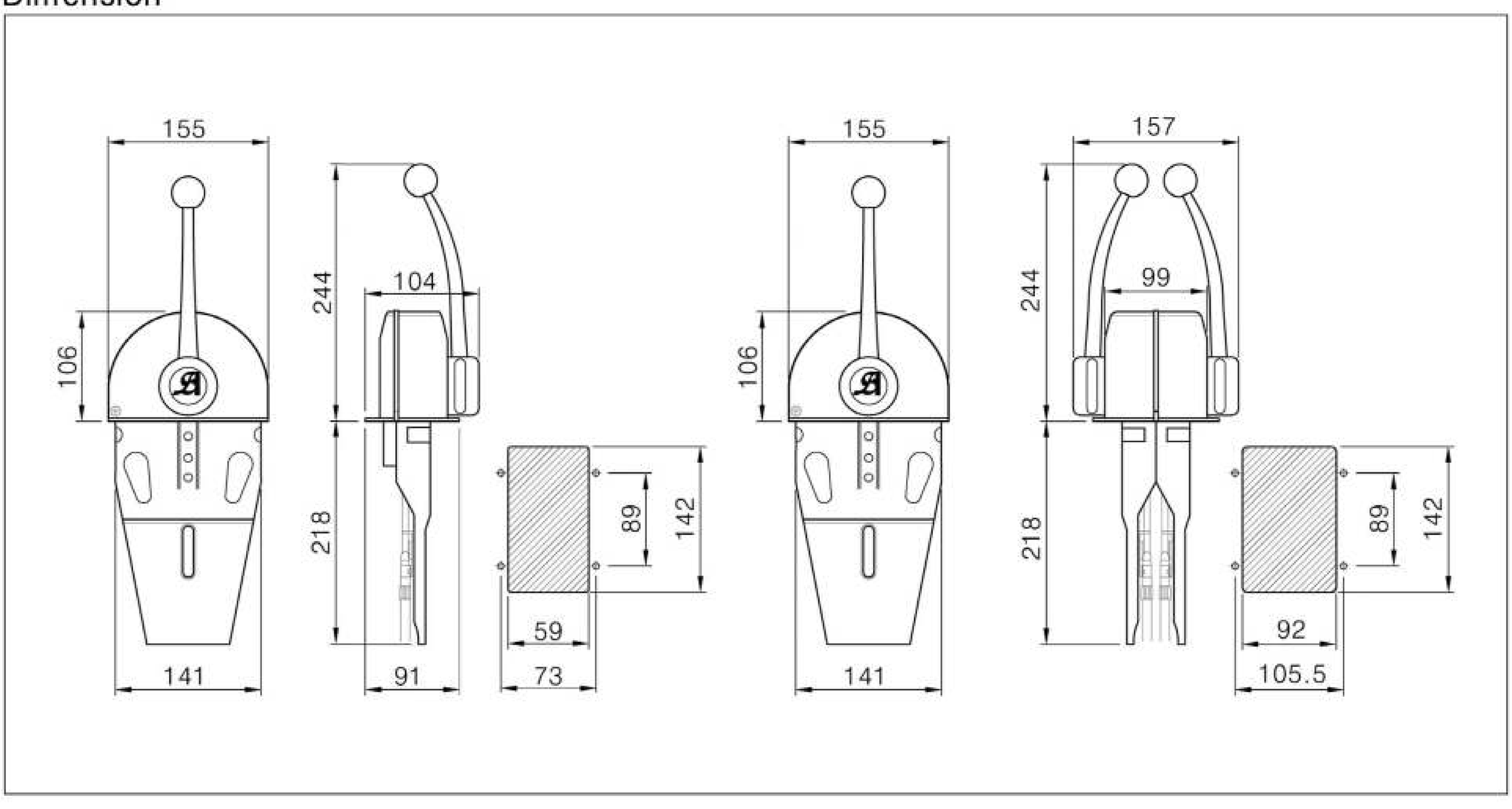
ST-Single
(For Single Engine)

ST-XL-S
(For Single Engine)

ST-Twin
(For Twin Engine)

ST-XL-T
(For Twin Engine)

Dimension



Engine Control Cable

C33 BLUE, C33 RED, C2, B14 Cable

◆ 클러치 및 가바나 조작 케이블

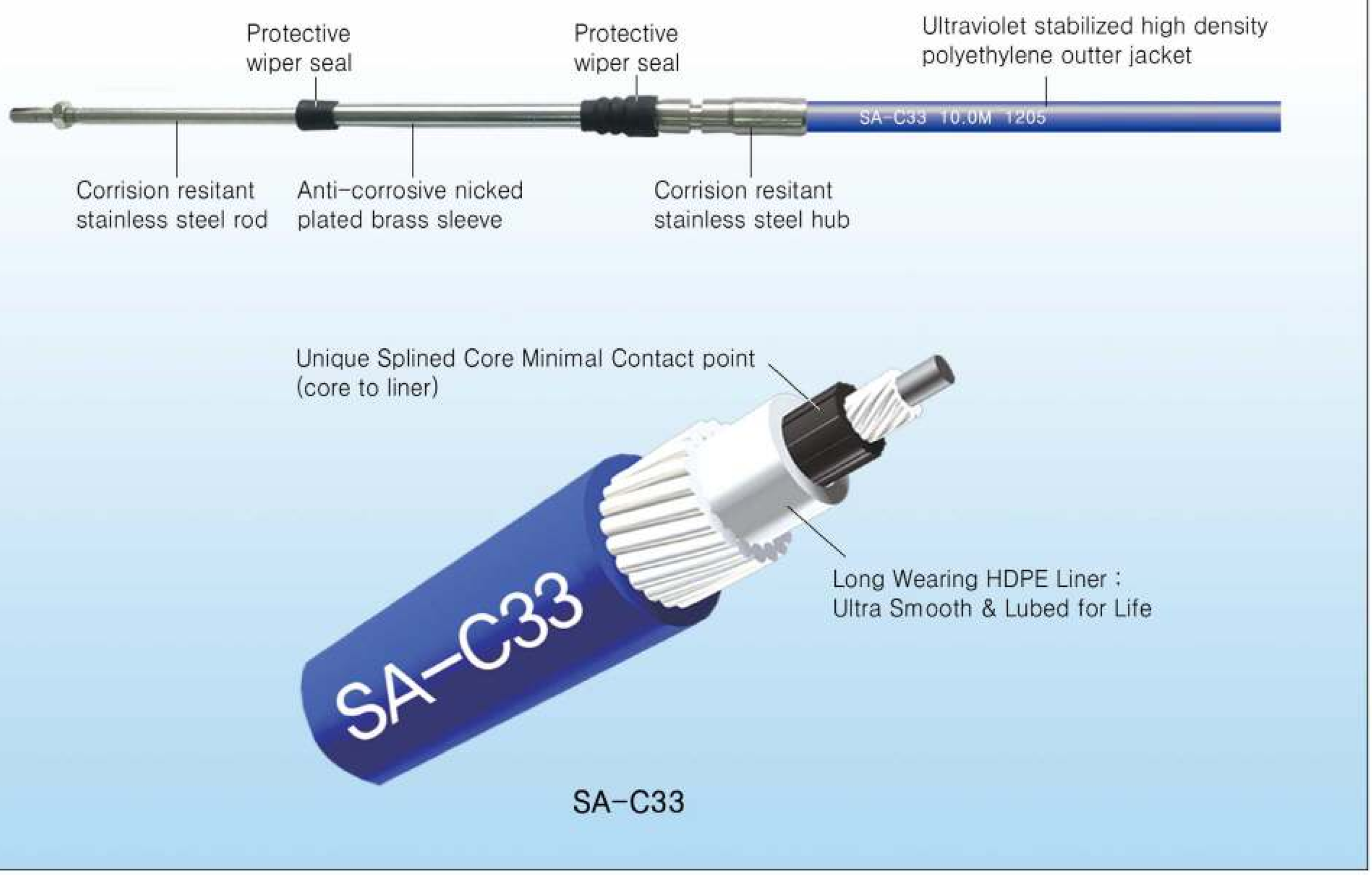
(주)에스에이엠텍의 C33 케이블은 전세계적으로 가장 많이 사용되어지는 형식의 케이블이다.

C33 케이블은 경제적으로 사용할 수 있는 케이블이다.
- 케이블 아답터를 사용하면 모든 엔진에 호환가능하다
- Rod는 3"의 유동과 8°의 최소 굽힘 반경을 갖고있다.

◆ Engine Control Cable

S.A. C33 Push-Pull Cables are the most widely used cable type in the world. It is economical work horse cable.
- Cable adapter kits available for the with Mercury, Mercruiser, Johnson/Evinrude and OMC strendrive.
- 3" travel, 10-32 SAE threads, 8° min bend radius (other travels availible)

SA-C33 Multi-Core Cable



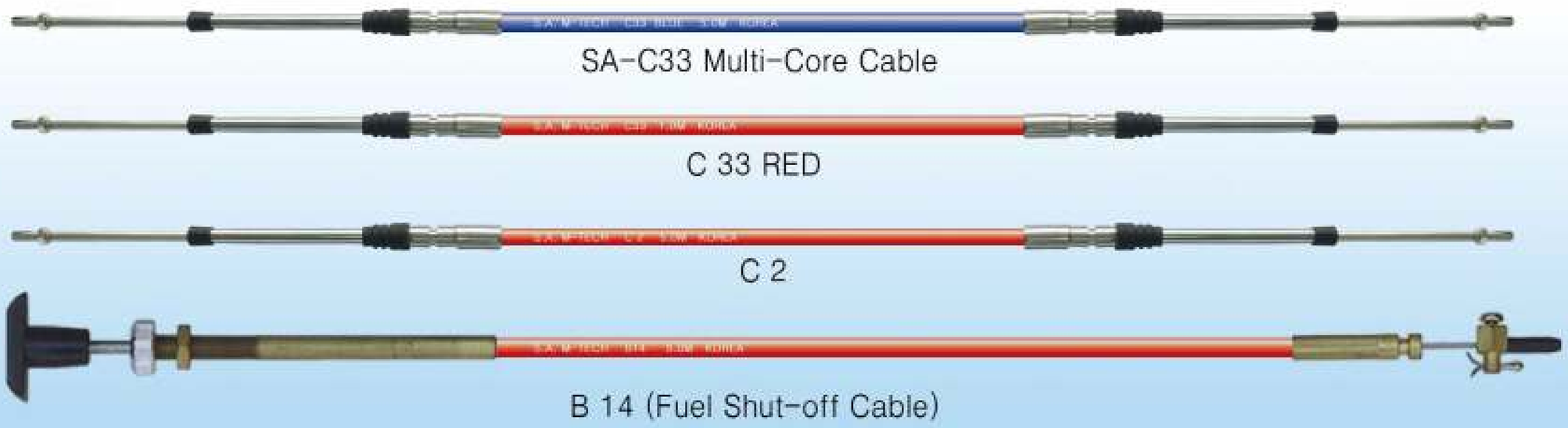
SA-C33

Specifications

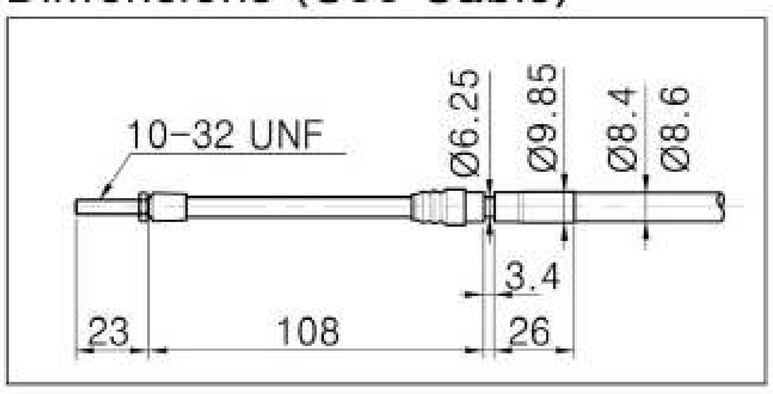
ITEM		SA-C33	C 33 RED
Color		BLUE	RED
Conduit (피복)	Material	Polyethlene	Polyethlene
	Out Diameter (mm)	Ø8.4 ± 0.15	Ø8.6 ± 0.15
Core (심재)	Material	SWRH62A, PA	STS304
	Out Diameter (mm)	Ø3.0	Ø1.9
Stroke (mm)		76 +6/0	76 +6/0
Input (kg)	Push	11.25	11.25
	Pull	11.25	11.25
Separtion Strength (이탈강도)	Rod and Core (로드와 코어)	Min. 136 kg	Min. 136 kg
	Hub and Conduit (허브와 피복)	Min. 136 kg	Min. 136 kg
Sleeve Swing Angle		±8°	±8°
Minimum Bending Radius (최소 굽힘 반경)		R 165	R 254
Heat & Cool using temperature Range (내한·내열온도)		-20℃ ~ 100℃	-20℃ ~ 100℃
Backlash (mm)		L(m)×0.5+5.08	L(m)×0.5+5.08
Lubricating (윤활유)		S/C Grease	E G Oil

Engine Control Cables & Fittings

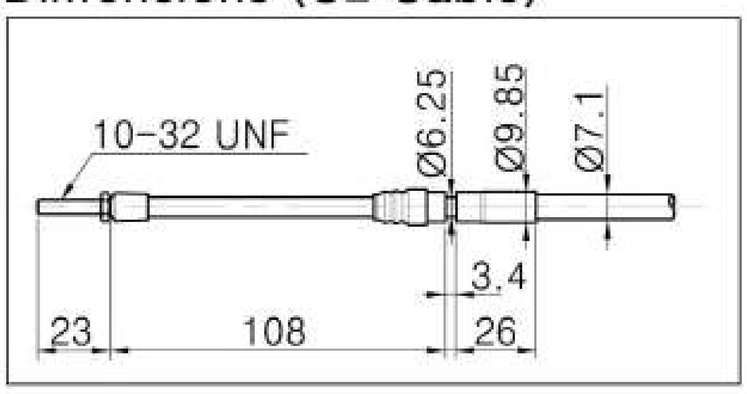
Engine Control Cables



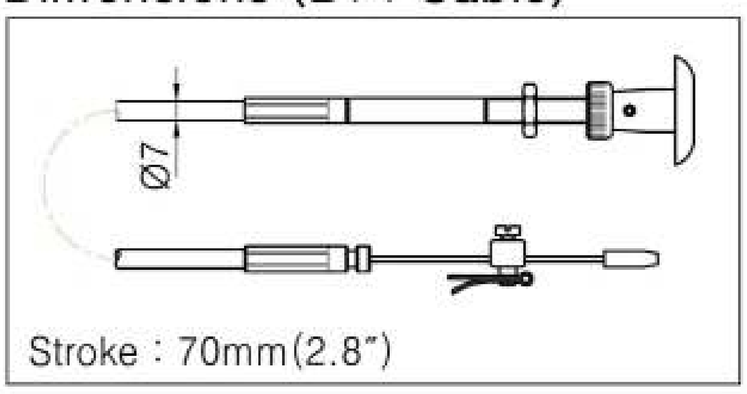
Dimensions (C33 Cable)



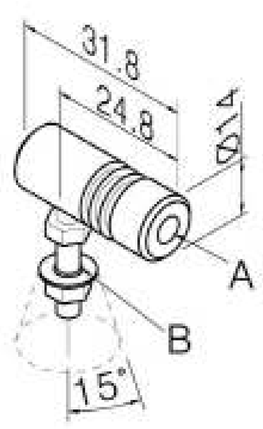
Dimensions (C2 Cable)



Dimensions (B14 Cable)

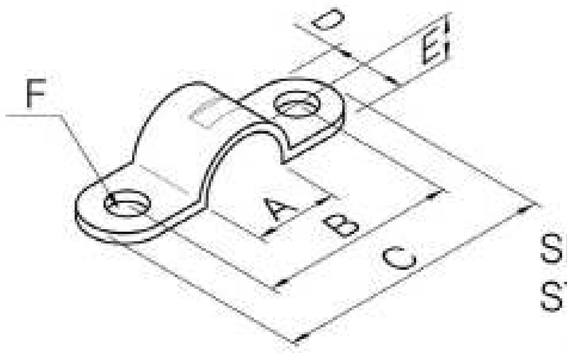


Fittings



Ball Joint

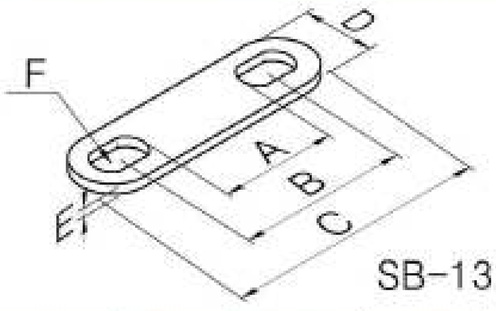
Part Number	A	B
BJ-30	No.10-32UNF	M6×1.0
BJ-31	No.10-32UNF	M8×1.25
BJ-33	No.10-32UNF	No.5/16-24UNF
BJ-34	M5×0.8	M6×1.0
BJ-35	M6×1.0	M6×1.0



