



创新 / 合作 / 共赢

# 产品手册

S P A R E   B R O C H U R E



INNOVATE  
COOPERATION  
WIN-WIN

上海恒星船舶技术有限公司

Shanghai Hensung Marine Technology Co.,Ltd

" Hensung Marine Technology " is located in Pudong, Shanghai, Facing domestic and foreign owner customers, providing marine technical services and marine spare parts supply business.

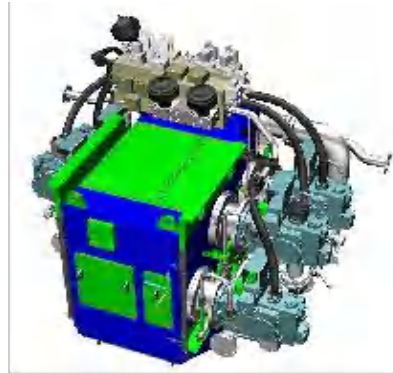
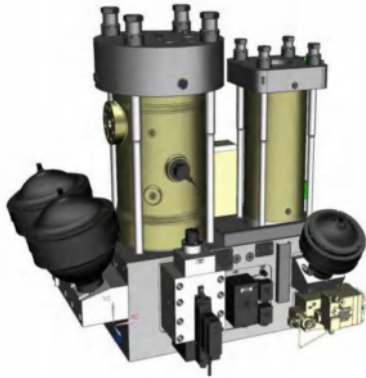
After years of technical development and channel development, we have established deep cooperation and agency relationship with the following many marine equipment manufacturers.

MAN, Mitsubishi, CSSC, WinGD, Hyundai, Rexroth, Parker, Nabtesco, Eaton, Dynex, Hawe, Contrinex, Seitzvalve, Aventics, Haewon, Mt.H, Kumkang, Leduc, Super Green Power etc.

Professional and dedicated operation enables us to have good spare parts supply capacity in the marine machinery , The core business is mainly focused on M/E and G/E.

In the future, We will continue to grow and provide more customers with professional and dedicated services, cooperation and win-win.

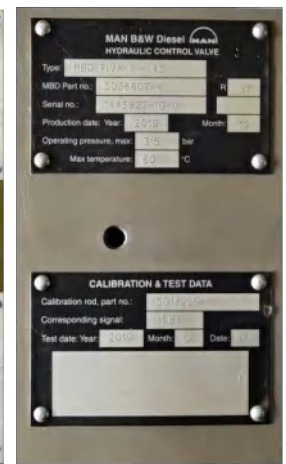
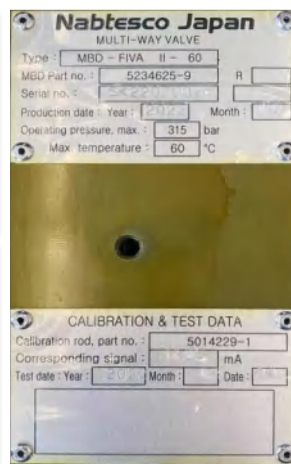
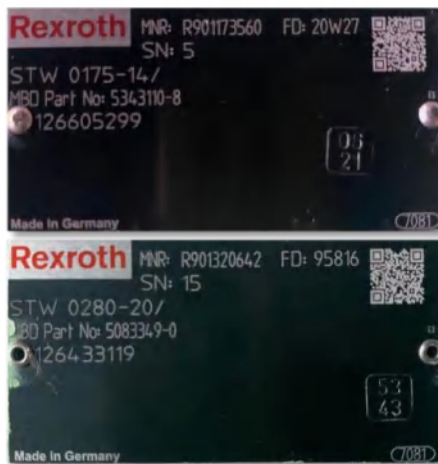
A handwritten signature in black ink, consisting of stylized initials and a long horizontal flourish extending to the right.



### Docking Meataince Parts

01. Fuel Oil Pressure Booster
02. Exhaust Valve Actuator
03. HCU&HPS(ELFI/FIVA/HPS P.)
04. Membrane accumulator
05. The Proportional Valve
06. Pneumatic Maneuvering System
07. Cylinder Lubricator
08. Tacho System
09. ECS

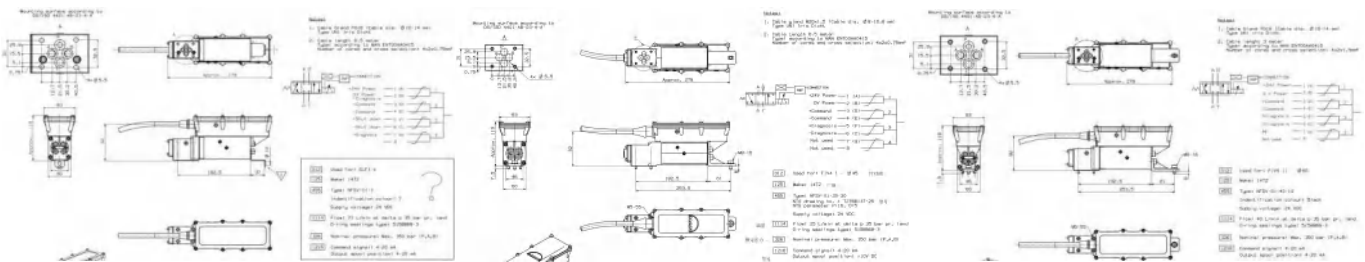
Repair kits for Fuel Oil Pressure Booster	ME-B	ME-C-50	ME-C-60	ME-C-70	ME-C-80	ME-C-90	ME-C-98
Repair kits for Exhaust Valve Actuator	ME-B	ME-C-50	ME-C-60	ME-C-70	ME-C-80	ME-C-90	ME-C-98



FIVA-1000	FIVA VALVE	R901173560/5343110-8	Rexroth
FIVA-2000	FIVA VALVE	R901320642/5083349-0	Rexroth
FIVA-I-45	FIVA VALVE	5234046-0	Nabeco
FIVA-II-60	FIVA VALVE	5234625-9	Nabeco
FIVA-I-45	FIVA VALVE	5036807-4	MAN
FIVA-II-60	FIVA VALVE	5032039-5	MAN



D1FPE50MA9NS0039XG264-MA	Proportional Valve	250-750	Parker	5635647-0
D1FPE50HA9NS0039XG264-HA	Proportional Valve	125-180	Parker	5635666-1
D1FPE50FA9NS0039XG264-FA	Proportional Valve	40-71	Parker	5635692-3
D1FPE50HB9NS0039XG267-HB	Proportional Valve	FIVA- I	Parker	5634426-0
D1FPE50FB9NS0039XG265-FB	Proportional Valve	ELFI	Parker	5635505-6
D1FPE50MB9NS0039XG267-MB	Proportional Valve	FIVA-II	Parker	5247348-8



NFSV-01-12.5

NFSV-01-25

NFSV-01-40

NFSV-01-12.5	Proportional Valve	ELFI	Nabtesco	5690005-8
NFSV-01-25	Proportional Valve	FIVA-I-45	Nabtesco	5203317-4
NFSV-01-40	Proportional Valve	FIVA-II-60	Nabtesco	5234275-9



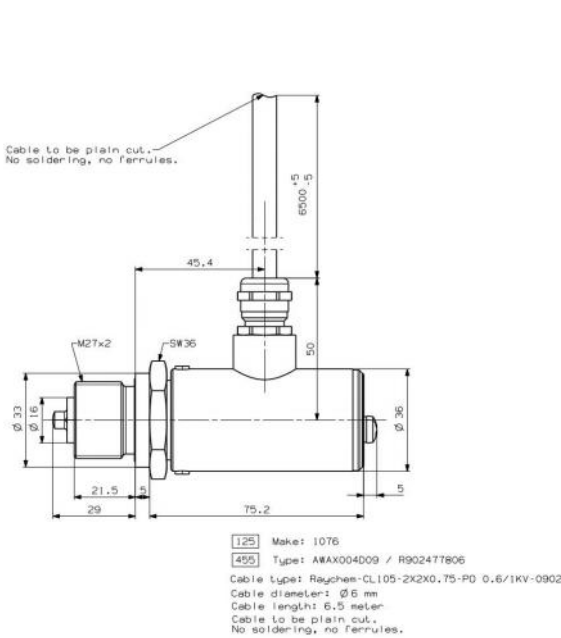
22/STW0175-12/*ET	R961011848	Rexroth	Used For FIVA1000
22/STW0280-20/*ET	R961011847	Rexroth	Used For FIVA2000
R901288846 4WRPE 6 VC08S-2X/G24KO/FIM-948	R901288846	Rexroth	Used FOR HPS PUMP 125/180
R901288847 4WRPE 6 VC18S-2X/G24KO/FIM-948	R901288847	Rexroth	Used FOR HPS PUMP 40/71/250/500/750



