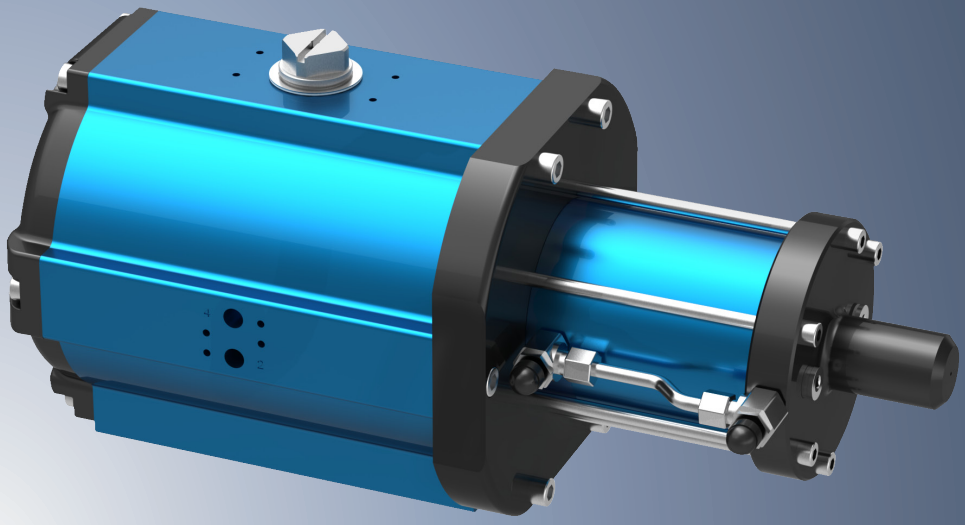
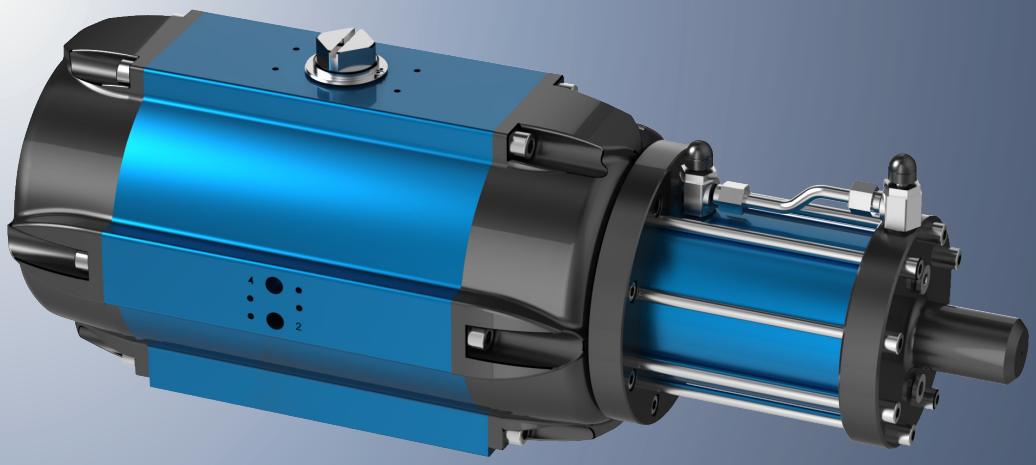




AMG DOUBLE-PISTON QUARTER TURN ACTUATOR WITH HYDRAULIC DAMPING

TYPE SAD - HD DOUBLE-ACTING

TYPE SAF - HD SINGLE-ACTING

AMG-PESCH®

An ERIKS Company

QUALITY IS OUR DRIVE

AMG-PESCH®

an ERIKS company

Under the names PESCH, AMG and ABK, we are manufacturers and suppliers of complete solutions for valves, pneumatic actuators and controls.

We are active world wide, supported by a network of sales representatives and distributors, supported by our own subsidiaries and group companies.

Our activities comprise the design, manufacturing and sales of high quality pneumatic rack and pinion actuators and related control equipment. These are combined with standard valves from recognised brands or, in case of “ABK”, with customised, tailor made solutions, of our own production.