SB-132
ST-9565

Clamp

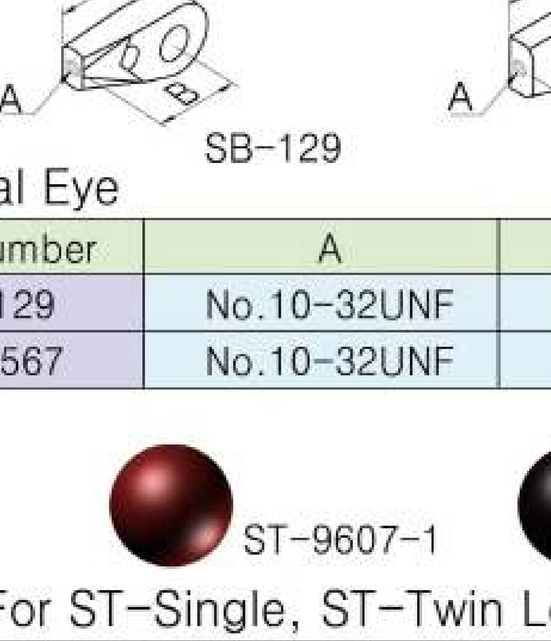
Part Number	A	B	C	D	E	F
SB-132	10.0	26.0	40.7	13.0	10.4	5.4×7.8
ST-9565	10.0	21.0	31.1	13.0	10.2	Ø5.5



SB-131

Shim

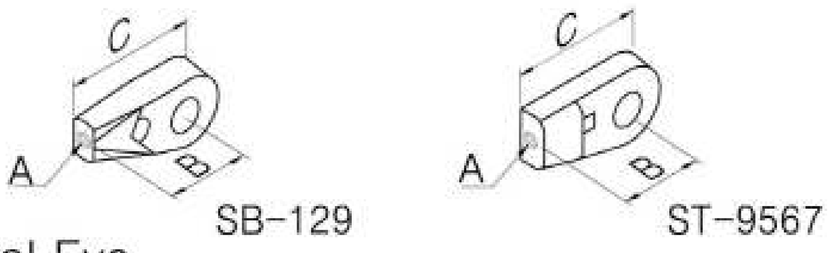
Part Number	A	B	C	D	E	F
SB-131	20.7	28.5	42.0	12.0	3.0	5.2×7.8



AB-146 ST-9565

Pivot (For Lever)

Part Number	A	B	C	D	E
AB-146	No.10-32UNF	19.5	Ø6.0	Ø12.0	-
ST-9566	Ø4.8	17.0	Ø7.9	13.9	10.8



SB-129 ST-9567

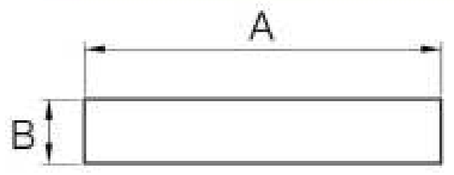
Terminal Eye

Part Number	A	B	C
SB-129	No.10-32UNF	25.0	32.4
ST-9567	No.10-32UNF	24.5	32.1

ST-9607-1 ST-9607-2

Knob (For ST-Single, ST-Twin Lever)

Part Number	Color	Size
ST-9607-1	Chestnut	Ø38
ST-9607-2	Black	Ø38



ST-9561-1
ST-9561-2

Flat Spring (For ST-Type Lever)

Part Number	A	B	Thickness
ST-9561-1	75.4	8.0	0.4
ST-9561-2	75.4	8.0	0.8

Engine Remote Control System & Select Unit

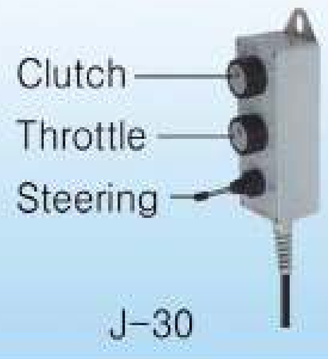
TCB-100 & DS-100

TCB-100 Actuator & Remote Controller

· For Single-function control by Two lever each
· Use SB-Twin & ST-Single

TCB-100 Actuator & Remote Controller

조이스틱 조타 + 엔진리모트용
(For Joystick Remote Steering and Engine Remote)

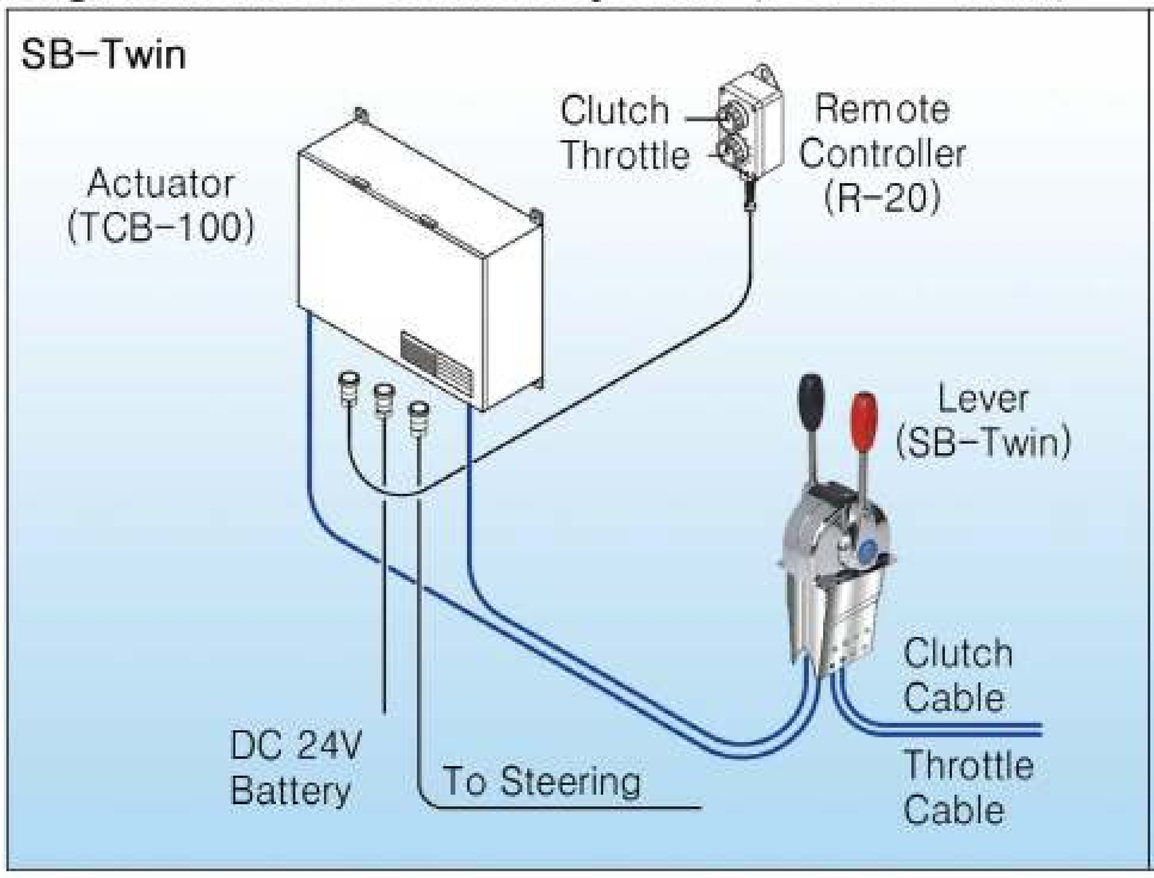


다이알 조타 + 엔진리모트용
(For Dial Remote Steering and Engine Remote)

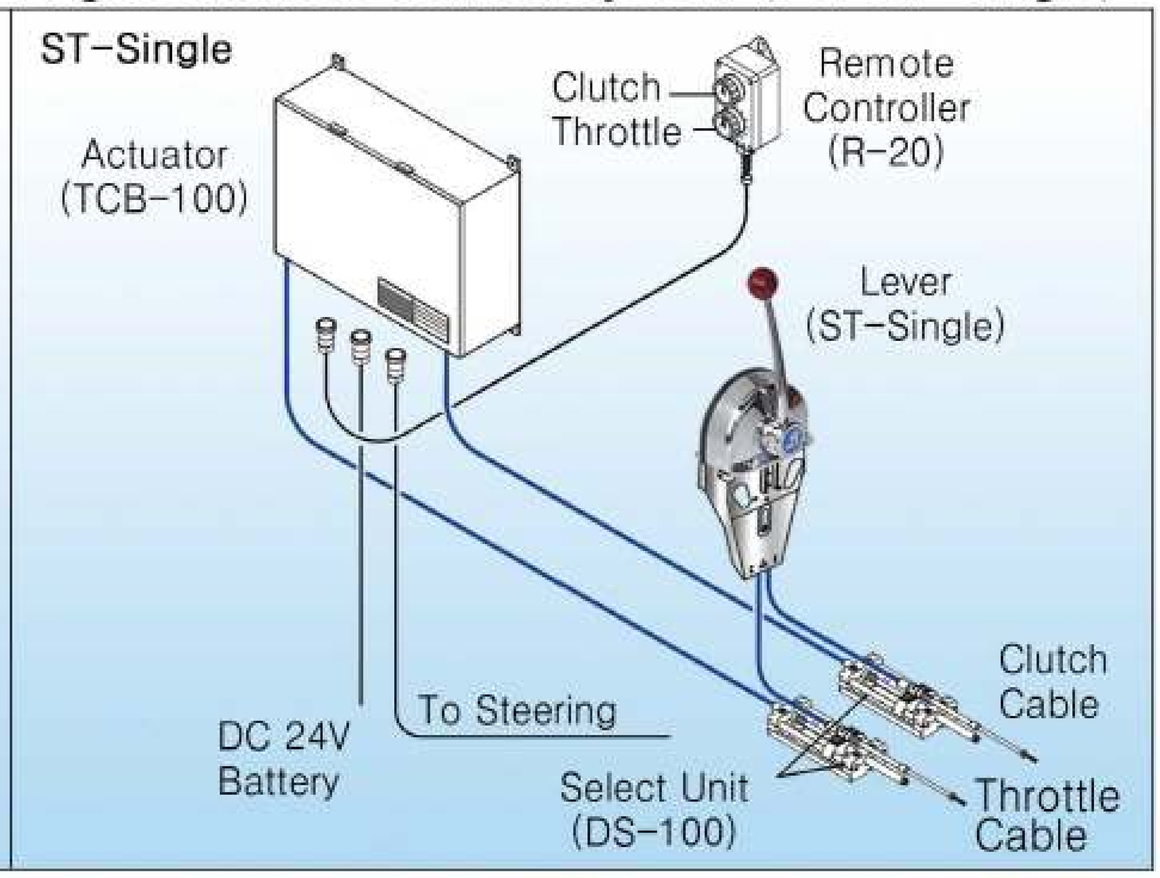
TCB-100 Specifications

Model		TCB-100
Controlling method	Clutch	3-position control : Ahead-Neature-Astern
	Throttle	Linerar control (Following-up principle)
Power requirement		DC 24V (Battery)
Cable Acutating Force	Clutch	25 kg Max.
	Throttle	45 kg Max.
Cable Acutating Speed	Clutch	About 1.5 sec (Ahead-Neature-Astern)
	Throttle	About 2.8 sec (Dead slow to Max. full)
Power Consumption	Normal	Less than 1.3A
	Clutch Control	Starting : Max. 8.5A at DC24V
	Throttle Control	Starting : Max. 8.5A at DC 24V
Push-Pull Cable		S.A. C33, Ultra C8, Morse 33C
Applications		Two Lever, Single Lever
Steering (Rudder Turning Speed)		90° / 6 ~ 8 sec

Engine Remote Control System (For SB-Twin)

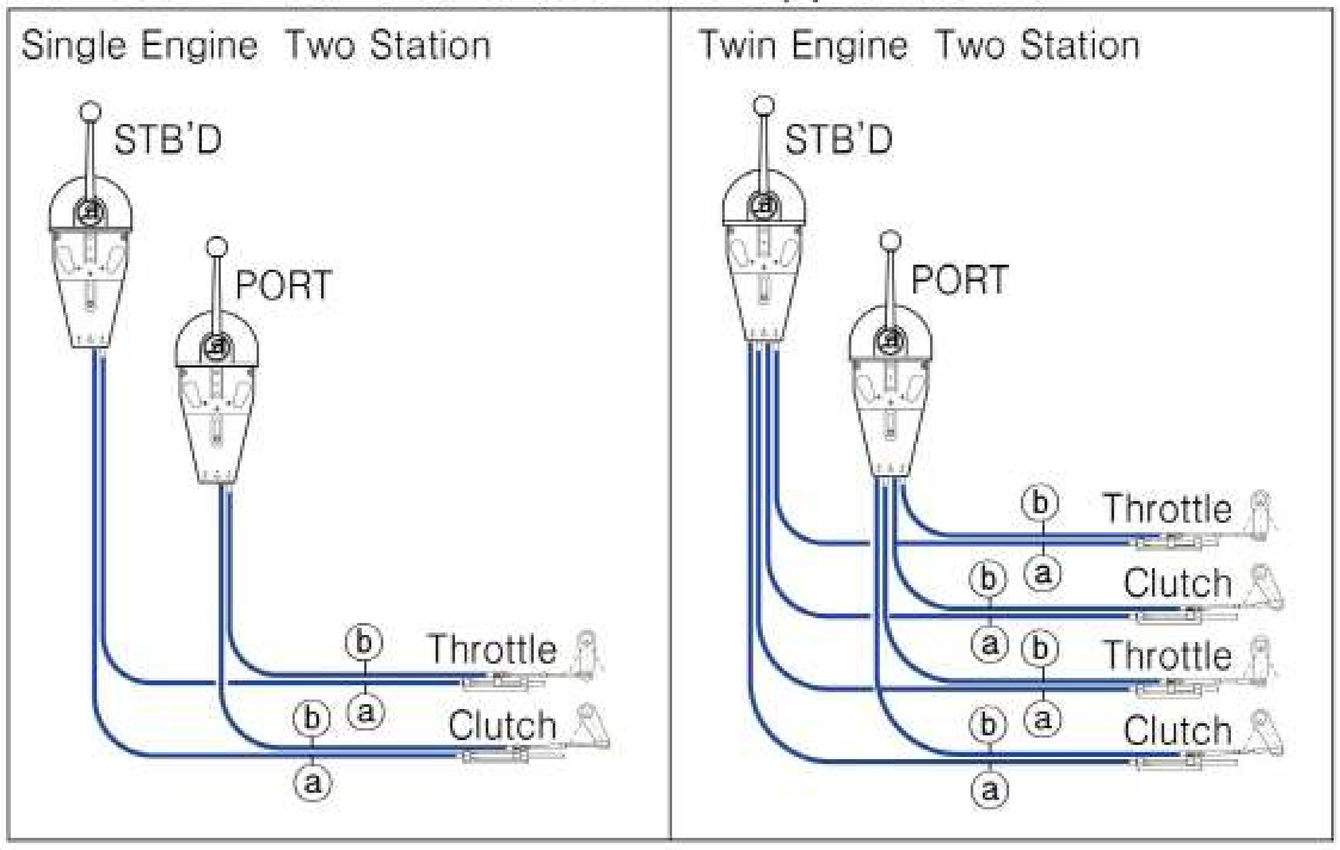


Engine Remote Control System (For ST-Single)



DS-100 (Application : Dual Station)

DS-100 선택장치 응용 (DS-100 Applications)



Outboard Steering System

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Outboard Hydraulic Steering Systems

OBHF-350 & OBHF-100

■ OBHF-350 (Application HP : up to 350 HP)

Outboard Cylinder : OF-350

Option

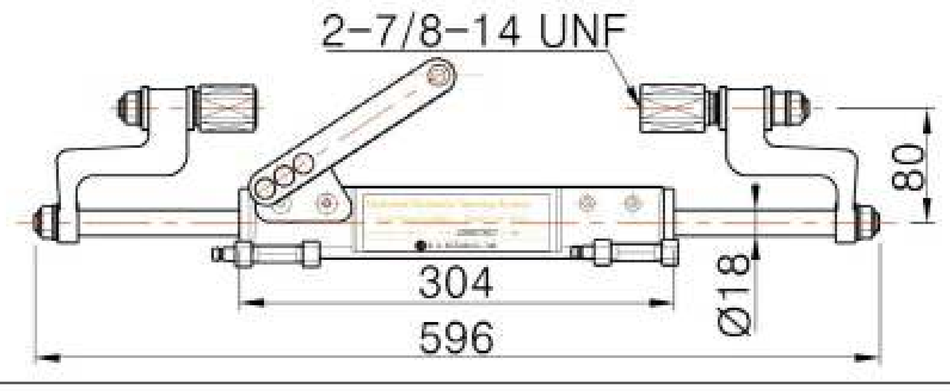
Wheel : SW-260

Helm Pump : SOH-18, 25, 35

Hose : 3/8" × 10m

Oil : SO-02 (1ℓ×2EA)

