



# S. A. M-Tech

*Ship Accessories & Marine Technology*



ISO 9001 : 2008



CERTIFICATE  
OF EUROPE



KOREA SHIP SAFETY  
TECHNOLOGY AUTHORITY



ABYC MEMBER



KOREA REGISTER  
OF SHIPPING



RUSSIAN MARITIME REGISTER  
OF SHIPPING





시장을 리더하는 S.A. M-Tech Co., Ltd.

### 브랜드의 광고를 오직 제품으로 말하는 기업

주식회사 에스에이엠텍은 1981년 설립된 이래 해양장비 및 선박 액세서리 제품의 제조와 유통에 오랜 역사를 가지고 있습니다.

모든 제품은 철저한 품질 관리 및 오랜 기간의 R&D를 통해 최고 수준의 품질을 자랑하며, 주요 부분은 염분 및 오염으로부터 부식을 예방하는 재질을 사용하여 긴 수명을 보장합니다. 주식회사 에스에이엠텍이 제조 및 공급하는 주요제품들은 세계의 많은 해양관련 장비제조 업체 및 사용자들에게 항상 새로운 만족감을 느끼게 합니다.

#### 주식회사 에스에이엠텍은

“품질은 최고로, 고객은 제일로”라는 슬로건을 통해 항상 고객들에게 최고의 품질과 합리적인 가격으로 제품을 공급하고 있습니다.

### We Let the Quality of Our Product Speak for Itself.

Since our establishment in 1981, S.A. M-Tech Co., Ltd. has been advancing forward to become a world's renowned manufacturer and distributor in Ship Accessories and Marine Equipments.

Through long-term Research & Development and strict quality management, our products boast highest level of quality. Furthermore, our products secure high durability as the material inputs are corrosion-free from salinity and pollution. All of our products are qualified for International Standard and has been earning great reputation among many buyers across the globe.

#### Under our slogan

“The Best Quality and the Best Service for the Customer” S.A. M-Tech Co.,Ltd. strives its best to satisfy customers with our top quality products with most reasonable price.

## 회사연혁

## Company History

세두기계 설립	1981. 08.	Sedu Machinery was Established
에스에이 기계 상호변경 및 확장이전 (서울 구로구 신도림동 276-59호)	1993. 10.	Company name changed to S.A Machinery and moved to a larger facility in Seoul
컨트롤 레버 SB-TYPE 개발	1994. 01.	Developed & Commercialized SB-Type Control Lever
수동 유압조타기 개발 (K.F 승인)	1994. 08.	Developed & Commercialized Manual Hydraulic Steering System (K.F. Approved)
컨트롤 레버 ST-TYPE 개발	1995. 01.	Developed & Commercialized ST-Type Control Lever
열교환기 확관 기술 습득	1995. 12.	Acquired Tube Expanding Technique for Heat Exchanger
기동 유압 조타기 개발 (K.F 승인)	1996. 02.	Developed & Commercialized Power Hydraulic Steering System (K.F Approved)
에스에이마트 상호 변경	1996. 09.	Company name changed to S.A. Mart.
조선기자재 협회 등록	1996. 12.	Registered as an Official Member of Association of Shipbuilding Material
유압 헬름펌프 개발	1996. 12.	Developed & Commercialized Hydraulic Helm Pump
특허청 상표등록 (제354160호)	1997. 01.	Registered Trademark from the Korean Intellectual Property Office
유압 조타기 러시아 선급 협회 승인	1998. 01.	Approval of classification on Hydraulic Steering System by Russian Maritime Register of Shipping
워터젯 한국 독점 판매권 계약 (North American Marine Jet)	1998. 02.	Exclusive Sales Contract Signed with Water Jet (North American Marine Jet)
ABYC (미국보트요트협회) 정식 회원 등록	1998. 06.	Registered as Official Member of American Boat and Yacht Council (ABYC)
확장이전 (인천 남동공단)	1998. 12.	Moved to a larger facility in Incheon
엔진 컨트롤 케이블 개발	1999. 04.	Developed & Commercialized Engine Control Cable
실린더 CE 마크 획득 (EC00/00003)	2000. 01.	Acquired CE Mark for Cylinder (EC00/00003)
오토 파일럿 개발	2000. 03.	Developed & Commercialized Auto Pilot
엔진 리모트 시스템 개발	2000. 05.	Developed & Commercialized Engine Remote System
헬름펌프 CE 마크 획득 (BS EN ISO 10592-1995)	2000. 06.	Acquired CE Mark for Helm Pump (BS EN ISO 10592-1995)
회사확장 (증축)	2000. 12.	Company Expansion (Extension of Building)
선박용 자동 조타장치 실용신안등록	2001. 07.	Registered a Utility Model Right : Autopilot Steering System for Marine-use
주식회사 에스에이마트로 법인전환	2002. 01.	Converted to a Corporation (S. A. Mart Co., Ltd.)
ISO 9001:2009 인증획득	2002. 11.	Acquired ISO Certification (9001:2009)
스카이 인라인 스텐 드라이브 개발	2003. 09.	Developed & Commercialized Sky In-Line Surface Stern Drive
선미추진장치 실용신안등록 (스카이 인-라인 스텐드라이브)	2005. 03.	Registered a Utility Model Right : Sky In-Line Surface Stern Drive
아웃보드 실린더 개발 및 상용화	2006. 05.	Developed & Commercialized Outboard Cylinder
주식회사 에스에이엠텍으로 상호변경	2010. 07.	Company name changed to S.A. M-Tech Co., Ltd.
멀티 코어 케이블 개발 (SA-C33M)	2013. 11.	Developed & Commercialized SA-C33 Multi-core Engine Control Cable
수출 유망 중소기업 선정 - 중소기업청	2014. 06.	Appointed as a "Promising Export Firm" by Small & Medium Business Administration
선박용 조타 장치 (전기스탠드) 특허등록	2015. 04.	Registered a Patent Right : Marine Steering System (Electric-Type Stand)



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# *Engine Control Lever & Cables*





# Engine Control Lever

SB Type

## 수출로 인정받는 최고의 제품

- SB Type 컨트롤 레버는 Throttle (스로틀)용과 Clutch (클러치)용으로 만들어져 있다.
- Throttle (스로틀) 레버는 빨간 손잡이에 브레이크가 내장되어 있다. 이 손잡이를 오른쪽으로 돌리면 브레이크가 작동하고, 왼쪽으로 돌리면 해제된다.
- Clutch (클러치) 레버는 검은 손잡이로 전진, 중립, 후진의 위치가 감지되도록 만들어져 있다.

- SB Type Control Lever has two types : Throttle and Clutch.
- The Red-Knob on Throttle Lever has built-in brake. If the Red-Knob is turned clockwise, the brake is activated and when it is turned opposite direction, the brake is released.
- The Black-Knob on Clutch Lever is designed to detect forward, neutral, reverse position of the lever.

## Engine Control Lever

6



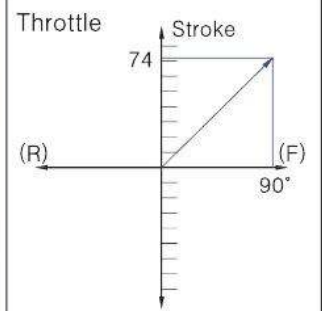
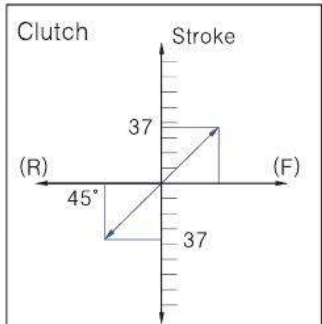
SB-T-Single  
(For Throttle)



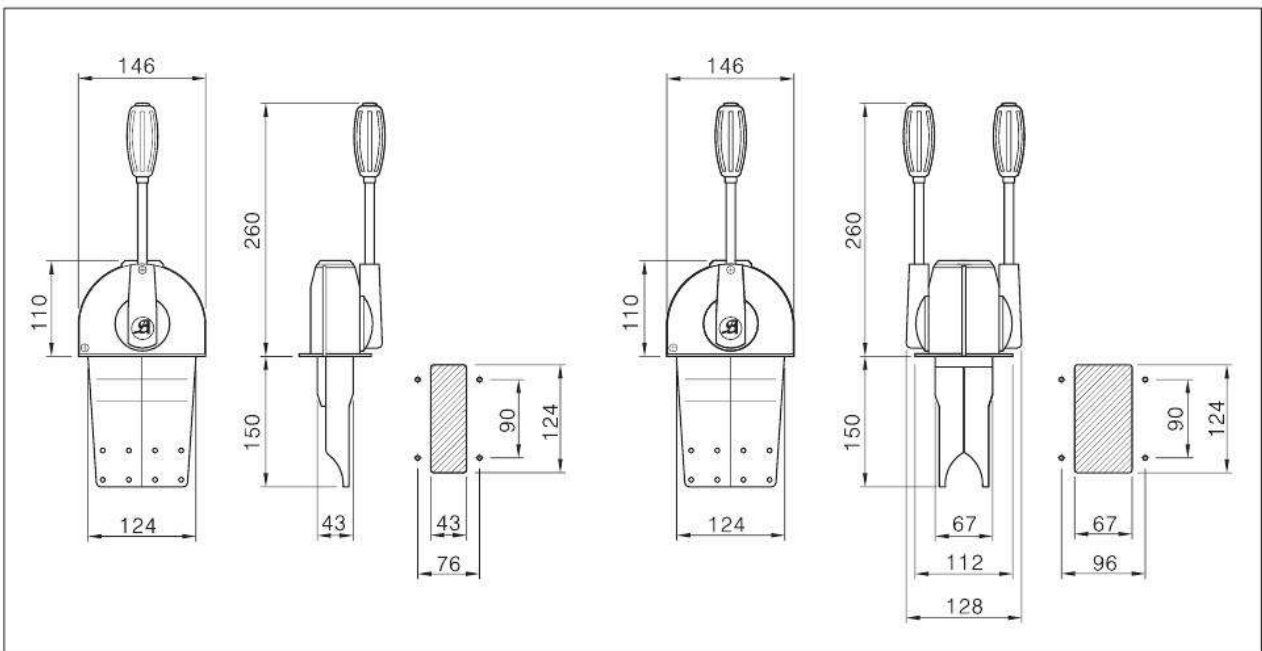
SB-C-Single  
(For Clutch)



SB-Twin  
(For Single Engine)



## Dimension







# Engine Control Lever

ST Type

## 수출로 인정받는 최고의 제품

- ST Type 컨트롤 레버는 안전 중립 스위치 장착으로 우발적인 기어 작동 예방이 가능하며, 쉽고 안전하게 사용 가능하다.
- Clutch (클러치)를 중립에서 위밍업 할 수 있다.

- With in-built neutral safety switch, ST-Type control lever is prevented from accidental gear engagement and allows easy and safe handling.
- Warming-up can be done when clutch is at neutral position.

\* 아래 표의 Throttle 각도는 레버 핸들의 중립 위치에 따라 변경 될 수 있다.

\* Neutral position for control handle can be changed accordance to the angle of throttle as suggested in below table.

## 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)

Option (Knob)

Red

Black

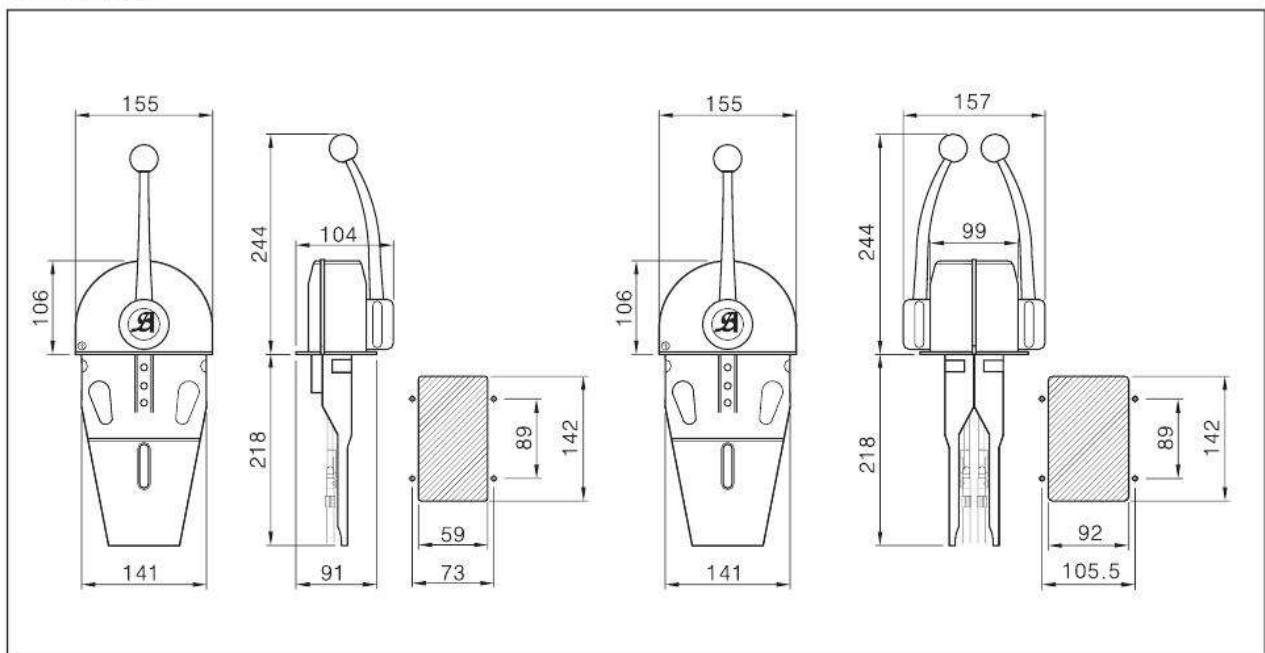
  

Option

■ 안전 중립 스위치  
(Neutral safety switch)

ST-9564

## Dimension





# Engine Control Lever

Side Mount Type

## 사이드 마운트 타입 최적의 제품

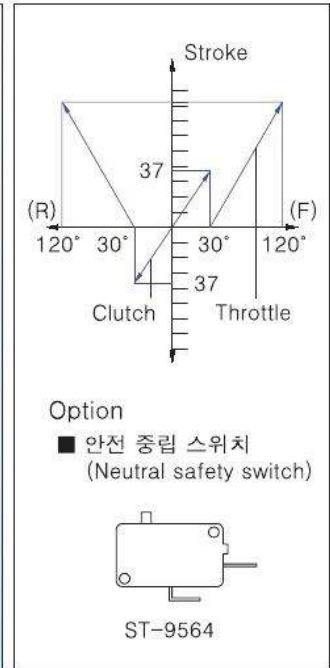
- SM-XL-S 레버를 사이드 마운트가 가능하게 디자인된 제품이다.
- 설치 시 핸들 손잡이만 밖으로 노출되어 심플한 디자인을 자랑한다.
- 안전 중립 스위치 장착으로 우발적인 기어 작동 예방이 가능하며, 쉽고 안전하게 사용 가능하다.
- Clutch(클러치)를 중립에서 워밍업 할 수 있다.

## Ideal Product for Side-Mount Type.

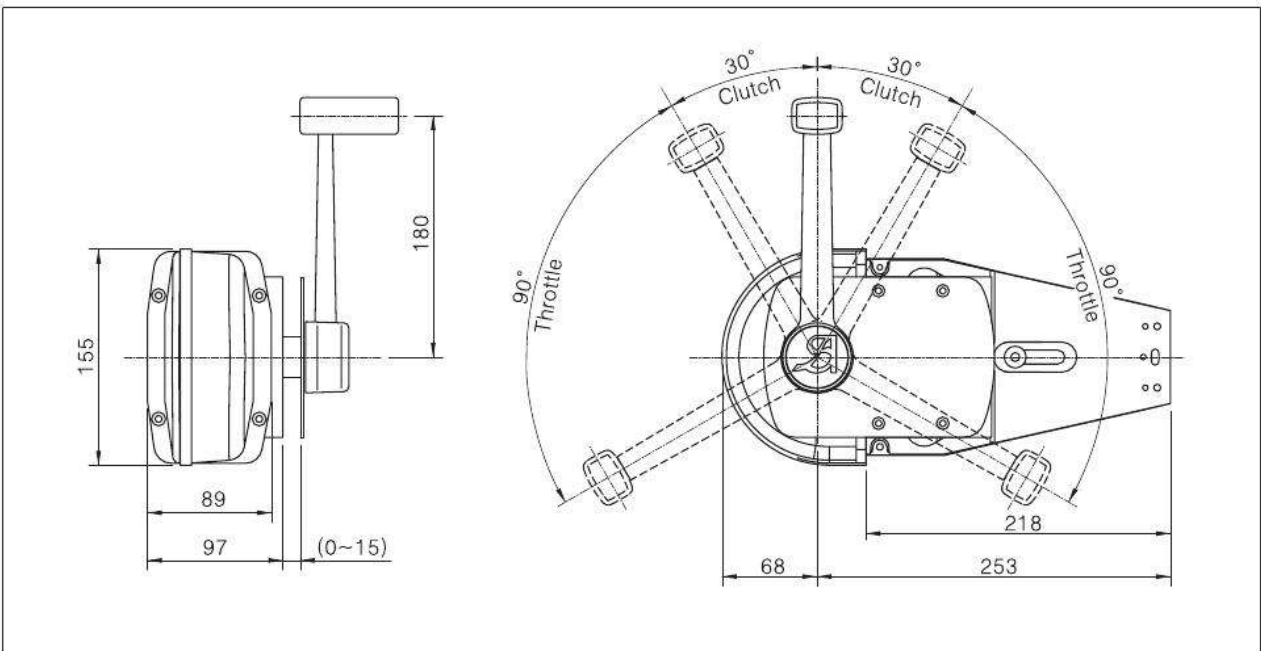
- SM-XL-S lever was specially modified to work as side-mount type.
- When installed, only handle lever is exposed externally; boasting its simple design.
- With in-built neutral safety switch, ST-Type control lever is prevented from accidental gear engagement and allows easy and safe handling.
- Warming-up can be done when clutch is at neutral position.

## Engine Control Lever

8



## Dimension







# Engine Control Lever

Mechanical Control Lever Systems

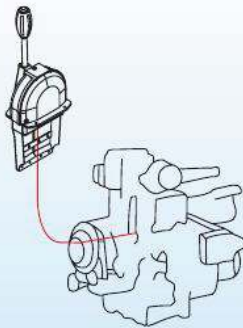
## SB-Type 레버 사용시

- SB-C-Single 레버는 클러치 조작용이고 SB-T-Single 레버는 스로틀 조작용이다.
- SB-Twin은 검정색 손잡이가 클러치 용이고 빨간색 손잡이가 스로틀 용이다.
- 2개의 엔진을 컨트롤 할때는 SB-Twin 레버 2개를 설치하여 사용 한다. SB-Twin 레버 중 각각의 검정색 손잡이는 클러치를 조작하고 각각의 빨간색 손잡이는 스로틀을 조작한다.

