



NORDISK MARINE HYDRAULIK  
DANMARK A/S

Marinebuen 6 - DK-4700 Nysted  
Tlf. 55771800 - Telex 40124 - Fax 55773177

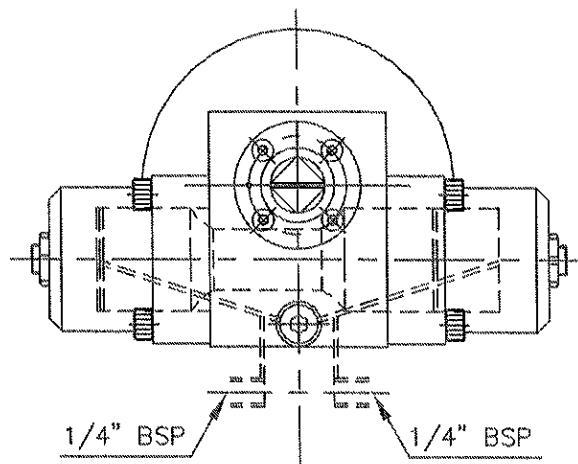
BHA

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## DESIGN

- New design based on many years' experience of rack- and pinion type actuators.
- Compact high torque output.
- Fixed and locked mounting on valve.
- Independent end stop adjustment OPEN/CLOSED.
- Turning max. 100°.
- Floating pistons.
- Permanent built-in cross-over valve.
- Suitable for mounting everywhere.
- Optional mounting direction - vertical/horizontal or upside down.
- Approved by all the classification societies.

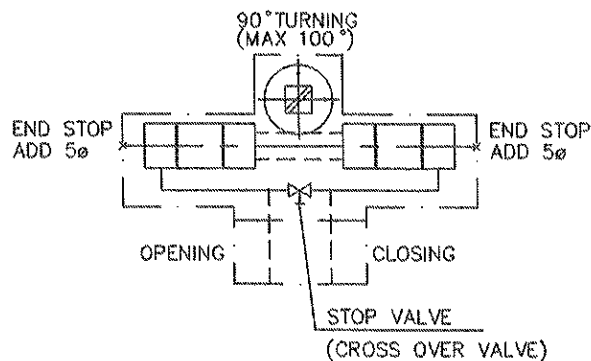


## FUNCTION

Actuator type BHA is a double acting quarter turn actuator designed for all types of butterfly-, plug- and ball valves.

A special accessories programme allows a varied combination of operating modes.

Especially designed for heavy duty service including the possibility for submersion in different media.



## TECHNICAL DATA

Working pressure	: 135 bar
Rotation	: 90° (+10°)
Test pressure	: 1,5 * max. working pressure
Oil viscosity	: Hydraulic oil ISO 15-46 (see spec.)
Temperature range	: -20°C/+80°C
Oil purity	: ISO 4406 16/13
Types of valves	: Butterfly-, plug-, ball-, and 3-way valves etc.
Mounting	: Directly on valve (locked)
Adjustment	: Opening/closing position ±5°
Mounting conditions	: Dry and wet places Wet places: open deck, flooded and submerged (with special surface treatment and tophat)
Indication	: Visual mechanical in top
Emergency operation	: Mechanical on top of actuator/Hand pump
Accessories	: Control blocks with remote indication/Mech. gear box emerg. operation/Hand pump unit etc.

SPECIAL DESIGN : Available on request



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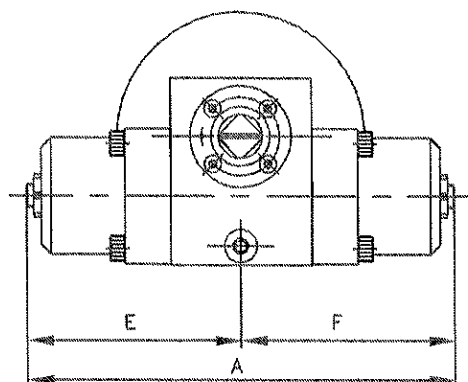
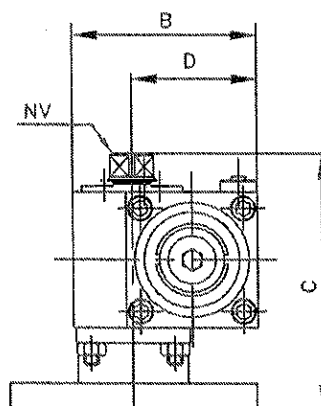
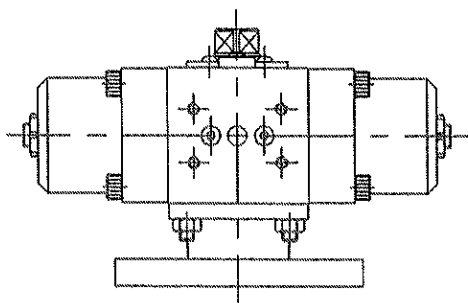
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## MAIN DIMENSION