Dimensions



Specifications

Model	OF-350
Volume	156 cc
Tube I.D.	Ø35
Rod I.D.	Ø18
Output Force	495 kgf
Stroke	220 mm
Max. Pressure	70 kgf/㎠

■ OBHF-100 (Application HP : up to 150 HP)

Outboard Cylinder : OF-100

Option

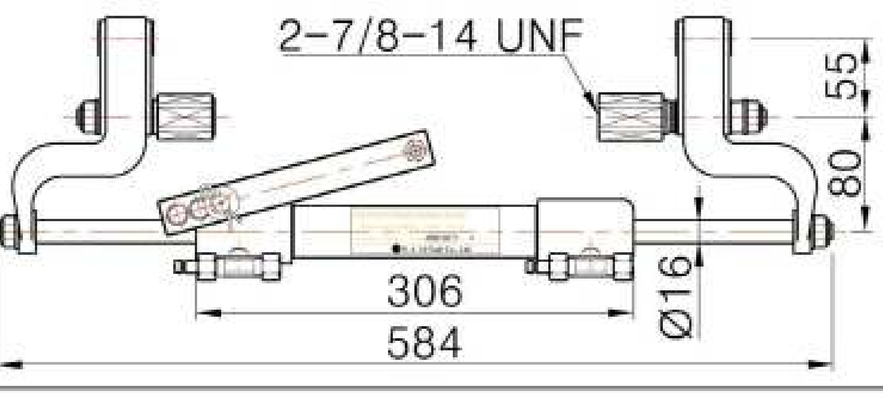
Wheel : SW-260

Helm Pump : SOH-18, 25, 35

Hose : 3/8" × 10m

Oil : SO-02 (1ℓ×2EA)

Dimensions



Specifications

Model	OF-100
Volume	111.3 cc
Tube I.D.	Ø30
Rod I.D.	Ø16
Output Force	354 kgf
Stroke	220 mm
Max. Pressure	70 kgf/㎠

Outboard/Inboard/Water Jet/Stern Drive Steering Systems

OBHS-100 & IBHD-100, IBHD-98, IBHD-99

■ OBHS-100 (Application HP : up to 240 HP)

Outboard Cylinder : OS - U100

Option

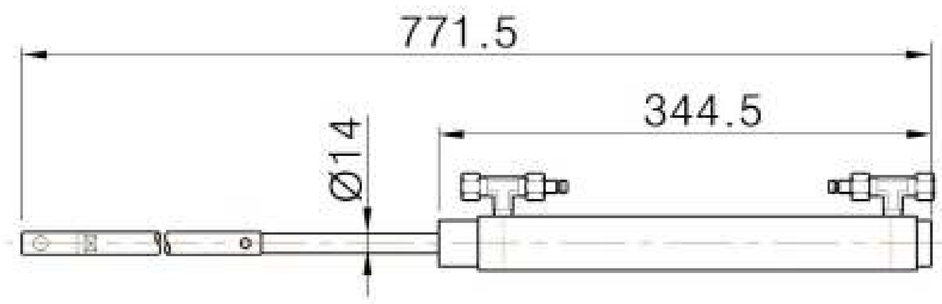
Wheel : SW-260

Helm Pump : SOH-25, 35, 45

Hose : 3/8" × 10m

Oil : SO-02 (1ℓ×2EA)

Dimensions



Specifications

Model	OS-U100
Volume	132.1 cc / 163.6 cc
Tube I.D.	Ø32
Rod I.D.	Ø14
Output Force	495 kgf / 562 kgf
Stroke	203 mm
Max. Pressure	70 kgf/㎠

■ IBHD-100 ,IBHD-98, IBHD-99

Cylinders : ID-100, SDC-98, SDC-99

Option

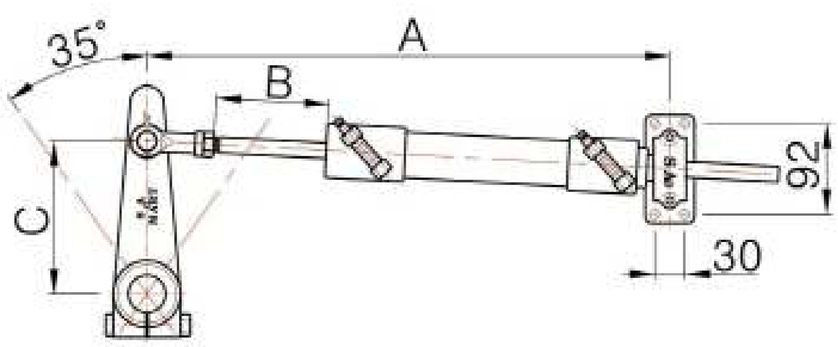
Wheel : SW-260

Helm Pump : SOH-25, 35, 45

Hose : 3/8" × 10m

Oil : SO-02 (1ℓ×2EA)

Dimensions



Model	A	B	C
ID-100	471	100	130
SDC-98	532	114	155
SDC-99	606	139	198

Specifications

Model	ID-100	SDC-98	SDC-99
Volume	98 cc	188 cc	241 cc
Tube I.D.	Ø32	Ø40	Ø40
Rod I.D.	Ø14	Ø16	Ø16
Output Force	455.2 kgf	738.9 kgf	738.9 kgf
Stroke	150 mm	178 mm	228 mm
Max. Pressure	70 kgf/㎠	70 kgf/㎠	70 kgf/㎠

Outboard Steering Systems

Accessories & Diagram

Accessories

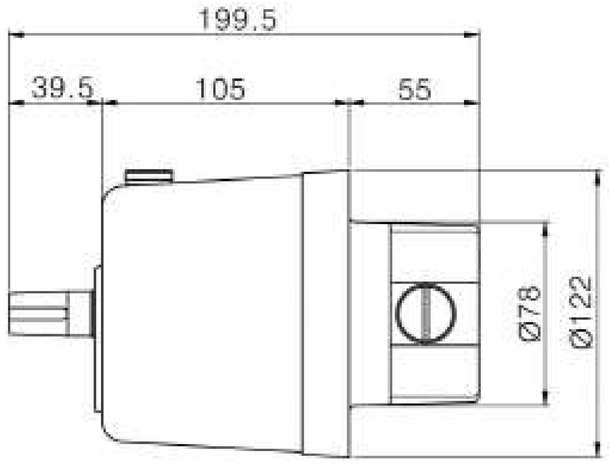
Wheel : SW-260

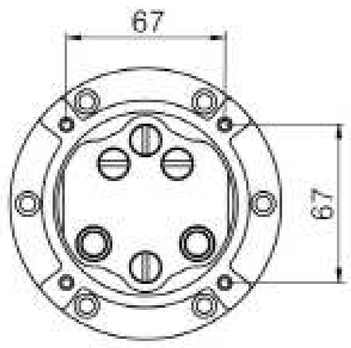
Fitting : HV-01

Hose : 3/8" × 10m

Oil : SO-02 (1ℓ×2EA)

Helm Pump Dimension





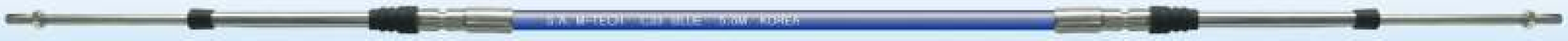
Helm Pump Specifications

Model	Capacity	Piston Q'ty	Max. Pressure	Weight
SOH-18	18 cc/rev	7 EA	70 Bar	4 kg
SOH-25	25 cc/rev	7 EA	70 Bar	4 kg
SOH-35	35 cc/rev	7 EA	70 Bar	4 kg

Reference

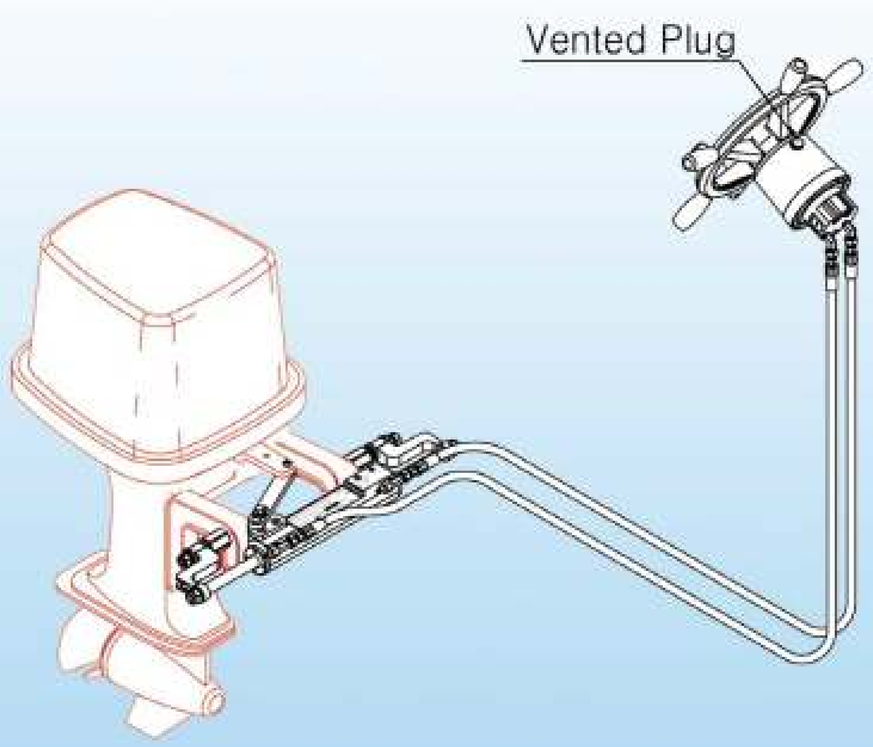
Model	Volume (cc)	Turns lock to lock (Wheel Turns) Helm Pump (cc/rev)		
		SOH-18	SOH-25	SOH-35
OF-350	156	8.6	6.2	4.5
OF-100	111.3	6.2	4.5	3.2
OU-U100	132.1 / 163.6	7.3 / 9.1	5.3 / 6.5	3.8 / 4.7
ID-100	98	5.4	3.9	2.8
SDC-98	188	10.4	7.5	5.4
SDC-99	241	13.4	9.6	6.9

Engine Control Cable

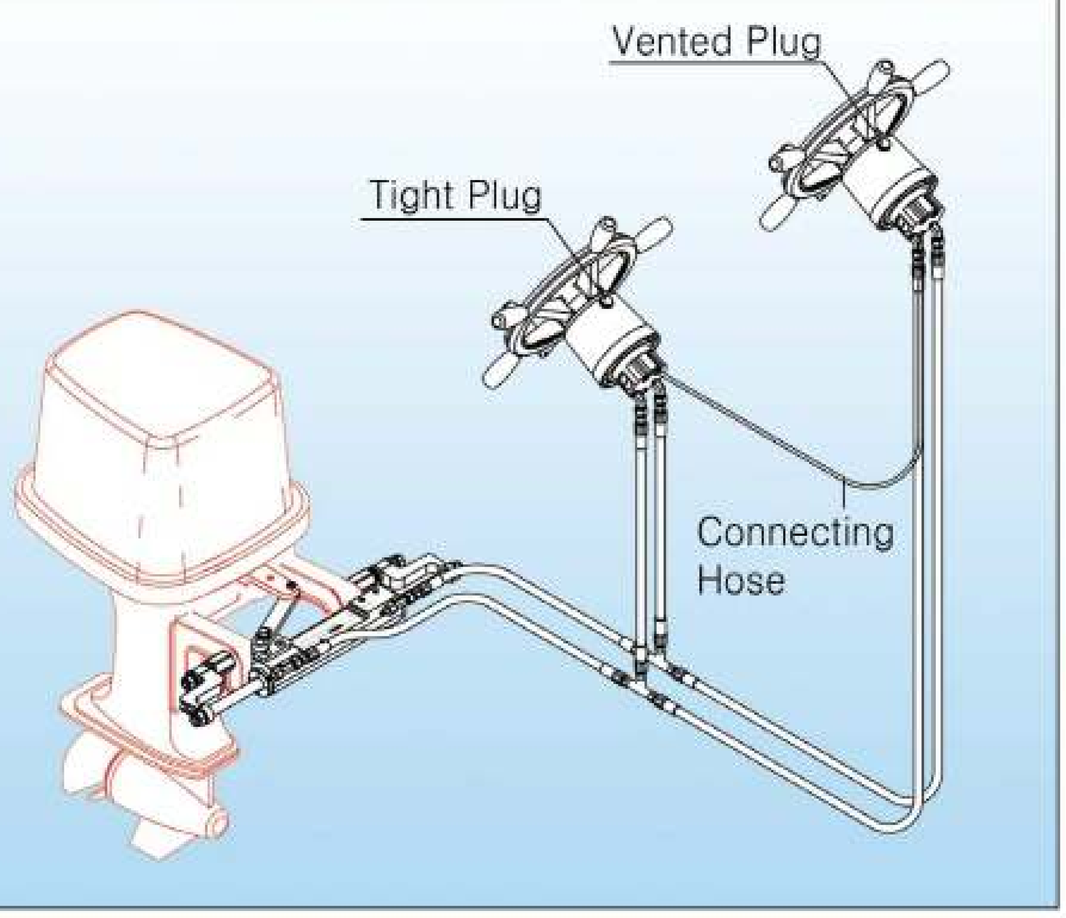


SA-C33 Multi-Core Cable

Single Station with lock valve



Double Station with lock valve



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Outboard Power Steering System

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Outboard Power Steering System

Feature & Components, Specifications

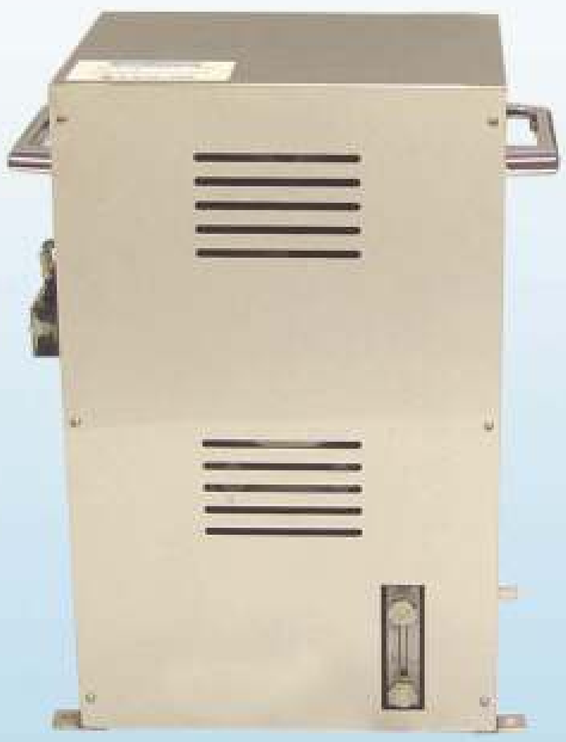
◆ 특 징

- 파워 스티어링 구동으로 스티어링 휠의 작동이 원활하고 적은 전타와 적은 힘으로 운전이 가능한 시스템이다.
- 스티어링 휠을 동작시킬 때 센서가 감지되어 일정시간만 펌프 유닛이 동작하고, 스티어링 휠의 동작이 멈추면 일정시간 후 정지하여 배터리의 소모를 줄인다.
- 선박의 용도 및 기능에 맞게 모델을 선정할 수 있다.
- 파워 스티어링 펌프 유닛은 모터 과부하 차단장치를 내장하여 모터가 타거나 눌어붙는 것을 방지한다.
- 컨트롤 박스 (OPC-40)는 프리볼트 용으로 설계·제작되어 DC 12V ~ DC 24V 까지 펌프 유닛 구동이 가능하다.