## When using SB-Type Lever

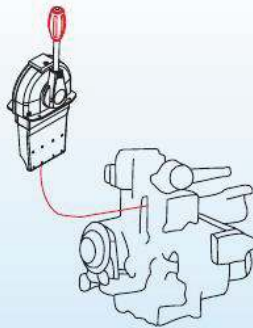
- SB-C-Single Lever operates as a clutch and SB-T-Single Lever operates as a throttle.
- The black knob on SB-Twin operates clutch and the red knob operates throttle.
- When two engines are installed, 2 pcs of SB-twin are needed to be installed in order to function. Each black knob on SB-Twin operates clutch and each red knob operates throttle.

SB-C-SINGLE



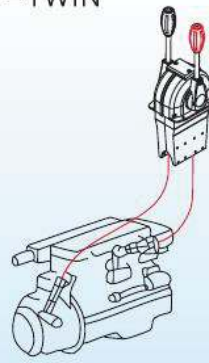
Single function control  
Auxiliary engine

SB-T-SINGLE



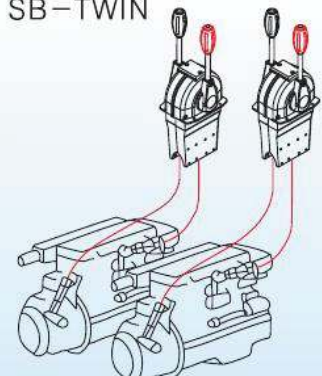
Single function control  
Auxiliary engine

SB-TWIN



Single function control  
Single engine

SB-TWIN



Single function controls  
Twin engines

## ST-Type 레버 사용시

- ST-Single 레버는 한 개의 레버로 클러치와 스로틀을 조작한다.  
컨트롤 방식은 두 개의 케이블을 사용한다.  
(하나는 스로틀 용이고 또 다른 하나는 클러치 용)

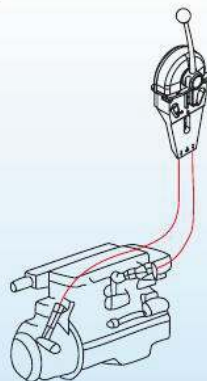
## When using ST-Type Lever

- With two cables, ST-Single controls both clutch and throttle with one lever.  
(One for throttle and the other for clutch)

- ST-Twin 레버는 두 개의 엔진을 컨트롤 할 때 사용하며 각각의 레버가 각각의 클러치와 스로틀을 조작한다.

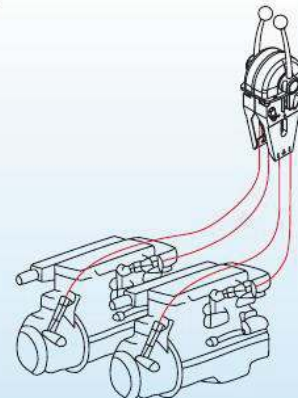
- ST-Twin is used for two engine type and each lever operates clutch or throttle.

ST-SINGLE



Dual function control, single engine

ST-TWIN



Dual function controls, twin engines



# Engine Control Cable

C33 Single-Core Cable (Stainless Steel Core)

## 클러치 및 스로틀 조작 케이블

- C33 케이블은 전세계적으로 가장 많이 사용되어지는 형식의 케이블이다.
  - C33 Single-Core 케이블은 경제적으로 사용할 수 있는 케이블이다.
- ① 케이블 어댑터를 사용하면 모든 엔진에 호환이 가능하다.
  - ② Rod는 3"의 스트로크와 R254의 최소 굽힘반경을 갖고 있다.

## Control Cable for Clutch and Throttle

- C33 Cable is the type of cable that is the most widely used around the world.
  - C33 Single-Core cable is the most economical cable.
- ① With Cable Adaptor, it is compatible with any type of marine engine.
  - ② The rod has 3" stroke and minimum bending radius of R254.

## C33 Single-Core Cable



## Specifications

Model		C33 Single-Core
Jacket Color		RED BLACK
Conduit (피복)	Material	Polyethylene
	Out Diameter (mm)	Ø8.65 ± 0.15
Core (심재)	Material	STS304
	Out Diameter (mm)	Ø1.9
Stroke (mm)		76 +6/0
Input (kg)	Push	11.25
	Pull	11.25
Separation Strength (이탈강도)	Rod and Core (로드와 코어)	Min. 136 kg
	Hub and Conduit (허브와 피복)	Min. 136 kg
Sleeve Swing Angle		± 8°
Minimum Bending Radius (최소 굽힘 반경)		R254
Heat & Cool using temperature Range (내한 · 내열 온도)		-20°C ~ 100°C
Backlash (mm)		L(m) × 0.5 + 5.08
Lubricant (윤활유)		E G Oil

Note : Stroke 는 주문자의 요구에 따라 변경 할 수 있다.

Note : Stroke can be customized upon buyer's request.





# Engine Control Cable

C33 Multi-Core Cable (Spline Type Multi-Core)

## 클러치 및 스로틀 조작 케이블

- C33 케이블은 전세계적으로 가장 많이 사용되어지는 형식의 케이블이다.
- C33 Multi-Core 케이블은 C33 Single-Core 케이블의 고급형 모델이다.

- ① C33 Single-core 케이블보다 상대적으로 작동이 부드럽고 가볍다.
- ② 최소굽힘반경 R165로 C33 Single-Core 케이블보다 작다.

## Control Cable for Clutch and Throttle

- C33 Cable is the type of cable that is the most widely used around the world.
- C33 Multi-Core cable is the upgraded version of C33 Single-Core cable.

- ① When compared with C33 Single-Core, it offers much smoother and lighter operation.
- ② With minimum bending radius R165, it offers lesser bending radius than C33 Single-Core.

## C33 Multi-Core Cable



## Specifications

Model		C33 Multi-Core
Jacket Color	Standard	BLUE / RED
	Option	BLACK / GRAY
Conduit (피복)	Material	Polyethylene
	Out Diameter (mm)	Ø8.4 ± 0.15
Core (심재)	Material	SWRH62A, PA
	Out Diameter (mm)	Ø3.0
Stroke (mm)		76 +6/0
Input (kg)	Push	11.25
	Pull	11.25
Separation Strength (이탈강도)	Rod and Core (로드와 코어)	Min. 136 kg
	Hub and Conduit (허브와 피복)	Min. 136 kg
Sleeve Swing Angle		± 8°
Minimum Bending Radius (최소 굽힘 반경)		R165
Heat & Cool using temperature Range (내한 · 내열 온도)		-20°C ~ 100°C
Backlash (mm)		L(m) × 0.5 + 5.08
Lubricant (윤활유)		S/C Grease

Note : Stroke 는 주문자의 요구에 따라 변경 할 수 있다.

Note : Stroke can be customized upon buyer's request.



# Engine Control Cables

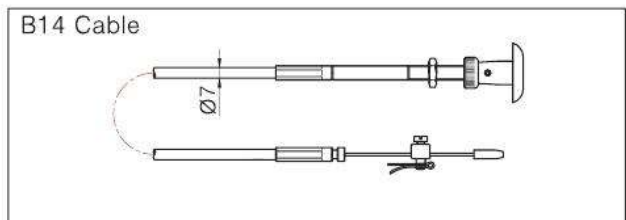
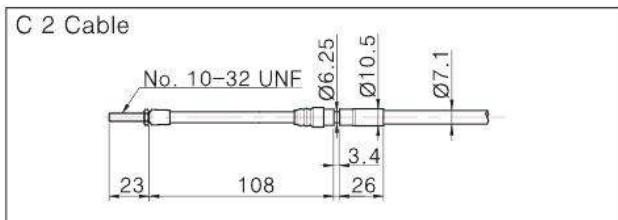
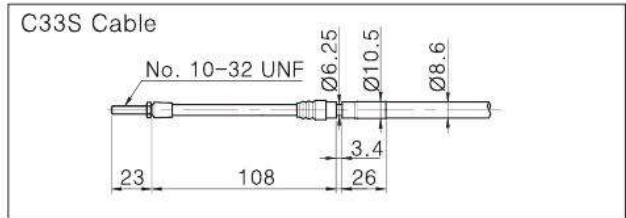
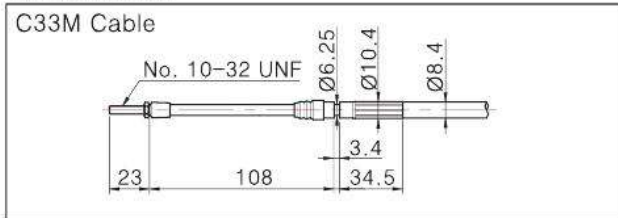
Engine Control Cables & Dimensions

## Engine Control Cables



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## Dimensions

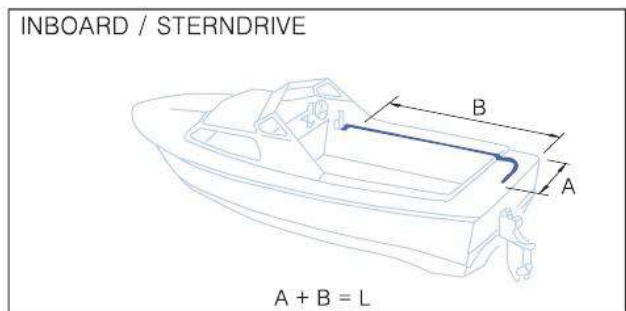
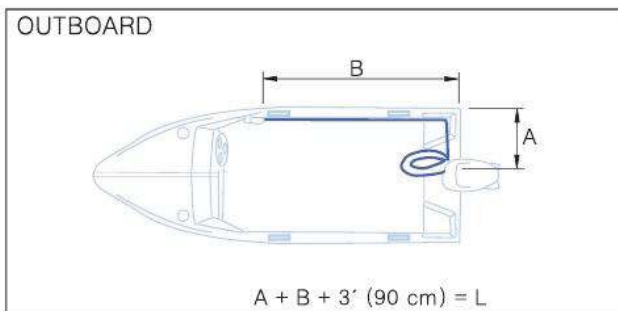


## 컨트롤 케이블 연결을 위한 길이 측정 방법

- 처음 설치 시 컨트롤 레버로부터 클러치와 스토폴까지 어떠한 간섭이나 장애가 없는 케이블 설치 길이 (A + B의 거리)를 잴다.
- 최소굽힘반경은 C33S 케이블은 R254mm, C33M 케이블은 R165mm이며 아웃보드 엔진 설치 시 엔진의 움직임을 감안해서 3피트(약 90cm) 정도의 여유공간이 필요하다.
- 교체시에는 기존의 케이블 끝에서 끝까지 거리를 재면 된다.

## How to Measure the Control Cable when installing

- When installing, measure the unobstructed cable length (A+B) from control lever to clutch and control lever to throttle separately.
- Since minimum bending radius for C33S Cable is R254mm and R165mm for C33M Cable, give 3ft (about 90cm) allowance to secure enough space for outboard engines to freely move.
- When replacing with the old one, simply measure it from tip to tip.







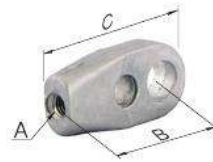
# Engine Control Lever & Cables Fittings

Fittings

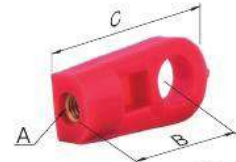


Ball Joint

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



SB-129



ST-9567

Terminal Eye

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

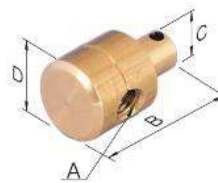
13



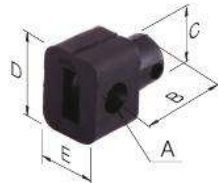
SB-132  
ST-9565

Clamp

Part Number	A	B	C	D	E	F
SB-132	10.0	26.0	40.7	13.0	10.4	5.2×7.8
ST-9565	10.0	21.0	31.1	13.0	10.2	Ø5.5



AB-146



ST-9566

Pivot (For Lever)

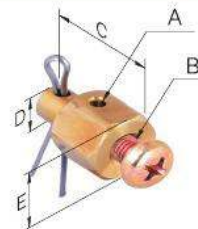
Part Number	A	B	C	D	E
AB-146	No. 10-32 UNF	19.5	Ø6.0	Ø12.0	-
ST-9566	Ø4.8	17.0	Ø7.9	13.9	10.8



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-147

Pivot (For B14 Cable)

Part Number	A	B	C	D	E
AB-147	Ø2.4	M5×10	17.0	Ø5.9	11.0



ST-9607-1



ST-9607-2

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

Part Number	Color	Size
ST-9607-1	Mixed Red	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



# Selector Unit

DS-100

## 듀얼 스테이션 적용을 위한 셀렉터 유닛

- 셀렉터 유닛은 듀얼 스테이션 적용시 싱글 레버 컨트롤과 함께 사용된다.
- 이것은 메인 스테이션 및 플라잉 브릿지 스테이션에서 독립적인 스로틀 및 클러치 컨트롤을 가능하게 한다.

NOTE : 스테이션을 변경하기 전에 스로틀은 반드시 공회전 위치에 있어야 하며, 클러치는 중립이어야 한다.

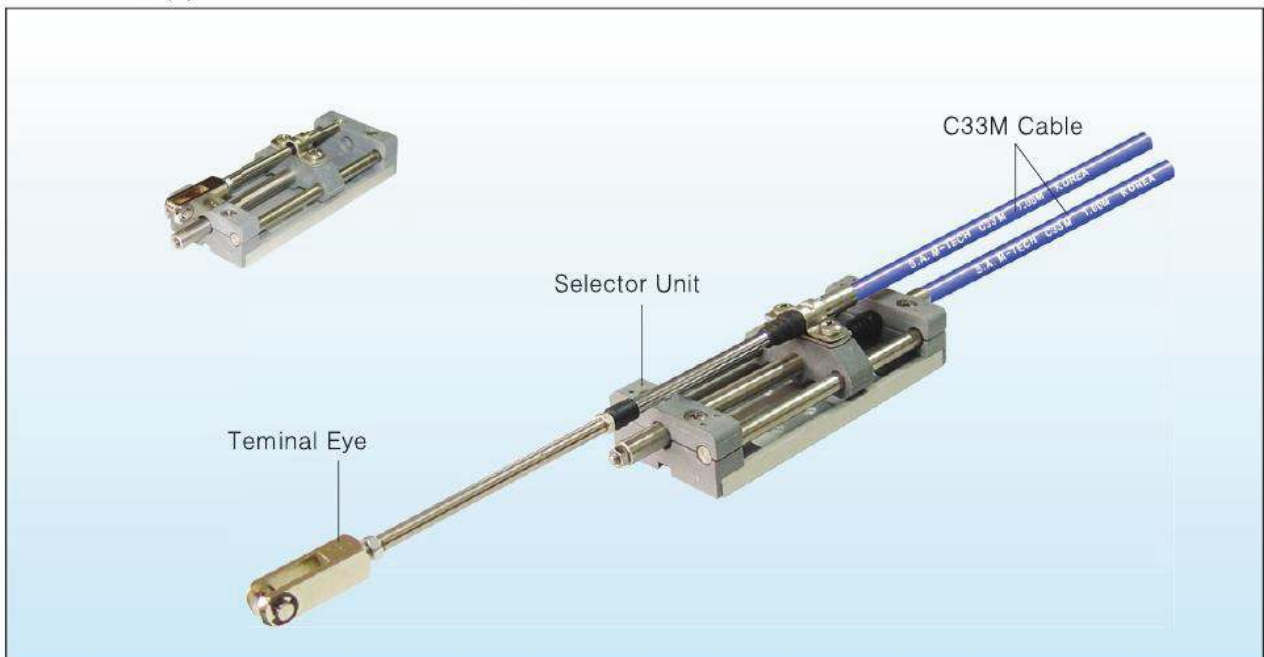
## Selector Unit for Dual Station Application

- When selector unit is applied with dual station, single lever control is used along.
- It enables independent control over throttle and clutch from either main station or fly bridge station.

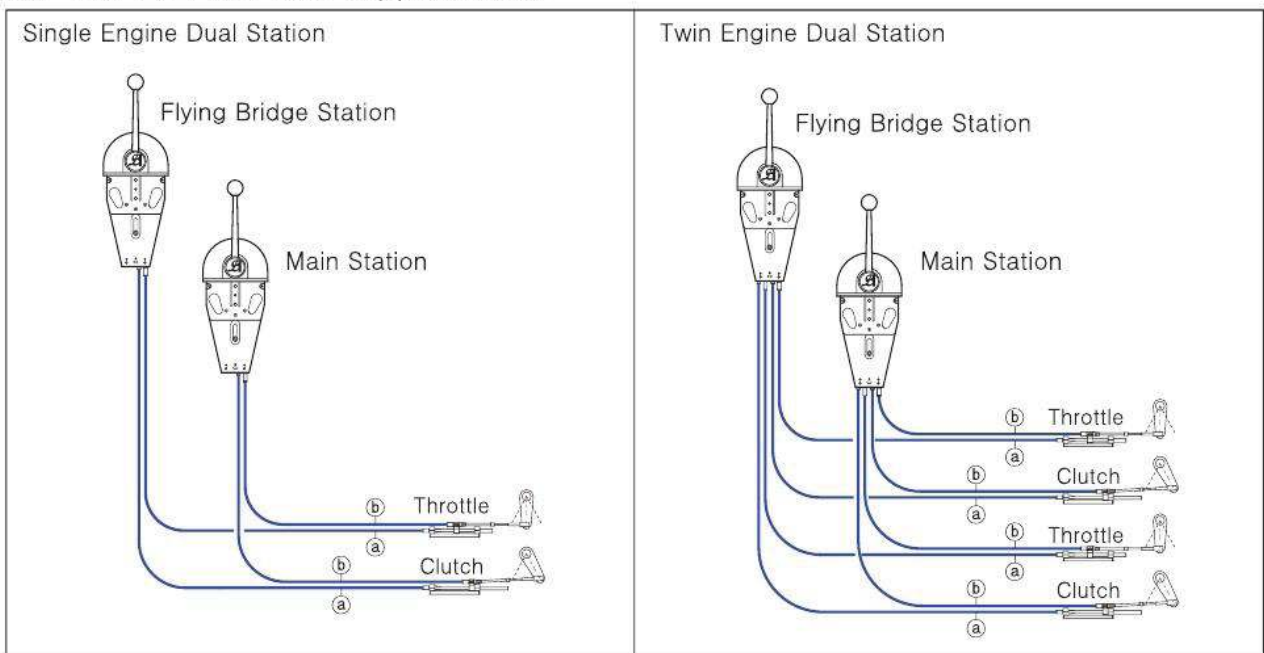
NOTE : Before changing the station, throttle must be at idling position and clutch at neutral state.