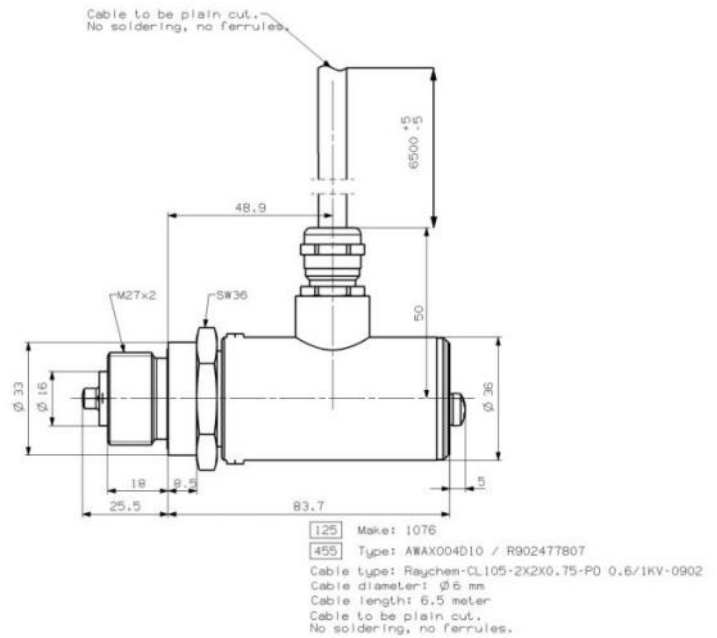
22/STW0175-12/\*ET



22/STW0280-20/\*ET



R902477806



R902477807

R902477807	5237984-5	R902477807	Rexroth	Used FOR HPS PUMP 125/180
R902477806	5237894-6	R902477806	Rexroth	Used FOR HPS PUMP 40/71/250/500/750



Exhaust Valve-SENSOR	HF	1881713-8	MAN
FIVA-SENSOR	HF	1881672-9	MAN
FIVA-SENSOR	Japan	1881681-3	MAN



HPS-71

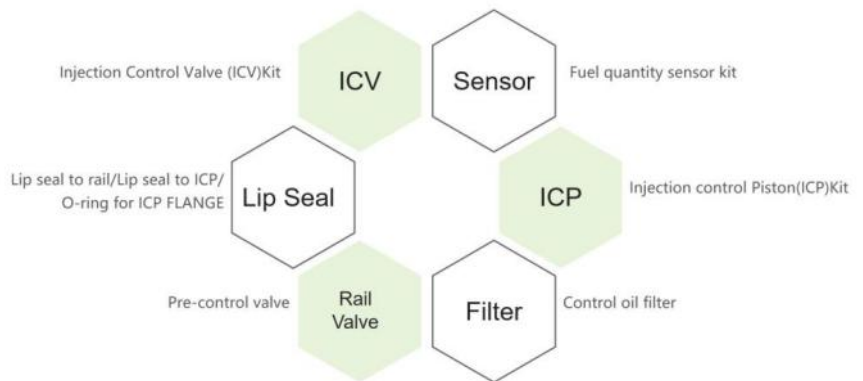


HPS-125

A4VSO 71 HS3/4(E)	HPS PUMP	71	Rexroth
A4VSO 125 HS3/4(E)	HPS PUMP	125	Rexroth
A4VSO 40 HS3/4(E)	HPS PUMP	40	Rexroth



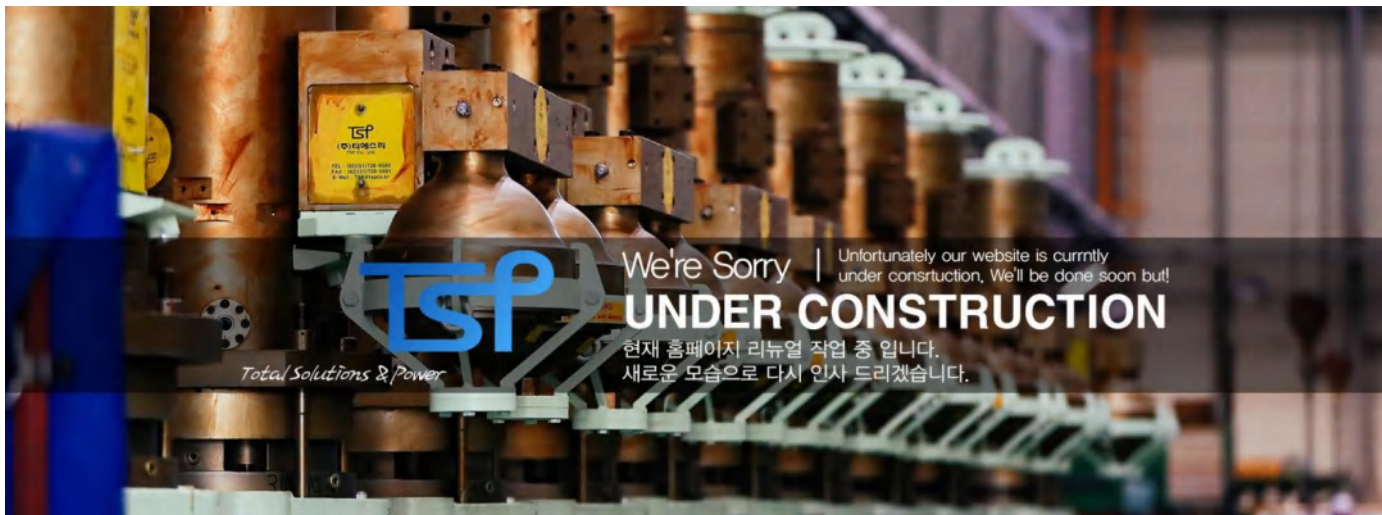
PV016/28 PUMP	Electrolled Controlled Engings	16/28	PARKER
PV032/46 PUMP	Electrolled Controlled Engings	32/46	PARKER
PV063/92 PUMP	Electrolled Controlled Engings	63/92	PARKER



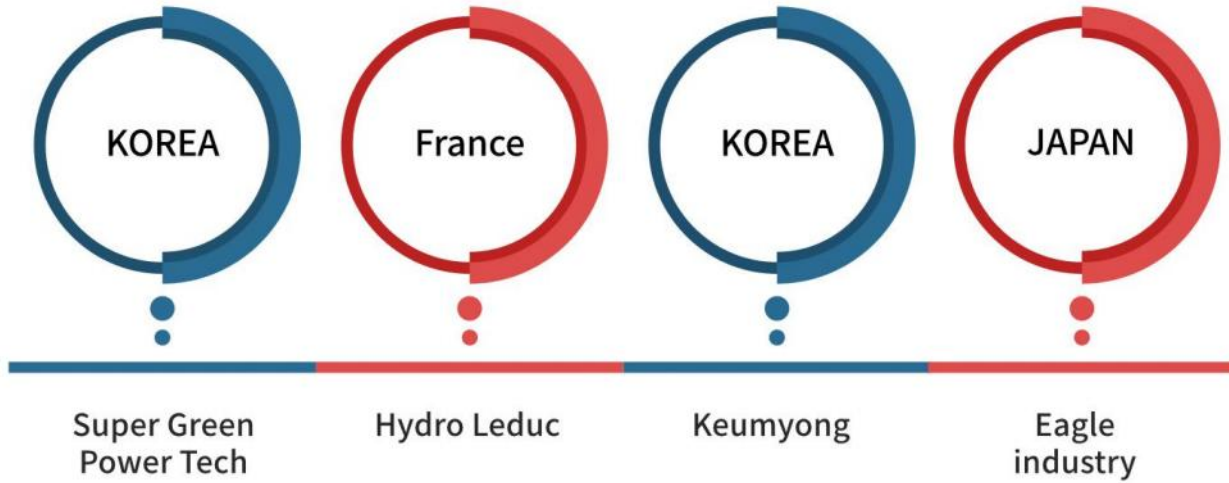
ICU order numbers for size 0,1,2,3,4 rail UNITS



Rt-flex48T-D; Rt-flex50; Rt-flex50B; Rt-flex50-D	Size 0
Rt-flex50T-B; Rt-flex50T-D; Rt-flex50T-E; Rt-flex60C; Rt-flex60C-B;	Size 1
Rt-flex68-B; Rt-flex68-D;	Size 2
Rt-flex82T-D; W-X82; W-X82-B; 部分的 Rt-flex68-D;	Size 3
Rt-flex84T-D; Rt-flex96C-B;	Size 4
W-X82DF; W-X92; W-X92DF	Size 5



Approved makers hydraulic accumulators are:



MEMBRANE ACCUMULATOR,REPAIR KIT(4LITRE)-RepairKit	SGP	KOREA	5792630-2.0
MEMBRANE ACCUMULATOR,REPAIR KIT(10LITRE)-RepairKit	SGP	KOREA	5792786-0.0
MEMBRANE ACCUMULATOR,REPAIR KIT(4LITRE)-RepairKit	TSP	KOREA	5361751-6.0
MEMBRANE ACCUMULATOR,REPAIR KIT(10LITRE)-RepairKit	TSP	KOREA	5361522-8.0