The compact design, high performance valves and actuators of AMG - PESCH are specified where fluids are to be safely and efficiently transmitted in all fields of flow technology and automation.

In addition to the company headquarters in Cologne, another site is operated in Merseburg (Germany).

AMG - Pesch is supported by a reliable team of around 80 employees with a wide-range of expertise, many years of experience and Know-how, a mature and extensive product range and the latest technology in the field of flow technology and automation.

These factors have made the company one of Germany’s leading providers to this industry.

The acquisition of the main assets and commercial activities of AMG-Pesch by ERIKS in 2011 will allow us to continue completing and developing our product range and to further increase customer satisfaction. Please contact us- we would be happy to provide you with more details and help in choosing your ideal combination. In addition, being part of ERIKS, we can offer you a wide range portfolio of technical products (www.eriks.com).

Quality is our drive

DOUBLE-PISTON QUARTER TURN ACTUATORS
TYPE SAD / SAF - HD

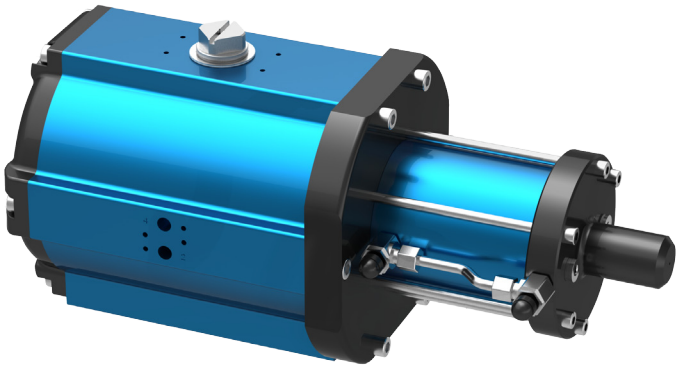
RANGE OF APPLICATION

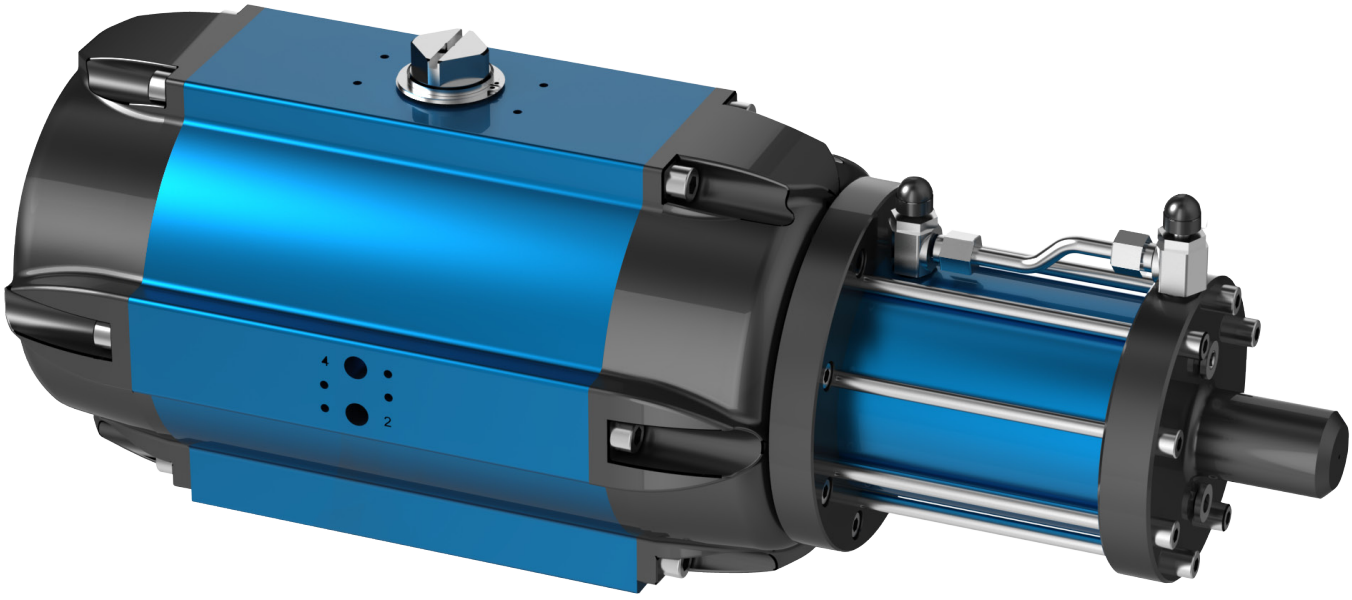
All pipes designed to forward any kind of media such as liquids, gases or vapors are provided with valves which must be actuated or stroked. Due to their high process security the AMG quarter turn actuators are well suited for the operation of such valves.