## DS-100 (Application : Dual Station)

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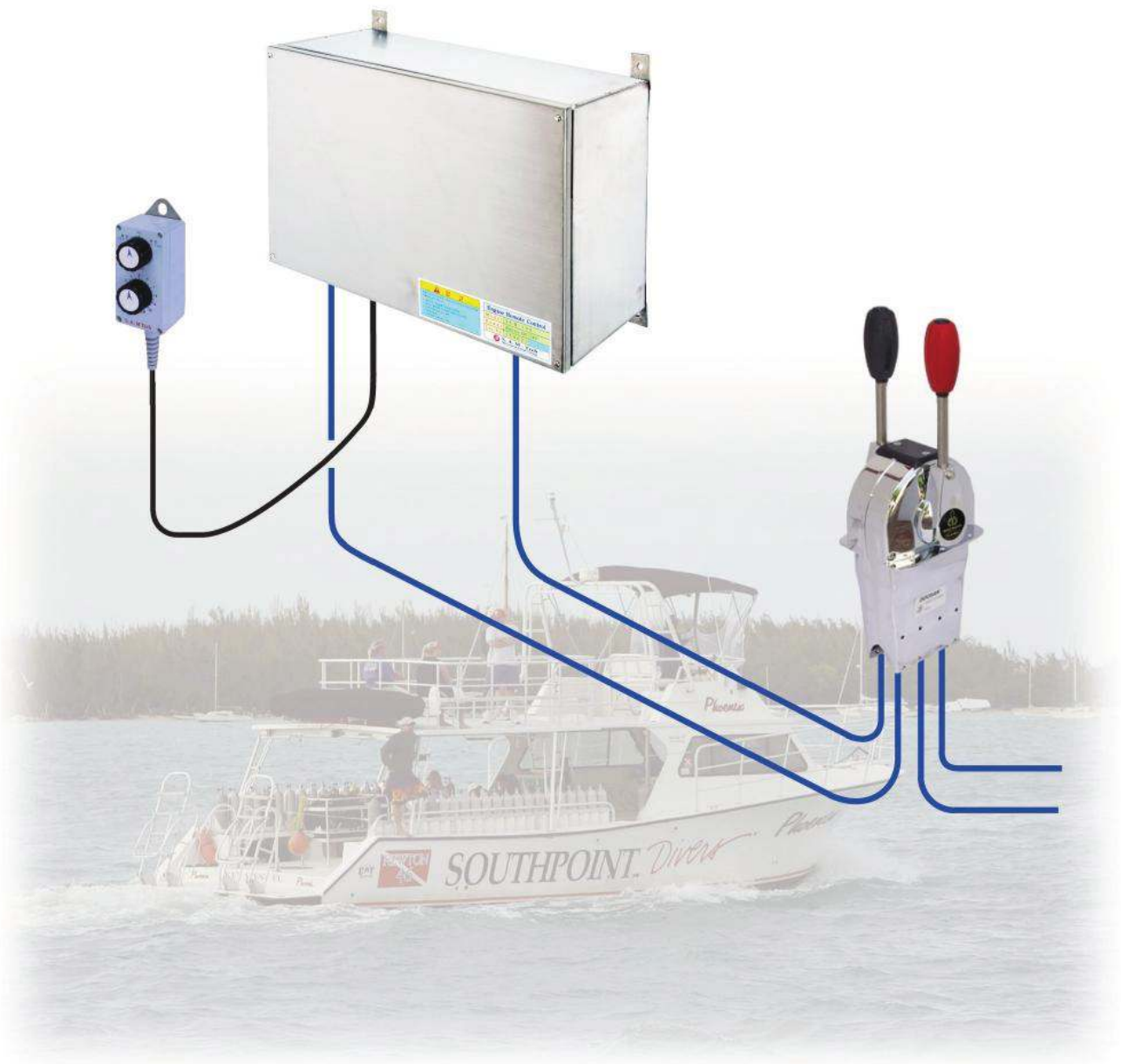


## DS-100 선택 장치 응용 (Applications)





# *Engine Remote Control System*





# Engine Remote Control System

TCB-100, TCB-50T, TCB-50C Actuator & Remote Controller

## 특징

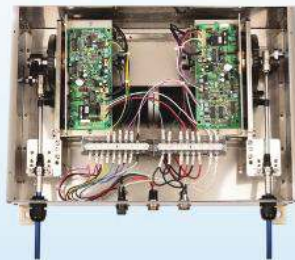
- SB-Twin, SB-T-Single, SB-C-Single 적용
- 장소에 구애받지 않는 콤팩트 타입으로 어느 방향에서도 설치가 가능
- Lever 위치 조정이 (전진, 중립, 후진, 증속, 감속) Volume으로 간단하며, 초보자도 위치 설정가능
- 클러치는(Clutch) 전진에서 중립과 후진에서 중립을 별개로 조정 가능
- Motor 과부하 장치가 내장되어 Motor 소손방지
- 전자클러치가 내장되어 타제품과 비교하여 수동레버 (SB-Twin) 조작 시 케이블의 부하가 적어서 작동이 부드러움.

## Features

- Can be applied to SB-Twin, SB-T-Single, SB-C-Single
- With our compact design, it can be installed in any direction regardless of place limitation.
- The position of lever (forward, neutral, reverse, accelerate, decelerate) can be controlled by simply adjusting the volume. Even the beginner can simply set up the position.
- Clutch can be controlled separately from FWD position to NEU position and REV position to NEU position.
- In-built overload device in motor prevents the damage done to motor.
- In-built electronic clutch allows much smoother manual lever (SB-Twin) operation due to less load-bearing to the cable when compared to other products.

## TCB-100 Actuator

- For Single-function control by Two Lever each
- Use SB-Twin & SB-T-Single, SB-C-Single



TCB-100  
(For SB-Twin)



TCB-50T  
(For Throttle)



TCB-50C  
(For Clutch)

## Remote Controller

엔진 리모트용  
(For Engine Remote)



R-20-E



R-10-T

R-10-C

## Specifications

Model		TCB-100	TCB-50T	TCB-50C
Controlling method	Clutch	3-position control (Forward - Neutral - Reverse)	—	○
	Throttle	Linear Control (Following - up principle)	○	—
Power Source		DC 24V		
Cable Actuating Force	Clutch	25 kg Max.	—	○
	Throttle	45 kg Max.	○	—
Cable Actuating Speed	Clutch	About 1.5 sec (Forward - Neutral - Reverse)	—	○
	Throttle	About 2.8 sec (Dead slow to Max. full)	○	—
Power Consumption	Normal	Less than 1.3A		
	Clutch Control	Starting : Max. 8.5A at DC 24V	—	○
	Throttle Control	Starting : Max. 8.5A at DC 24V	○	—
Push-Pull Cable		C33S, C33M, Ultra C8, Morse 33C		
Applications		SB-Twin	SB-T-Single	SB-C-Single

※ DC 12V 용은 별도 주문 생산 가능함.

※ DC 12V can be supplied upon request.

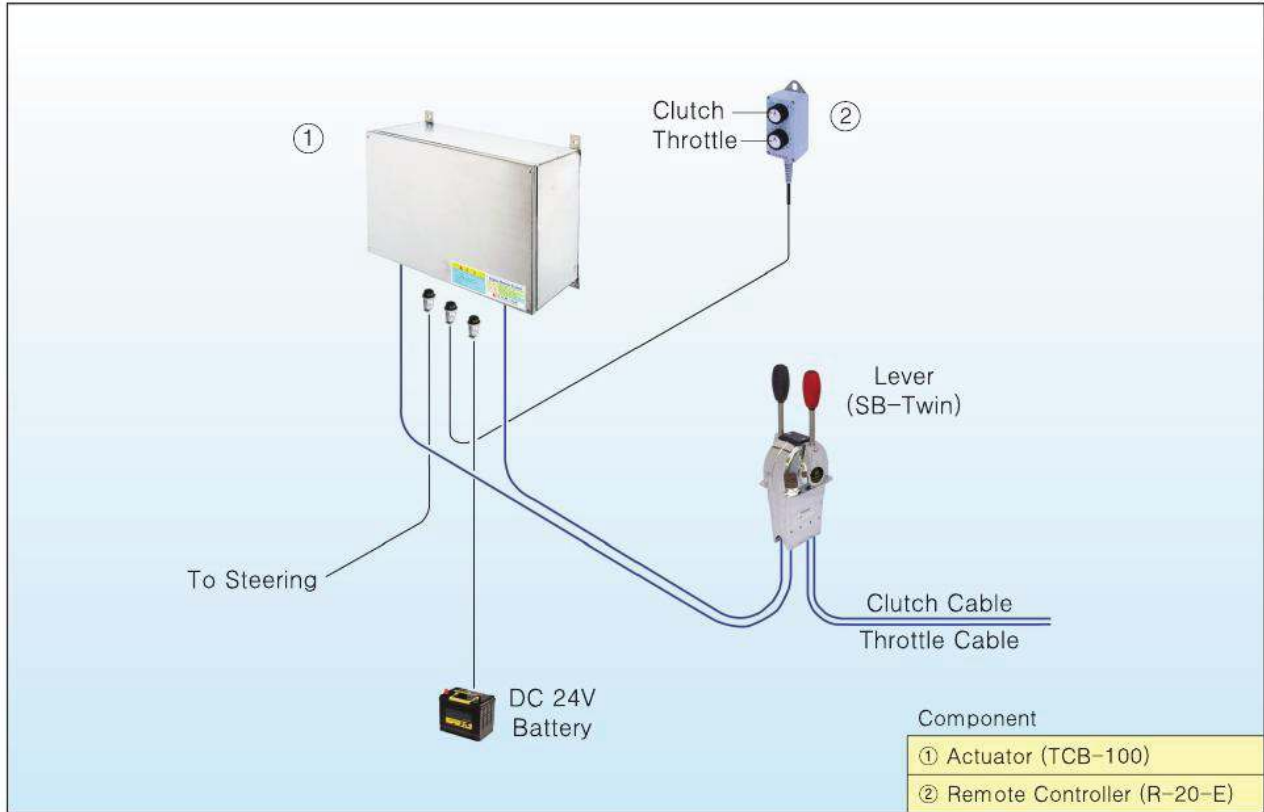




# Engine Remote Control System Diagram

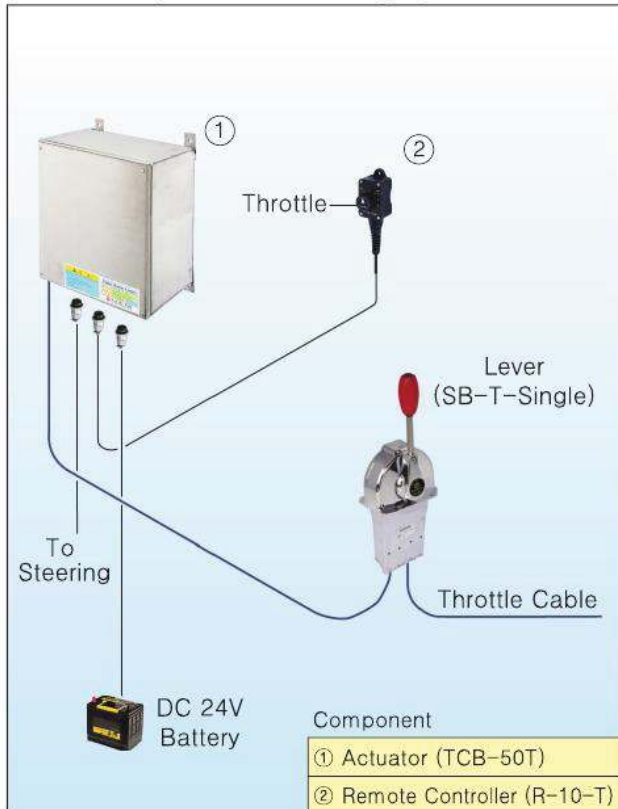
TCB-100 & TCB-50T & TCB-50C

## Engine Remote Control System TCB-100 (For SB-Twin)

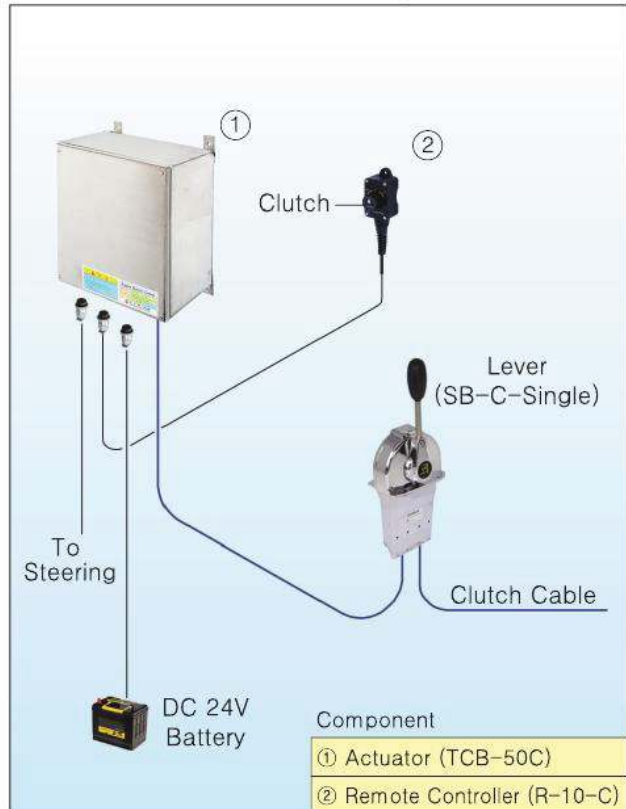


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## TCB-50T (For SB-T-Single)



## TCB-50C (For SB-C-Single)





# Engine Remote Control System

TCM-100, TCM-50C, TCM-50T Actuator & Remote Controller

## 특징

- SB-Twin, SB-C-Single, SB-T-Single 적용
- SB Lever의 Arm에 걸어서 사용하는 Hook Type이며 수동조작으로 즉시전환이 가능.
- SB Lever 수동 작동 또는 TCM-100을 이용한 리모컨 작동.
- Lever 위치 조정이 (전진, 중립, 후진, 증속, 감속) Volume으로 간단하며, 초보자도 위치 설정가능
- Motor 과부하 장치가 내장되어 Motor 소손방지
- 리모컨 작업으로 어느 장소에서나 조작이 자유로움


## Features

- Capable of applying to both SB Single Lever and SB Twin Lever.
- Can be immediately switched to the hook type once SB Lever Arm is locked to actuator hook.
- SB Lever can be controlled alone or controlled remotely by using TCM-100.
- When adjusting actuator's position (forward, neutral, reverse, accelerate, decelerate), it can be done by adjusting volumes. Even the beginner can easily make adjustments.
- Overload device is internally installed in motors to prevent the damages from fire or heat.
- Due to remote control operation, it allows convenient operation from any place within the ship.


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## TCM-100 Actuator


- For Single-function control by Two Lever each
- Use SB-T-Single, SB-C-Single & SB-Twin




TCM-100



Control Box




TCM-50C



TCM-50T


## Remote Controller

엔진 리모트용  
(For Engine Remote)




Clutch —  
Throttle —

R-20-E



Clutch —

R-10-C



Throttle —

R-10-T

## Specifications

Model		TCM-100	TCM-50C	TCM-50T
Controlling method	Clutch	3-position control (Forward - Neutral - Reverse)	○	—
	Throttle	Linear Control (Following - up principle)	—	○
Power Source		DC 12V		
Push-Pull Cable		C33S, C33M, Ultra C8, Morse 33C		
Applications		SB-Twin	SB-C-Single	SB-T-Single

※ DC 24V 용은 별도 주문 생산 가능함.

※ DC 24V can be supplied upon request.

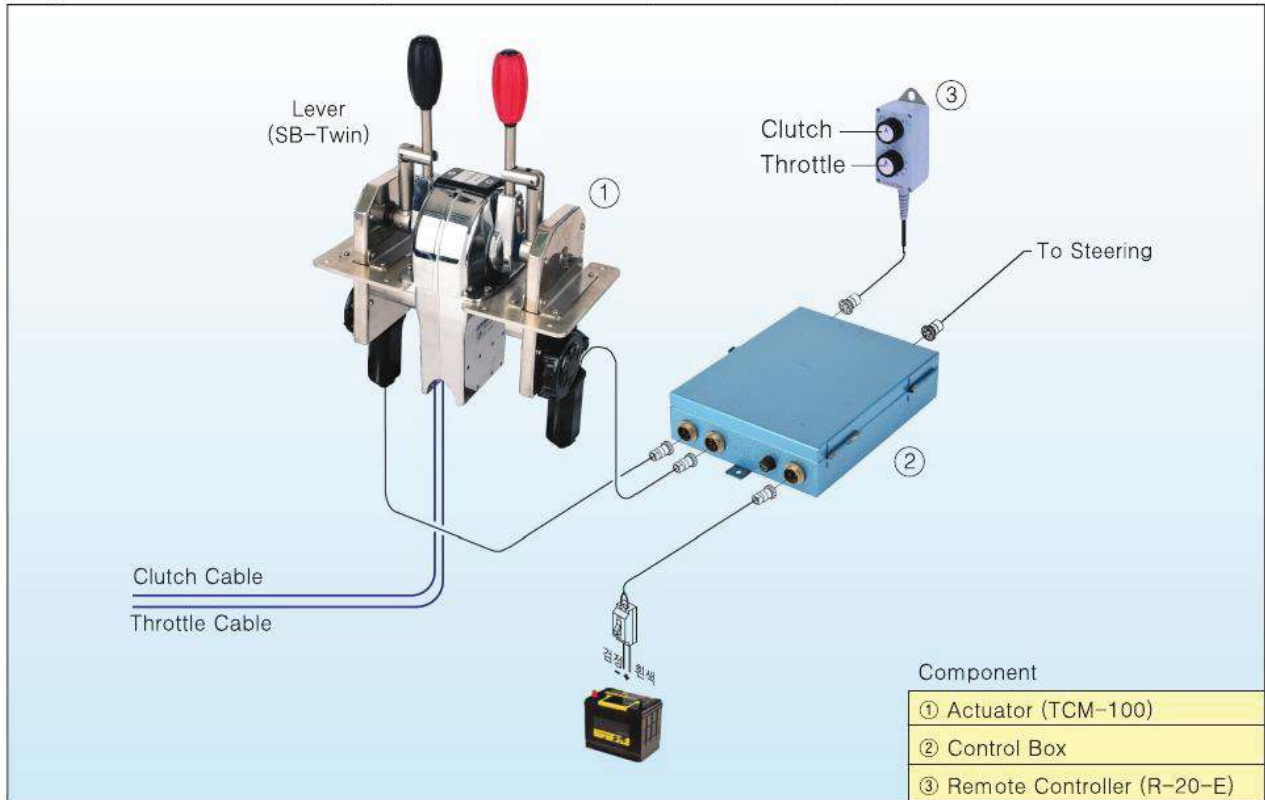




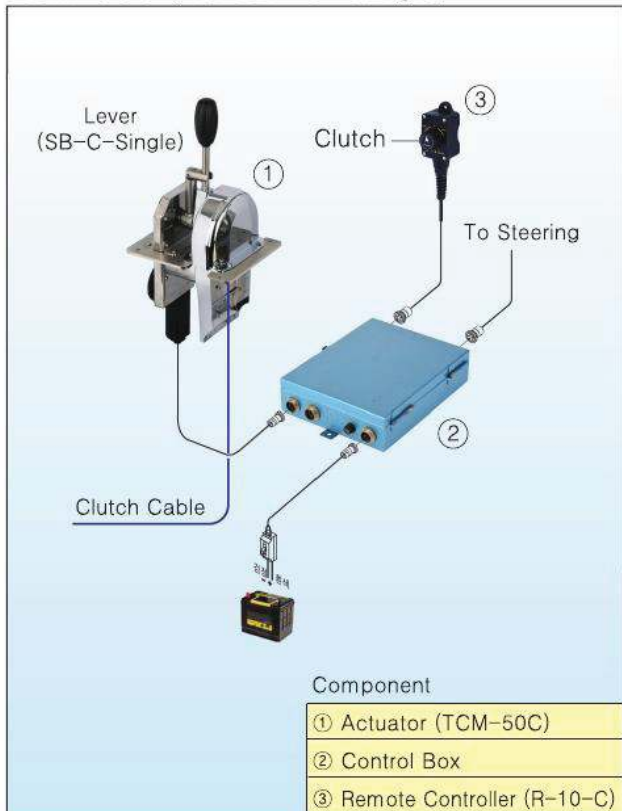
# Engine Remote Control System Diagram

TCM-100 & TCM-50C & TCM-50T

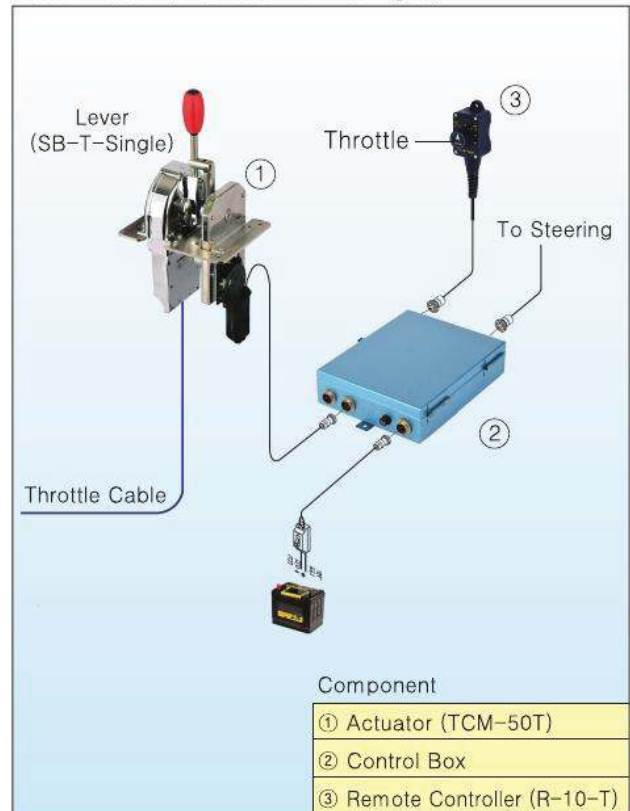
## Engine Remote Control System TCM-100 (For SB-Twin)