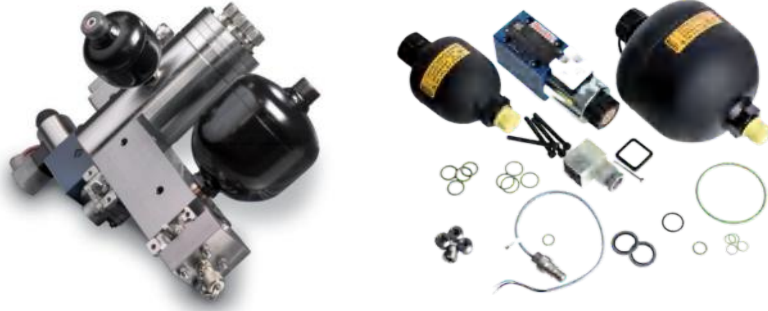
MEMBRANE ACCUMULATOR(4LITRE)-Complete	Leduc	French	5792628-0.0
MEMBRANE ACCUMULATOR(10LITRE)-Complete	Leduc	French	5792778-8.2
MEMBRANE ACCUMULATOR(4LITRE)-Complete	TSP	KOREA	5361870-2.0
MEMBRANE ACCUMULATOR(10LITRE)-Complete	TSP	KOREA	5745524-3.2





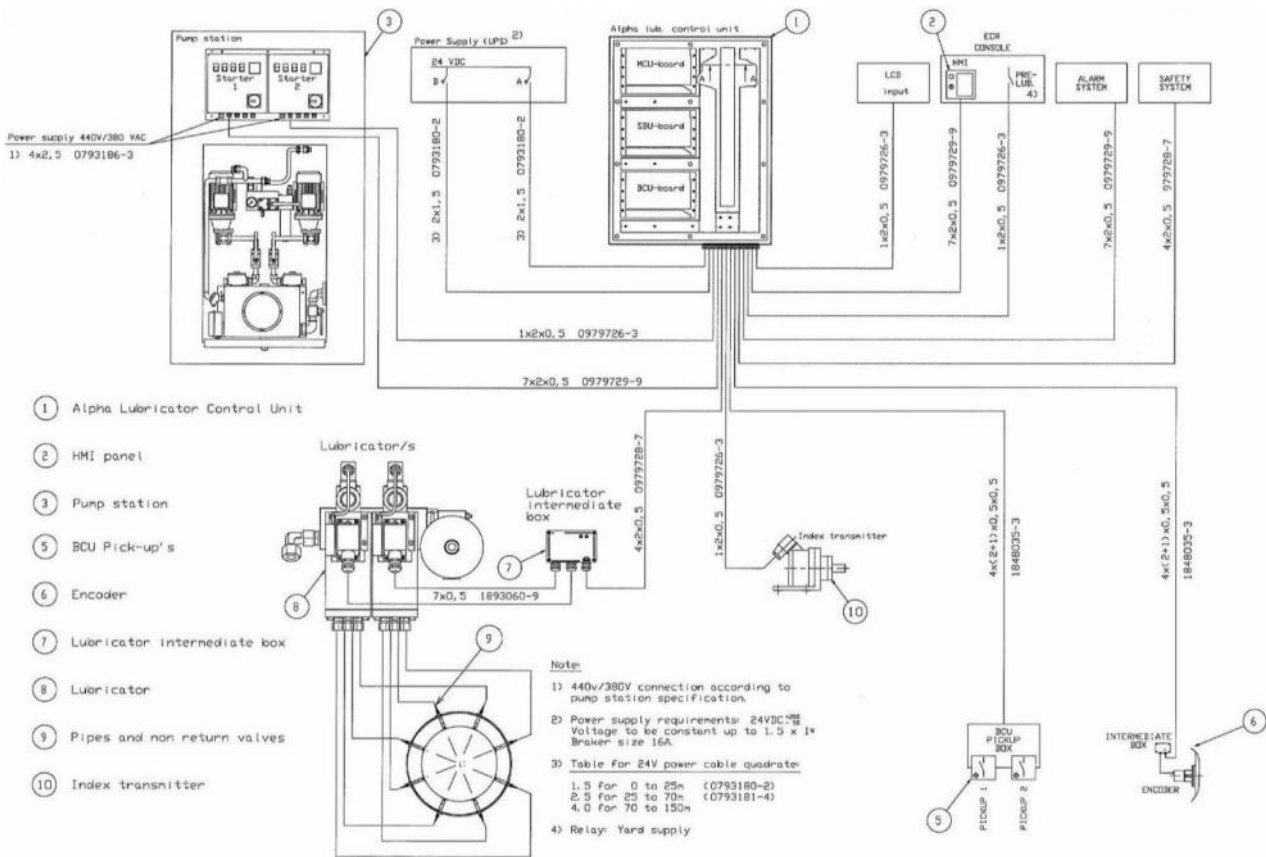
## MAIN COMPONENTS

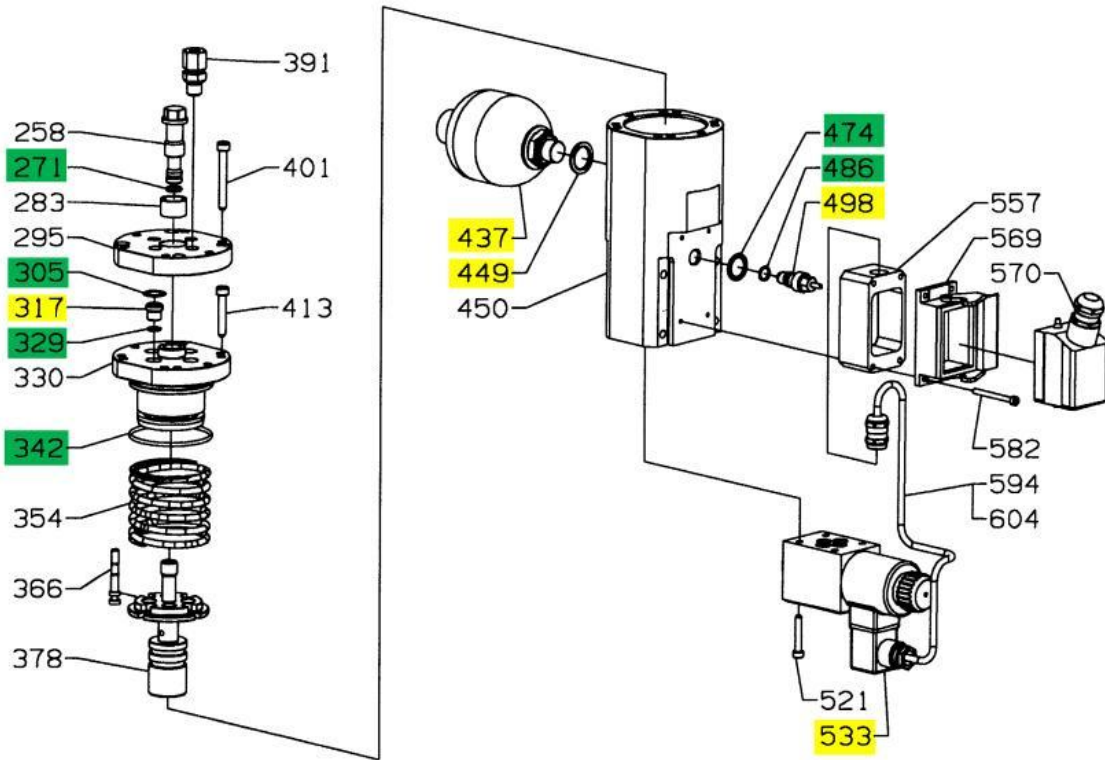
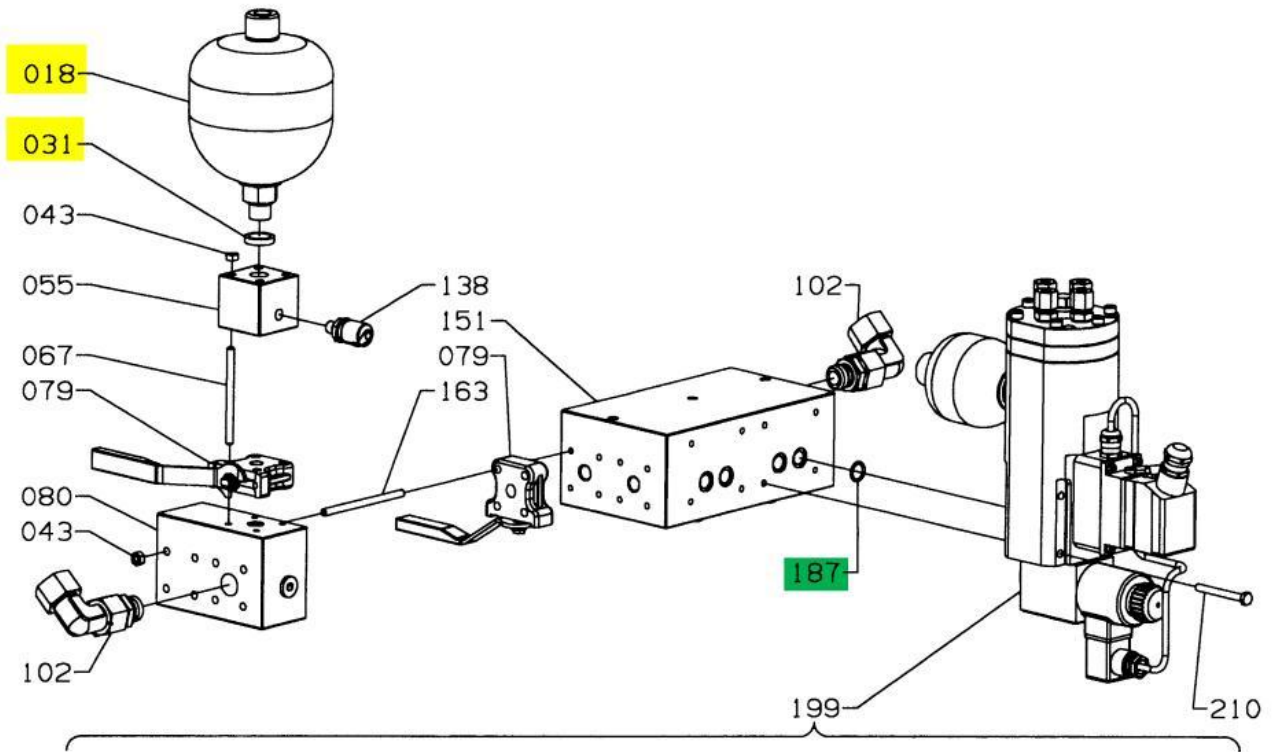
01. Alpha Lubricator Control Unit
02. HMI panel
03. Pump station
04. Transmitter box for Alpha Lubricator
05. BCU Pick-up's
06. Encoder
07. Lubricator intermediate box
08. Service Kit for alpha Lubricator
09. Pipes and non return valves
10. Index transmitter