Quarter turn actuators are important components of an actuator system which consists of a valve, an actuator, a way valve or positioner and a limit switch. These are linked with each other via standardized interfaces.

Process control systems, PLCs or other control devices transmit actuating signals to the actuator via way valves or positioners. These signals are translated into a rotary motion to move the valve.

AMG Quarter turn actuators with hydraulic damping are used for the automation of ball valves, plug valves, throttle valves and control valves when a stable, in-time actuation is required during their closing and opening process.





TYPE OF CONSTRUCTION

METHOD OF OPERATION & SYSTEM STRUCTURE

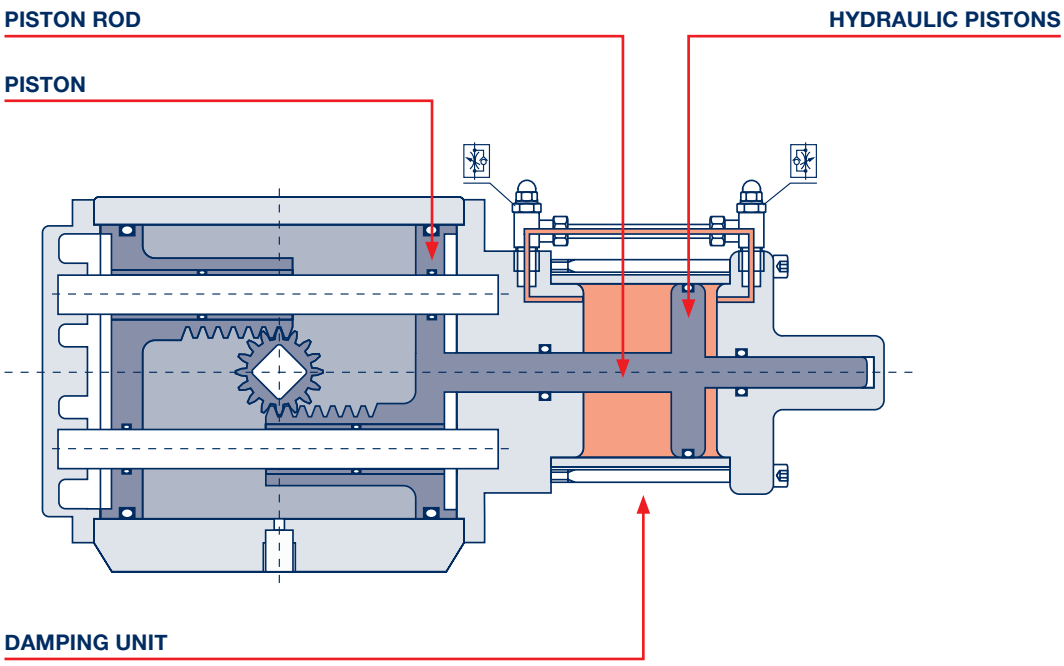
An integrated hydraulic damper ensures regulation of the piston speed (actuation time) of the double and single-acting quarter turn actuators type SAD and SAF.

FUNCTION

The piston movement of the actuator is transmitted via a piston rod to the damper inside which a liquid is flowing from one chamber to another. By changing the section via one-way flow control valve the closing and opening times can be adjusted independently from each other.