◆ Feature

- The steering wheel is operated smoothly by motor-driven, this system is possible to run with less turns lock to lock and less force
- When the steering wheel is working, Pump unit is also operating a certain amount of time to be detected by sensor, if the steering wheel is stopped, Pump unit also stopped after a certain amount of time, so it can conserve the fuel consumption.
- You can select a model to fit the purpose and function of the vessel
- Power steering pump has a built-in overload protection device which prevents motor from burning out
- The control box is designed and manufactured for free-volt to be available DC12~DC24V in operating the pump unit

Components



Pump Unit

OPP-30 / OPP-50 (Standard Type)
OPP-30S / OPP-50S (Solenoid Type : Option)

Steering Wheel Ass'y

OPW-30 / OPW-50

Control Box

OPC-40

Oil

SO-02 (1ℓ × 4EA)

Option

Remote Controller

J-10

Hose

5/16″×5 M (2EA) (Standard Type)
5/16″×5 M (4EA) (Solenoid Type : Option)

System Specifications

System Model	OPS-30	OPS-30S	OPS-50	OPS-50S
Power requirement	DC 12V			
Max. Current	23.8A		35.8A	
Pump Unit Model	OPP-30	OPP-30S	OPP-50	OPP-50S
Solenoid	×	○	×	○
Pump Unit Capacity	2.8 ℓ/min		4.5 ℓ/min	
Pump Pressure	50 kg/cm²			
Working Pressure	35 kg/cm²			
Control Box Model	OPC-40			
Steering Unit Model	SU-30		SU-50	
Steering Unit Capacity	31 cc/rev		50 cc/rev	
Oil	#15, 1ℓ × 4 EA			
Hose	5/16″×5M, 2 EA	5/16″×5M, 4 EA	5/16″×5M, 2 EA	5/16″×5M, 4 EA

※ DC 24V 용은 별도 주문 생산 가능함.

※DC 24V is for order production separately

Outboard Power Steering System

Components Item

Pump Unit

OPP-30 / OPP-50
(Standard Type)

OPP-30S / OPP-50S
(Solenoid Type : Option)

Pump Unit Specifications

Model	OPP-30 / OPP-30S	OPP-50 / OPP-50S
Displacement	2.8 ℓ/min	4.5 ℓ/min
Power Source	DC 12V	
Max. Current	23.8A	35.8A
Pump Pressuree	50kg/cm²	
Working Pressure	35kg/cm²	

Hose & Fitting, Oil

For OPP-30 / OPP-50

Hose : 5/16″× 5 M
(2EA)

Oil : SO-02
(1ℓ × 4EA)

For OPP-30S / OPP-50S

Hose : 5/16″× 5 M
(4EA)

Oil : SO-02
(1ℓ × 4EA)

Control Box

OPC-40

Control Box Inside

Option

Remote Controller

J-10

Steering Wheel Ass'y

OPW-30 / OPW-50

Wheel

SW-260S

Steering Unit Ass'y

Steering Unit

SU-30, SU-50

Steering Unit Specifications

Model	SU-30	SU-50
Capacity	31 cc/rev	50 cc/rev

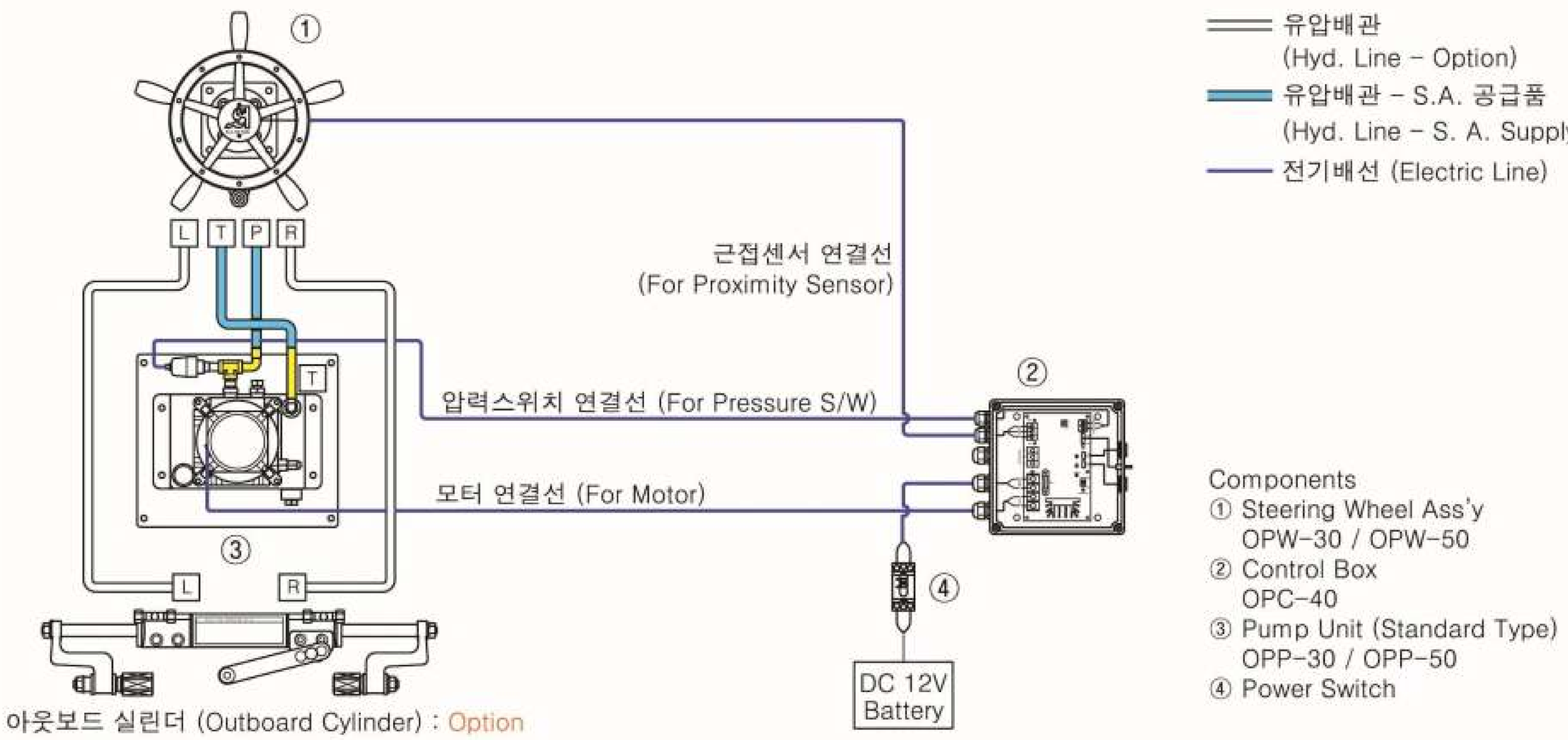
Select (Steering Unit)

Cylinder Model		OS-U100H	OF-100H	OF-350H	ID-100	SDC-98	SDC-99
Volume (cc) - One Cylinder		132.1(In) / 163.6(Out)	111.3	156	98	188	241
Wheel Turns	SU-30 (Single Engine)	4.3 / 5.3	3.6	5.1	3.2	6.1	7.8
	SU-50 (Twin Engine)	5.3 / 6.6	4.5	6.3	4.0	7.6	9.7

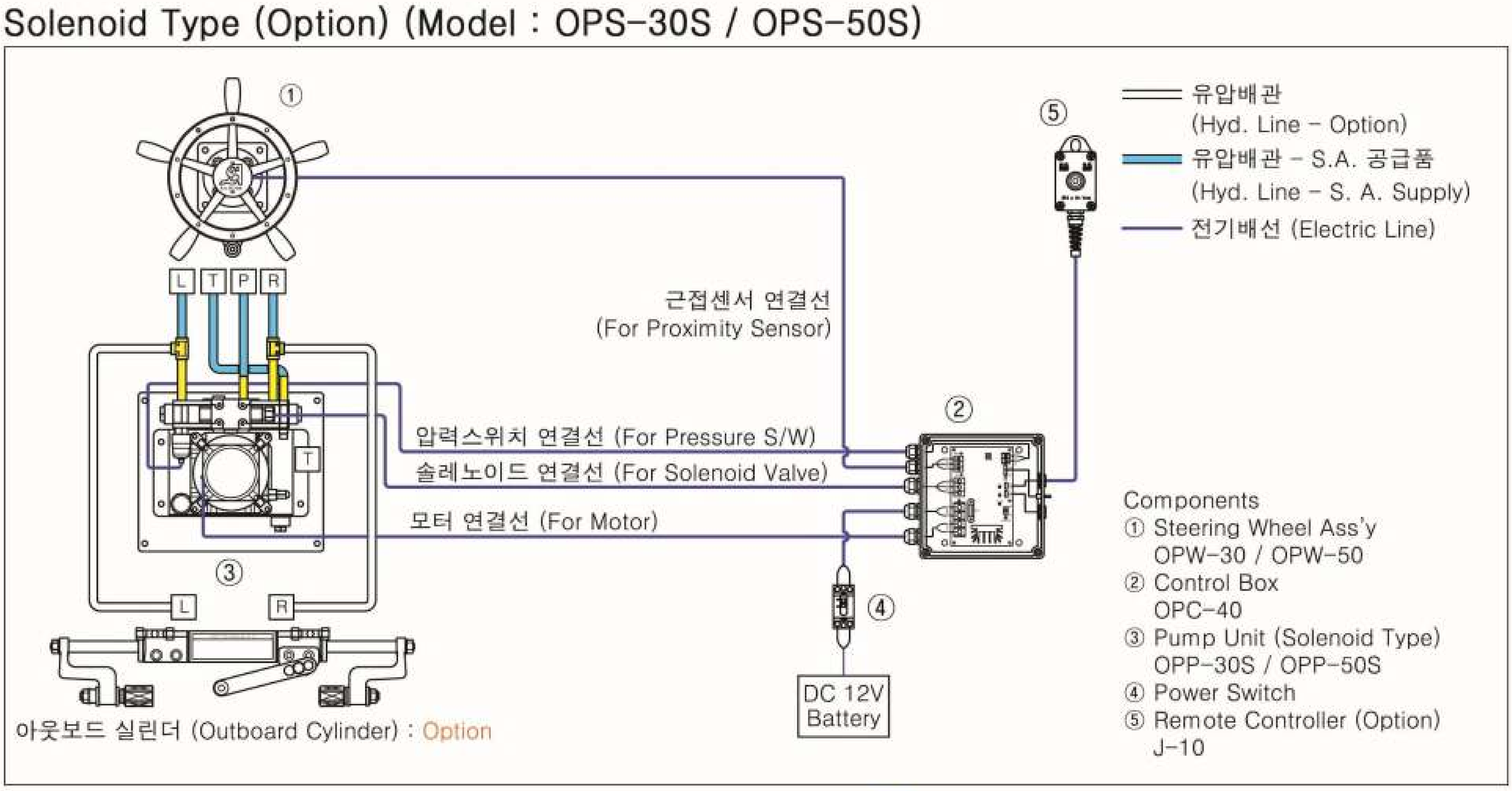
Outboard Power Steering System

Hydraulic Diagram

Standard Type (Model : OPS-30 / OPS-50)



Solenoid Type (Option) (Model : OPS-30S / OPS-50S)



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Other Products

Power Steering System & Electric Steering System, Sky In-LIne Stern Drive Package System

Power Steering System

Power Stand

Cylinder

Oil Pump

Oil Tank

Electric Steering System

Joystick Remote

Electric Stand

Cylinder

Power Pack

Wall Mounted
Rudder Angle Indicator
(for Wheel House)

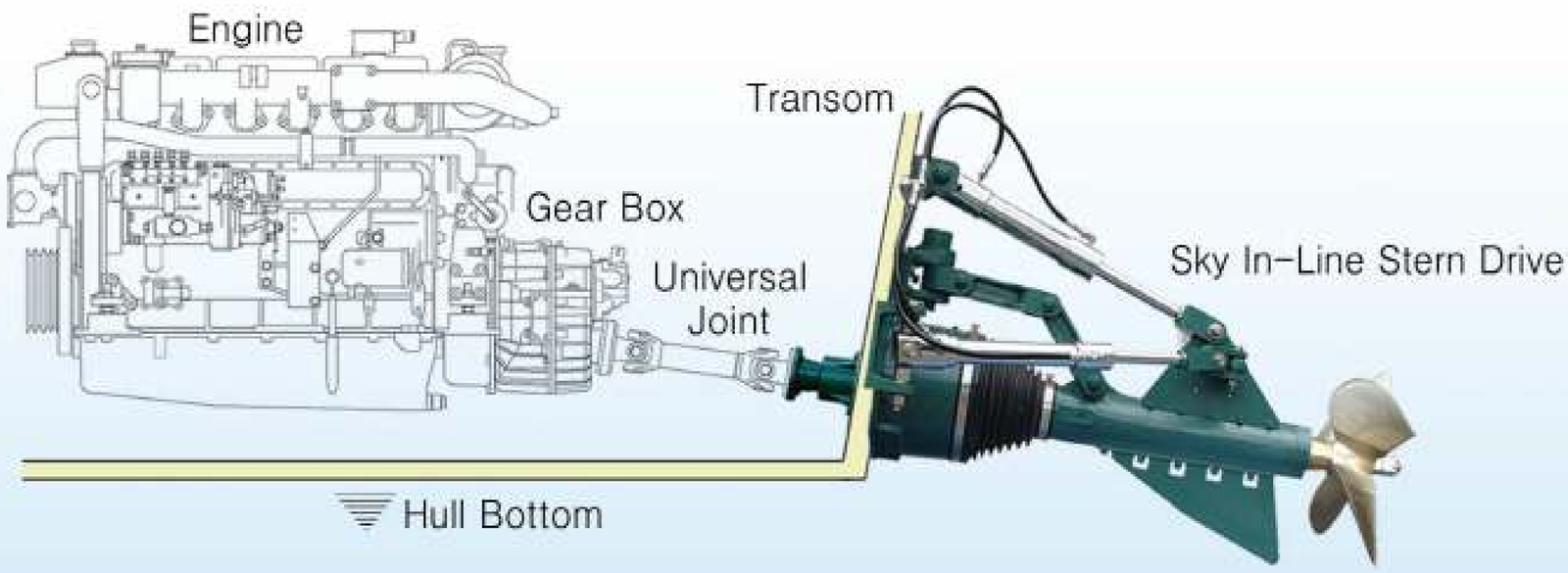
Starter Panel

Alarm Box

Relay Box

Electric Panel

Sky In-Line Stern Drive Package System



■ 특징

- 축계장치보다 15~20% 속도 증가
- 15 ~ 20%의 연료절감 효과
- 낮은 수심에서도 자유로운 항해 보장
- 전제품 특수소재로 부식 방지 및 완벽한 내구성 보장
- 유압조타 및 유압트림장치로 부드러운 작동
- 간단한 구조로 유지보수비용 대폭 절감
- 간단한 설치
- 중, 소형 선박의 선외기 수준 고속화 실현

■ Special feature

- 15~20% more rapid speed than the shafting device.
- Fuel saving effect up to 15~20%.
- Free sailing is possible even at the shallow depth.
- As whole products are made of special material, anti-corrosionand thorough durability are realized.
- Smooth operation due to hydraulic steering trim device.
- Drastic saving of maintenance and repairing expenses by the simple structure.
- Installation is simple.
- High speed is realized same as the outboard level of medium and small boats.

품질은 최고로, 고객은 제일로

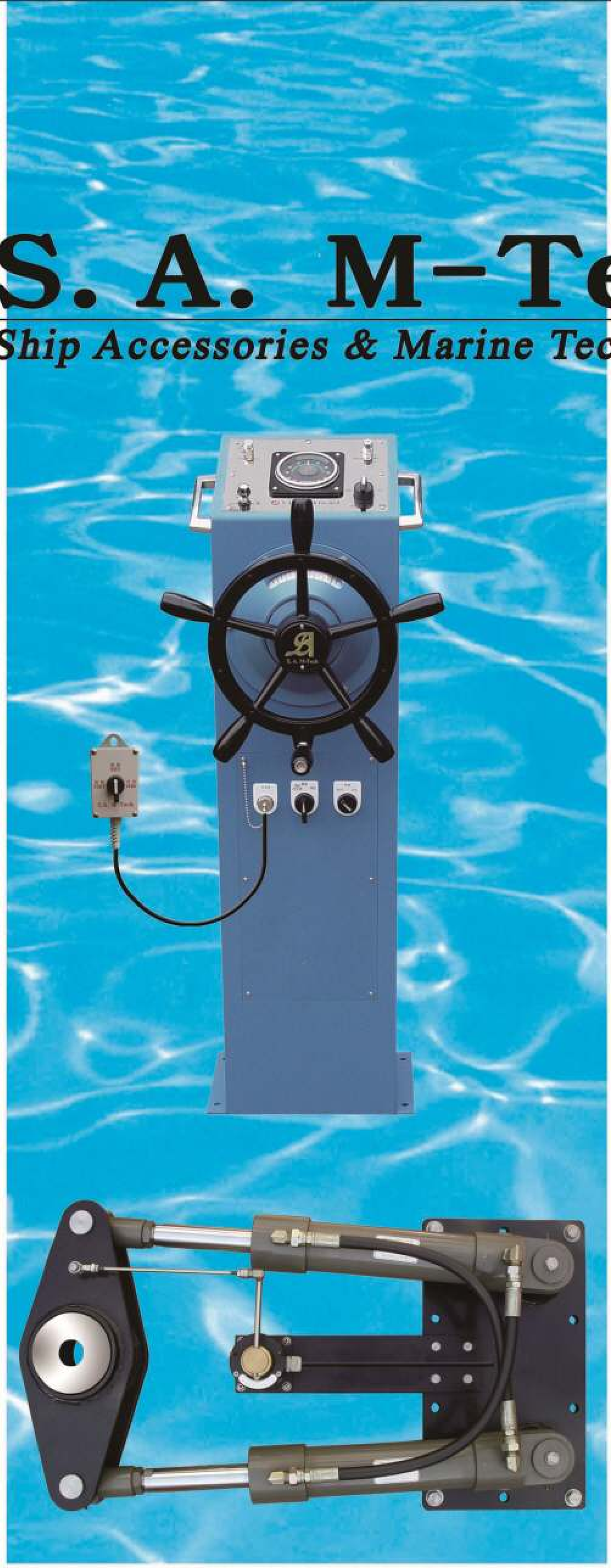
선박부품 시장을 리더하는 기업!!