Alpha Lubricator	Inlet accumulator <sup>①</sup>	0.7L	Rexroth	Germany
	Outlet accumulator <sup>②</sup>	0.16L	Rexroth	Germany
	Inlet accumulator <sup>①</sup>	0.7L	HYDAC	Germany
	Outlet accumulator <sup>②</sup>	0.16L	HYDAC	Germany
	Inlet accumulator <sup>①</sup>	0.7L	PARKER	USA
	Outlet accumulator <sup>②</sup>	0.16L	PARKER	USA
	Solenoid Valve Complete <sup>MC</sup>	R901186443	Rexroth	Germany
	Solenoid Valve Complete <sup>ME</sup>	R900050392	Rexroth	Germany
	Non return valve	5BAR		CHINA
	Non return valve	5BAR		KOREA
	Feed back sensor/Inductive sensor	DW-AD-603-M10E-637	M10	Switzerland
	Feed back sensor/Inductive sensor	DW-AD-603-M10E-620	M10	Switzerland
	Feed back sensor/Inductive sensor	PEPPERL+FUCHS	M10	Germany
	Seal kits for alpha lubricator		OEM	
PUMP STATION	Suction Filter <sup>①</sup>	01.TS.210.250G.B	Eaton	USA
	Pressure Filter <sup>②</sup>	01.E.60.130G.30.E.P	Eaton	USA
	Suction Filter <sup>①</sup>	0240 RS 200W	HYDAC	Germany
	Pressure Filter <sup>②</sup>	0060 D100 W/HC	HYDAC	Germany
	Suction Filter <sup>①</sup>	P-TSF-06-150W		JAPAN
	Pressure Filter <sup>②</sup>	P-GM-2-40UW		JAPAN
	Repair kit for Gear Pump <sup>seal kit</sup>	1 517 010 152	Rexroth	Germany
	Repair kit for Gear Pump <sup>shaft seal</sup>	1 150 283 008-000	Rexroth	Germany
	Repair kit for Gear Pump <sup>shaft seal</sup>	1 150 283 008-000	Nok	JAPAN
	Repair kit for Gear Pump <sup>REPAIR KIT</sup>		TOYOOKI	JAPAN
	Gear Pump	0510425009	Rexroth	Germany
	Gear Pump	0510525009	Rexroth	Germany
	Gear Pump	0510525006	Rexroth	Germany
	Gear Pump	TCP2-F10-MRI-A-020	TOYOOKI	JAPAN

			KOYO CO.,LTD	
	Spider	GR24	KTR24	Germany
	Coupling	22-30	KTR	Germany
ALCU	MCU	V1.4		MAN
	BCU	V2.0		MAN
	SBU	V1.5		MAN
	HMI			MAN
Others	MPC	V1.73		
	ENCODER <sup>MC-SINGLE</sup>	LeineLinde-855900010		Sweden
	ENCODER <sup>MC-DOUBLE</sup>	LeineLinde-855900020		Sweden
	ENCODER <sup>ME</sup>	LeineLinde-8309000001		Sweden
	LEVEL SWITCH	BEDIA CLS-50 500274		Germany
	0330 PCB ASSY	1142824-2		MAN
	Lubricator intermediate box			MAN
	LOAD TRANSMITTER	SSEPOT-60		KOREA
	LOAD TRANSMITTER	WT707-113D A130		Switzerland
PMI pressure transmitter	6613EQ		KISTLER	



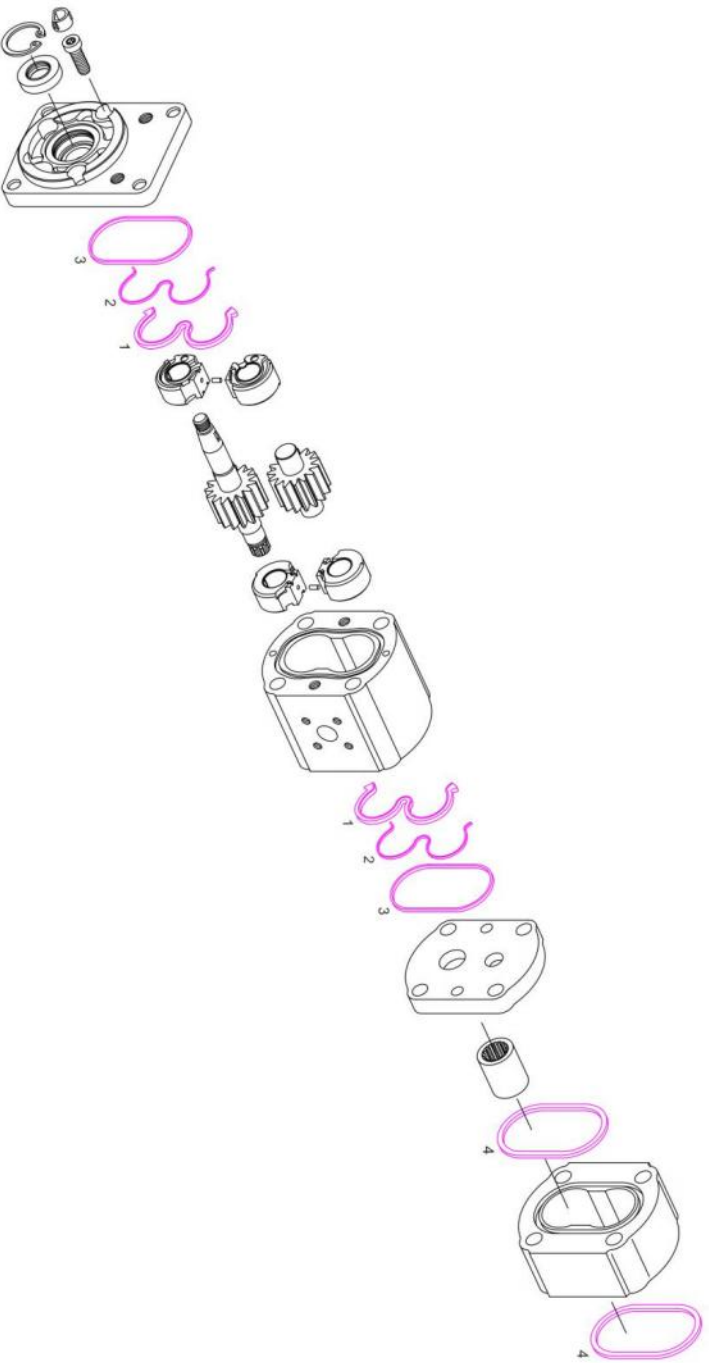


# BOOSTER PUMP UNIT FOR ALPHA LUBRICATION SYSTEM



- ◆ Part No. : A19-215031-3
- ◆ Flow : 0.8 m<sup>3</sup>/h
- ◆ Voltage/Frequency : 3× 440V / 60Hz