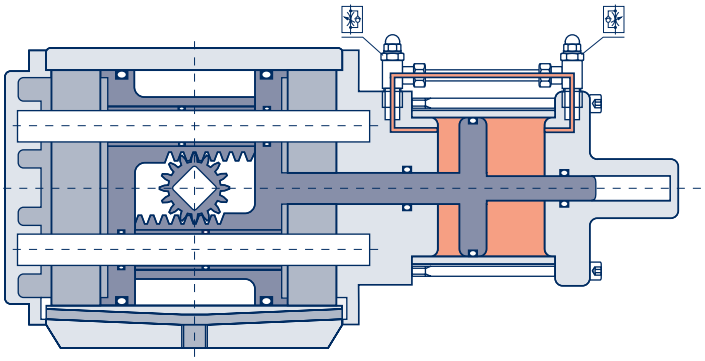
ADVANTAGES

- The infinitely variable time setting allows adjustment to the ambient conditions on site
- Almost constant actuation times even in the event of fluctuations in temperature
- The piping system is prevented from pressure thrusts
- Valves and lining are protected



FUNCTION TYPE SAD/SAF-HD

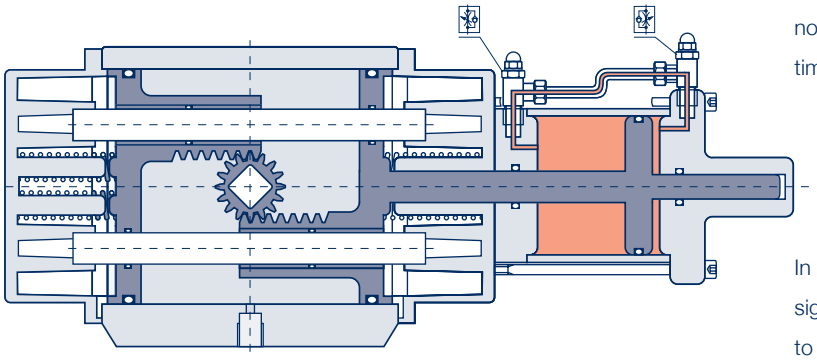
METHOD OF OPERATING TYPE SAD-HD (DOUBLE-ACTING)



MOTION BY COMPRESSED AIR

Double-acting actuators are provided with two chambers (ports A and B) which are alternately pressurized. The generated force causes the pistons to move. This movement is transmitted to the pinion shaft which in turn moves the valve. The actuation time is infinitely adjustable within pre-defined limit values.

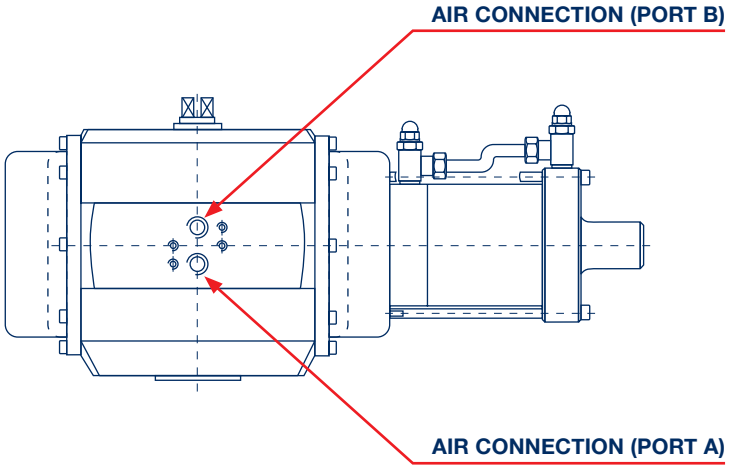
METHOD OF OPERATING TYPE SAD-HD (SINGLE-ACTING)



MOTION BY COMPRESSED AIR AND SPRING FORCE

When applying single-acting actuators only the internal chamber is pressurized via port A. The generated force not only moves the valve in one direction. At the same time the springs are loaded for return pressure.

In the event of a loss of air supply the springs are designed to close or open the valves in order to set them to their respective safety positions. The actuation time is infinitely adjustable within pre-defined limit values.