최고의 신기술로 안전한 항해를 함께 합니다.

The best quality and the best service for the customers

S. A. M-Tech

Ship Accessories & Marine Technology



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Hydraulic Steering Systems

Cylinders & Specifications

Cylinders

직동형 실린더 (Direct Cylinder)

Model : ID-100, SDC-98
SDC-99
(For Outboard, Inboard
Water Jet Stern Drive)

직동형 실린더 (Direct Cylinder)

Model : SSDC-01, SDC-01
SDC-02

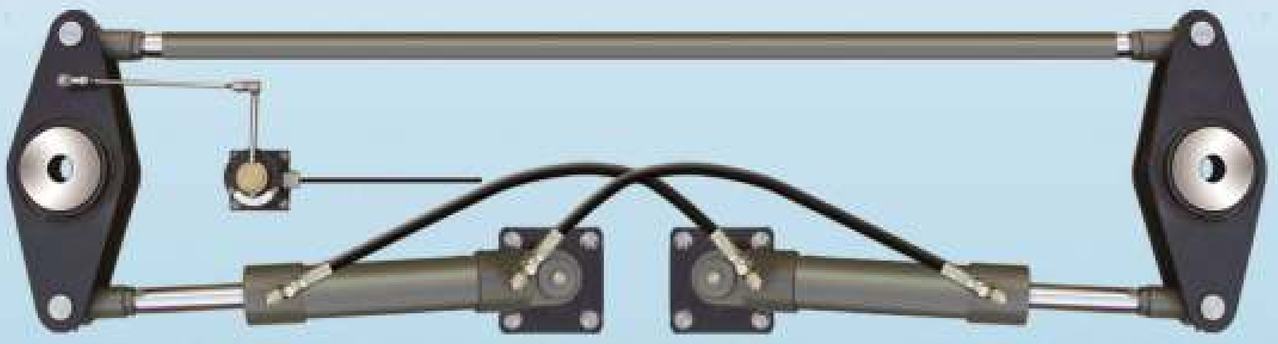
로타리 실린더 (Rotary Cylinder)

Model : SRC-00, SRC-01

더블 실린더 (Double Cylinder)

Model : SSPC-01, SPC-01
SPC-02, SPC-02S, SPC-70
SPC-03, SPC-04, SPC-05

더블 실린더 (Double Cylinder) - For Twin Engines



Model : SSPC-01T, SPC-01T
SPC-02T, SPC-02ST, SPC-70T
SPC-03T, SPC-04T, SPC-05T

Specifications (Outboard Cylinders)

Model	Volume (cc)	Output Force (kgf)	Stroke (mm)	Piston Dia. (mm)	Rod Dia. (mm)	Turns lock to lock (°)	Fitting	Appl. Pre. (kgf/㎠)	Application
ID-100	98	455.2	150	32	14	70	3/8"	70	For Outboard, Inboard Water Jet, Stern Drive
SDC-98	188	738.9	178	40	16	70	3/8"	70	
SDC-99	241	738.9	228	40	16	70	3/8"	70	

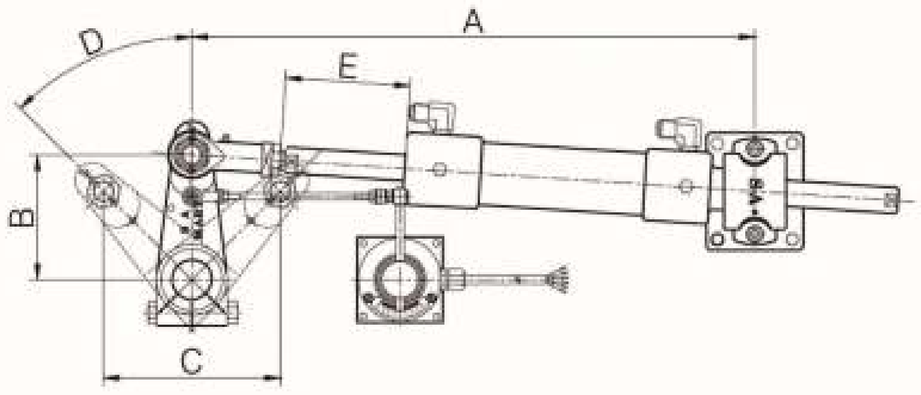
Specifications (Inboard Cylinders)

Model	Volume (cc)	Torque (kg-m)	Stroke (mm)	Piston Dia. (mm)	Rod Dia. (mm)	Turns lock to lock (°)	Fitting	Appl. Pre. (kgf/㎠)	Appl. Vessel (Tons)	Appl. Engine(HP)
SSDC-01	250	84	170	50	25	90	1/2"	70	2~3	100~250
SDC-01	333	124	226	50	25	84	1/2"	70	3~5	100~250
SDC-02	487	182	226	63	35	84	1/2"	70	5~10	150~450
SRC-00	235	134	75.4	63	47	90	1/2"	70	2~3	100~250
SRC-01	427	271	85	80	60	83	1/2"	70	3~8	150~350
SSPC-01	547	358/261	170	50	30	70 / 90	1/2"	100	5~10	150~450
SPC-01	728	479/351	226	50	30	70 / 90	1/2"	100	7~15	150~450
SPC-02	1,191	785/641	226	63	35	70 / 90	1/2"	100	15~30	300~600
SPC-02S	1,350	913/707	256	63	35	70 / 85	1/2"	100	20~40	400~700
SPC-70	1,648	1,151/903	256	70	35	70 / 85	1/2"	100	40 ~ 70	450~800
SPC-03	2,426	1,618	300	80	50	70	1/2"	100	70~100	500~800
SPC-04	3,864	2,577	300	100	60	70	1/2"	100	100~200	600~1,200
SPC-05	6,682	4,459	350	120	67	70	1/2"	100	150~300	800~1,500

Hydraulic Steering Systems

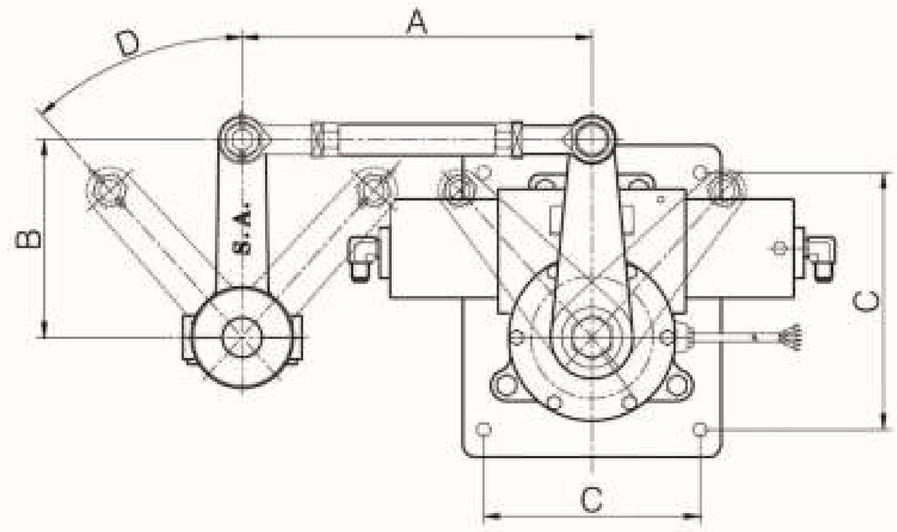
Cylinders Dimension & Tiller Dimension

Direct Cylinder



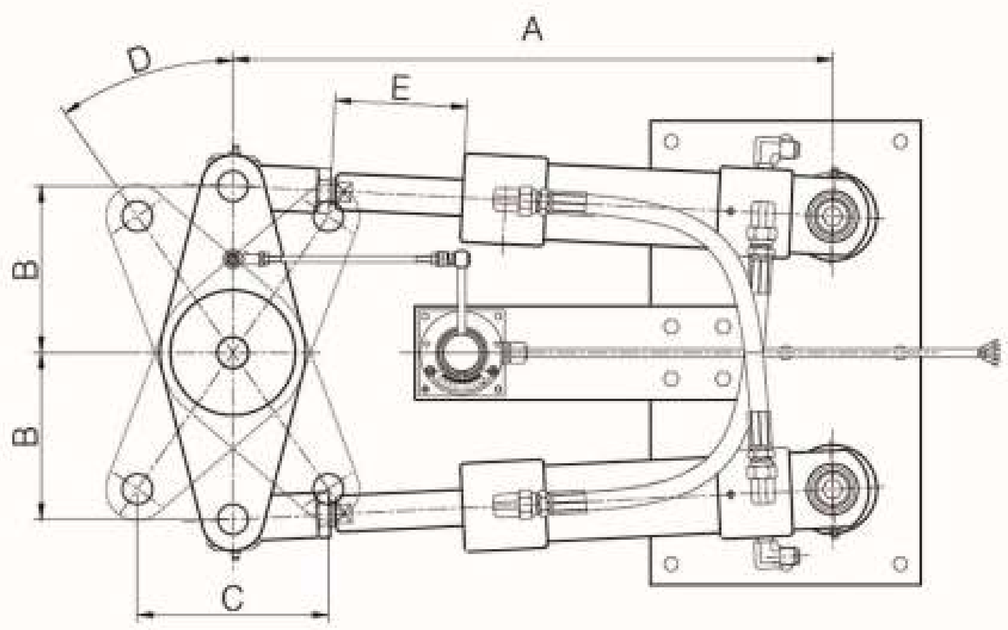
Model	A	B	C	D	E	INSTALL(L×W×H)
ID-100	471	130	150	35°	100	800×250×100
SDC-98	532	155	178	35°	114	950×300×150
SDC-99	606	198	228	35°	139	1000×300×150
SSDC-01	541	120	170	45°	120	1000×300×120
SDC-01	625	170	226	45°	148	1100×320×120
SDC-02	664.5	170	226	42°	148	1150×300×150

Rotary Cylinder



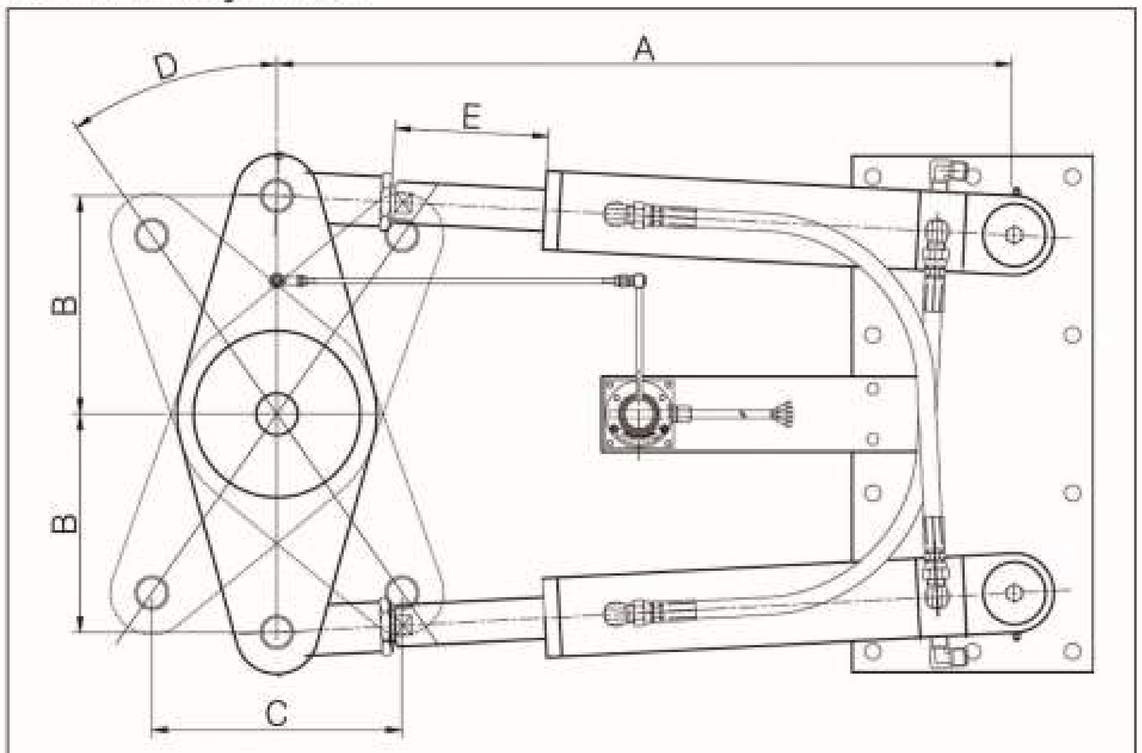
Model	A	B	C	D	INSTALL(L×W×H)
SRC-00	336	160	170×210	45°	800×350×300
SRC-01	336	190	208×247	41.5°	850×400×300

Double Cylinder



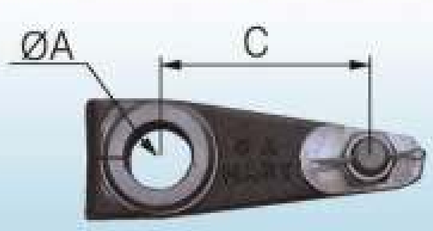
Model	A	B	C	D	E	INSTALL(L×W×H)
SSPC-01	556	120	170	45°	120	850×450×200
SPC-01	640	160	226	45°	148	1000×550×200
SPC-02	640	160	226	45°	148	1000×550×200
SPC-02S	683	190	256	42.5°	163	1000×580×220

Double Cylinder

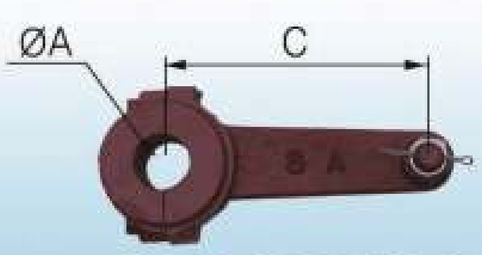


Model	A	B	C	D	E	INSTALL(L×W×H)
SPC-70	683	190	256	42.5°	163	1000×580×220
SPC-03	887	262	300	35°	185	1300×720×300
SPC-04	887	262	300	35°	185	1300×720×300
SPC-05	1001	305	350	35°	225	1400×800×300

Tiller (For Direct Cylinder, Rotary Cylinders)



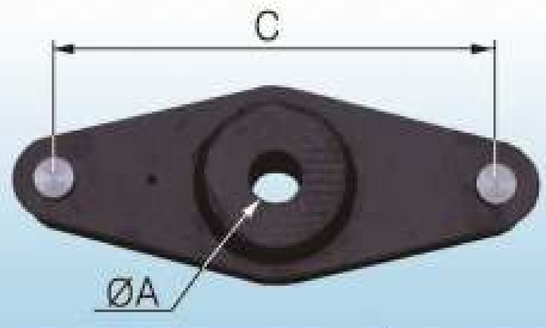
ST-01,ST-02



ST-03,ST-04,ST-05

Model	C	ØA Max.	For Cylinder
ST-01	120	Ø45	SSDC-01
ST-02	170		SDC-01
ST-03	170	Ø80	SDC-02
ST-04	160		SRC-00
ST-05	190		SRC-01

Tiller (For Double Cylinders)



Model	C	ØA Max.	For Cylinder
ST-06	120	Ø60	SSPC-01
ST-07	170	Ø80	SPC-01, SPC-02
ST-07S	170	Ø85	SPC-02S, SPC-70
ST-08	160	Ø130	SPC-03, SPC-04
ST-09	190	Ø150	SPC-05

Hydraulic Steering Systems

Steering Parts

Steering Wheel

SW-260
알루미늄 다이캐스팅
(AL-Die casting)
(Ø260)

SW-300
알루미늄 다이캐스팅
(AL-Die casting)
(Ø300)

SW-350S
스테인레스
(Stainless)
(Ø350)

Steering Stand (Helm Pump, Steering Unit Inside)

MLT/PLT-100
Plate

MS/PS-01
Simple Stand

MS/PS-02
Desk Stand

MS/PS-03
Long Stand

MLT/MS-Stand (For Helm Pump)

PLT/PS-Stand (For Steering Unit)

Rudder Angle Indicator

SG-01
Panel Type
(스탠드 일체형)