Pos	2	3	5	6	7	8	9	10	11	13	14	15	16	17	18	19	21	23	25	26	27	28	29	31	32			
MAN Part no.	Suc-tion filter	Suc-tion valve	Ball valve	Pump*	Coupling Bellhouse	Motor	Check valve	Needle valve	Pressure transducer	Mano meter	Test point	Ball valve mount	Check valve - bypass	Pressure filter	Pressure relief valve	Ther mo valve	Check valve	Heater	Bleeder valve	Mano meter valve	Ball valve	Mount. Manifold	Cleaning cover	Temperature transmitter PT100	Control Box			
1890775-9	IN 480002: TSW210.250G.6.P, Element IN 320075, Gauge WATT 192401006957		RØ 100023: 1"BSP	BO 0 510 225 006	HBE: 6301/6252/6359: SOFTEX 24/30.B17-28H7 HBE 4085: PE160/105/70	BEV 100L-4 2.2kW B34	SA 0768689: RHZ-18LRED 1 BAR	DE 86020171: PB-NVA-OK	DA 060G3131: MBS 33M 0-100 BAR 4-20 Ma / KL 8298.83.2517.04.19.43.58.92 + SA 0361956: RI R1/2-EDxR1/4	ST 31127: ø63 0-60 GREEN MARKING 40-50 BAR	HYDA 680107: M16x2.0	RØ 106024 DN20	IM 200014: CV1-16N-P-O-100: 7 BAR	IN 430318: FHP60.130G.30.E.F.4: Element IN 320136: Gauge IN 318528 AOC 5.0.P	IN 430319: FHP90.130G.30.E.P: Element IN 303104: Gauge IN 318528 AOC 5.0.P	BO 0 532 002 012: 15-50 BAR; ADJ 45 BAR	NIS 220216: 1"BSP 45°C	DE 87410001: SJ-CVA-00-0010: 0.7 BAR	DE-VI 23244627: 500W 5-85°C ADJ 40°C	DE-VI 23312749: 500W 5-85°C ADJ 40°C	DE-VI 23244627: 500W 5-85°C ADJ 40°C	SA 0370700: ½"BSP	DA SL-257050: FT 290-1/4"BSP	SA 0518613: 1½"BSP	ST 31110, Manifold: ST 30475	HBE 3097: Sealingring: HBE 3091	DA 084Z801200: MBT 5250: PT100 ½"BSP ø11X100	EL 100014 052
1890775-0				BO 0 510 425 009		LDC 100L-4 2.2kW B34																						
1890775-4				BO 0 510 325 006																								
1890779-6				BO 0 510 525 009																								
1890739-2				BO 0 510 225 006																								
1890795-2				BO 0 510 425 009																								
1890620-0				BO 0 510 225 006																								
1890624-2				BO 0 510 425 009																								
1890772				BO 0 510 525 018																								
1890790-6				BO 0 510 625 022																								
1890791-4				BO 0 510 625 022																								
1890622-4				BO 0 510 525 018																								





**MAN Energy Solutions**



# *Certificate of Approval*

This is to certify that

**Contrinex SA**

Route de Paqui 5, CH-1720 Corminboeuf, Switzerland

is approved by MAN Energy Solutions for the manufacture and supply of:

**Inductive "On/Off" Sensor type:**

**DW-AD-603-M10E-620**

**DW-AD-603-M10E-637**

for MAN B&W engines (two-stroke) in accordance with the Terms and Conditions stated in Appendix A.

issued on 2018-11-28

expires on 2028-11-28

Certificate no.: 2700-2018-671.0

MAN Energy Solutions

  
Kenneth Tolberg

  
Lars Fox



PNEUMATIC CONTROL SYSTEM

- 01.the repair kit for Reversing cylinder
- 02.the repair kit for VIT SYSTEM
03. The complete pneumatic valve
04. The complete air cylinder
05. The complete P-MAX Actuator
- 06.The main starting valve & slow turning valve Mth/KK.

The Repair Kit For Pneumatic Control system

HYUNDAI	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
MITSUI	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
KAWASAKI	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
DOOSAN	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
HITACHI	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
DMD	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
SAMSUNG	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
CMD	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
STX	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
HSD	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
HHM	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
YMD	ME-B	ME-C	MC-46	MC-50	MC-60	MC-70	MC-80	MC-90	MC-98
RTA	All the series								
RT-FLEX	All the series								
WINGD	All the series								
UEC	All the series								





PSMT-34	R431004795&R431004499	EGCS-44-2	3710750002
PSMT-36	R431004795&R431004499	EGCS-322M-2	3710760002
PSMT-38	R431004793&R431004499	EGCS-314M-2	5772020002
PSM-33E-P	R431004790&R431004498	EGLS-42	5776020002
PSM-43-B	R431004790&R431004498	EGPS-314M-4	5772020002
PSC-34-P	R431004795	EGPCS-314M-4	5772020002
PSC-36-P	R431004795	EGMS-314M	3723522220
XPSCNE-43	R431004790	EGMECS-414M	5631020002&5420500002
NPS-2	3631180002	EGMS-414M-2	3723520002
NTS-414M	5631020002	EGCS-422M-C	5711000002
GRL-414MF-4LS	3630040012	EGLS-414M	5631010002
GF	4325000092	EGCS-314M	5631010012
GDC-14M-A	5340170000	EGMLS-414M	5631020002
EGLS-42	5776020002	GCMS-47N	5631020002
GDC-22M-A	8995044824	EGMS-314M	5420500002

地址：上海市浦东新区宣春路 211 号烁谷创新园

ADD: SOGU Park , No.211 XuanChun Road PUDONG New Area , Shanghai.

EMAIL: spare@hensung.com.cn

Tel: +86 21-68466568; Fax:+86 21-50280859;

GCH-37N	3710300042	EGMS	5420500002
GPS-14M	5341060002	TYPE 755 OH/41 RapSatz	191.875.01-2A27 24VDC
GFH	3327050002	TYPE1116 OH/41 RapSatz	127.447.01
MGCC	3712000022	TYPE290 OH/41 RapSatz	128.018.01
MGMCT-2	3722250042	TYPE 1116 RapSatz /41	126.664.01
GBCHC-326M	3630820002	TYPE1538 RapSatz	114.115.01
GQ,GQH-22M	3735000002	TYPE117 RapSatz	117.497.01
MGD-1S	4410140010	TYPE 2456 RapSatz	122.448.01
GCC-414M	3710120012	TYPE 603 RapSatz /41	123.211.01
GQ-22M-A	9735000000	MGDS	3340180012
GPI-14M	8900306340	MGSC	3340190012
180,182 Safety Valve	3343061020	GBCH-K	3710300032
R431004790	P058875 (小)	GB-314M-B	3630030012
R431004795	P058884 (中)	MGMC-2	3722250032
R431004793	P058880 (大)	MGCS	3712040032
R431004498	P058116 电磁阀部分 (小)	GCH-37N	3710300042
R431004499	P058120 电磁阀部分 (大)	GRH-22M	3750030002
TYPE 755 OH/41 RapSatz	191.875.01-2A37 24VDC MAN	GFH-3S-2	3327050002



## Special Tie-Rod Cylinders

Double acting with solenoid piston, amplified version,  
40-160 mm dia.



**Rexroth**  
Bosch Group

### Technical data


Type		Piston cylinder, tie rod version
Operating pressure	p max.	Max. 10 bar
Ambient temperature range		- 25°C to +75°C
Medium		Compressed air, lubricated or non-lubricated
Materials	Piston rod Cylinder tube Cover dia. 32 to 125 mm 160 to 250 mm Seals	X 10 Cr Ni S 18.9 roller burnished Al - anodized, hard coated  Zn-diecasting GD/GK - Al NBR

### Application area



Suitable for all applications in mechanical engineering.



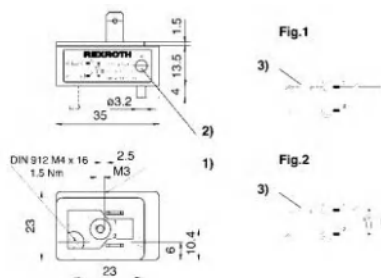
### Type number

	Piston dia.	Stroke	Cushioning	Flange shape	Type number
	40	50	On both sides	Without	322 061 190 0
	50	85	On both sides	Without	322 062 185 0
	50	100	On both sides	I	322 062 186 0
	50	70	On both sides	Without	322 062 188 0
	50	55	On both sides	Without	322 062 189 0
	50	100	On both sides	Without	322 062 195 0
	50	72	On both sides	Without	322 062 199 0
	63	120	On both sides	I	322 063 185 0
	63	120	Without	I	322 063 186 0
	63	120	On both sides	Without	322 063 195 0
	80	140	On both sides	I	322 064 190 0
	80	140	Without	I	322 064 191 0
	80	140	On both sides	Without	322 064 195 0
	80	160	On both sides	Without	322 064 196 0
	100	160	On both sides	II	322 065 185 0
	100	160	Without	II	322 065 186 0
	100	160	On both sides	Without	322 065 195 0
	125	180	On both sides	II	322 066 191 0
	125	180	Without	II	322 066 192 0
	125	180	On both sides	Without	322 066 195 0
160	195	Without	II	322 067 190 0	