TYPE OF DESIGN, TECHNICAL DATA

APPLIED STANDARDS

- In accordance with the practicable standards, for example DIN EN ISO 5211, DIN EN 15714 - 3, VDI / VDE 3845

MAINTENANCE

AMG ACTUATORS ARE FREE OF MAINTENANCE

Provided that:

- The actuator is properly mounted
- The operating medium used is clean and non-aggressive
- The actuator is operated under normal ambient conditions
- Usage according to regulations

OPTIONS

- Sealing elements made of FKM (Viton) or alternatively fluorosilicone
- Tailor made mounting kits and dimensioning acc. to customer requirements
- Variable sens of rotation (clockwise / counterclockwise)
- Coating options:
  - HARD-COAT
  - Chemical nickelplating
  - Plastic-coating
  - Silicone-free lacquer
  - Special lacquer
- Special housing : stainless steel

DESIGN

- Pneumatic double-piston quarter turn actuator with hydraulic damping

DESIGN FEATURES

- Rack-and-pinion system, piston guidance via guide rods

DEGREE OF ROTATION

- 90°

PRESSURE RANGE

- min. 2 bar; max. 10 bar

OPERATING MEDIUM

- Dry and filtered compressed air.
- Other, non-aggressive gaseous media upon request

AMBIENT TEMPERATURE

- -25°C bis +80°C

MOUNTING POSITION

- Any

RESISTANCE TO CORROSION

- Industrial atmosphere

LUBRICATION

- Permanent lubrication with grease ISO 51825-K2K-30

MATERIALS

Housing	Aluminum alloy, anodised
End cap	Aluminum alloy, coated
Piston	Aluminum alloy
Piston bearing	Bearing material
Guide rods	Stainless steel
Pinion shaft	Stainless steel
Pinion shaft bearing	Bearing material
Safety springs	VD Si Cr, delta tone / delta seal coating
Sealings	O-ring, NBR, 70 shore

TORQUES

- From 32 Nm to 3994 Nm (see torque charts)

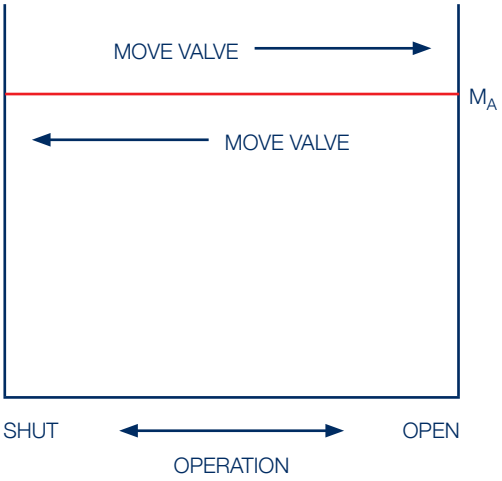
TORQUE [Nm] RATINGS OF TYPE SAD - HD DOUBLE ACTING ACTUATORS

Type	Torque M_A at air supply pressure pe												
SAD - HD*	2 bar	2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar
20	32	42	51	61	70	80	89	98	108	118	127	136	145
25	61	79	98	115	133	151	169	187	205	223	240	257	275
30	91	117	144	170	196	223	249	276	302	329	355	380	405
35	221	286	350	413	478	543	607	671	736	801	863	925	986
40	336	435	534	629	727	827	924	1022	1121	1220	1314	1408	1502
42	536	694	852	1005	1161	1321	1475	1631	1789	1948	2098	2248	2398
45	893	1156	1419	1674	1934	2199	2457	2717	2980	3245	3495	3744	3994

M_A = effective torque in [Nm]