SG-02
For Joystick Remote
(조이스틱 리모트용)

SG-03
For Dial Remote
(다이얼 리모트용)

SG-04
For Auto Pilot
(오토파일럿용)

G-01
Standard
(For SG-01)

G-02
Standard (For G-03)
(최대각 및 중심각 조정가능)

GW-01
GW-02
For Wall Mounted
(조타실 & 타기실)

Standard Set

SG-01
Rudder Angle
Indicator

SCC-01
SCC-03
Rudder Angle
Sensor

Wall Mount Set

Wall Mounted
Rudder
Angle Indicator

SCC-01-TWO
SCC-03-TWO
Rudder Angle
Sensor

Oil Pump

A13 / A18

B18 / B24

Model	Displacement	Max. R.P.M.
A13	13ℓ/min at 1,000 rpm	3,500
A18	18ℓ/min at 1,000 rpm	3,500
B18	18ℓ/min at 1,000 rpm	3,400
B24	24ℓ/min at 1,000 rpm	2,800

Oil Pump Set

OP-A13
OP-A18

OP-B18
OP-B24

특징 (Feature)

A Type : 오른방향 회전 (R/V only right)
릴리프 내장형(Relief inside)

B Type : 양방향 회전 (R/V Both ways)
릴리프 외장형 (Relief outside)

Power Pack

Option

DSV-01

Model	Motor Power	Oil Pump	Oil Capacity
PP-6X	5 HP	OP-B18	100ℓ
PP-8X	7.5 HP	OP-B24	115ℓ

Oil Pump & Electric Clutch (For Oil Pump Driving)

Option

Model	Pump	Pulley	Power
EC-16-18	18ℓ/min	7"×B Type	DC 24V
EC-16-24	24ℓ/min		

Oil Tank

Model	Oil Capacity	Size (H×W×D)
OT-01	20ℓ	382×320×180
OT-02	28ℓ	450×380×180
OT-03	40ℓ	450×400×250

Electric Panel

Starter Panel
(CSP-01)

Alarm Box
(CAB-01)

Relay Box
(CRB-01)

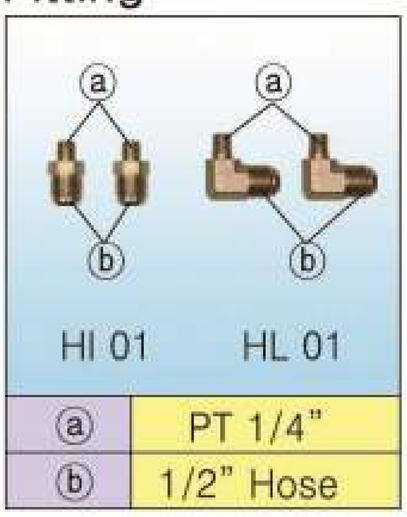
Hydraulic Steering Systems

Helm Pump & Steering Unit

Helm Pump (Manual)

Hose & Oil

Fitting



ⓐ	PT 1/4"
ⓑ	1/2" Hose

Specifications (Helm Pump)

Model	Displacement	Max. Pre.
SSP-25	25 cc	70 Bar
SSP-35	35 cc	70 Bar
SSP-45	45 cc	70 Bar
SSP-50	50 cc	70 Bar
※SSP-80	80 cc	70 Bar
※SSP-120	120 cc	70 Bar
※SSP-150	150 cc	70 Bar

※은 수입품임.(Mark '※' is imported.)

Select (Helm Pump)

Standard Heavy

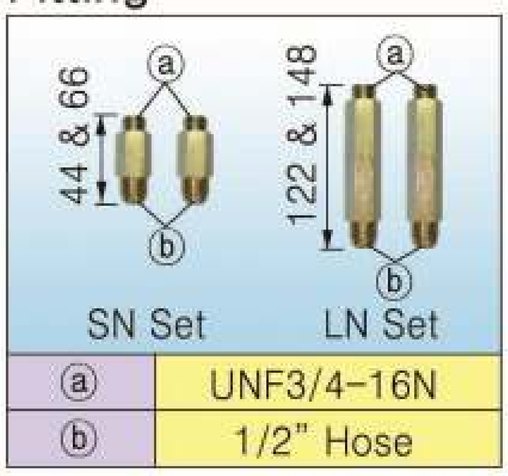
Cylinder			Helm Pump (cc/rev) & Turns lock to lock (휠바퀴수)						
Type	Model	Volume (cc)	25	35	45	50	80	120	150
Direct	ID-100	98	3.9	2.8					
	SDC-98	188		5.4	4.2				
	SDC-99	241		6.9	5.4				
	SSDC-01	250		7.1	5.6				
	SDC-01	333			7.4	6.7			
	SDC-02	487			10.8	9.7			
Rotary	SRC-00	235		6.7	5.2				
	SRC-01	427			9.5	8.5			
Double	SSPC-01	547				10.9	6.8		
	SPC-01	728				14.6	9.1		
	SPC-02	1,191					14.9	9.9	
	SPC-02S	1,350						11.2	9.0
	SPC-70	1,648						13.7	11.0
	SPC-03	2,426						20.2	16.2

※휠바퀴수 계산공식 (Wheel Turns formulars calculation) : Cylinder Volume (cc) ÷ Helm Pump (cc) = Wheel Turns (rev)

Steering Unit (Power)

Flange & Shaft

Fitting



ⓐ	UNF3/4-16N
ⓑ	1/2" Hose

Specifications (Steering Unit)

Model	Displacement	Max. Pre.
SU-60	60 cc	70 Bar
SU-80	80 cc	70 Bar
SU-100	100 cc	70 Bar
SU-120	120 cc	70 Bar
SU-160	160 cc	70 Bar
SU-240	240 cc	70 Bar
SU-320	320 cc	70 Bar

Select (Steering Unit)

Standard

Cylinder			Steering Unit (cc/rev) & Turns lock to lock (휠바퀴수)						
Type	Model	Volume (cc)	60	80	100	120	160	240	320
Direct	SSDC-01	250	4.2	3.1	2.5				
	SDC-01	333		4.2	3.3	2.8			
	SDC-02	487			4.9	4.1	3.2		
Rotary	SRC-00	235	3.9	2.9	2.3				
	SRC-01	427		5.3	4.3	3.5			
Double (T=Two Rudder)	SSPC-01 / SSPC-01T	547			5.5	4.6	3.4		
	SPC-01 / SPC-01T	728			7.3	6.1	4.5		
	SPC-02 / SPC-02T	1,191				9.9	7.4	4.9	
	SPC-02S / SPC-02ST	1,350				11.3	8.4	5.6	
	SPC-70 / SPC-70T	1,648					15.2	6.8	5.2
	SPC-03 / SPC-03T	2,426						10.1	7.6
	SPC-04 / SPC-04T	3,864						16.1	12.1
	SPC-05 / SPC-05T	6,682							20.9

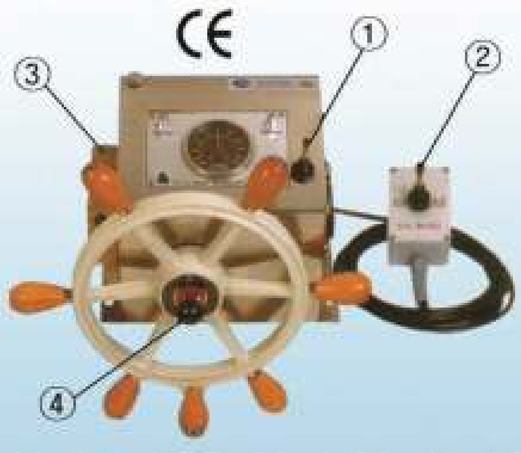
※휠바퀴수 계산공식 (Wheel Turns formulars calculation) : Cylinder Volume (cc) ÷ Steering Unit (cc) = Wheel Turns (rev)

Hydraulic Steering Systems

Manual Remote Stand & Power Remote Device

Manual Remote Stand 실용신안특허 제0239433호

MRD-J Type

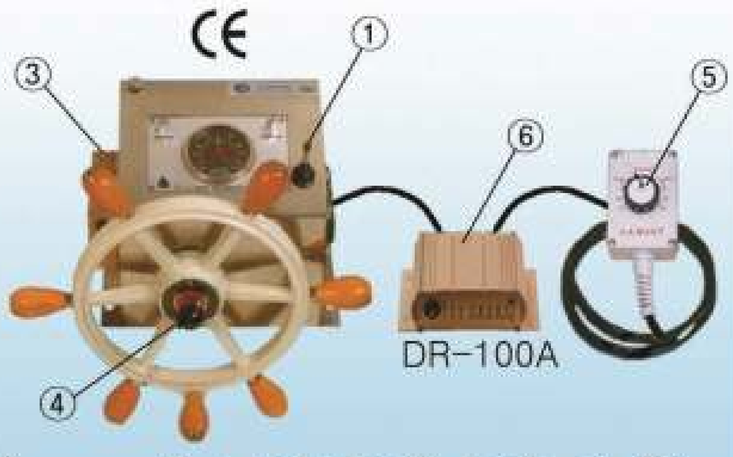


Model : MRD-02-J-35, 45, 50

Notes
1. 전원(Power) : Battery DC24V
2. 정격휴즈 (Fuse) : 10A

① 항해용 리모트 (For Sailing Joystick S/W)
② 작업용 조이스틱 리모트 : J-10
(For Working Joystick Remote)
③ 전자 콘트롤 박스 : MT-V2 (Electric Control Unit)
④ 변환레버 (Change Knob)
⑤ 작업용 다이얼 리모트 : R-10
(For Working Dial Remote)
⑥ 전자 콘트롤 박스 : DR-100A (Electric Control Unit

MRD-D Type



Model : MRD-02-D-35, 45, 50

Helm Pump (Manual Remote Stand : MRD-J Type / MRD-D Type)

Model (Set)	Cylinder		Turns lock to lock (Wheel Turns)			Turns lock to lock (Time;Sec)		
	Model	Volume (cc)	Helm Pump (cc/rev)			Helm Pump (cc/rev)		
			35	45	50	35	45	50
MRD-D50-J / MRD-D50-D	SDC-01	333		7.4	6.7		4.7	4.3
MRD-D63-J / MRD-D63-D	SDC-02	487		10.8	9.7		6.7	6.2
MRD-R63-J / MRD-R63-D	SRC-00	235	6.7	5.2		4.2	3.3	
MRD-R80-J / MRD-R80-D	SRC-01	427		9.5	8.5		6.0	5.4
MRD-DA50-J / MRD-DA50-D	SSPC-01	547		12.2	10.9		7.7	7.0

Manual Steering Gear Power Remote Device

MRP-J Type

Notes
1. 전원 (Power) : Battery DC24V
2. 모터 (Motor) : DC24V, 300W, 1750rpm
3. 펌프 (Pump) : Max 3.2ℓ/min

① 파워팩 : HRP-75 (Power Pack - DC24V)
② 전자 콘트롤 박스 : MT-V15
(Electric Control Unit) Box)

MRP-D Type

Manual Steering Gear Power Remote Device (MRP-J Type MRP-D Type)

Model (Set)	Cylinder		Turns lock to lock (Wheel Turns)			Time;Sec
	Model	Volume (cc)	Helm Pump (cc/rev)			HRP-75
			35	45	50	53.5 cc/rev
MRP-SD50-J / MRP-SD50-D	SSDC-01	250	7.1	5.6		4.6
MRP-D50-J / MRP-D50-D	SDC-01	333		7.4	6.7	6.2
MRP-D63-J / MRP-D63-D	SDC-02	487		10.8	9.7	9.1
MRP-R63-J / MRP-R63-D	SRC-00	235	6.7	5.2		4.4
MRP-R80-J / MRP-R80-D	SRC-01	427		9.5	8.5	7.9
MRP-DA50-J / MRP-DA50-D	SSPC-01	547			10.9	10.2

Power Remote Device

PR-200-J Type

DSV-01
DSV-03

J-10

Notes
1. 유량조절과 압력보상, 오일온도 급상승 방지시스템을 적용, 장비의 고장을 방지하여 긴 수명을 보장한다.
2. 다이알 리모트 콘트롤러에서 라다각을 확인하면서 조타를 할 수 있다.
3. 유량 조절 밸브로 0초에서 18초까지 자유롭게 전타 속도 조정 가능하다.

Notes
1. To the safety sailing applied folw control system and pressure compensation. These are for protection system from sudden rising of oil temperature.
So we warranty longer life of equipment.
2. Can be checked Rudder Angle from Dial Remote Controller.
3. Can be adjustment time of turns lock to lock from 0 second to 18 second by flow control valve.

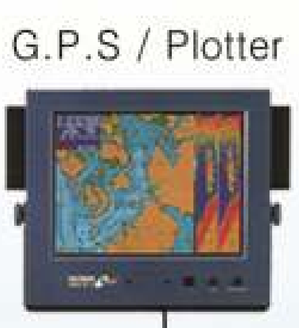
PR-200-D Type

DSV-01
DSV-03

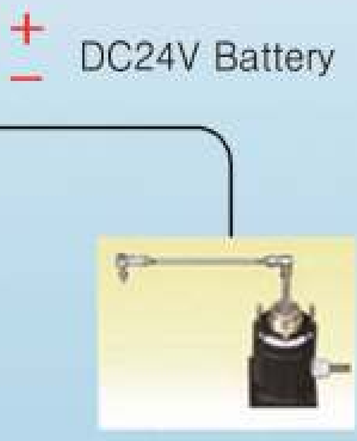
Hydraulic Steering Systems

Auto Pilot

Auto Pilot

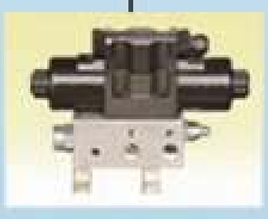


Control Unit
(DR-3000)



DC24V Battery

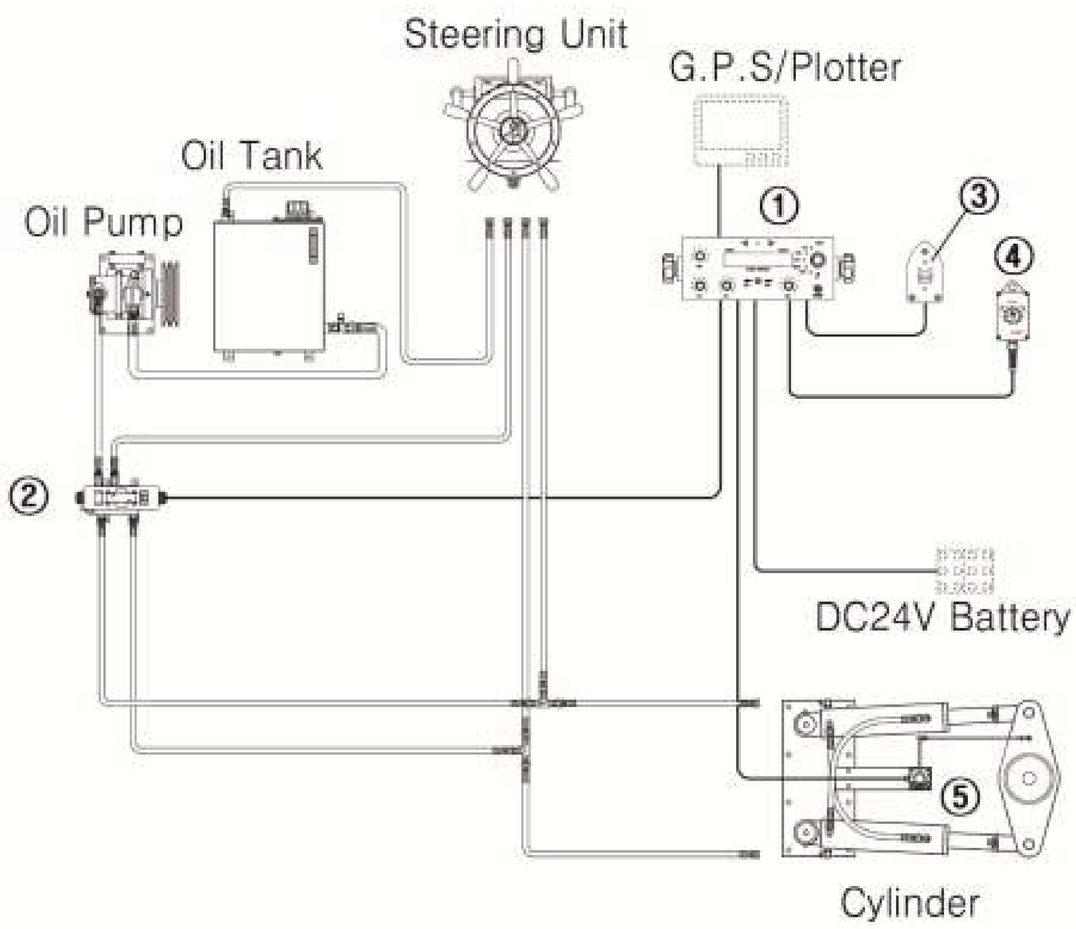
Earth Magnetic
Detection Sensor
(EMDS-01)