### Accessories (to be ordered separately)

Accessories	Type	32 - 63	80 - 125	160 - 200		
	Piston dia.					
	Proximity reed switch with LED Connector	894 041 061 2 894 100 470 2	894 041 061 2 894 100 470 2	894 041 061 2 894 100 470 2		
	Clamp for sensor	322 061 356 2	322 064 356 2	322 067 352 2		
	Cylinder number	322 061 190 0	322 062 1.. 0	322 063 185 0	322 063 186 0	322 063 195 0
	Spare part kit	322 061 002 2	322 062 002 2	322 063 002 2	322 063 003 2	322 063 002 2
	Cylinder number	322 064 190 0	322 064 191 0	322 064 195 0	322 064 196 0	322 065 185 0
	Spare part kit	322 064 003 2	322 064 004 2	322 064 003 2	322 064 003 2	322 064 003 2
	Cylinder number	322 065 186 0	322 065 195 0	322 066 191 0	322 066 192 0	322 066 195 0
	Spare part kit	322 065 003 2	322 065 002 2	322 066 002 2	322 066 003 2	322 066 002 2

3220610022	Rxroth	Φ40×50	40
3220620022	Rxroth	Φ50×100	50
3220630022	Rxroth	Φ63×120	60
3220640032	Rxroth	Φ80×140	70
3220650022	Rxroth	Φ100×160	80
3220660022	Rxroth	Φ125×180	80/90
3220670042	Rxroth	Φ160×195	98
3220613562	Rxroth	support	50-63
3220643562	Rxroth	support	80-125
3220673532	Rxroth	support	160-200
8940410602	Rxroth	Magnetic Field SW.	None LED
8940410612	Rxroth	Magnetic Field SW.	With LED
3220611900	Rxroth	Φ40×50	40
3220621860	Rxroth	Φ50×100	50
3220631850	Rxroth	Φ63×120	60
3220641900	Rxroth	Φ80×140	70
3220651850	Rxroth	Φ100×160	80



1) Switching point in the middle of this side 2) LED (yellow) 3) Load  
 Supplied with gasket. Mounting screw M4 supplied with the clamp (MA = 1.5 Nm) MA = torque of mounting screw.

Type number	Type	Fig.	Ambient temp. range	Nominal voltage	Switching current	Switching capacity
894 041 060 2	Without LED	1	- 25° C to + 75° C	AC/DC 10-250 V	Max. 3 A	60 W / 60 VA
894 041 061 2	With LED	2	- 25° C to + 75° C	AC/DC 10-250 V	Max. 0,5 A	50 W / 50 VA

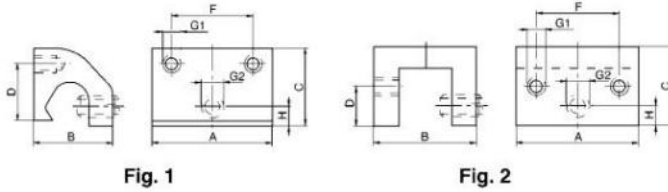
Protection with plug: IP65 - IEC 529 (DIN VDE 0470)  
 Max. peak voltage: 500 Vs Passing speed max.: 1.5 m/s  
 Switching point accuracy: +/- 0.1 mm Impact resistance : 50 g ( 11 ms )  
 Vibration resistance: 35 g (50 - 1000 Hz)

Piston dia.	32	40	50	63	80	100	125	160	200
A	12	13	14	16	17	17	16	20	20

The contact of the proximity reed switch remains closed for a stroke length of "A" mm (see table)

▲ Connector for sensor 894 041 06X 2.

### ▲ Clamp for tie-rod cylinder



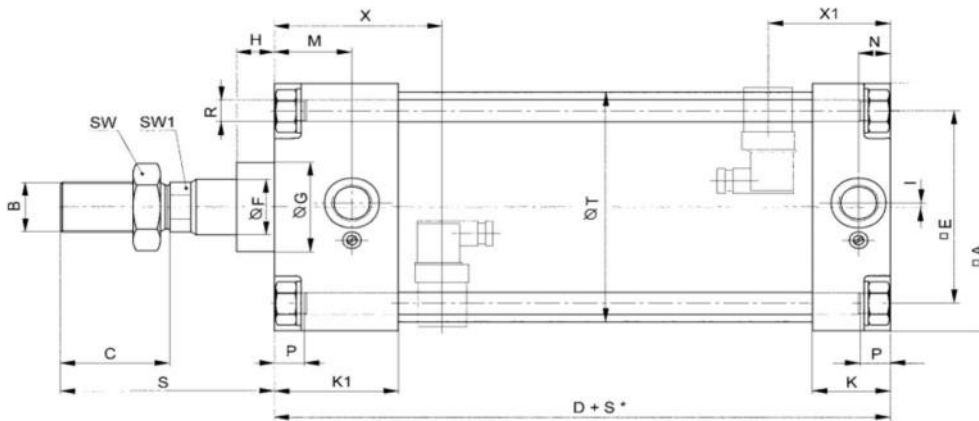
Piston dia.	Type number	Fig.	A	B	C	D	F	G1	G2	H
32 to 63	322 061 356 2	1	35	19	21	16	23	M 4	M 6	5
80 to 125	322 064 356 2	1	35	22	21	12	23	M 4	M 6	5
160 to 200	322 067 353 2	2	32	32	22	11	23	M 4	M 6	6
250 to 320	322 089 350 2	2	41	41	30	16	23	M4	M 6	6

Mounting screws for clamp and proximity reed switch are supplied.  
Figs. 1 and 2 for proximity reed switches 894 041 060 2, -061 2, -190 2, -202 2, -203 2

## Special Tie-Rod Cylinders

Double acting with solenoid piston, amplified version,  
40-160 mm dia.

**Rexroth**  
Bosch Group



Piston dia.	A	B	C	D	E	F	G <sup>99</sup>	H	I	K2
40	52	M 16x1.5	36	131	40	18	32	15	4	33.5
50	65	M 16x1.5	36	133	49	18	32	15	4	33.5
63	76	M 20x1.5	46	150	59	22	45	20	4	38.5
80	95	M 20x1.5	46	149	75	22	45	20	4	36
100	115	M 20x1.5	63	174	90	30	55	20	0	39.5
125	140	M 27x2	63	190	110	30	55	20	0	39.5
160	180	M 36x2	85	211	140	40	65	25	0	51.5

Piston dia.	K1	M	N	O	R	SW1	SW2	T	X	X1
40	45.5	25	13	70	M 6	24	13	M14x1.5	72	60
50	45.5	25	14	70 *)	M 8	24	13	M14x1.5	73	61
63	55.5	33	16	130	M 8	30	17	M18x1.5	83	67
80	52	33.5	17.5	151**)	M 10	30	17	M18x1.5	83	67
100	62.5	41	18	190	M 10	30	24	M22x1.5	98	75
125	62.5	41	18	220	M 12	41	24	M22x1.5	106	83
160	81.5	48.5	18.5	203.5	M 16	55	32	M 26x1.5	123	88

\*) For cylinders 322 062 186 0 and 322 062 195 0 the dimension O is= 115 mm  
\*\*) For cylinder 322 064 196 0 the dimension O is= 169 mm



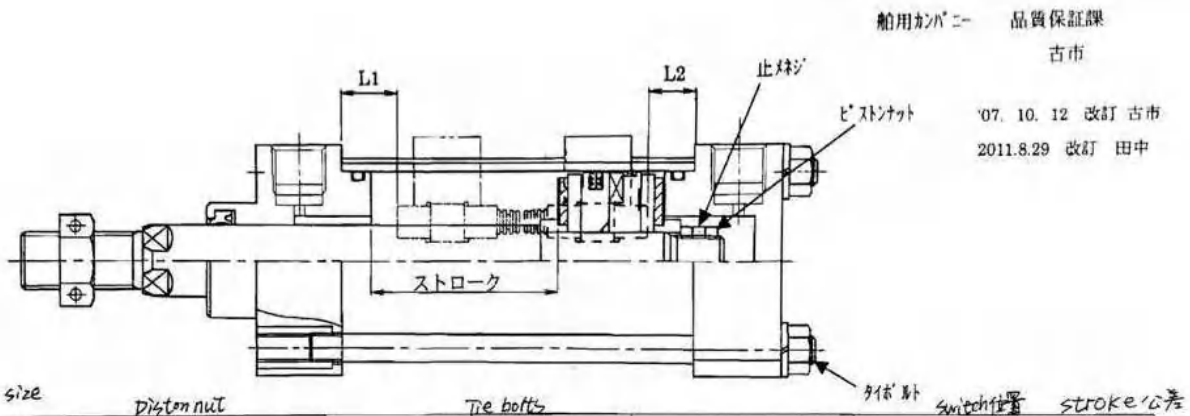
Repair kit for MC50	HAEWON	Φ50×100	50
Repair kit for MC60	HAEWON	Φ63×120	60
Repair kit for MC70	HAEWON	Φ80×140	70
Repair kit for MC80	HAEWON	Φ100×160	80
Repair kit for MC90	HAEWON	Φ125×180	80/90
Repair kit for MC98	HAEWON	Φ160×195	98
Repair kit for 63*80	HAEWON	Φ63×80	57#
The complete MC50	HAEWON	Φ50×100	50
The complete MC60	HAEWON	Φ63×120	60
The complete MC70	HAEWON	Φ80×140	70
The complete MC80	HAEWON	Φ100×160	80
The complete MC90	HAEWON	Φ125×180	90
The complete MC98	HAEWON	Φ160×195	98
The complete MC63*80	HAEWON	Φ63×80	60
End Cover MC50	HAEWON	Φ50×100	50
End Cover MC60	HAEWON	Φ63×120	60
End Cover MC70	HAEWON	Φ80×140	70
End Cover MC80	HAEWON	Φ100×160	80
End Cover MC90	HAEWON	Φ125×180	90
End Cover MC98	HAEWON	Φ160×195	98