* Intermediate sizes on request

TORQUE CHARACTERISTIC OF TYPE SAD - HD DOUBLE-ACTING ACTUATORS



The indicated torques are constant over the complete movement

TORQUE [Nm] RATINGS OF TYPE SAF - HD SINGLE ACTING ACTUATORS

Air supply pressure pe	2 bar		2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		6 bar	
Number of springs n	4		5		6		7		8		9		10		11		12	
Type	Spring torque M_S = Air torque M_A [Nm]																	
SAF - HD*	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
20	12,7	21,1	15,9	26,4	19,1	31,7	22,2	36,9	25,4	42,2	28,6	47,5	31,8	52,8	35,0	58,0	38,1	63,3
25	24,2	40,2	30,2	50,2	36,3	60,2	42,3	70,3	48,3	80,3	54,4	90,4	60,4	100,4	66,5	110,8	72,5	120,5
30	36	59	45	74	54	89	62	104	71	118	80	133	89	148	98	163	107	178
35	87	144	109	180	131	216	152	252	174	288	196	324	218	360	239	396	261	432
40	133	222	166	277	199	333	232	388	266	443	299	499	332	554	365	610	398	665
42	212	352	265	440	318	528	371	615	424	703	477	791	530	879	583	967	636	1055
45	352	585	440	732	528	878	616	1025	705	1171	793	1317	881	1464	969	1610	1057	1756

* Intermediate sizes on request

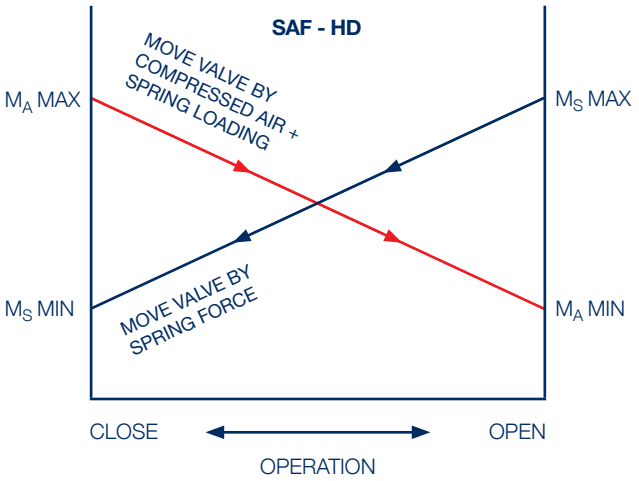
Air and spring torque are identical at given „pe“ and corresponding „n“

Example for chosing the right actuator:

Fact: Air pressure pe 4 bar
Required: Actuator with a minimim spring torque (Ms MIN) of 70 Nm

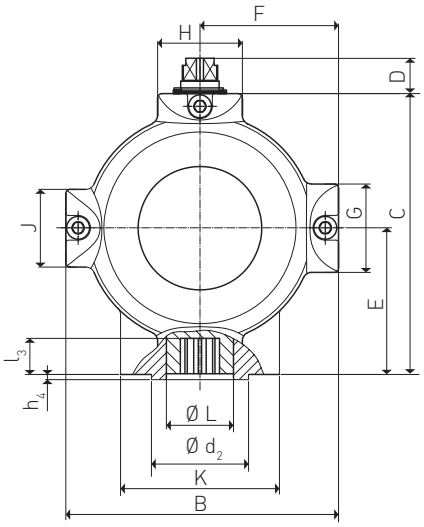
Result: SAF - HD 30, n=8
Torques: Spring / Air min = **71 Nm** - Spring / Air max = **118 Nm**