## TCM-50C (For SB-C-Single)



## TCM-50T (For SB-T-Single)





# Engine Remote Control System

TCM-100S, TCM-50S Actuator & Remote Controller

## 특징

- ST-Twin, ST-Single 에 적용
- ST Lever의 Arm에 걸어서 사용하는 Hook Type이며 수동 조작으로 즉시전환이 가능.
- ST Lever 수동 작동 또는 TCM-100S을 이용한 리모컨 작동.
- Lever 위치 조정이 (전진, 중립, 후진, 증속, 감속) Volume으로 간단하며, 초보자도 위치 설정가능
- Motor 과부하 장치가 내장되어 Motor 소손방지
- 리모컨 작업으로 어느 장소에서나 조작이 자유로움

## Features

- Can be applied to ST-Twin, ST-Single.
- Works as a hook type when inter-locked with ST-Lever arm and can also be instantly switched to manual operation.
- ST-Lever can be manually controlled alone or controlled remotely by using TCM-100S.
- The position of lever (forward, neutral, reverse, accelerate, decelerate) can be controlled by simply adjusting the volume. Even the beginner can simply set up the position.
- In-built overload device in motor prevents the damage done to motor.
- With Remote Controller, it allows convenient operation from anywhere within the ship.

## TCM-100S Actuator

- For Dual-function control by Single Lever each
- Use ST-Single, ST-Twin



TCM-100S



Control Box



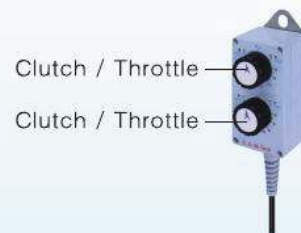
TCM-50S



Control Box

## Remote Controller

엔진 리모트용  
(For Engine Remote)



R-20-D



R-10-E

## Specifications

Model		TCM-100S, TCM-50S
Controlling method	Clutch	3-position control (Forward - Neutral - Reverse)
	Throttle	Linear Control (Following - up principle)
Power Source		DC 12V
Push-Pull Cable		C33S, C33M, Ultra C8, Morse 33C
Applications		ST-Single, ST-Twin

※ DC 24V 용은 별도 주문 생산 가능함.

※ DC 24V can be supplied upon request.

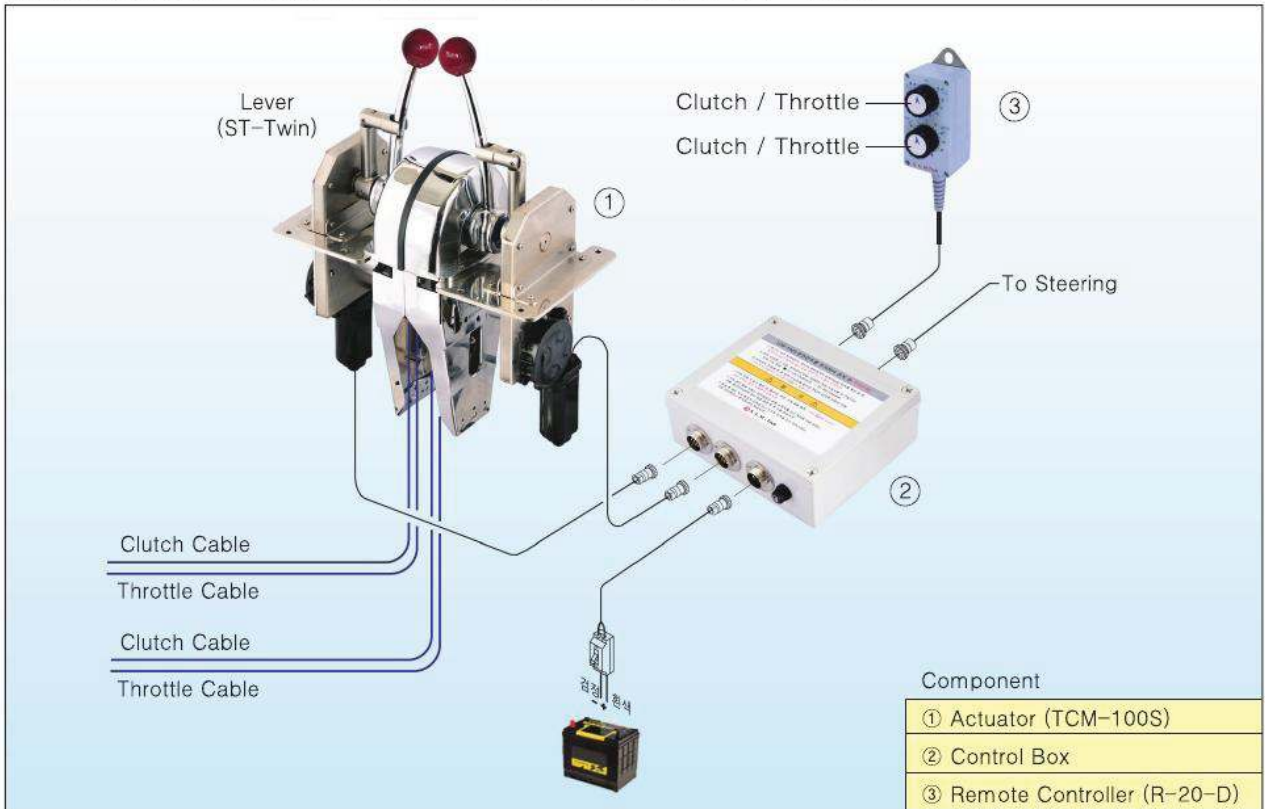




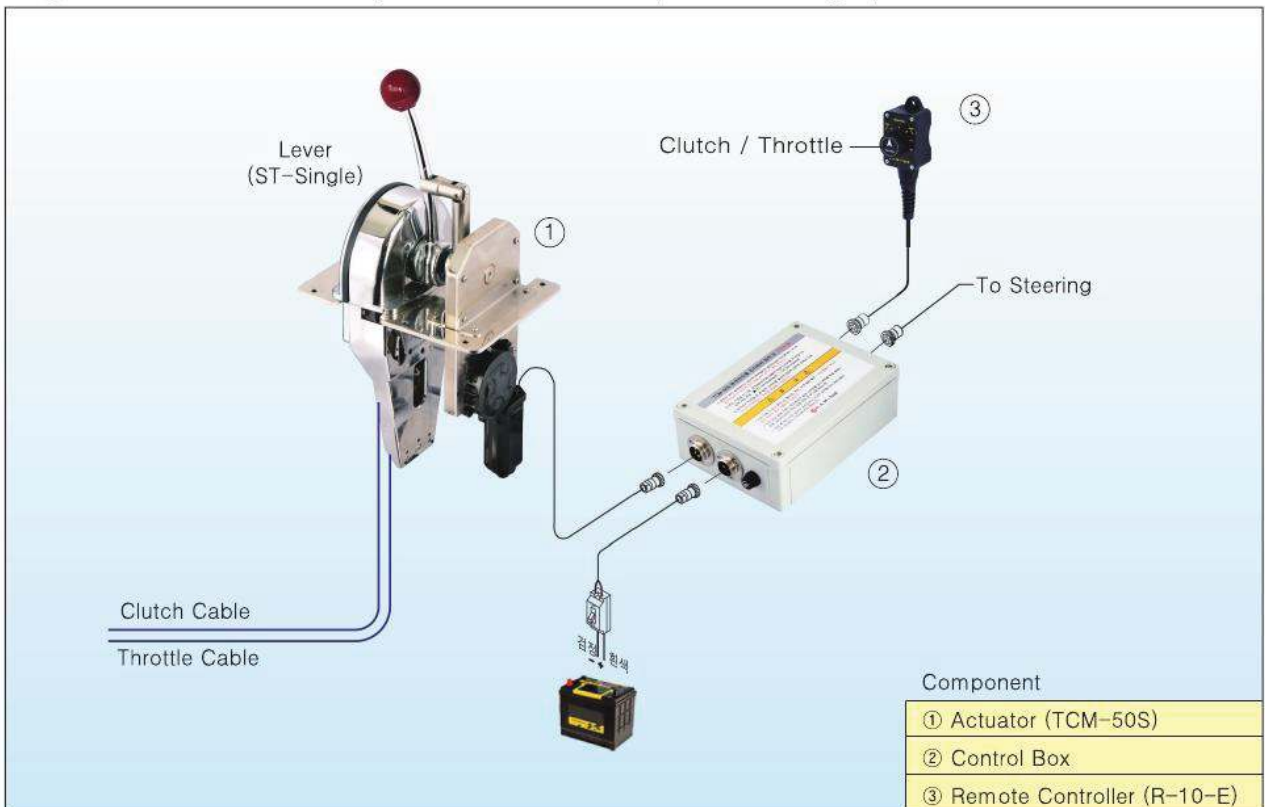
# Engine Remote Control System Diagram

TCM-100S & TCM-50S

Engine Remote Control System TCM-100S (For ST-Twin)



Engine Remote Control System TCM-50S (For ST-Single)



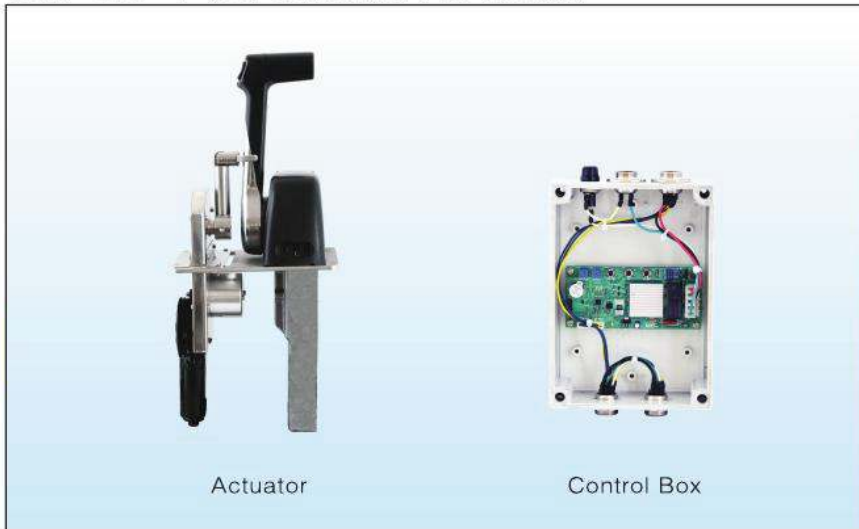


# Engine Remote Control System

TCM-50S-T (For Outboard Top Mount)

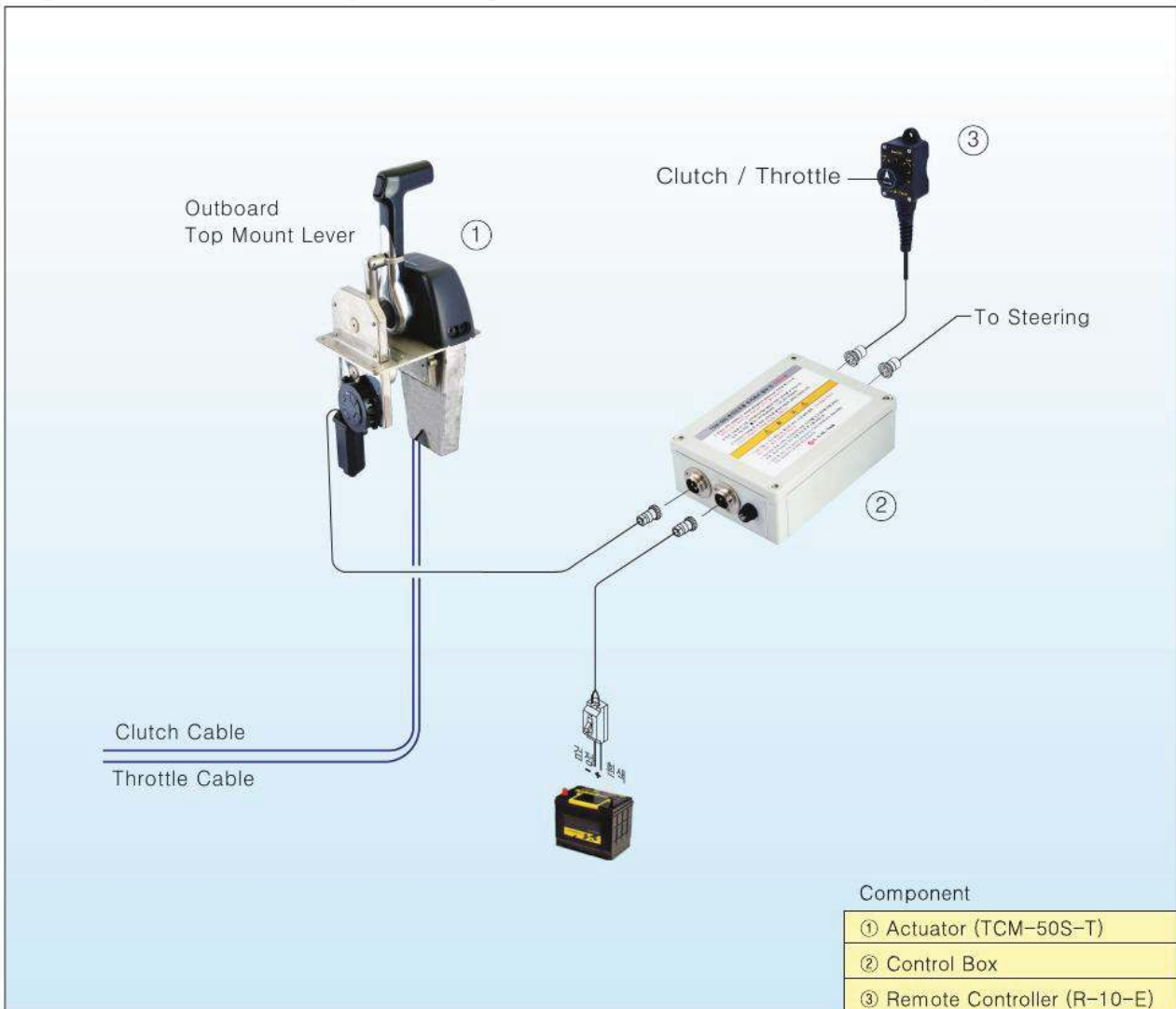
TCM-50S-T (For Outboard Top Mount)

Remote Controller



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Engine Remote Control System Diagram TCM-50S-T (For Outboard Top Mount)