Repair kit for MC50	BOKYONG	Φ50×100	50
Repair kit for MC60	BOKYONG	Φ63×120	60
Repair kit for MC70	BOKYONG	Φ80×140	70

GPSP-1	Haewon		≤70
GPSP-2	Haewon		> 70
GPSP-1	BOKYONG		≤70
GPSP-2	BOKYONG		> 70
3230200022	Rexroth	GPSP-1	≤70
R417000297	Rexroth	GPSP-1	≤70
3230200052	Rexroth	GPSP-2	> 70
The complete GPSP-1	Haewon	VIT-1	≤70
The complete GPSP-2	Haewon	VIT-2	> 70



FA50N100-S	Nabeco	Φ50×100	50
FA63N120-S	Nabeco	Φ63×120	60
FA80N140-S	Nabeco	Φ80×140	70
FA100N160-S	Nabeco	Φ100×160	80
FA125N180-S	Nabeco	Φ125×180	80/90
FA160N195-S	Nabeco	Φ160×195	98



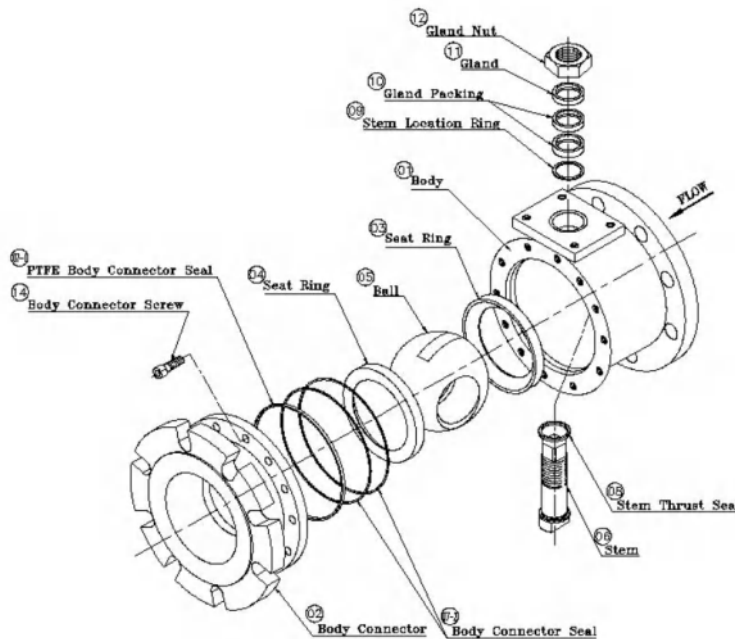
船用カバー 品質保証課  
古市

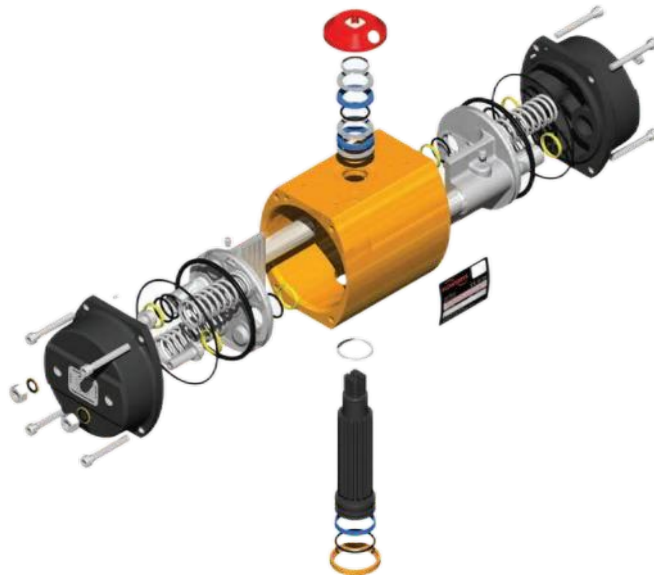
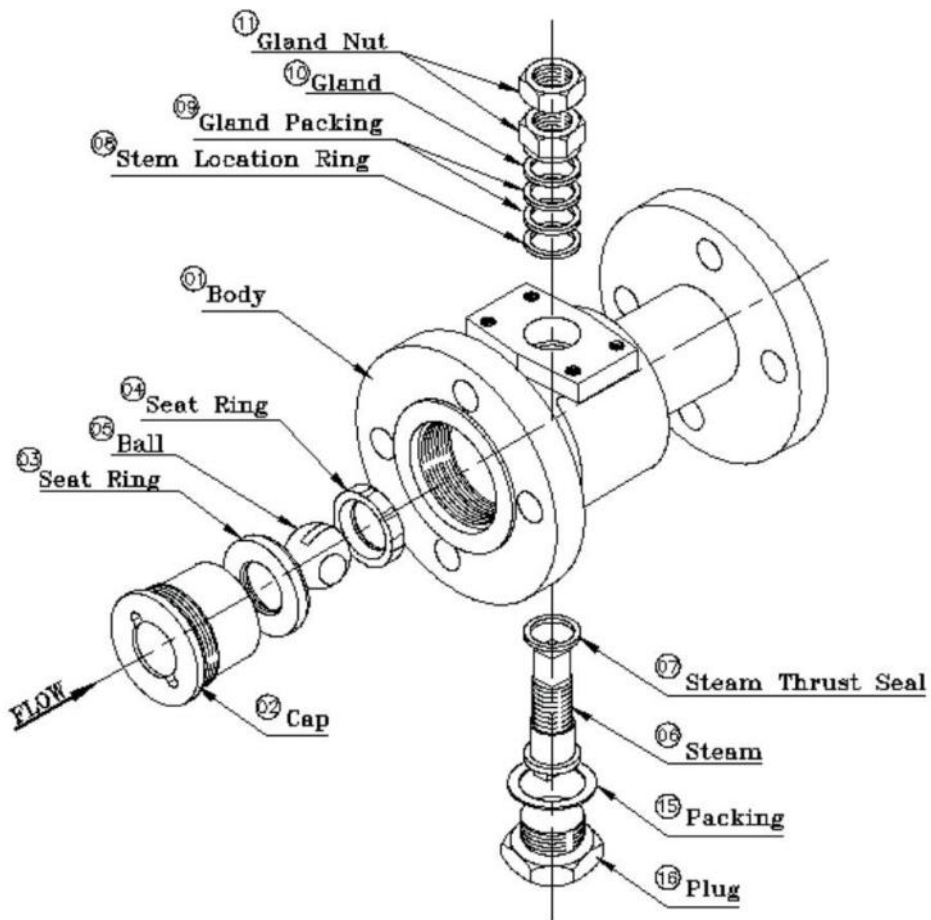
07. 10. 12 改訂 古市  
2011.8.29 改訂 田中