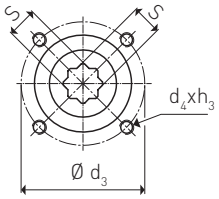
TORQUE CHARACTERISTIC OF TYPE SAF - HD SINGLE ACTING ACTUATORS



DIMENSION DRAWING

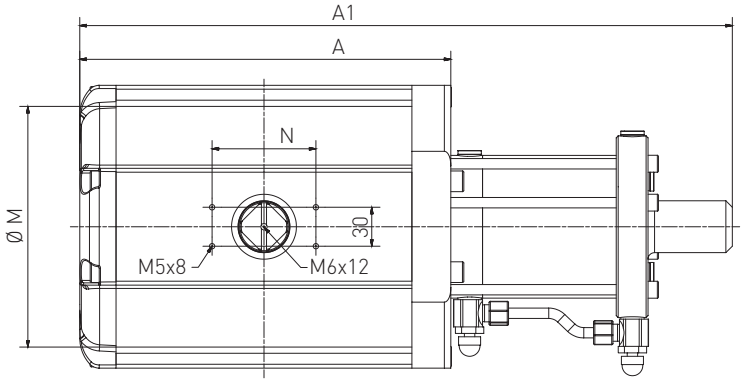
SIDE VIEW

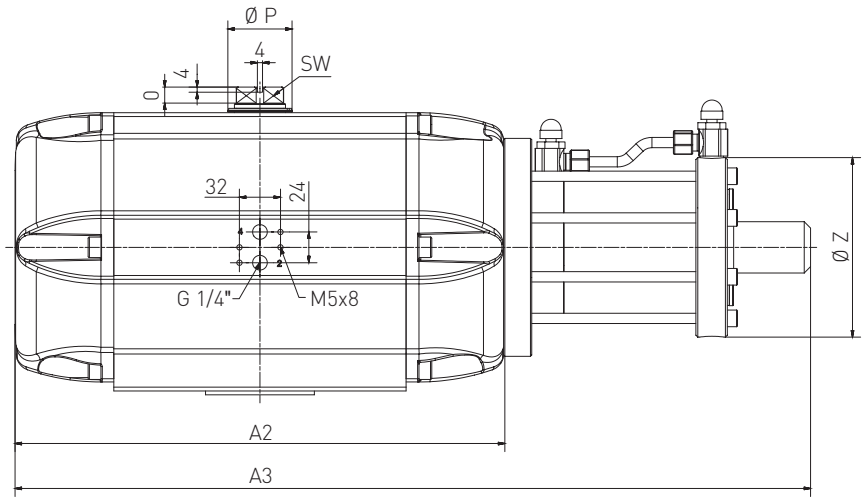




INTERFACE CONNECTION
DIN EN ISO 5211

TOP VIEW





FRONT VIEW

SIZE TABLE

Design	SAD / SAF - HD								
Size	15	20	25	30	33	35	40	42	45
A / A1 (SAD - HD)	150 / 319	157 / 326	179 / 356	232 / 430	253 / 491	286 / 503	293 / 510	354 / 629	475 / 867
A2 / A3 (SAF - HD)	198 / 375	210 / 387	241 / 460	346 / 565	365 / 603	382 / 621	428 / 667	558 / 798	694 / 1023
B	116	134	1.545	174	204	218	268	288	330
C	111	132,5	159	174	202	217	266	296	337
D	20	20	20	20	20	20	20	20	30
E	56	685	83	89	103	112	136	146	175
F	61	70	785	87	102	109	134	144	165
G	50	50	50	50	50	50	60	60	84
H	40	48	48	64	90	90	108	108	125
K	64	64	90	90	108	108	125	150	150
Ø I	28	35	38	47	56	62	62	80	106
J	44	44	44	50	50	50	60	60	84
Ø M	93	111	130	145	175	192	236	258	292
N	80	80	80	80	80	80	80	80	130
O	12	12	12	12	12	12	12	12	18
Ø P	22	25	30	36	45	50	50	63	90
Ø Z	100	100	100	100	140	140	140	140	220
SW	12	14	17	17	22	30	30	30	46
Connetction DIN 5211	F05	F07	F07	F10	F12	F12	F14	F14	F16
Ø d2	35	55	55	70	85	85	100	100	130
Ø d3	50	70	70	102	125	125	140	140	165
d4 x h3	M6x10	M8x13	M8x13	M10x16	M12x20	M12x20	M16x25	M16x25	M20x32
Number of screws	4	4	4	4	4	4	4	4	4
h4	3	3	3	3	3	3	4	4	5
l3	16	20	20	25	30	30	40	40	50
s	14	17	17	22	27	27	36	36	46

Dimensions in [mm]