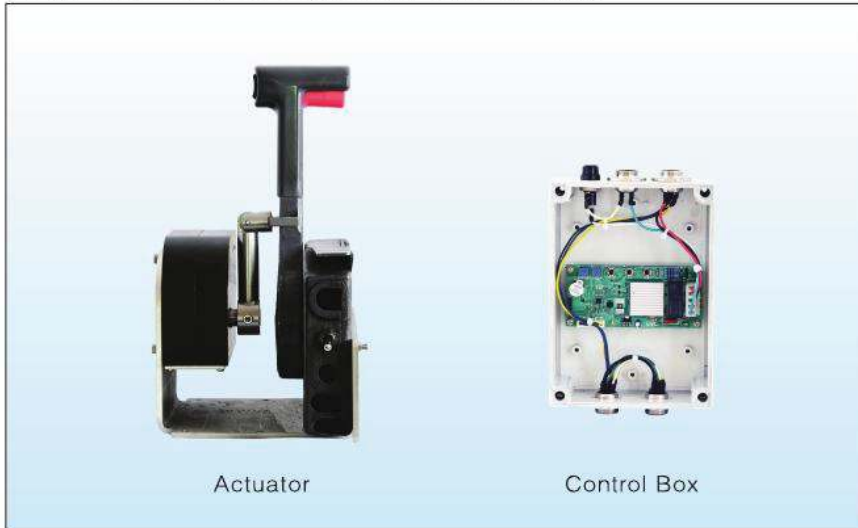


# Engine Remote Control System

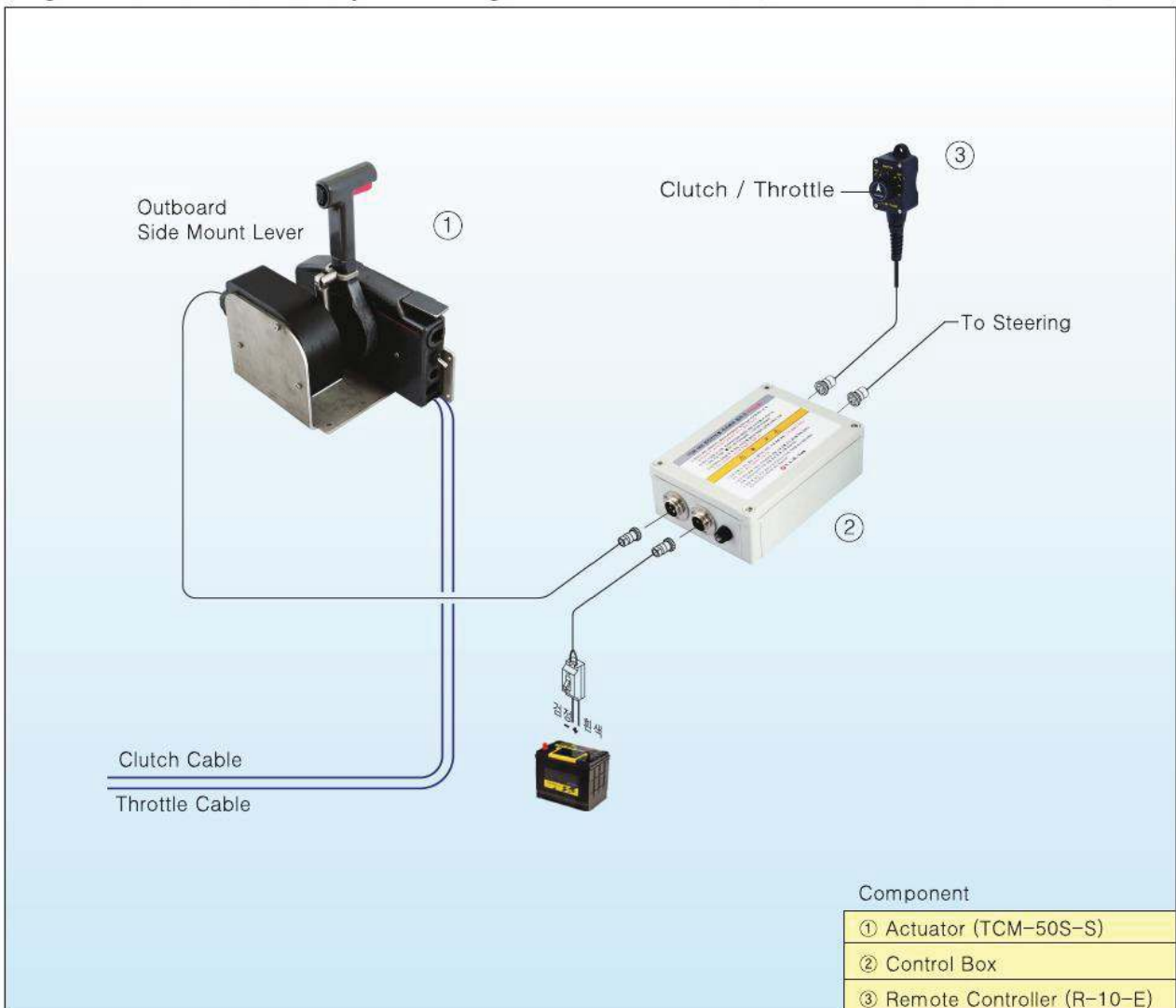
TCM-50S-S (For Outboard Side Mount)

TCM-50S-S (For Outboard Side Mount)

Remote Controller



Engine Remote Control System Diagram TCM-50S-S (For Outboard Side Mount)





# Engine Remote Control System

Remote Controller

## Remote Controller (For One Engine : SB-T-Single, SB-C-Single & Steering)

 <p>Throttle</p> <p>R-10-T For One Engine SB-T-Single</p>	 <p>Clutch</p> <p>R-10-C For One Engine SB-C-Single</p>	 <p>Steering</p> <p>J-10 Joystick Steering (Non Follow-up)</p>	 <p>Steering</p> <p>R-10 Dial Steering (Follow-up)</p>
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## Remote Controller (For One Engine : ST-Single & Steering)

<p>엔진리모트용</p>  <p>Clutch / Throttle</p> <p>R-10-E For One Engine ST-Single</p>	<p>조이스틱 리모트 조타+엔진리모트용</p>  <p>Clutch / Throttle Steering</p> <p>J-20 For One Engine Joystick Steering (Non Follow-up)</p>	<p>다이얼 리모트 조타+엔진리모트용</p>  <p>Clutch / Throttle Steering</p> <p>R-20 For One Engine Dial Steering (Follow-up)</p>
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## Remote Controller (For One Engine : SB-Twin & Steering)

<p>엔진리모트용</p>  <p>Clutch Throttle</p> <p>R-20-E For One Engine SB-Twin</p>	<p>조이스틱 리모트 조타+엔진리모트용</p>  <p>Clutch Throttle Steering</p> <p>J-30 For One Engine SB-Twin Joystick Steering (Non Follow-up)</p>	<p>다이얼 리모트 조타+엔진리모트용</p>  <p>Clutch Throttle Steering</p> <p>R-30 For One Engine SB-Twin Dial Steering (Follow-up)</p>
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## Remote Controller (For Twin Engine : ST-Twin & Steering)

<p>엔진리모트용</p>  <p>Clutch / Throttle Clutch / Throttle</p> <p>R-20-D For Twin Engine ST-Twin</p>	<p>조이스틱 리모트 조타+엔진리모트용</p>  <p>Clutch / Throttle Clutch / Throttle Steering</p> <p>J-30-D For Twin Engine ST-Twin Joystick Steering (Non Follow-up)</p>	<p>다이얼 리모트 조타+엔진리모트용</p>  <p>Clutch / Throttle Clutch / Throttle Steering</p> <p>R-30-D For Twin Engine ST-Twin Dial Steering (Follow-up)</p>
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# *Outboard Steering System*





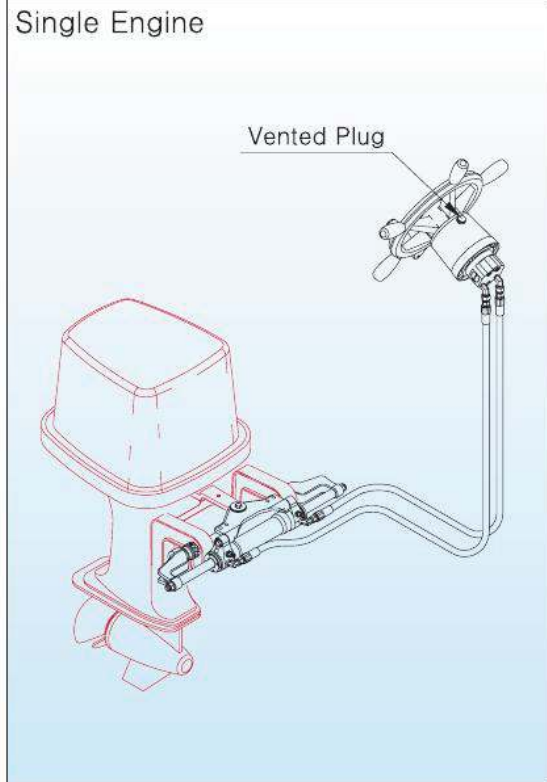


# Hydraulic Steering System Diagram

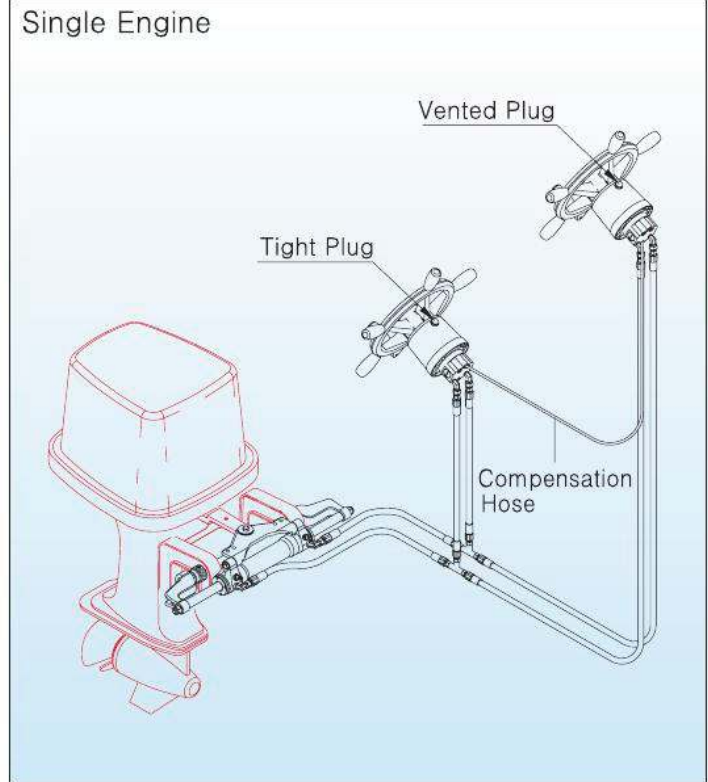
Installation Diagram

26

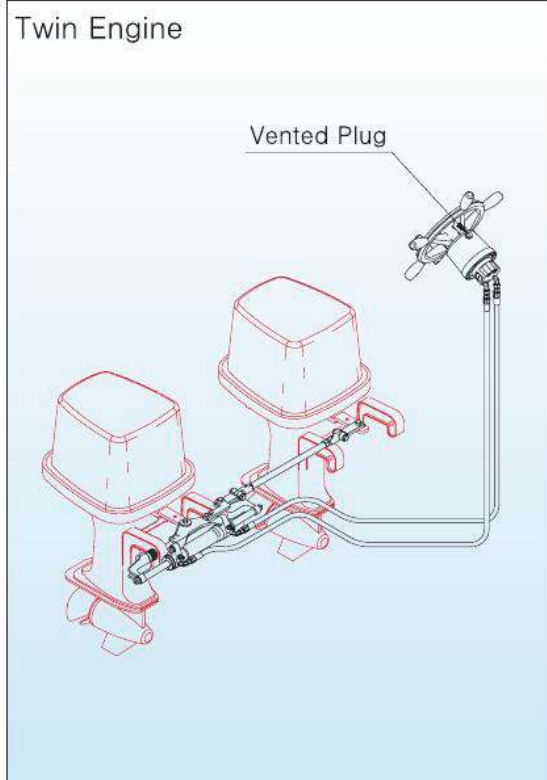
For Single Steering Station



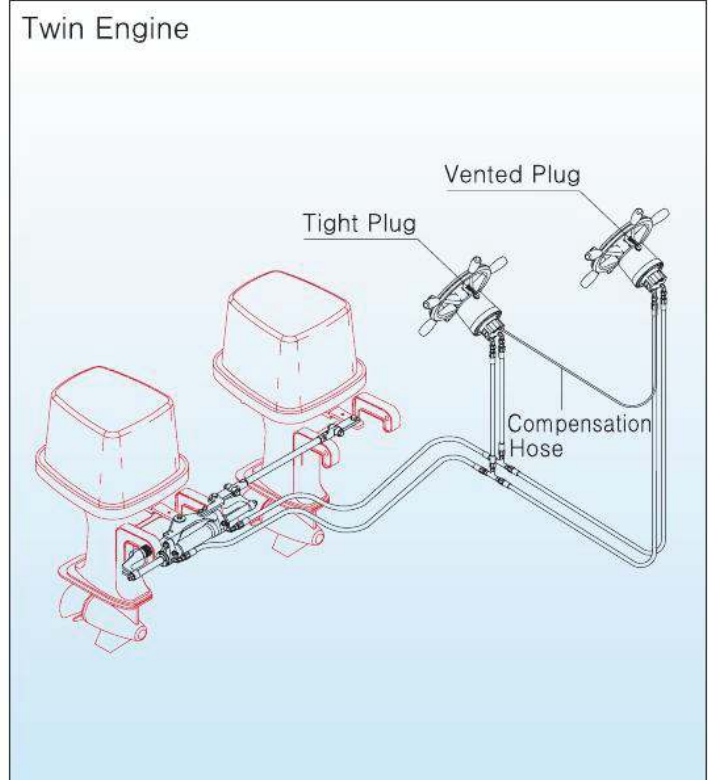
For Dual Steering Station



For Single Steering Station



For Dual Steering Station

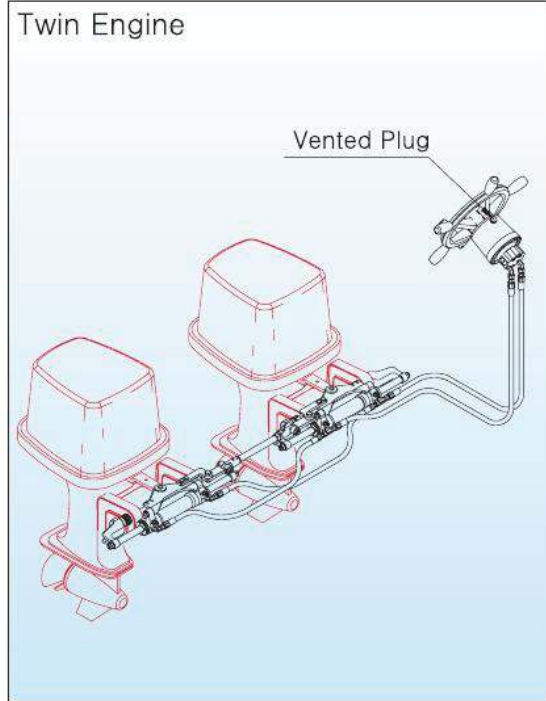




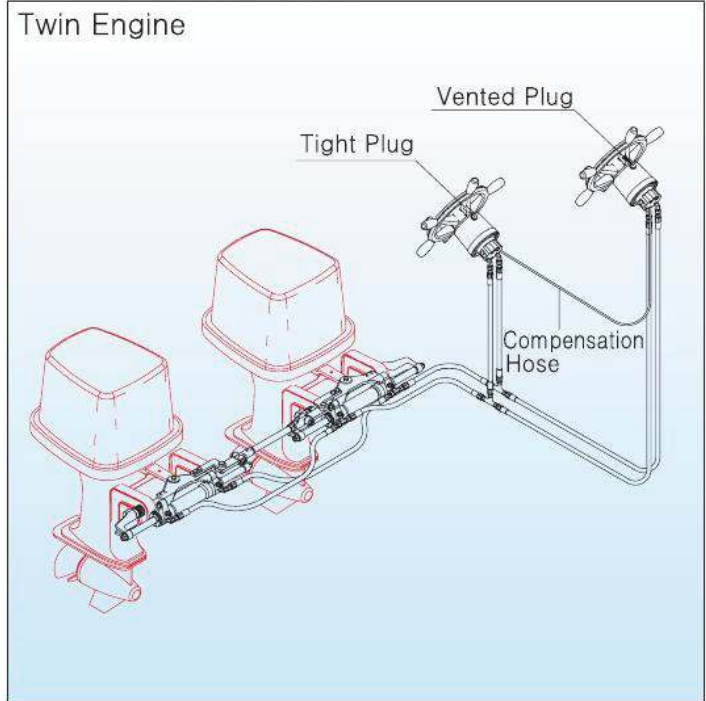
# Hydraulic Steering System Diagram

Installation Diagram & Minimum Splashwell Dimension Requirement

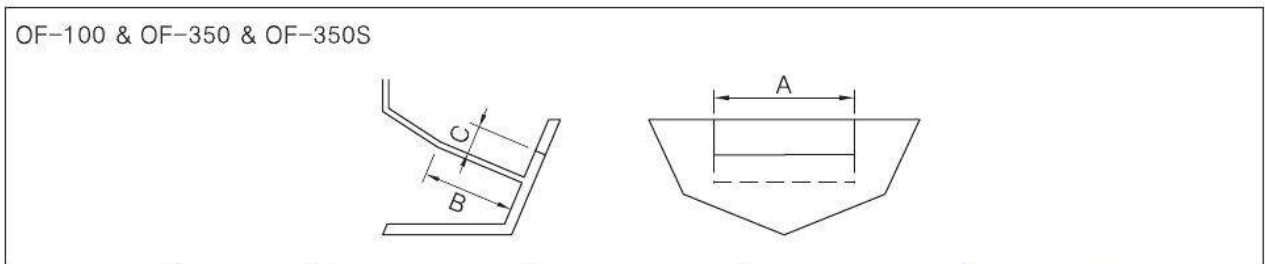
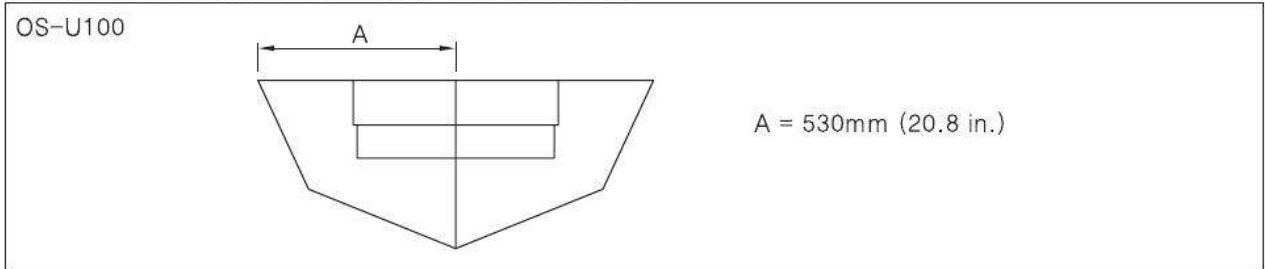
For Single Steering Station



For Dual Steering Station



## Minimum Splashwell Dimension Requirement



MODEL	#OF ENGINE	A	B	C	Min. Engine Center Distance
OF-100	1	23.5" (597mm)	6" (152mm)	5" (127mm)	N / A
	2	47" (1194mm)	6" (152mm)	5" (127mm)	26" (660mm)
OF-350	1	22" (559mm)	6" (152mm)	5" (127mm)	N / A
	2	44" (1118mm)	6" (152mm)	5" (127mm)	26" (660mm)
OF-350S	1	22" (559mm)	6" (152mm)	5" (127mm)	N / A
	2	44" (1118mm)	6" (152mm)	5" (127mm)	26" (660mm)



# Helm Pump

SOH Type (SOH-18, SOH-25, SOH-35)

## 특징

- 아웃보드에 적합한 컴팩트한 디자인
- 부드럽고 가벼워진 성능
- 3/4" 표준 테이퍼의 스테인레스 샤프트
- 부식 방지에 강한 알루미늄 다이캐스팅 본체
- 체크밸브 내장형
- 듀얼 스테이션 적용 가능
- 다양한 볼륨의 모델 (18cc/rev, 25cc/rev, 35cc/rev)