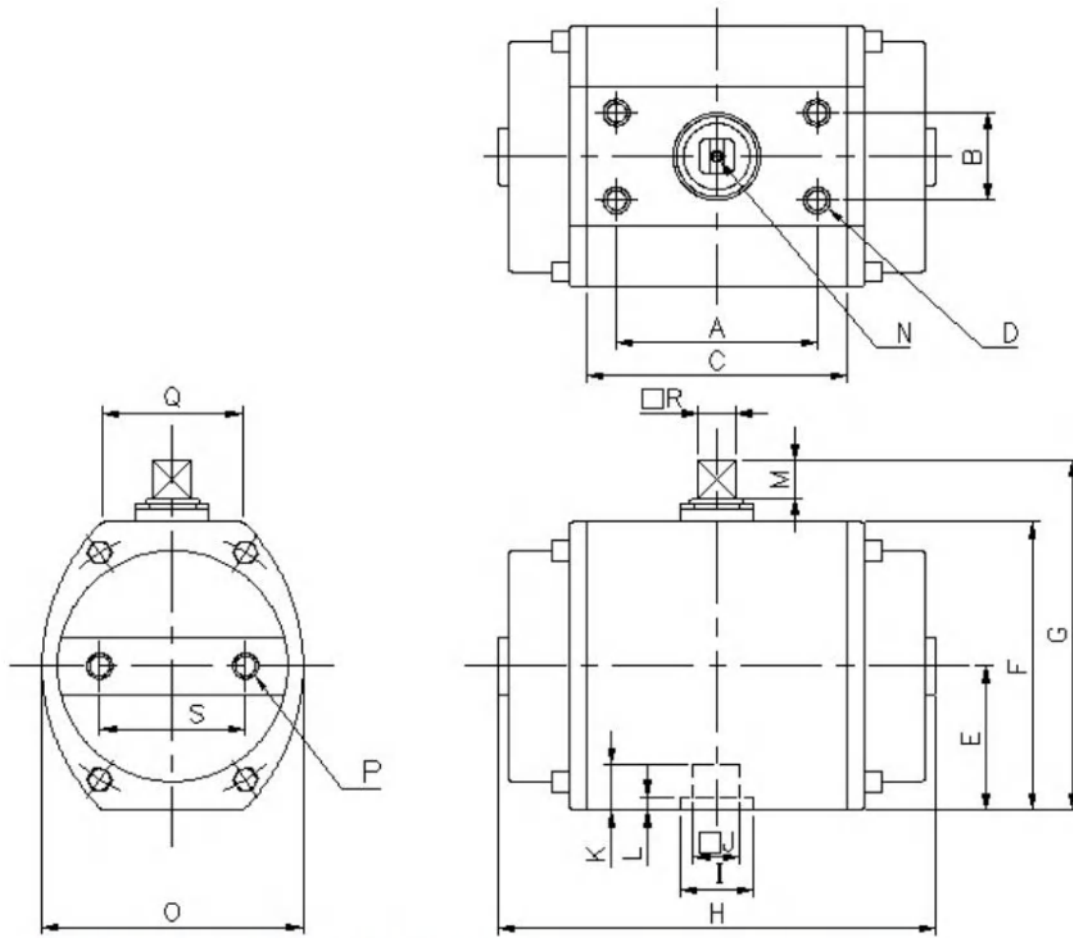
シリンダサイズ	ピストンナット		タイボット		止メネジ		スイッチ位置		ストローク公差
	締付けトルク	使用接着剤	締付けトルク	使用接着剤	締付けトルク	使用接着剤	L1	L2	
SD40N50	15.75N・m	スリーボンド 1303B	4.8N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	17mm	14mm	+2.1~+0.1
SD50N55	44.1N・m	スリーボンド 1303B	6.2N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	17mm	14mm	+3.4~+1.4
SD50N72	44.1N・m	スリーボンド 1303B	6.2N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	17mm	14mm	+3.4~+1.4
SD50N85	44.1N・m	スリーボンド 1303B	6.2N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	17mm	14mm	+3.4~+1.4
FA50N100	44.1N・m	スリーボンド 1303B	6.2N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	17mm	14mm	+2.2~0
FA63N120	70.2 N・m	スリーボンド 1303B	13.0N・m	スリーボンド 1303B	2.45 N・m	スリーボンド 1322	20mm	18mm	+2.7~+0.5
FA80N140	96.05 N・m	スリーボンド 1303B	21.0 N・m	スリーボンド 1303B	2.45N・m	スリーボンド 1322	24mm	21mm	+2.5~+0.5
FA100N160	181.4N・m	スリーボンド 1303B	21.0N・m	スリーボンド 1303B	2.45N・m	スリーボンド 1322	28mm	25mm	+3.4~+1.3
FA125N180	158.9N・m	スリーボンド 1303B	52.0N・m	スリーボンド 1303B	2.45N・m	スリーボンド 1322	29mm	29mm	+4.4~+2.4
FA160N195	458.0N・m	スリーボンド 1303B	52.0N・m	スリーボンド 1303B	2.45N・m	スリーボンド 1322	38.5mm	23.5mm	+5.8~+2.7



Main Starting Valve	Mt.H	200A-HBB&HAP	200A
Main Starting Valve	Mt.H	150A-HBB&HAP	150A
Main Starting Valve	Mt.H	100A-HBB&HAP	100A
Main Starting Valve	Mt.H	50A-HBB&HAP	50A
Main Starting Valve	Mt.H	25A-HBB&HAP	25A
Main Starting Valve	KumKang	200A-HBB&HAP	200A
Main Starting Valve	KumKang	150A-HBB&HAP	150A
Main Starting Valve	KumKang	100A-HBB&HAP	100A
Main Starting Valve	KumKang	50A-HBB&HAP	50A
Main Starting Valve	KumKang	25A-HBB&HAP	25A

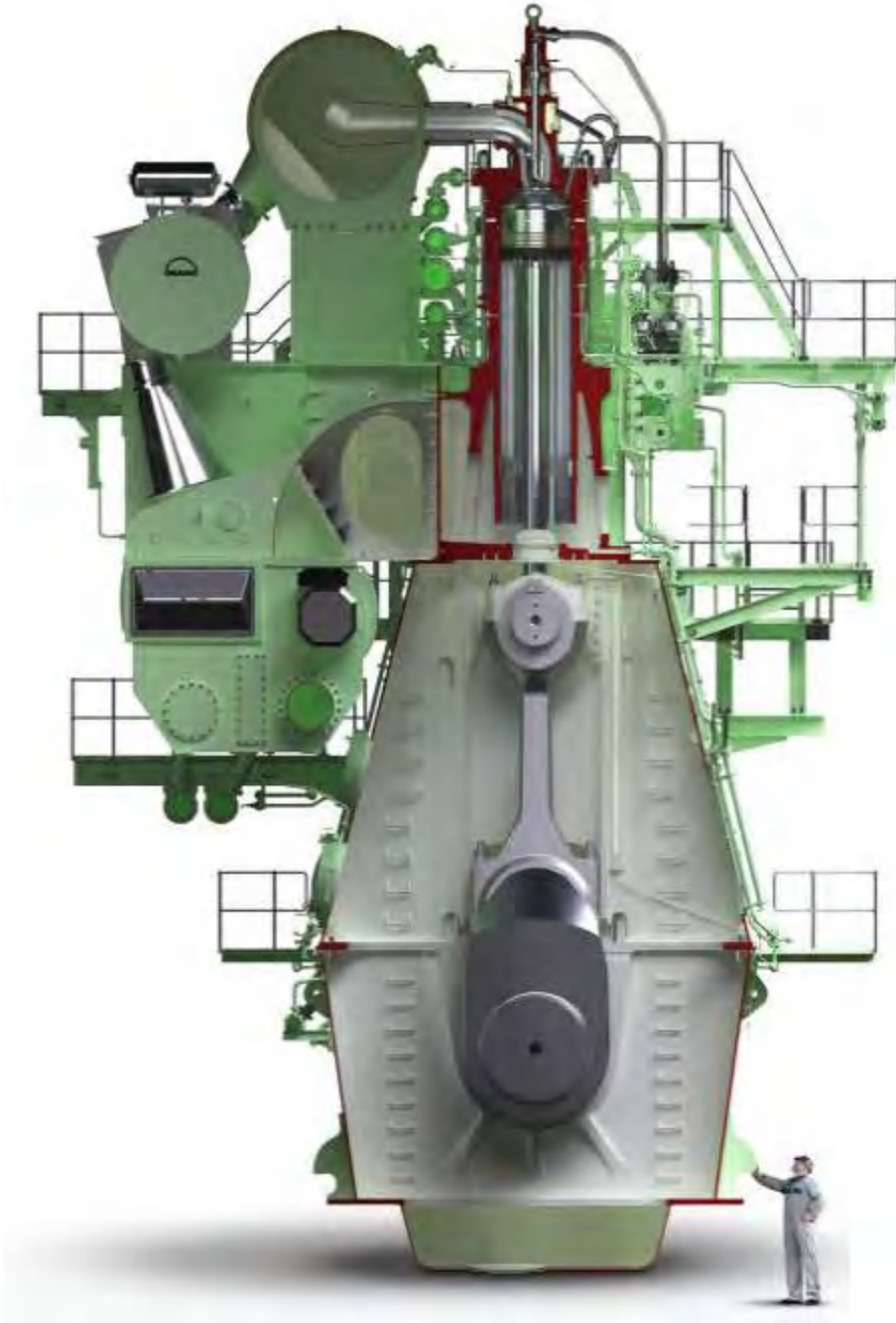






### Dimensions ( Unit : mm )

Actuator	A	B	C	D	E	F	G	H	I	
HAP25	73	31	101	M6×P1	42.5	85	103	163	14.5	
HAP50	107	47	129	M8×P1.25	59	118	144	210	19	
HAP100	213	102	232	M10×P1.5	109	218	257	352	38	
HAP150	244	118	273	M12×P1.75	125	250	300	394	40	
HAP200	330	160	492	M16×P2.0	171.5	343	377	640	56	
Actuator	J	K	L	M	N	O	P	Q	R	S
HAP25	11	17	12	12	M6×P1	83	PF1/8"	42.8	11	48
HAP50	14	18	12	20	M6×P1	110	PF1/4"	67	12.7	58
HAP100	22	30	22	28	M6×P1	214	PF1/2"	127	28.6	114
HAP150	28.7	30	22	37	M6×P1	244	PF1/2"	150	35	140
HAP200	38.5	44	11	23	M6×P1	335	PF1/2"	190	50.8	210.6





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