WEIGHTS – STROKE VOLUME – OPERATING TIMES

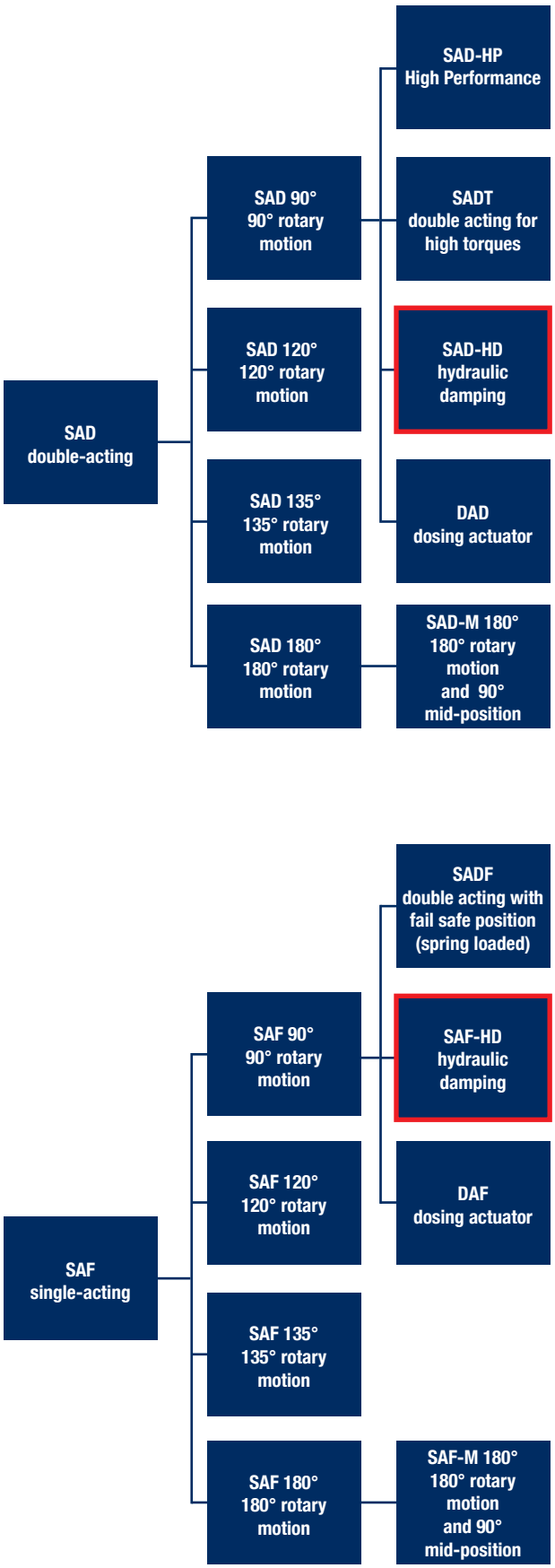
Size	15	20	25	30	33	35	40	42	45
Weight [kg]									
Type SAD-HD	6	7	9	16	18,5	26	33	45	97
Type SAF-HD	7	8	12	17	23	32	44	56	120
Stroke volume [dm³]									
Type SAD-HD	0,7	1	2	2,8	5,1	6,8	10,6	16,4	25,6
Type SAF-HD	0,4	0,5	1	1,5	3	3,9	6,1	9,5	14,7
Operating times [sec]*									
Type SAD-HD OPEN	1	1	1	2	4	4	4	6	8
Type SAD-HD CLOSE	1	1	1	2	3	3	5	7	9
Type SAF-HD** OPEN	1	1	1	2	4	4	6	8	10
Type SAF-HD** CLOSE	1	1	1	2	3	3	3	5	7

* not throttled / Operating times at 4,5 bar air pressure supply without load (standard values)

** Type SAF-HD with 9 springs

*** With the two throttle check valves R1 / 4 ", the Switching times in both directions up to 60 seconds is possible.

PRODUCT RANGE



SERVICE AND QUALITY MANAGEMENT

SERVICE

- Consulting, performance of training courses
- Assembly and setting- up
- Testing and approval of valves, actuators and complete units according to customer requirements and important international regulations
- After sales and spare parts service
- Repair and overhaul

QUALITY MANAGEMENT

Quality Management System according to DIN EN ISO 9001, audited by TÜV-Rheinland Cert GmbH

This brochure provides you with a brief outline of the AMG actuators range, types SAD / SAF - HD from our company‘s product range. Are you also interested in the other types offered by our company? We would be pleased to give you more information.

LOCATION

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