## Features

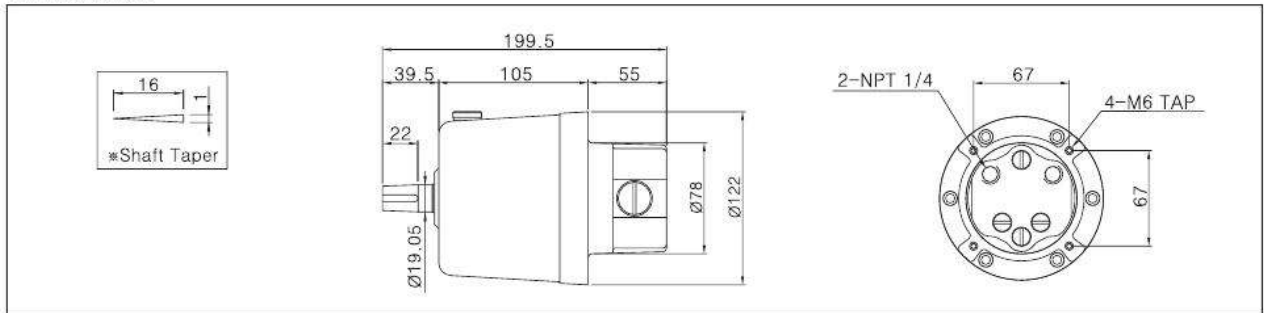
- Compact design is suitable for Out-board.
- Smooth and light performance.
- Stainless shaft with 3/4" Standard taper.
- Aluminum Die-Casting done on main body assures corrosion-free.
- Built-in check valve.
- Dual station is applicable.
- Various Volume Model (18cc/rev, 25cc/rev, 35cc/rev)

## Helm Pump (SOH Type)

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## Dimension



## Specifications

Model	Capacity	Piston Q'ty	Max. Pressure	Weight
SOH-18	18 cc/rev	5 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

## Select Reference

Model	Volume (cc)	Turns lock to lock (Wheel Turns)		
		Helm Pump (cc/rev)		
		SOH-18	SOH-25	SOH-35
OS-U100	132 / 164	7.3/9.1	5.3/6.6	3.8/4.7
OF-100	111	6.2	4.4	3.2
OF-350S	132	7.3	5.3	3.8
OF-350	143	7.9	5.7	4.1
ID-100	98	5.4	3.9	2.8
SDC-98	188	10.4	7.6	5.4
SDC-99	241	13.4	9.6	6.9





# Helm Pump

SSP Type (SSP-25, SSP-35, SSP-45, SSP-50)

## 특징

- 아웃보드 및 인보드에 적합한 디자인
- 부드럽고 가벼워진 성능
- 3/4 " 표준 테이퍼의 스테인레스 샤프트
- 부식 방지에 강한 알루미늄 다이캐스팅 본체
- 체크밸브 내장형
- 듀얼 스테이션 적용 가능
- 다양한 볼륨의 모델 (25cc/rev, 35cc/rev, 45cc/rev, 50cc/rev)

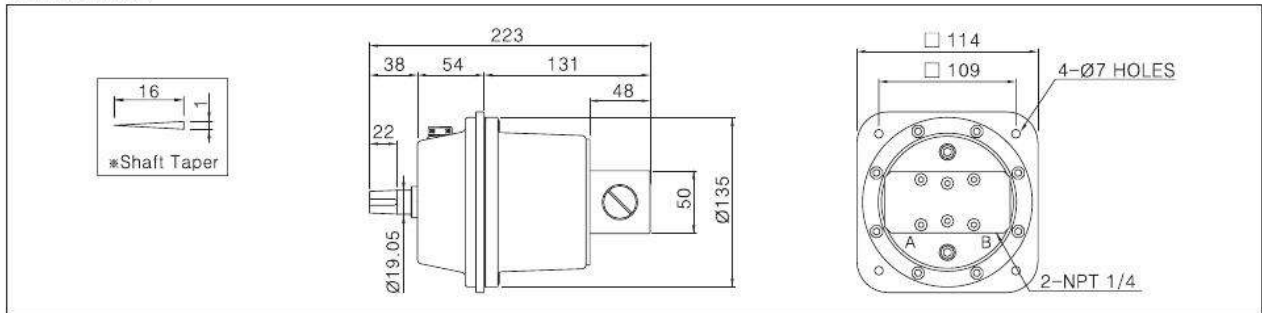
## Features

- Suitable design for In-board & Out-board.
- Smooth and light performance.
- Stainless shaft with 3/4" standard taper.
- Aluminum Die-Casting done on main body assures corrosion-free.
- Built-in check valve.
- Dual station is applicable.
- Various volume model (25cc/rev, 35cc/rev, 45cc/rev, 50cc/rev)

## Helm Pump (SSP Type)



## Dimension



## Specifications

Model	Capacity	Piston Q'ty	Max. Pressure	Weight
SSP-25	25 cc/rev	9 EA	70 Bar	6 kg
SSP-35	35 cc/rev	9 EA	70 Bar	6 kg
SSP-45	45 cc/rev	9 EA	70 Bar	6 kg
SSP-50	50 cc/rev	9 EA	70 Bar	6 kg

## Select Reference

Model	Volume (cc)	Turns lock to lock (Wheel Turns)			
		Helm Pump (cc/rev)			
		SSP-25	SSP-35	SSP-45	SSP-50
OS-U100	132 / 164	5.3/6.6	3.8/4.7	2.9/3.6	2.6/3.3
OF-100	111	4.4	3.2	2.5	2.2
OF-350S	132	5.3	3.8	2.9	2.6
OF-350	143	5.7	4.1	3.2	2.9
ID-100	98	3.9	2.8	2.2	2.0
SDC-98	188	7.6	5.4	4.2	3.8
SDC-99	241	9.6	6.9	5.4	4.8



# Outboard Hydraulic Cylinders

OS-U100 Cylinder & OBHS-100

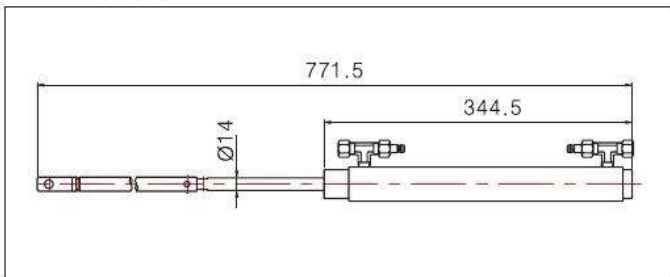
OS-U100 (Application : up to 300 HP)



Outboard Cylinder : OS-U100

30

## Dimensions



## Specification

Model	OS-U100
Volume	132 cc / 164 cc
Tube I.D	Ø32
Rod O.D	Ø14
Output Force	495 kgf / 562 kgf
Stroke	203 mm
Max. Pressure	70 kgf/cm <sup>2</sup>

## OBHS-100

Outboard Cylinder : OS-U100

Helm Pump  
(SOH-18, 25, 35)

Flexible Hose  
5/16"×14m

Hose Coupling  
5/16"

Oil : SO-02  
(#15, 1ℓ×2EA)

Option (Wheel)

SW-260

SW-300

## System Description

SINGLE

Helm Pump & Wheel Turns	25cc/rev 5.3 / 6.6 Turns
Application up to 300hp max	



# Outboard Hydraulic Cylinders

OF-100 Cylinder & OBHF-100

OF-100 (Application : up to 150 HP)



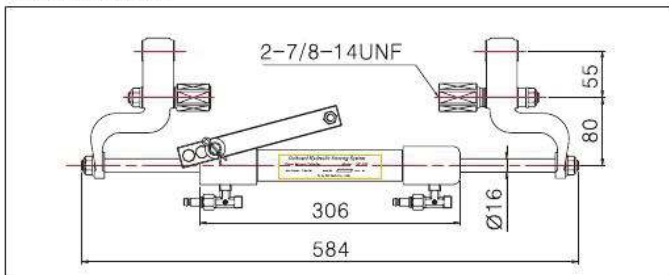
Outboard Cylinder : OF-100

Option

1"-12 UNF

Joint (HONDA / MERCURY)

## Dimensions



## Specification

Model	OF-100
Volume	111 cc
Tube I.D	Ø30
Rod O.D	Ø16
Output Force	354 kgf
Stroke	220 mm
Max. Pressure	70 kgf/cm <sup>2</sup>

## OBHF-100



Outboard Cylinder : OF-100

Helm Pump  
(SOH-18, 25, 35)

Flexible Hose  
5/16" x 14m

Hose Coupling  
5/16"

Oil : SO-02  
(#15, 1ℓ x 2EA)

Option (Wheel)



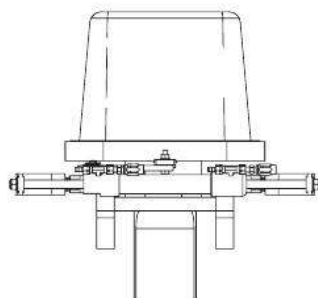
SW-260



SW-300

## System Description

SINGLE



Helm Pump & Wheel Turns	18cc/rev 6.2 Turns
	25cc/rev 4.4 Turns
Application up to 150hp max	





# Outboard Hydraulic Cylinders

OF-350S Cylinder & OBHF-350S

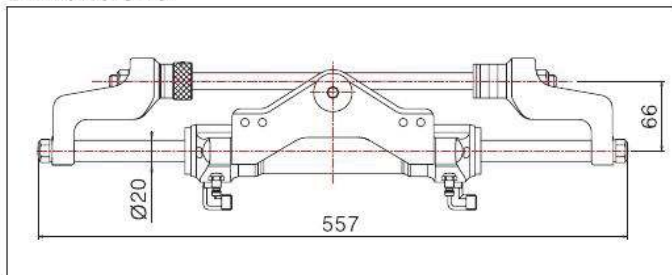
OF-350S (Application : up to 350 HP)



Outboard Cylinder : OF-350S

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## Dimensions



## Specification

Model	OF-350S
Volume	132 cc
Tube I.D	Ø35
Rod O.D	Ø20
Output Force	453 kgf
Stroke	203 mm
Max. Pressure	70 kgf/cm <sup>2</sup>

## OBHF-350S

Outboard Cylinder : OF-350S

Option (Wheel)

SW-260

SW-300

Helm Pump  
(SOH-18, 25, 35)

Flexible Hose  
5/16"×14m

Hose Coupling  
5/16"

Oil : SO-02  
(#15, 1ℓ×2EA)

## System Description

<p><b>SINGLE</b></p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 30%;">Helm Pump &amp; Wheel Turns</td> <td>18cc/rev 7.3 Turns</td> </tr> <tr> <td></td> <td>25cc/rev 5.3 Turns</td> </tr> <tr> <td colspan="2">Application up to 350hp max</td> </tr> </table>	Helm Pump & Wheel Turns	18cc/rev 7.3 Turns		25cc/rev 5.3 Turns	Application up to 350hp max		<p><b>DUAL ENGINE</b></p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 30%;">Helm Pump &amp; Wheel Turns</td> <td>35cc/rev 7.5 Turns</td> </tr> <tr> <td colspan="2">Application up to 350hp × 2 Engine max</td> </tr> </table>	Helm Pump & Wheel Turns	35cc/rev 7.5 Turns	Application up to 350hp × 2 Engine max	
Helm Pump & Wheel Turns	18cc/rev 7.3 Turns										
	25cc/rev 5.3 Turns										
Application up to 350hp max											
Helm Pump & Wheel Turns	35cc/rev 7.5 Turns										
Application up to 350hp × 2 Engine max											



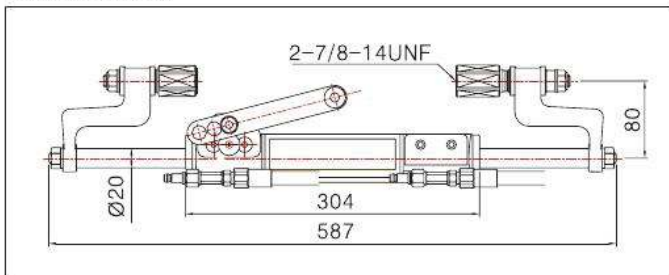
# Outboard Hydraulic Cylinders

OF-350 Cylinder & OBHF-350

OF-350 (Application : up to 350 HP)



## Dimensions



## Specification

Model	OF-350
Volume	143 cc
Tube I.D	Ø35
Rod O.D	Ø20
Output Force	453 kgf
Stroke	220 mm
Max. Pressure	70 kgf/cm <sup>2</sup>

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## OBHF-350



## System Description

SINGLE		DUAL ENGINE	
Helm Pump & Wheel Turns	18cc/rev 7.9 Turns 25cc/rev 5.7 Turns	Helm Pump & Wheel Turns	35cc/rev 8.2 Turns
Application up to 350hp max		Application up to 350hp × 2 Engine max	



# Direct Hydraulic Cylinders

ID-100 Cylinder & IBHD-100

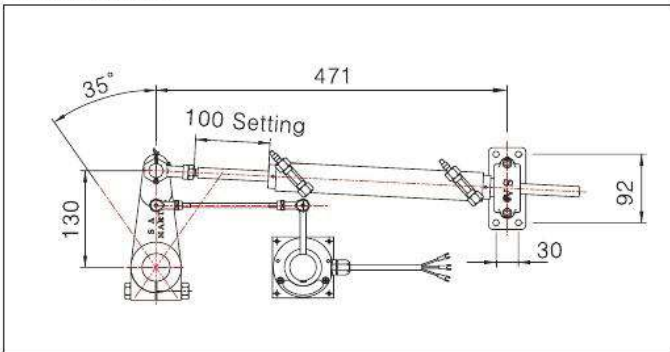
ID-100



Direct Cylinder : ID-100

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## Dimensions



## Specification

Model	ID-100
Torque	45 kg-m
Volume	98 cc
Tube I.D	Ø32
Rod O.D	Ø14
Output Force	455.2 kgf
Stroke	150 mm
Max. Pressure	70 kgf/cm <sup>2</sup>
Fitting	5/16" Flexible Hose

## IBHD-100 (For Water Jet & Stern Drive)



Direct Cylinder : ID-100

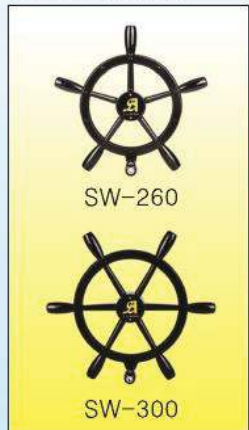
### Option (Tiller)



### Option (Helm Pump)



### Option (Wheel)



Helm Pump  
(SSP-25, 35, 45, 50)



Flexible Hose  
5/16"×14m



Hose Coupling  
5/16"



Oil : SO-02  
(#15, 1l×2EA)





# Direct Hydraulic Cylinders

SDC-98 Cylinder & IBHD-98

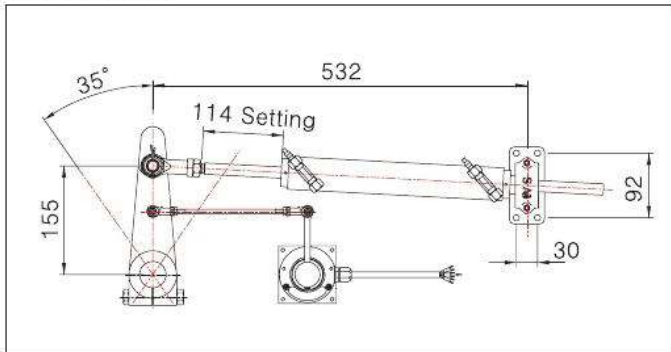
## SDC-98



Direct Cylinder : SDC-98

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## Dimensions



## Specification

Model	SDC-98
Torque	87.4 kg-m
Volume	188 cc
Tube I.D	Ø40
Rod O.D	Ø16
Output Force	738.9 kgf
Stroke	178 mm
Max. Pressure	70 kgf/cm <sup>2</sup>
Fitting	5/16" Flexible Hose

## IBHD-98 (For Water Jet & Stern Drive)

Direct Cylinder : SDC-98

Option (Tiller)

Option (Helm Pump)

SOH-18, 25, 35

Helm Pump  
(SSP-25, 35, 45, 50)

Flexible Hose  
5/16"×14m

Hose Coupling  
5/16"

Oil : SO-02  
(#15, 1ℓ×2EA)

Option (Wheel)

SW-260

SW-300



# Direct Hydraulic Cylinders

SDC-99 Cylinder & IBHD-99

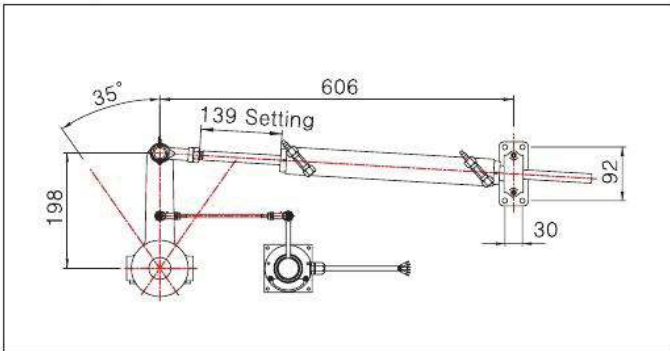
SDC-99



Direct Cylinder : SDC-99

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## Dimensions



## Specification

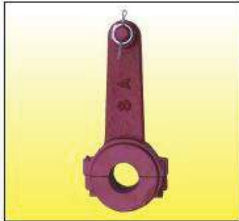
Model	SDC-99
Torque	112 kg-m
Volume	241 cc
Tube I.D	Ø40
Rod O.D	Ø16
Output Force	738.9 kgf
Stroke	228 mm
Max. Pressure	70 kgf/cm <sup>2</sup>
Fitting	5/16" Flexible Hose

## IBHD-99 (For Water Jet & Stern Drive)




Direct Cylinder : SDC-99


Option (Tiller)




Option (Helm Pump)




SOH-18, 25, 35




Helm Pump  
(SSP-25, 35, 45, 50)



Flexible Hose  
5/16"×14m




Hose Coupling  
5/16"




Oil : SO-02  
(#15, 1ℓ×2EA)

Option (Wheel)



SW-260



SW-300



# Accessories

Wheel & Flexible Hose, Hose Coupling, Oil, Nipple

## Wheel (AL-Die Casting)

<p>SW-260</p>	<p>SW-300</p>
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## Flexible Hose

Size	Ød	ØD
5/16"	Ø 7.8	Ø 13.2
3/8"	Ø 9.5	Ø 14.0

## Hose Coupling

Model	Hose Size	Material
OHC-01	5/16"	Brass (Cr Plating)
OHC-02	3/8"	Brass (Cr Plating)
OHC-01S	5/16"	Stainless
OHC-02S	3/8"	Stainless

## Oil

SO-02  
(#15, 1ℓ × 2EA)

## Nipple

No	Model	A	B	Application
①	OHN - 01	NPT 1/4"	NEF 9/16"	Helm Pump
②	OHN - 02	NPT 1/4"	NEF 9/16"	Helm Pump
③	OHN - 03	NPT 1/4"	NEF 9/16"	Helm Pump, Cylinder
④	OCN - 01	NPT 1/4"	NEF 9/16"	Cylinder

## Joint

For Honda/Mercury Engine

1"-12 UNF

Part No : OF350M23





# Accessories

## Tie Bar

### 특징

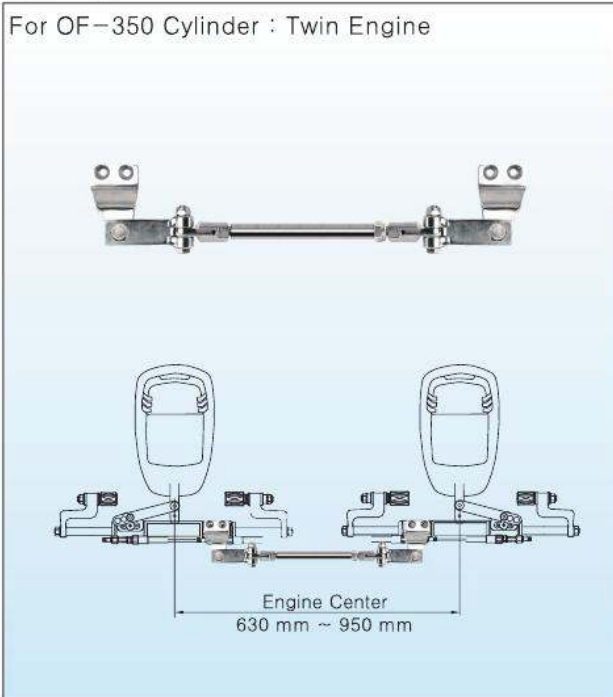
- 모든 부품이 스테인레스 재질로 제작되어 해수에 강하다.
- 트윈 엔진 및 트리플 엔진에 맞게 타이바를 선정하여 적용 할 수 있다.