Solenoid Valve & Block
(DSV-01)

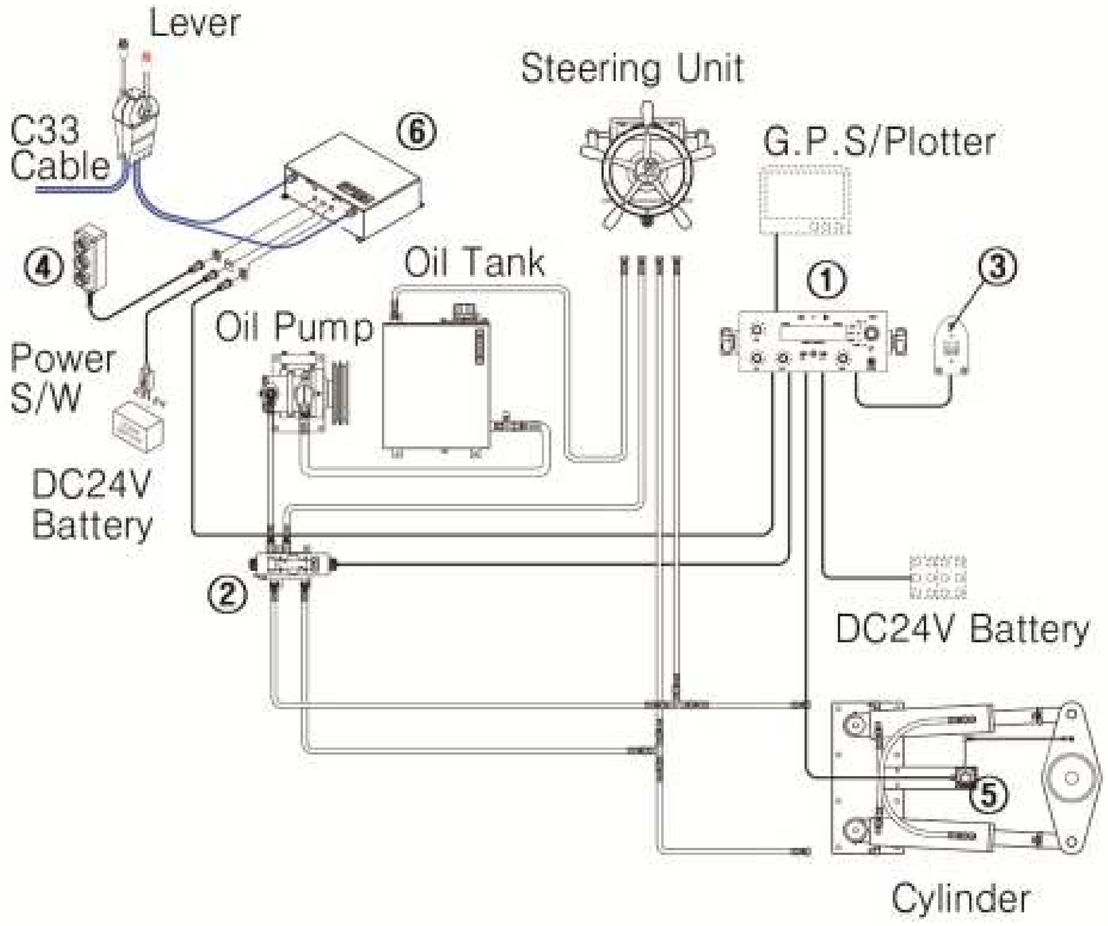
Rudder Angle Sensor
(SCC-03)

Auto Pilot & Power Steering System



Components
① Control Unit : DR-3000
② Solenoid Valve & Block : DSV-01(DC24V)
③ Earth Magnetic Detection Sensor : EMDS-01
④ Remote Controller : R-10
⑤ Rudder Angle Sensor : SCC-03

Engine Remote + Auto Pilot & Power Steering System



Components
① Control Unit : DR-3000
② Solenoid Valve & Block : DSV-01(DC24V)
③ Earth Magnetic Detection Sensor : EMDS-01
④ Remote Controller : R-30
⑤ Rudder Angle Sensor : SCC-03
⑥ Engine Remote Actuator : TCB-100

Hydraulic Steering Systems

Electric Steering System & Diagram

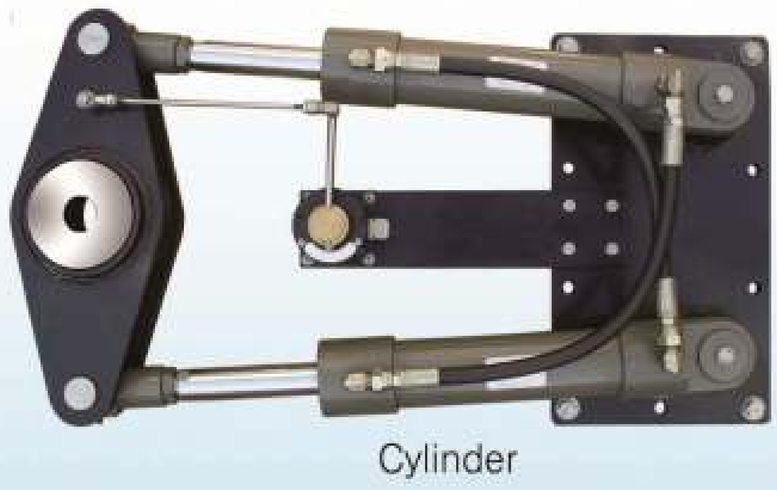
Electric Steering System


Joystick Remote

Electric Stand


Wall Mounted Rudder Angle Indicator (For Wheel House)


Power Pack


Cylinder

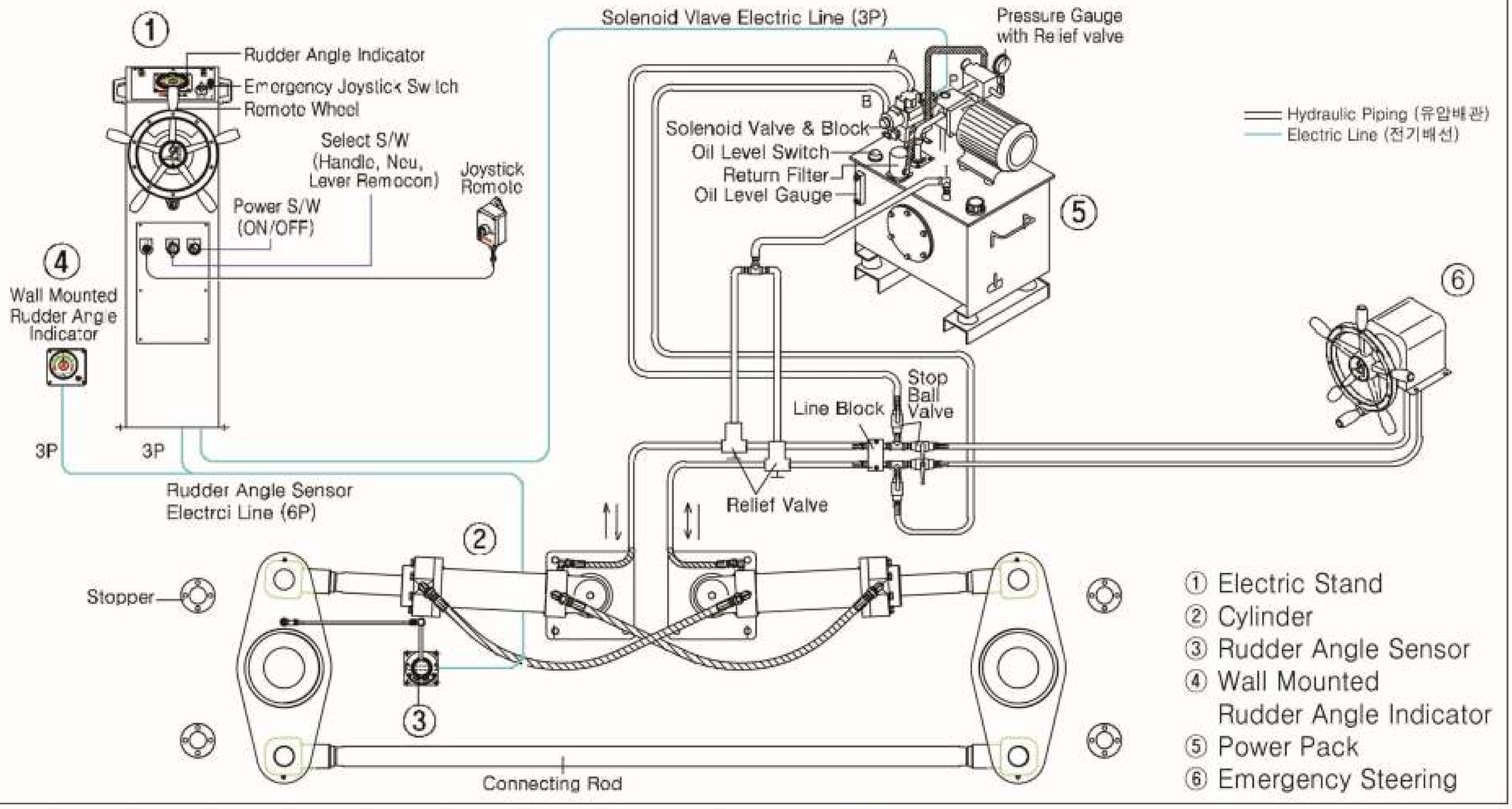
Starter Panel

Alarm Box

Relay Box

Electric Panel

Electric Steering System Diagram



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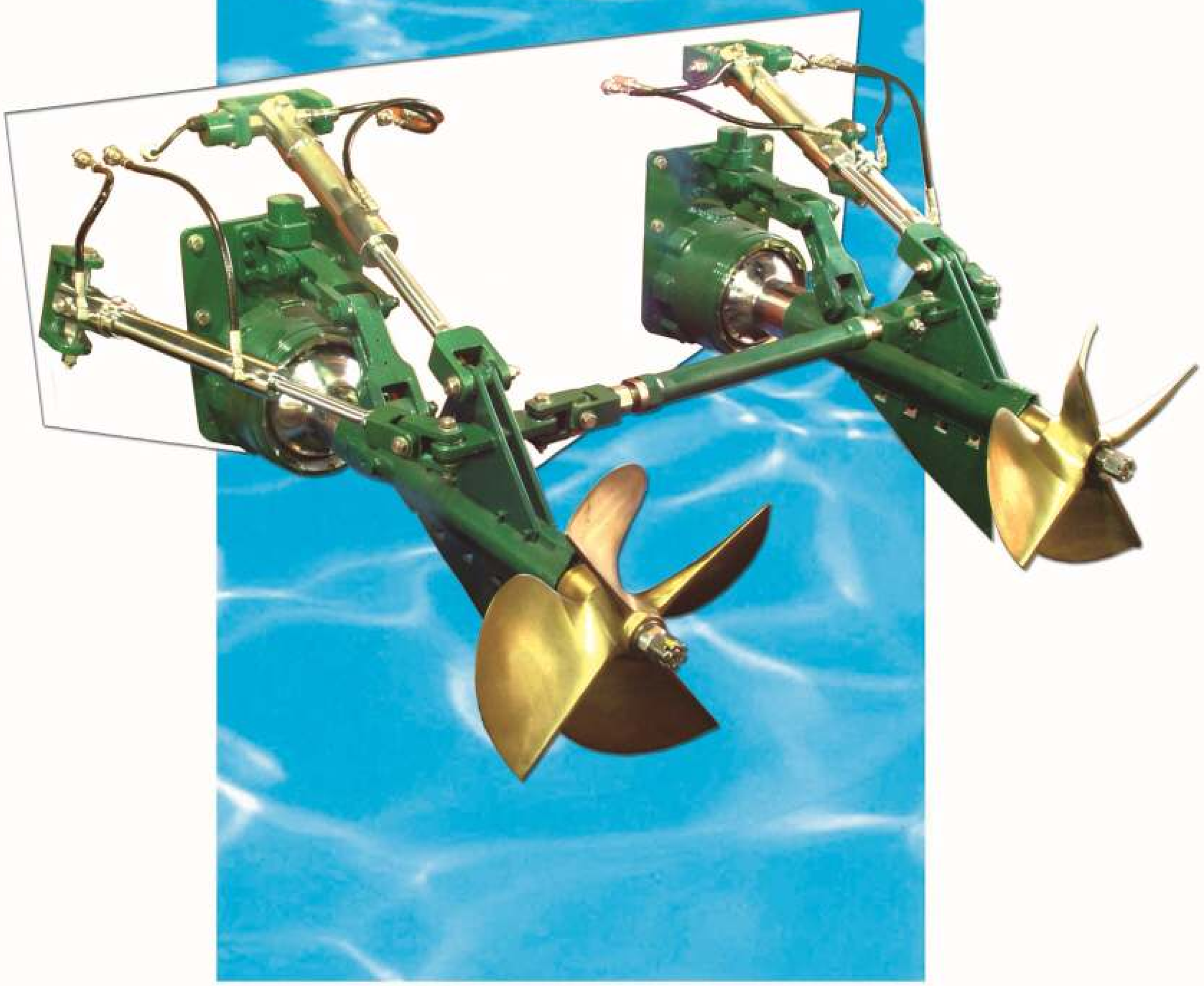
S. A. M-Tech

Ship Accessories & Marine Technology



ISO 9001:2008 인증 | 유럽(CE)인증 | 선박안전기술공단(KST) 인증 | ABYC MEMBER | 한국선급(KR) 인증 | 러시아선급(RS) 인증

Sky In-line Stern Drive System

Special Feature & System Components

◆ 특 징

- 축계장치보다 15~20% 속도 증가
- 낮은 수심에서도 자유로운 항해
- 전제품 특수소재로 부식 방지 및 완벽한 내구성
- 유압조타 및 유압트림장치로 부드러운 작동
- 간단한 구조로 유지보수비용 대폭 절감
- 간단한 설치
- 중, 소형 선박의 선외기 수준 고속화 실현
- 보트 2배길이의 U턴

시장을 리더하는 기업 (주)에스에이엠텍은

① 지금까지 빠른 속도를 요구하는 선박에서 사용되어 온 선외기 (Outboard) 또는 스턴드라이브 (Stern drive) 보다 견고하고 빠른 속도를 얻을 수 있는 추진장치인 스카이 수면 운전 추진장치를 개발하여 폐사 시험운전선에 장착 한 후 다양한 현장 실험을 하여 자신있게 출시하는 제품으로 고객의 욕구를 완벽하게 충족시킬 것이라 확신한다.

② 스카이 인라인 스턴드라이브는 간단한 구조와 전제품 특수메탈 사용으로 부식방지 및 유지보수비가 대폭 절감한 완벽한 내구성을 자랑하는 해양 혁명시대에 걸맞는 추진장치임. (참고, 선외기 또는 스턴드라이브는 연간 200~600만원 정도 유지보수비용 소요)

③ 디젤엔진으로 고속추진을 할 수 있으므로 연간 연료비 절약이 매우 크다.(참고, 선외기 대비 약 7.6배 절약)

◆ Special Feature

- 15~20% more rapid speed than the shafting device.
- Free sailing is possible even at the shallow depth.
- All the products are made of special material, provide anti-corrosion and strong durability.
- Smooth operation due to hydraulic steering trim device.
- Allow you to cut maintenance and repair costs drastically due to the simple structure.
- The installation is simple.
- High speed is realized the same as the outboard level of medium and small boats.
- In U-Turn, need double boat lenght.

S. A. M-Tech the leading the market.

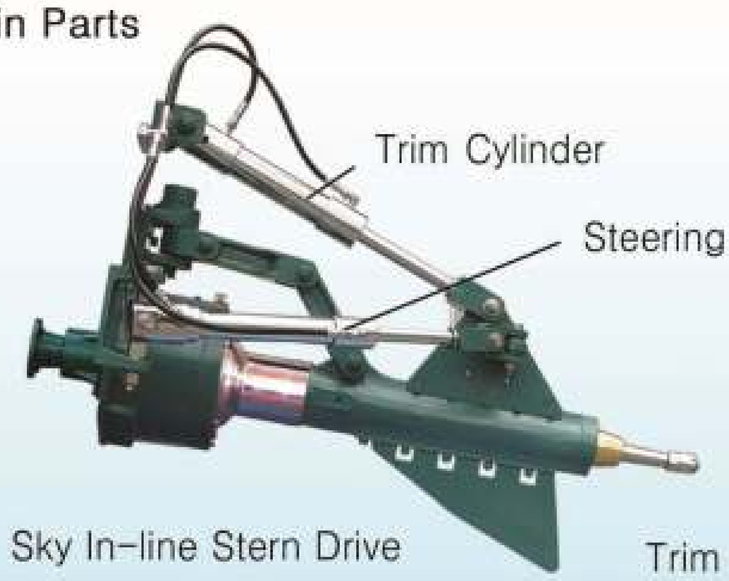
① We have developed a SKY surface drive propelling device (Sky In-line Stern Drive System) swifter than the outboard or stern drive used at boats of needing rapid speed up to now, and mounted the device on our test boat for four years in field experiments. The product is eventually being marketed with our pride, so we are confident that it can completely meet the needs of customers.