Seals	: NBR
Housing	: GGG 40
Cylinder	: GGG 40
Piston	: Hardened steel
Pinion	: Surface treatment high tensile steel
Rack	: High tensile steel
Intermediate flange	: GGG 40
Coupling	: Steel

The torque is calculated at  
working pressure = 135bar

All dimensions are in millimetres

TORQUE more than 6500 NM on request

ACTUATOR	TORQUE	OIL VOLUME	A	B	C	D	E	F	H	NV	WEIGHT	ID-NUMBER
BHA 0	100Nm	14 cm <sup>3</sup>	192	71	108	48	96	96	11.5	12	3.3kg	018-2812
BHA 1	275Nm	37 cm <sup>3</sup>	228	97	135	65	114	114	12.5	17	6.6kg	018-1942
BHA 2	760Nm	100 cm <sup>3</sup>	328	123	165	87	164	164	14	27	14.6kg	018-1762
BHA 3	1600Nm	210 cm <sup>3</sup>	402	150	196	102	201	201	18	34	31kg	018-1632
BHA 4	3250Nm	427 cm <sup>3</sup>	504	190	248	133	252	252	18	44	56kg	027-1002
BHA 5	6500Nm	853 cm <sup>3</sup>	608	220	310	160	304	304	21	54	105kg	027-1292

Standard : RAL 6024 green  
Submerged: 1\*125my Tar epoxy  
On deck : 1\*75my Galvosil  
(Zinc silicate) } Or on request

Meet all requirements to:

DNV, LRS, ABS, USCG, BV  
GL, USSR, NATO, US MIL. SPEC.  
DANISH NAVY, NORWEGIAN NAVY



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# VALVE ADAPTION

Valve spindle

Coupling

Intermediate flange

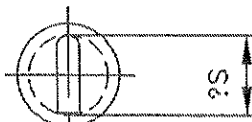
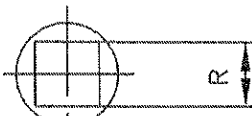
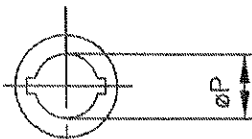
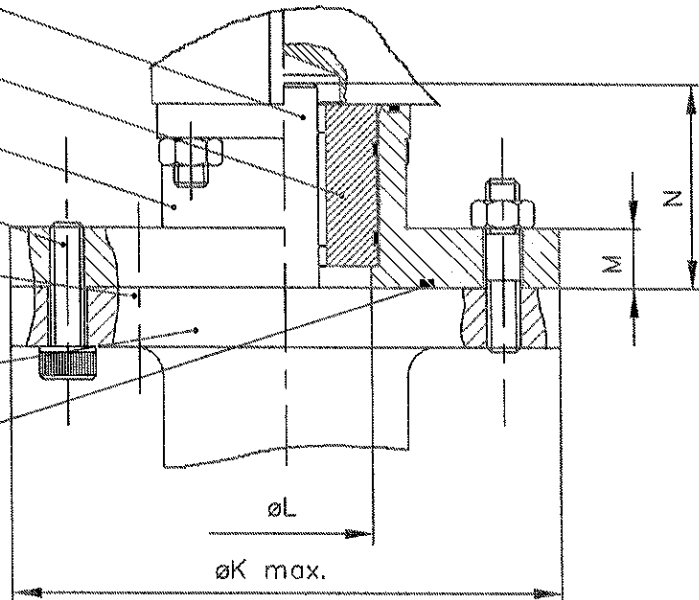
Screw or stud

$\varnothing T$  Pin (2 pcs.)

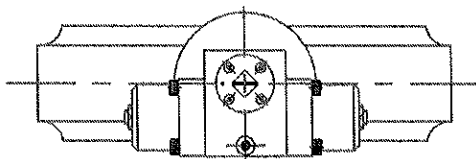
Placed non symmetrical

Valve flange

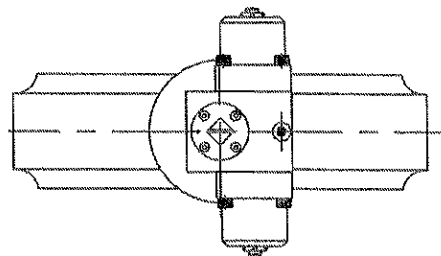
O-ring or fluid packing



BHA 5	270	110	25	100	80	66	94	16
BHA 4	230	87	20	75	60	50	71	10
BHA 3	190	70	15	60	50	42	59	8
BHA 2	175	53,5	15	50	40	34	48	8
BHA 1	130	41	14	45	30	27	38	6
BHA 0	105	28	12	35	20	18	26	6
ACTUATOR	$\varnothing K$	$\varnothing L$	M	N	$\varnothing P$	R	?S	?T