### Feature

- Since all the parts are made with stainless steel, they are anti-corrosive from the sea water.
- The tie bar can be selected accordance to twin or triple engine.

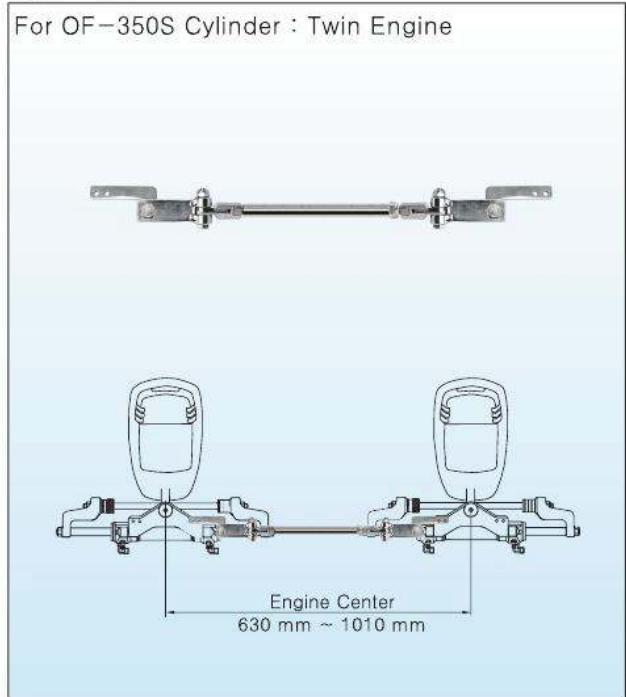
### OTB-01

For OF-350 Cylinder : Twin Engine



### OTB-02

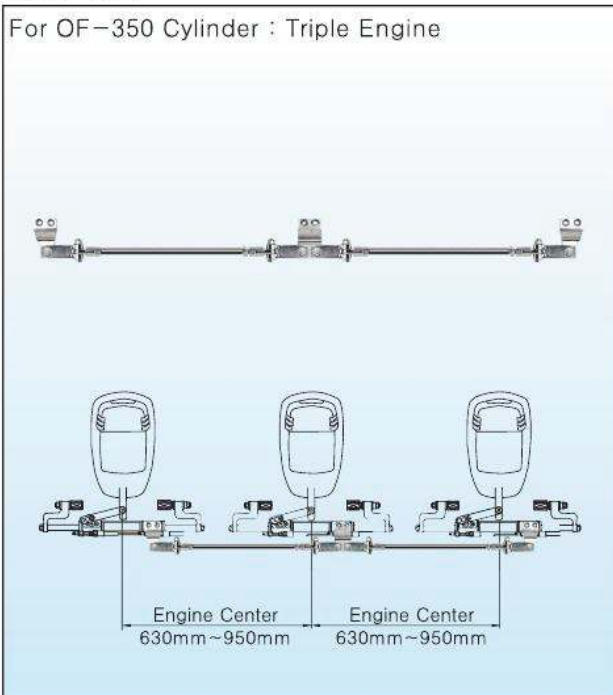
For OF-350S Cylinder : Twin Engine



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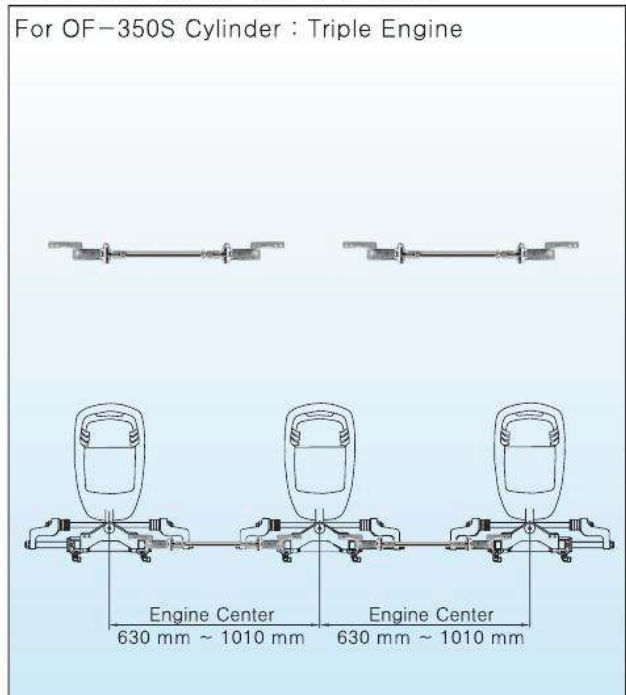
### OTB-01T

For OF-350 Cylinder : Triple Engine



### OTB-02T (OTB-02 × 2 SET)

For OF-350S Cylinder : Triple Engine



# *Outboard Power Steering System*





# Outboard Power Steering System

Feature & Components, Specifications

## 특징




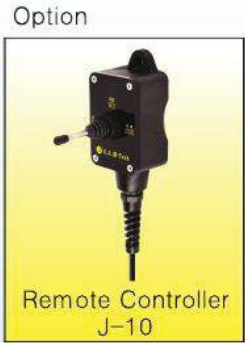
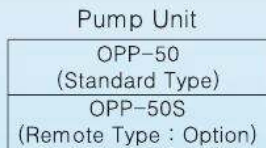


- 파워 스티어링 구동으로 스티어링 휠의 작동이 원활하고 적은 전압과 적은 힘으로 운전이 가능한 시스템이다.
- 스티어링 휠을 동작시킬 때 센서가 감지되어 일정시간만 펌프 유닛이 동작하고, 스티어링 휠의 동작이 멈추면 일정시간 후 정지하여 배터리의 소모를 줄인다.
- 선박의 용도 및 기능에 맞게 모델을 선정할 수 있다.
- 파워 스티어링 펌프 유닛은 모터 과부하 차단장치를 내장하여 모터가 타거나 늘어붙는 것을 방지한다.
- 컨트롤 박스 (OPC-40)는 프리볼트 용으로 설계·제작되어 DC 12V ~ DC 24V 까지 펌프 유닛 구동이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

## Features

- Power-drive system offers smooth steering wheel operation by lessening turns to lock to lock and with lesser force.
- When steering wheel is steered, the sensor detects its movement and allows motor unit to operate for a period of time. When there is no movement detected on steering wheel, the motor unit goes into sleep mode which helps to consume less battery.
- Accordance to desired purpose and function of vessel, suitable model can be selected.
- In-built overload protection device within the power steering pump unit prevent the motor from burning out.
- Control box (OPC-40) is designed and manufactured with free-volt type, which allows pump unit to operate on DC 12V ~ DC 24V.

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## Components (OPS-50 / OPS-50S)

 <p>Control Box OPC-40</p>	 <p>Steering Wheel Ass'y OPW-50S / OPW-50R</p>	 <p>Oil SO-02 (#15, 1ℓ×4EA)</p>	<p>Option</p>  <p>Remote Controller J-10</p>
 <p>Pump Unit OPP-50 (Standard Type) OPP-50S (Remote Type : Option)</p>	 <p>Flexible Hose 5/16"×5m (2EA) (Standard Type) 5/16"×5m (4EA) (Remote Type : Option)</p>	 <p>Hose Coupling 5/16" (2EA) (Standard Type) 5/16" (4EA) (Remote Type : Option)</p>	

## System Specification

System Model	OPS-50	OPS-50S
Power Source	DC 12V	
Max. Current	35.8A	
Pump Unit Model	OPP-50	OPP-50S
Solenoid Valve	×	○
Pump Unit Capacity	4.5 ℓ/min	
Pump Pressure	50 kg/cm <sup>2</sup>	
Setting Pressure	35 kg/cm <sup>2</sup>	
Control Box Model	OPC-40	
Steering Wheel Ass'y Model	OPW-50S / OPW-50R	
Steering Unit Model (Capacity)	SU-50S(50 cc/rev) / SU-50R(50 cc/rev)	
Oil	#15, 1ℓ × 4EA	
Hose	5/16" × 5m, 2EA	5/16" × 5m, 4EA

※ DC 24V 용은 별도 주문 생산 가능함.

※DC 24V can be supplied upon request.





# Outboard Power Steering System

Components Item

## Pump Unit



OPP-50  
(Standard Type)

OPP-50S  
(Remote Type : Option)

## Pump Unit Specifications

Model	OPP-50 / OPP-50S
Displacement	4.5 ℓ/min
Power Source	DC12V
Max. Current	35.8A
Pump Pressure	50 kg/cm <sup>2</sup>
Setting Pressure	35 kg/cm <sup>2</sup>

## Control Box



OPC-40

Control Box Inside

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## Hose & Fitting, Oil



For OPS-50



Flexible Hose  
5/16"×5m  
(2EA)



Hose  
Coupling  
(5/16")



Oil  
SO-02  
(#15, 1ℓ×4EA)

For OPS-50S



Flexible Hose  
5/16"×5m  
(4EA)



Hose  
Coupling  
(5/16")



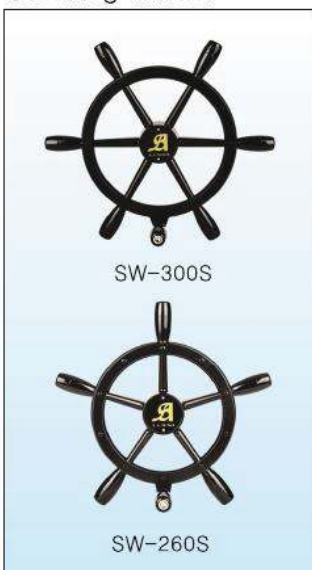
Oil  
SO-02  
(#15, 1ℓ×4EA)

## Option



J-10

## Steering Wheel



SW-300S

SW-260S

## Steering Unit Ass'y



## Steering Unit



※ Side Port Type



SU-50S  
(50cc/rev)

※ Rear Port Type



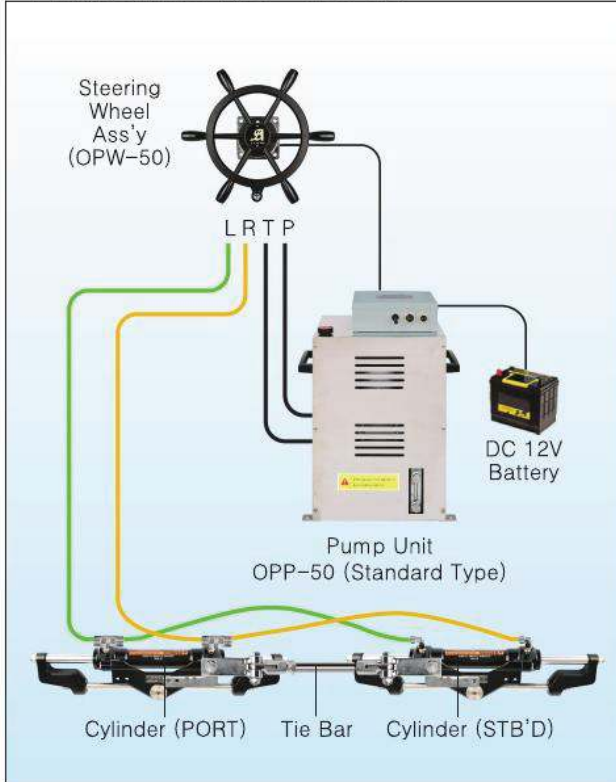
SU-50R  
(50cc/rev)



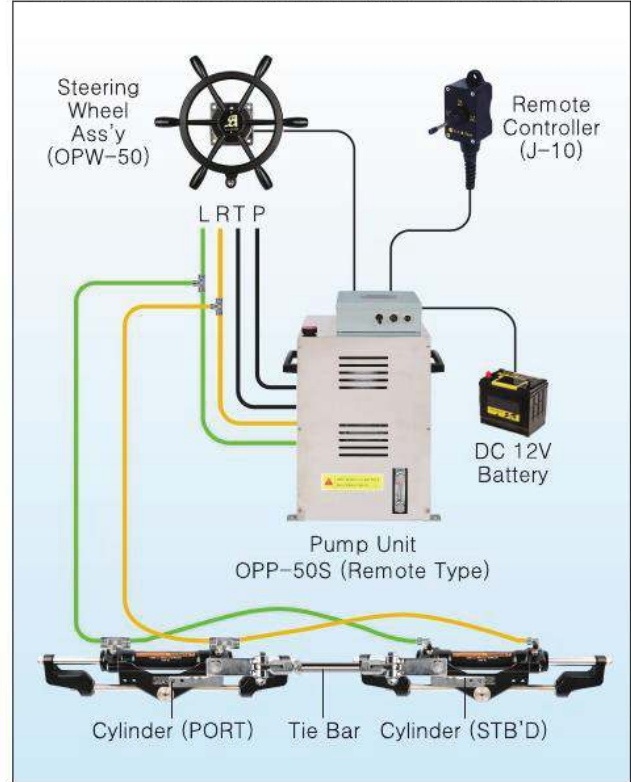
# Outboard Power Steering System Diagram

Outboard Power Steering System Diagram

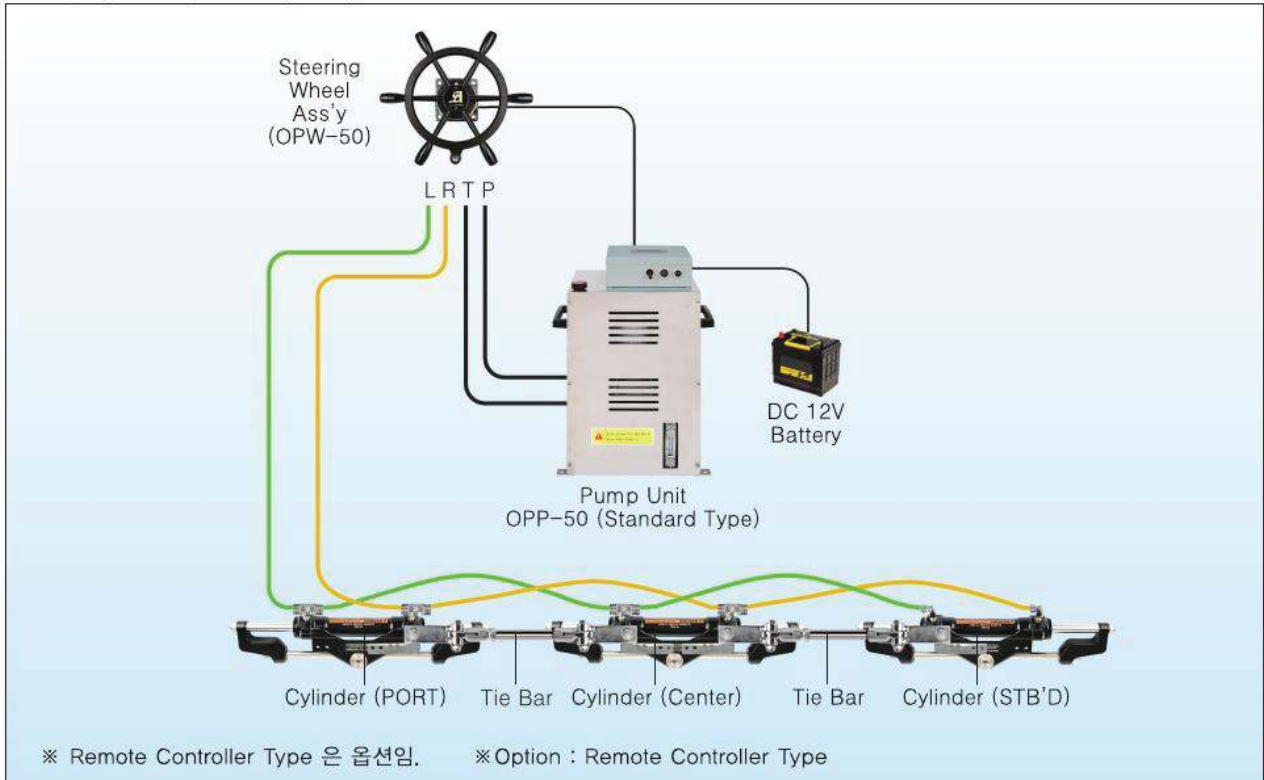
표준형 (Standard Type : OPS-50)



리모콘형 (Remote Controller Type : OPS-50S)



표준형 (For Triple Engines)





# Outboard Joystick Power Steering

HRP-75H

## 특징

- 헬 하우스의 Helm Pump와 병렬로 사용 가능
- 리모콘 조작으로 장소에 구애를 받지 않고 운전 가능
- 자유로운 토출유량 조절로 실린더 속도조절 가능
- 콤팩트하게 일체화 된 타입으로 간단한 설치

## Features

- Can be arranged parallel with helm pump from the wheel house.
- Allows convenient steering with remote control regardless of place limitation.
- With freely adjustable oil-input, cylinder speed can be easily controlled.
- With its compact and integrated design, installation can be easily done.