② Sky In-line Stern Drive has a simple structure and is made of completely special metal, therefore It has a strong durability due to anti-corrosion and that allow you to reduce drastically maintenance and repair expenses It's a suitable propelling device for the marine revolution era. (For your reference, as to the outboard or stern drive, about US $2,000 ~ $6,000 of maintenance and repairing expense may be needed yearly.)

③ As it can propel with high speed by a diesel engine, the yearly fuel consumption expense saving is very much. (For your re-ference, about 7.6 times expense saving is possible, comparing to the outboard.)

◆ 구성품 (System Components)

Main Parts



Sky In-line Stern Drive

Trim Power Pack

(AC 220/380V)
(DC 24V)

Universal Joint

(For Gearbox and Drive Connecting)

Steering Parts (For Engine Driving Oil Pump)

Wheel

Steering Unit

Oil Pump

(Driven by Engine)

Oil Tank (10ℓ)

Oil Cooler

(Cooling of Oil)

Steering & Trim Gauge

Gear Oil (#90)

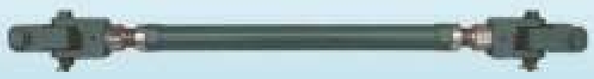
Assistant Oil Tank

기타구성품 (Other Parts)

Propeller

(Surface Piercing)

Tie Bar



(For Twin Engine)

Engine Mount

Steering Remote Set

Steering Dial Remote

Solenoid Valve Block

Sky In-line Stern Drive System

Model Selection Method & Dimensions & Specifications

◆ 귀하에게 맞는 모델이 어떤 것인지를 결정하는 방법

1. 엔진토크 계산

모든 엔진 제조사들은 엔진 파워 곡선을 제공합니다.
여기서 최대 출력 및 최대 회전을 확인하세요.
예) 360마력 @2800 rpm
토크 T(kg·m)=716.2×출력(마력)÷회전(분량회전수)
이 경우 엔진 토크는
T(kg·m)=716.2×360(마력)÷2800(분량회전수)=92.08 kg·m

2. 구동 입력 토크계산

추진 장치에서 사용될 토크는 입력 토크이기 때문에 토크는 기어비율로 공급해주어야 합니다.
예) ① 기어비율 1.5 : 1 T = 92.08 kg·m × 1.5 = 138.12 kg·m
※ 모델은 SKY-300 해당
② 기어비율 2.0 : 1 T = 92.08 kg·m × 2.0 = 184.16 kg·m
※ 모델은 SKY-500 해당

3. 아래 표에서 적합한 모델을 선택하세요.

Model	SKY-180	SKY-250	SKY-300A	SKY-500
Torque (kg·m)	74.48	102.87	153.55	271.71

4. 선체형태

선체모양은 플레닝 형태여야 합니다.
① 단면체(Monohedron) ② 휜(Warped) 형태

5. 사용엔진

① 디젤엔진 ② 가솔린 엔진 ③ 터빈엔진

6. 엔진마력(출력)과 선체 무게 비율

기존 장치보다 속도를 향상시키기 위해서는 목표속도는 25노트 이상이어야 하며, 출력 / 무게 비율은 톤당 50마력 이상이어야 합니다.

◆ HOW TO DETERMINE WHICH MODEL is SUITABLE FOR YOUR APPLICATION.

1. ENGINE TORQUE CALCULATION.

All engine manufacture supply the engine power curve, look at the maximum power and maximum revolution.
example) 360 horse power @2800 rpm
The torque is
T(kg·m)=716.2×Power(hp)÷Revolutions(revs/min)
In that case the engine torque is :
T(kg·m)=716.2×360(hp)÷2800(revs/min)=92.08 kg·m

2. DRIVE INPUT TORQUE

The torque to be used for drive selection is the input torque, so the engine torque has to be MULTIPLIED by the gear ratio.
example) ① Gear ratio 1.5 : 1
Input torque is : T = 92.08 kg·m × 1.5 = 138.12 kg·m
※ 138.12 kg·m is applied Model SKY-300 shown as below;
example) ② Gear ratio 2.0 : 1
Input torque is : T = 92.08 kg·m × 2.0 = 184.16 kg·m
※ 184.16 kg·m is applied Model SKY-500 shown as below;

3. CHOOSE ONE OF SUITABLE MODEL FOR YOUR VESSEL

Model	SKY-180	SKY-250	SKY-300A	SKY-500
Torque (kg·m)	74.48	102.87	153.55	271.71

4. HULL TYPE OF VESSEL

The hull type must be planning
① Monohedron type ② Warped type

5. THE ENGINE (power source)

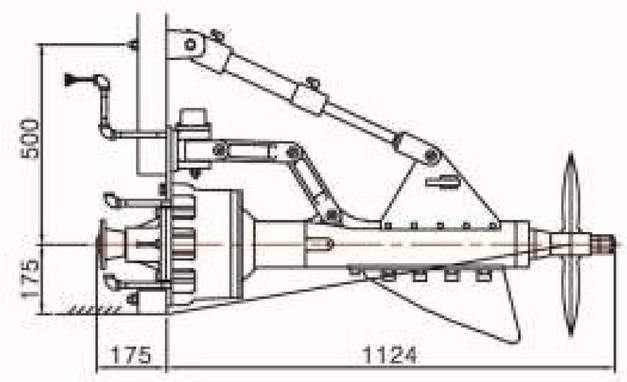
① Diesel engine ② Gasoline engine ③ Turbine engine

6. POWER / WEIGHT RATIO

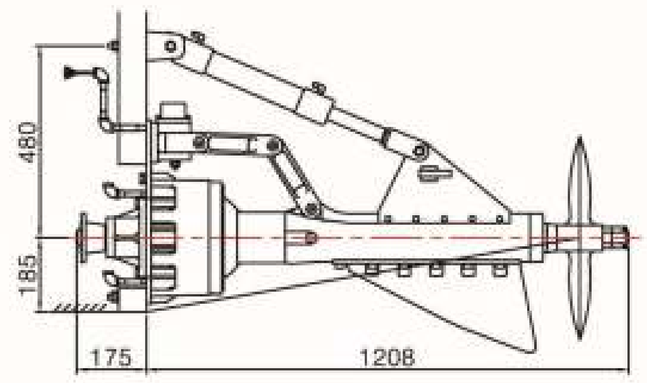
To improve speed, compared to conventional propulsion, the targeted must be above 25 knots and the power / weight ratio must be above 50 horse power pre ton.

◆ 치 수 (Dimensions)

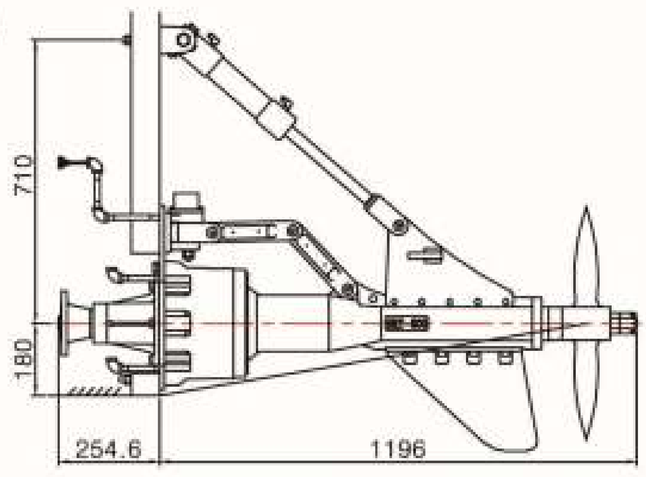
SKY-180



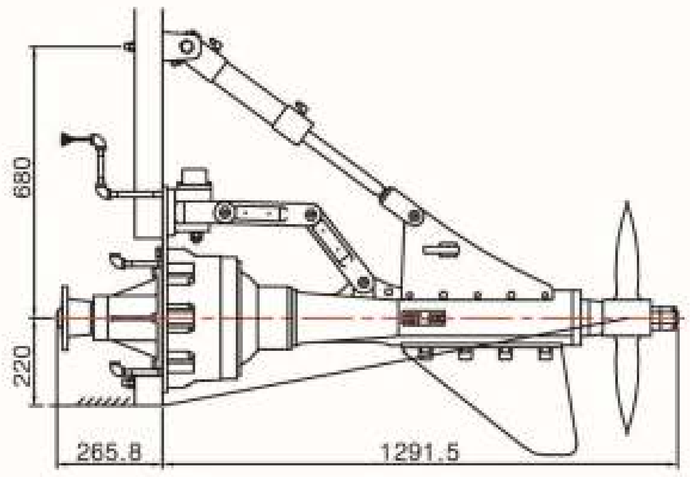
SKY-250



SKY-300A



SKY-500



◆ 사 양 (Specifactions)

Model		SKY-180	SKY-250	SKY-300A	SKY-500
Torque (kg-m)		74.48	102.87	153.55	271.71
Trim Angle	Up	19.0 °	19.0 °	19.0 °	19.0 °
	Down	9 °	9 °	9 °	9 °
Steering Angle		23° + 23°	23° + 23°	23° + 23°	23° + 23°
Spline Size (mm)		33.0	36.7	42.0	50.8
Full Set Weight		182 Kg	210 Kg	227 Kg	320 Kg

Sky In-line Stern Drive System

Installed Boats & Package System

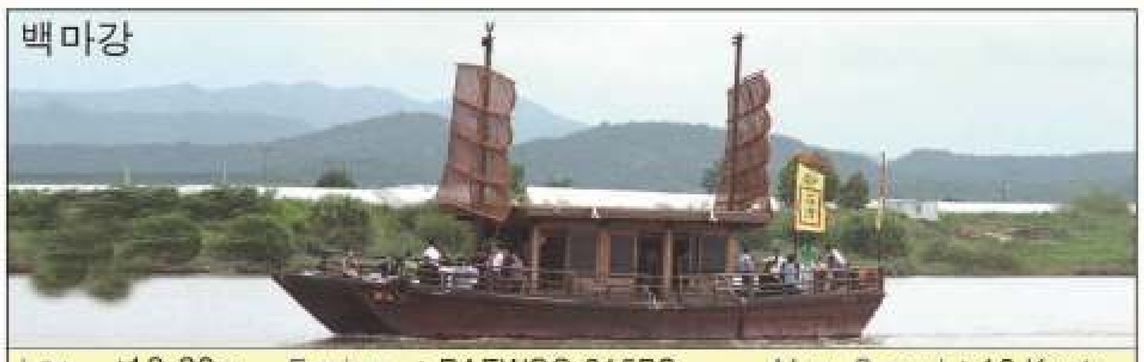
■ Installed Boats

LOA : 9.00m
LWL : 7.40m
Beam : 2.21m
Depth : 0.87m
Engine : 145HP×3,300 R.P.M.
Clutch : ZF 63A 1.56:1
Drive : SKY-180
Steering : Power
Max. Speed : 29 Knots
Ton : 1.77 Ton

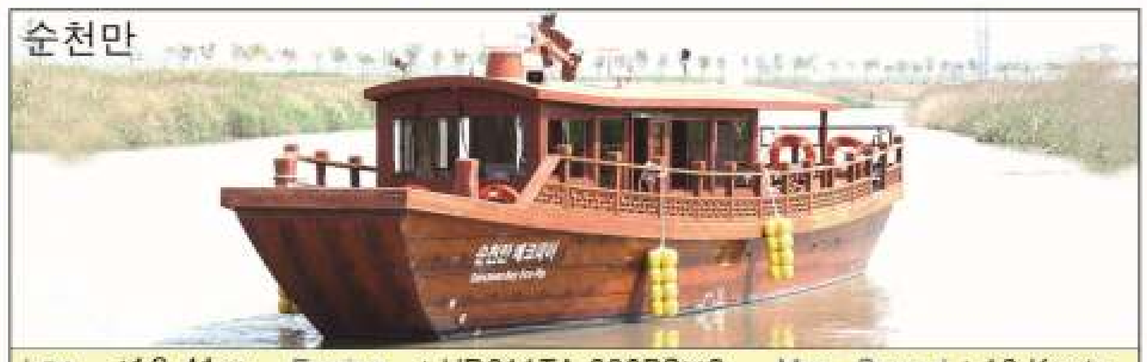
LOA :11.98m
LWL :10.50m
Beam : 4.20m
Depth : 1.00m
Engine : 145HP×3,300 R.P.M.
Clutch : ZF 63A 1.56:1
Drive : SKY-180
Steering : Power
Max. Speed : 16 Knots
Ton : 4.98 Ton

LOA :10.50m
LWL : 9.47m
Beam : 2.60m
Depth : 1.08m
Engine : 360HP×2,800 R.P.M.
Clutch : ZF 220 1.5:1
Drive : SKY-300
Steering : Power
Max. Speed : 29 Knots
Ton : 4.07 Ton

LOA :13.00m
LWL : 9.34m
Beam : 2.70m
Depth : 1.00m
Engine : DAEW00 360PS
Clutch : ZF 285A 1.28:1
Drive : SKY-400
Steering : Power
Max. Speed : 29 Knots
Hull Material : Aluminum
Full Displacement (Ton)
-Right : 8, -Heavy : 9

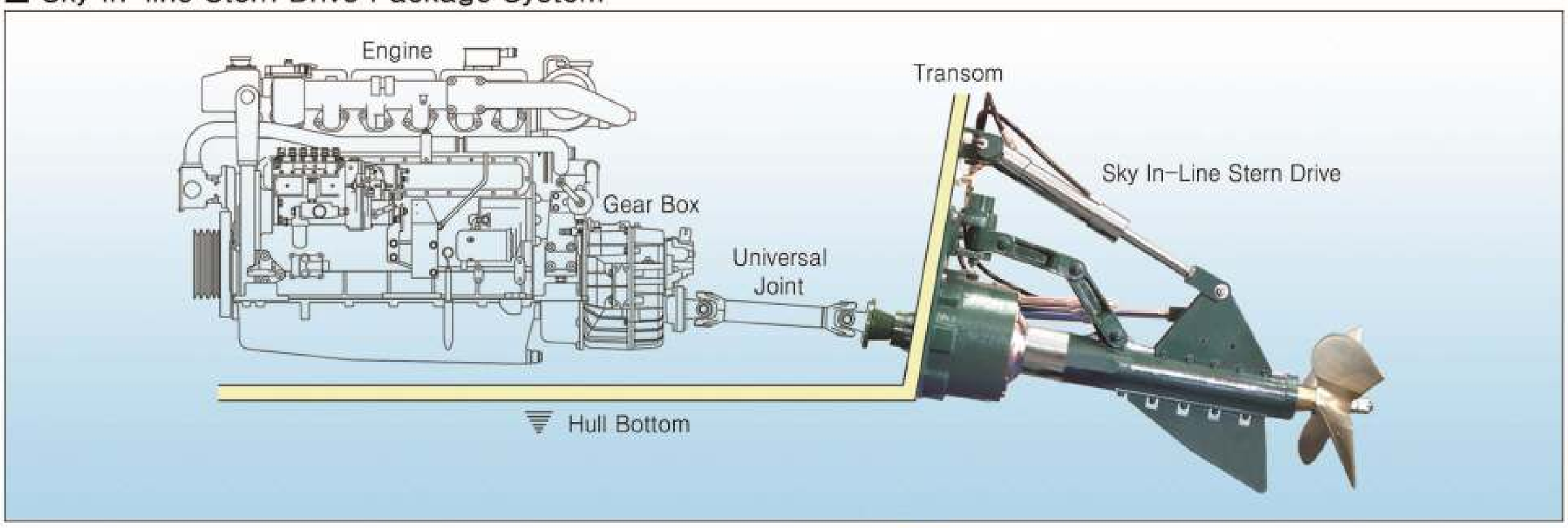


LOA :19.80m
LWL :18.10m
Beam : 4.50m
Depth : 1.20m
Engine : DAEWOO 315PS
Clutch : ZF 285A
Drive : SKY-400
Steering : Power
Max. Speed : 12 Knots
Hull Material : WOOD
Full Diaplacement
: 21 Ton



LOA :16.41m
LWL :14.70m
Beam : 3.90m
Depth : 1.00m
Engine : HD611TA 330PS×2
Clutch : KGM400, 2:1
Drive : SKY-500
Steering : Power
Max. Speed : 13 Knots
Hull Material : F.R.P.
Full Diaplacement(Ton)
-Right : 12, -Heavy : 16

■ Sky In-line Stern Drive Package System



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