ACROSSWISE



LENGTHWISE



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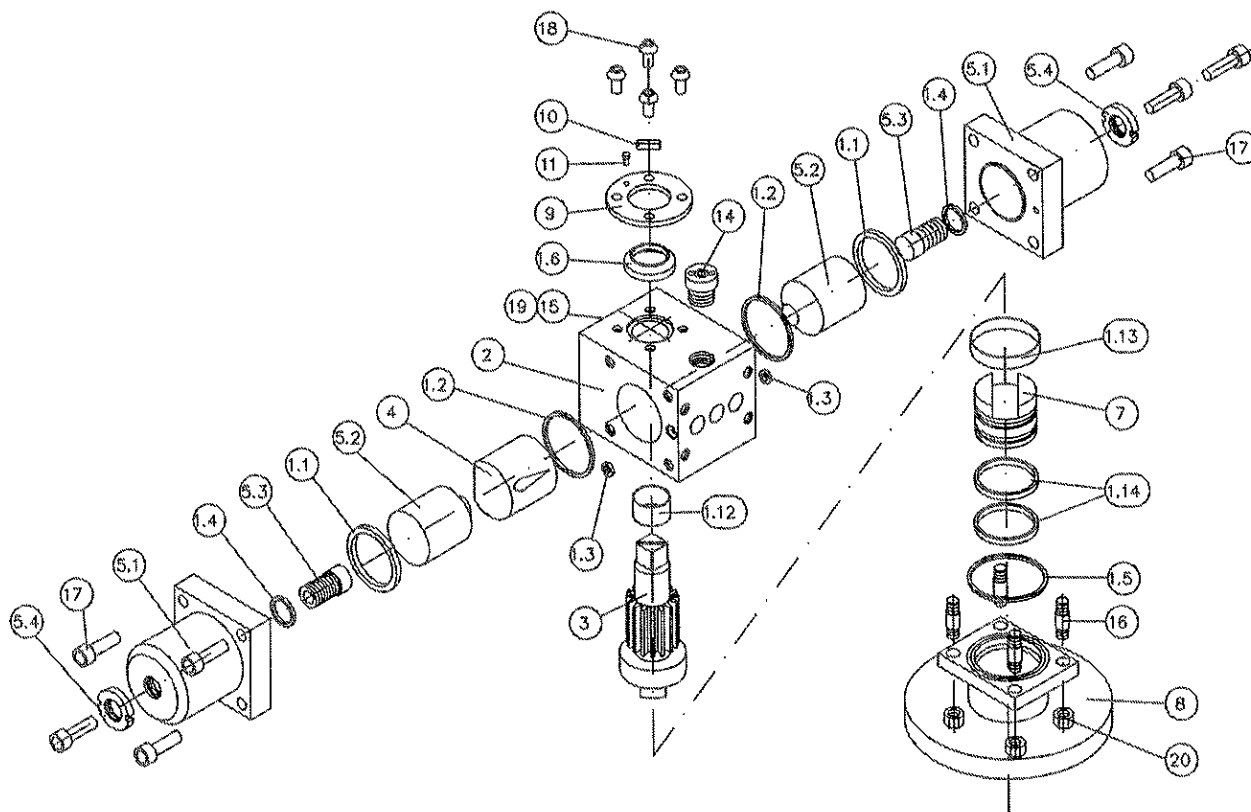
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## SERVICE AND MAINTENANCE

Dependent on location of valve system and application frequency the actuator sealings should be inspected once a year. Systems subject to such inspections are cargo-, fuel oil-, ballast-, bilge- and sea side valve systems to ensure reliable and safe functions of these important systems.

Other types of valve systems should be tested as described below.

Open and close the valves once a year (at least)  
Inspect the sealings after 4000 opening- and closing functions.  
It is recommended to replace all the actuator sealings in case that the actuator is being totally dismantled.



POS.	DESCRIPTION	Qty.	MATR.	POS.	DESCRIPTION	Qty.	MATR.
1.1	O-ring	2	NBR	5.3	Adj. screw	2	Sea water resist. brass
1.2	O-ring	2	NBR	5.4	Counter nut	2	Sea water resist. brass
1.3	O-ring	2	NBR	7	Coupling	1	Steel
1.4	O-ring	2	NBR	8	Interm. flange	1	GGG40
1.5	O-ring	1	NBR	9	Plate	1	MS58
1.6	Scraper	1	NBR	10	Indicator	1	ACRYL
1.12	Bearing	1	Pampus metallopla	11	Indicator	1	PVC
1.13	Bearing	1	Pampus metallopla	14	Stop valve	1	Sea water resist. brass, acidproof stainless steel
1.14	PO-55	2	Bronze reinforced	15	Name plate	1	Stainless steel
2	Housing	1	GGG40	16	Stud	4	Stainless steel
3	Pinion	1	Surface treated high tensile steel	17	Screw	8	Steel ISO 8.8
4	Rack	1	High tensile steel	18	Screw	4	Stainless steel
5.1	Cylinder	2	GGG40	19	Rivet No. 0	2	Stainless steel
5.2	Piston	2	Hardened steel	20	Nut	4	Stainless steel