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HRP-75H (Power Pack)

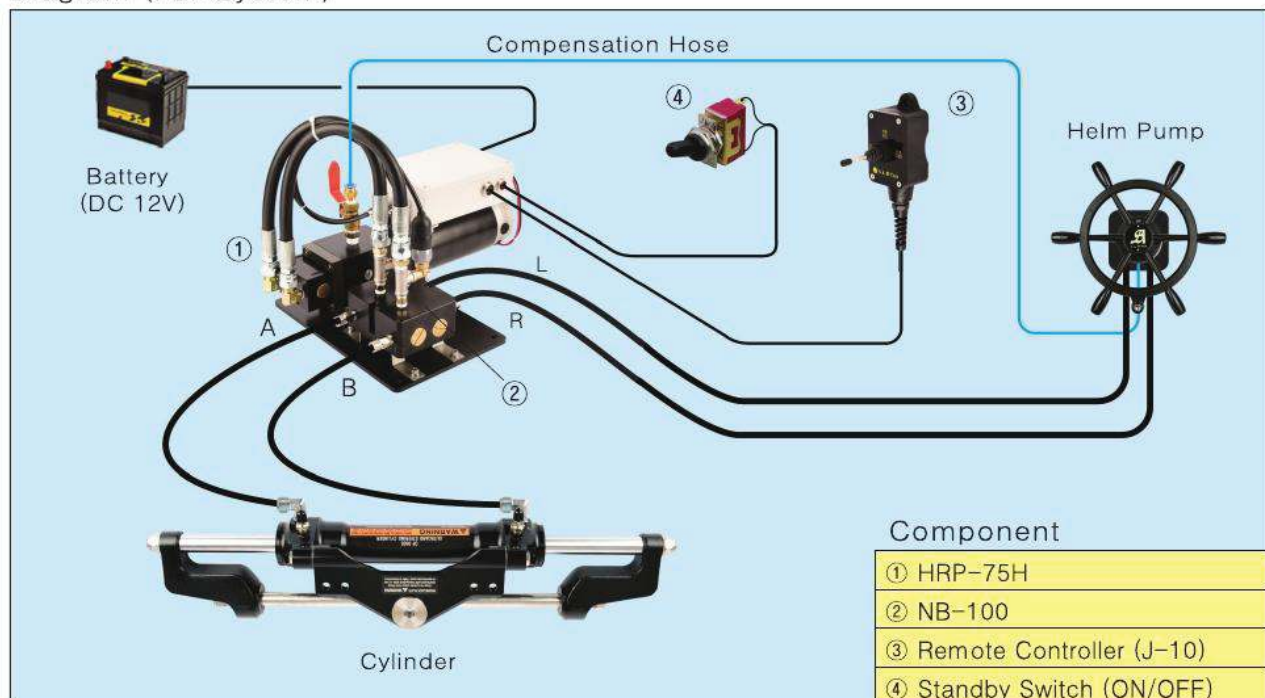


Specifications

Model	HRP-75H
Power Source	Battery DC 12V
Max. Current	23.8A
Motor	DC 12V, 200W, 1800 rpm
Pump Capacity	Max 3.2 l/min
Setting Pressure	35 kg/cm <sup>2</sup>
Motor Plunger Pump	HRP-75
Non-Return Valve	NB-100
Motor Controller Unit	MT-V40
Remote Controller	J-10
Application	Use it as parallel connection with Helm pump

※ DC 24V 용은 별도 주문 생산 가능함. ※ DC 24V can be supplied upon request.

Diagram (Full System)







# Outboard Joystick Power Steering

HRP-75R

## 특징

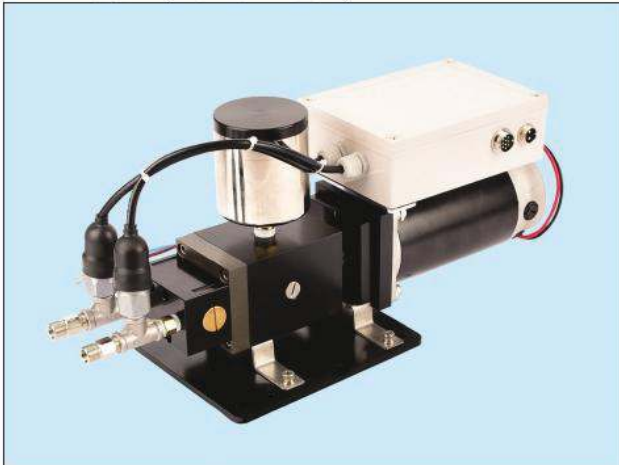
- 리모콘 조작으로 장소에 구애를 받지 않고 운전 가능
- 과부하 차단장치 장착으로 모터 및 기관의 손상 방지
- 자유로운 토출유량 조절로 실린더 속도조절 가능
- 콤팩트하게 일체화 된 타입으로 간단한 설치

## Features

- Allows convenient steering with remote control regardless of place limitation.
- In-built overload circuit breaker prevents possible damages to motor and panel.
- With freely adjustable oil-input, cylinder speed can be easily controlled.
- With its compact and integrated design, installation can be easily done.

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HRP-75R (Power Pack)

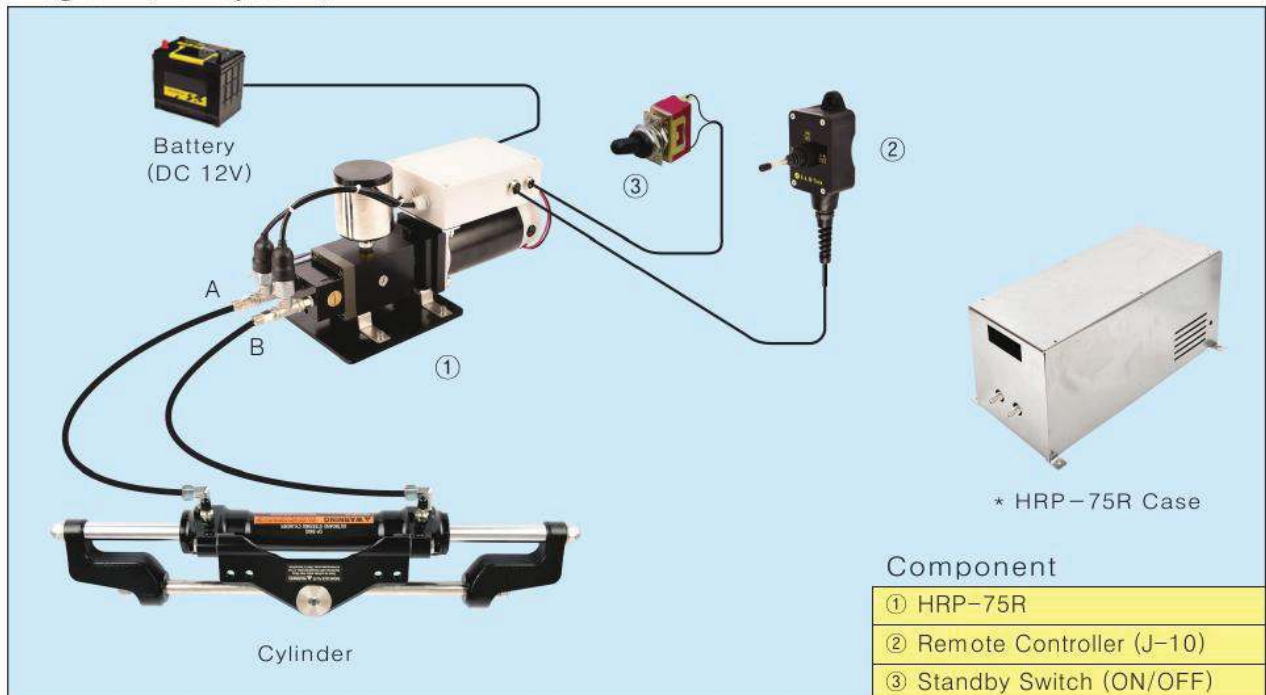


Specifications

Model	HRP-75R
Power Source	Battery DC 12V
Max. Current	23.8A
Motor	DC 12V, 200W, 1800 rpm
Pump Capacity	Max 3.2 l/min
Setting Pressure	35 kg/cm <sup>2</sup>
Motor Plunger Pump	HRP-75
Oil Reserve Pot	230 cc
Motor Controller Unit	MT-V40
Remote Controller	J-10
Application	Joystick Remote Pump

\* DC 24V 용은 별도 주문 생산 가능함. \* DC 24V can be supplied upon request.

Diagram (Full System)

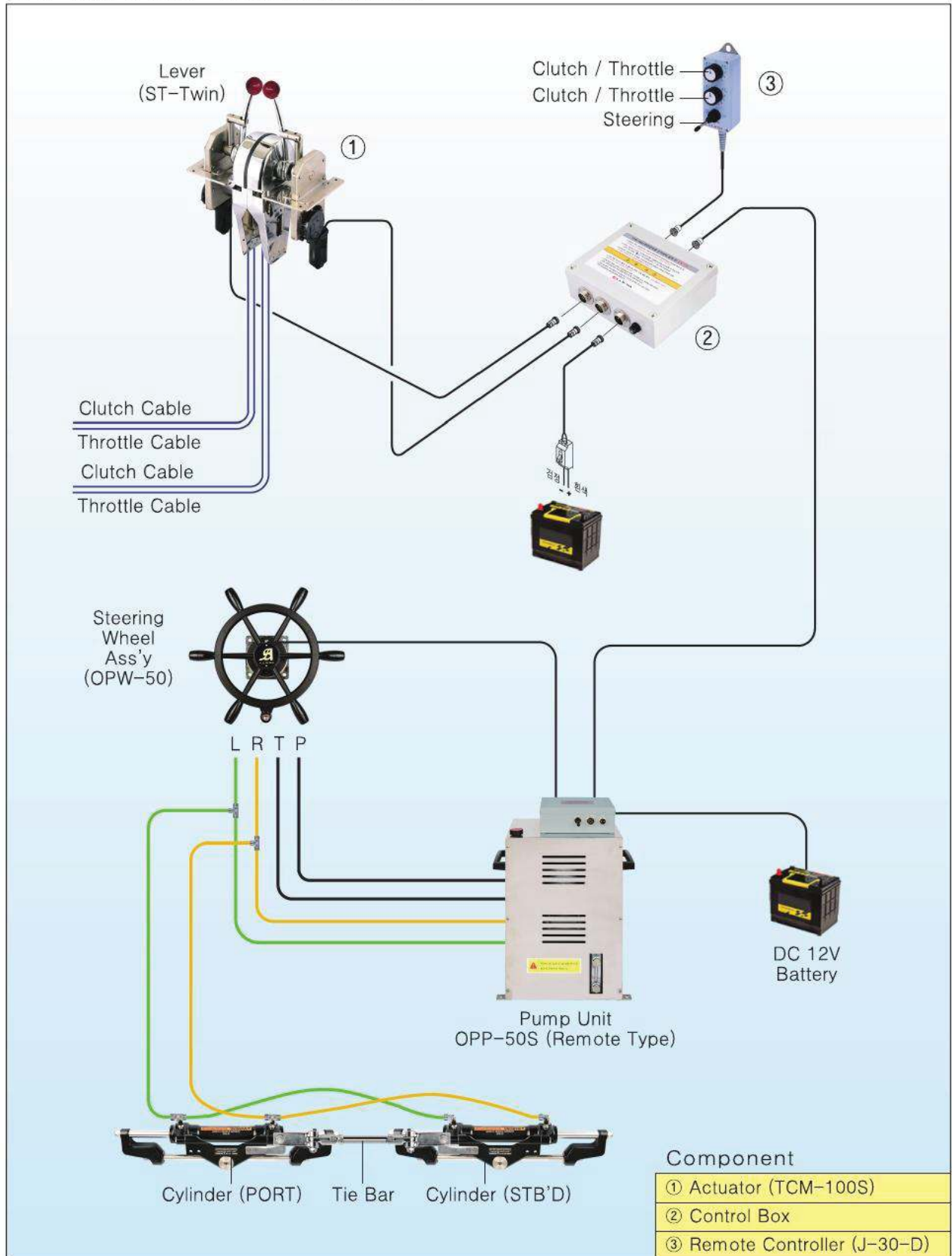




# Outboard Power Steering and Engine Remote System

OPS-50S & TCM-100S

OPS-50S & TCM-100S (Full System)



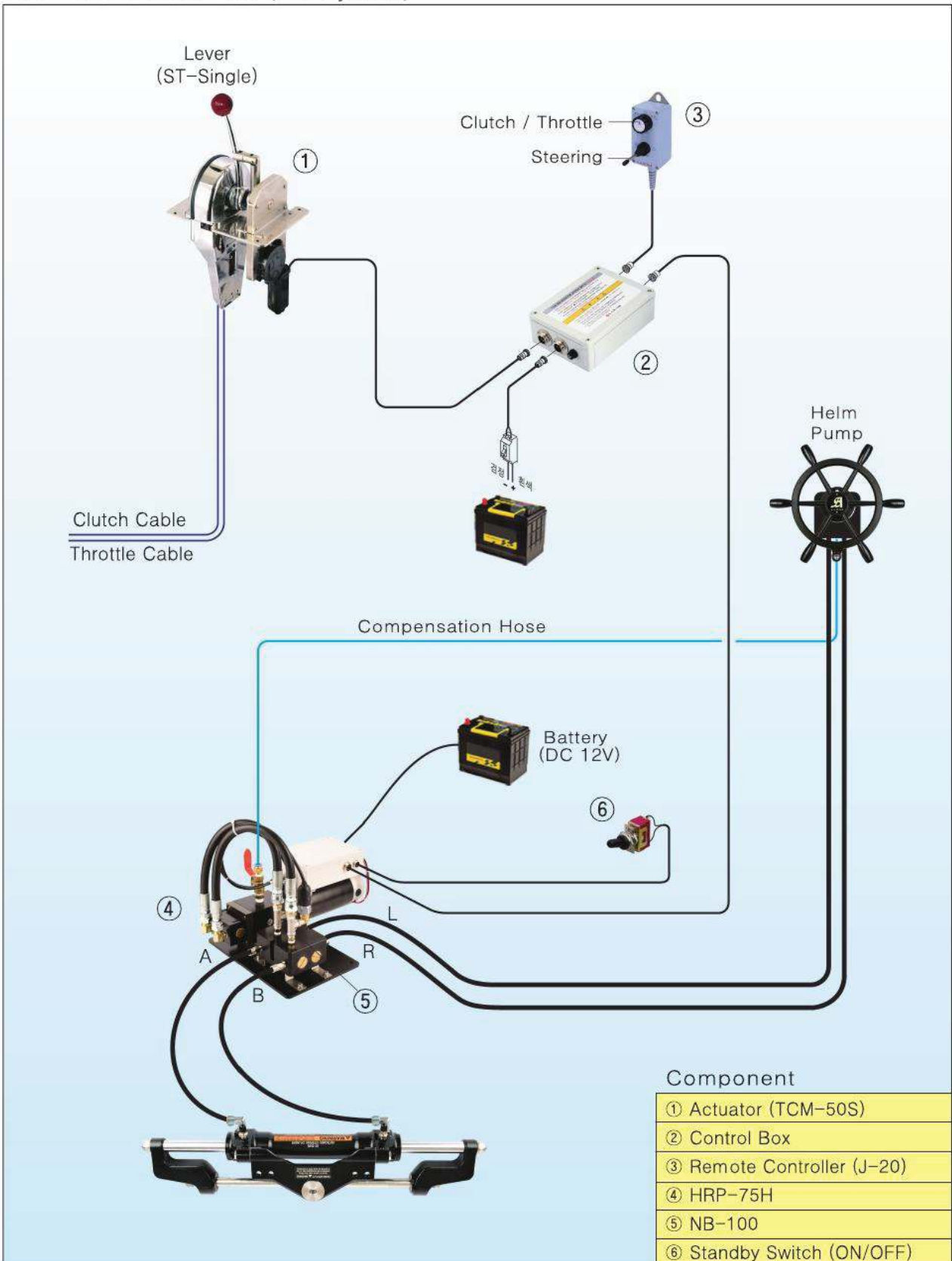


# Outboard Joystick Power Steering and Engine Remote System

HRP-75H & TCM-50S

## HRP-75H & TCM-50S (Full System)

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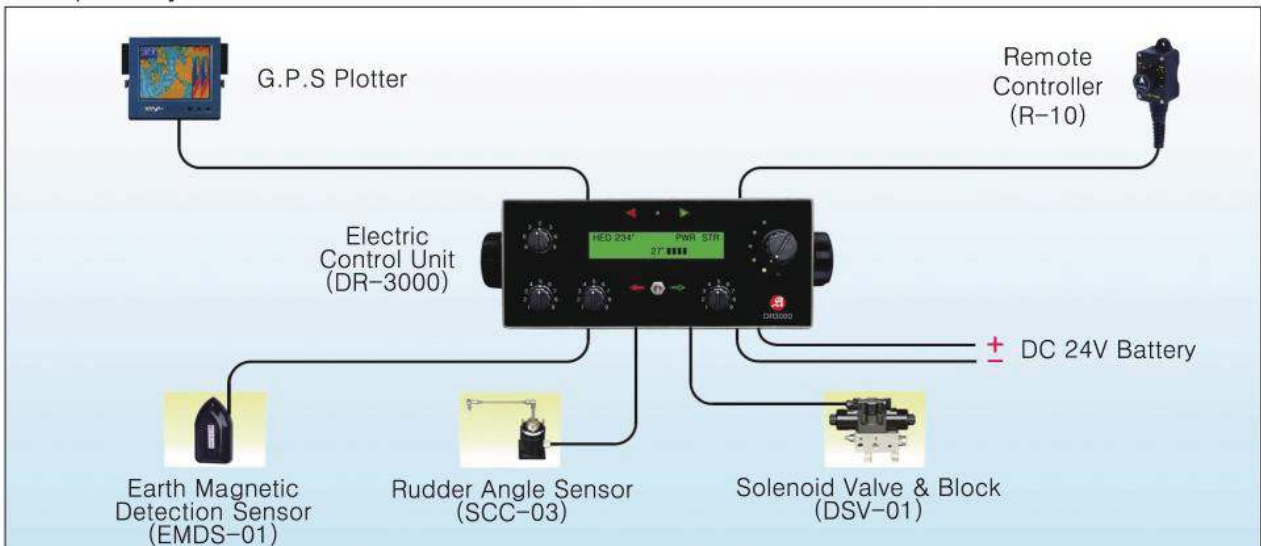


## Other Systems

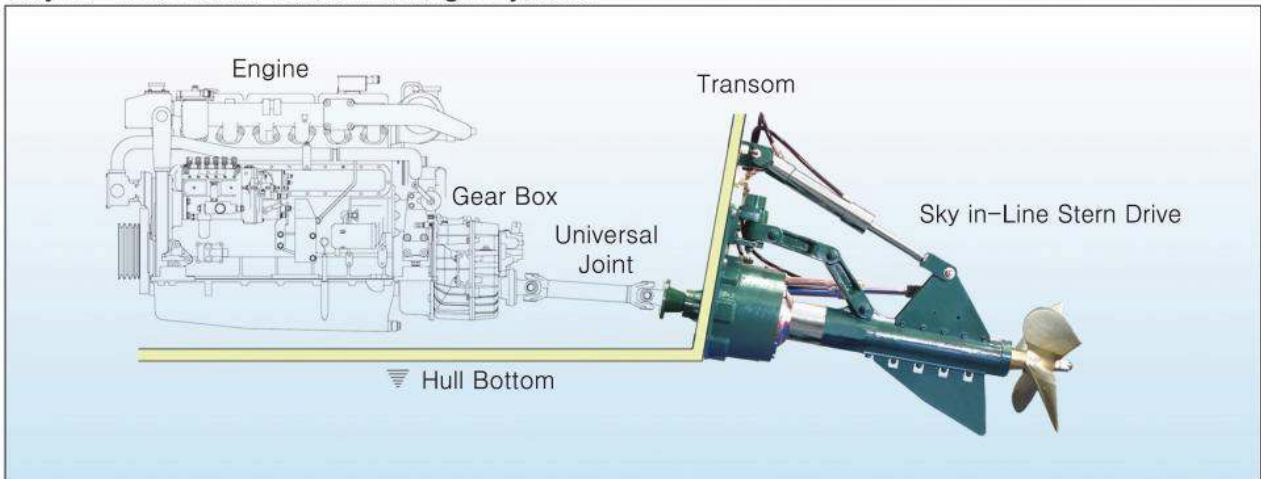
### Electric Steering System



### Autopilot System



### Sky In-line Stern Drive Package System



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