

Butterfly Valve

**BOAX-B**

## Actuator Selection



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Actuator Selection BOAX-B

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## Information

### Additional product literature

**Table 1:** Information/documents

Document	Reference number
Operating manual	8411.801
BOAX-B type series booklet	8409.11

### Flow velocities

The following is a typical selection of actuators for butterfly valves handling fluids at the maximum flow velocities shown. Higher flow velocities and further actuator/valve combinations are possible, depending on the operating conditions and hydraulic characteristics. Contact KSB.

**Table 2:** Overview table of maximum flow velocities for BOAX-B

DN	Fluids handled		Gases
	Lubricating fluids	Non-lubricating fluids	
	[m/s]	[m/s]	[m/s]
40	3	3	50
50	3	3	50
65	3	3	50
80	3	3	50
100	3	3	50
125	3	3	50
150	3	3	50
200	3	3	50
250	3	3	50
300	3	3	50
350	3	3	50
400	3	3	50
450	2,5	2,5	50
500	2,5	2,5	50
550	2,5	2,5	50
600	2,5	2,5	50
650	2,5	2,5	50
700	2,5	2,5	50
750	2	2	50
800	2	2	50
900	2	2	50
1000	2	2	50

# Actuators

## Levers

### CR/CM



Fig. 1: Unit comprising BOAX-B + CR/CM lever

Table 3: Liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids		Non-lubricating fluids
	s	h3		XA/XC/XV/K liners	All other liners	All liners
		[mm]		CR/CM	CR/CM	CR/CM
40	M11	24	10	165	165	165
50				230	230	230
65						
80						
100	M14	24		230	230	230
125				300	300	300
150		30		300	300	300
200	M19	35		300	300	300
250				510	510	510
300	M22	40		510	510	510

Table 4: Liners for lubricating fluids (16 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids	
	s	h3		XA/XC/XV/K liners	All other liners
		[mm]		CR / CM	CR / CM
40	M11	24	16	165	165
50				230	230
65					
80					
100	M14	24		230	230
125				300	300
150		30		300	300
200	M19	35		300	300
250				510	510
300	M22	40		510	510

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**Manual Gearboxes**
**MR/AB**

**Fig. 2:** Unit comprising BOAX-B + MR/AB manual gearbox

**Table 5:** Liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners		Non-lubricating fluids: XC/XU/K liners All fluids: all other liners	
	s	h3 [mm]		KSB	ROTORK	KSB	ROTORK
				Type MR	Typ AB	Type MR	Typ AB
40	M11	24	10	MR25	-	MR25	-
50					-		-
65					-		-
80					-		-
100	M14	24		-	-		
125		30		-	-		
150		-		-			
200	M19	35		-	-		
250				-	MR50	-	
300	M22	40		MR50	-	-	-
350	C25	45		-	-	MR100	-
400	C36	55		MR100	-	-	-
450				-	-	MR200	-
500				-	-	-	-
550				C50	65	MR200	-
600	-	-				-	
650	-	-	MR400			AB2000	
700	-	-	-			-	
750	MR400	80	AB2000			-	-
800			-	-	-	-	
900	C60	80	-	AB1950/PR4	MR600	AB1950/PR4	
1000			MR600	-	-	-	-

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**Table 6:** Liners for lubricating fluids (16 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	
	s	h3		KSB	ROTORK
		[mm]		Type MR	Typ AB
40	M11	24	16	MR25	-
50					-
65					-
80					-
100	M14	24			-
125		30			-
150		-			
200	M19	35			-
250				MR50	-
300	M22	40		-	
350	C25	45		MR100	-
400	C36	55		-	
450				MR200	-
500				-	
550				-	
600	C50	65		-	

# MN



Fig. 3: Unit comprising BOAX-B + MN manual gearbox

Table 7: Liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners
	s	h3		MN	MN
		[mm]			
40	M11	24	10	MN12	MN12
50					
65					
80					
100	M14	24			
125		30			
150					
200	M19	35		MN25	MN25
250				-	-
300	M22	40		-	-

Table 8: Liners for lubricating fluids (16 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners
	s	h3		Type MN
		[mm]		
40	M11	24	16	MN12
50				
65				
80				
100	M14	24		
125		30		
150				
200	M19	35		MN25
250				-
300	M22	40		-

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# MA

**Table 9:** Liners for lubricating fluids and non-lubricating fluids

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	Non-lubricating fluids: XC/XU/K liners
	s	h3 [mm]		Type MA	Type MA
40	M11	24	16	MA12	MA12
50					
65					
80					
100	M14	24		MA25	MA25
125		30			
150					
200	M19	35			

Double-acting Pneumatic Actuator

# ACTAIR NG



Fig. 4: Unit comprising BOAX-B + ACTAIR NG actuator

Table 10: Shut-off function: liners for lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners				
	s	h3 [mm]		Control pressure				
				3 [bar]	4 [bar]	5 [bar]	6 [bar]	
40	M11	24	10	NG2	NG2	NG2	NG2	
50				NG5	NG5			NG5
65						NG10		
80				NG15	NG15			NG10
100	M14	24		NG20	NG15	NG15	NG10	
125		30		NG30	NG20	NG20		
150		35		NG40	NG30	NG20	NG20	
200	M19	35		NG60	NG40	NG40	NG30	
250				NG80	NG60	NG60	NG40	
300	M22	40		NG120	NG80	NG80	NG80	
350	C25	45		NG160	NG120	NG120	NG160	
400				NG240				NG160
450				NG340	NG240	NG160		NG160
500				NG500	NG340	NG240		NG240
550	C50	65		NG700	NG500	NG500	NG500	
600				NG340				NG340
650			NG500	NG500	NG500			
700			NG700	NG500	NG500			
750	C36	55	NG700	NG500	NG500	NG500		
800			NG340				NG340	NG340
850			NG500	NG500	NG500			
900			NG700	NG500	NG500			
950	C60	80	NG700	NG500	NG500	NG500		
1000			NG340				NG340	NG340

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**Table 11: Shut-off function: liners for non-lubricating fluids (10 bar)**

DN	Shaft end		Maximum pressure [bar]	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners					
	s	h3 [mm]		Control pressure					
				3 [bar]	4 [bar]	5 [bar]	6 [bar]		
40	M11	24	10	NG2	NG2	NG2	NG2		
50				NG5	NG5	NG5	NG2		
65				NG10	NG10			NG10	NG5
80						NG15	NG15		
100	M14	24		NG20	NG20	NG20	NG15		
125		30		NG60	NG40	NG30	NG30		
150		35		NG80	NG60	NG60	NG60		
200	M19	35		NG120	NG80	NG80	NG80		
250				NG160	NG120	NG120	NG120		
300	M22	40		NG240	NG160	NG160	NG160		
350	C25	45		NG340	NG240	NG240	NG240		
400				NG500	NG340	NG340	NG240		
450				NG700	NG500	NG500	NG500	NG340	
500									-
550				C50	65	-	NG700	NG700	NG500
600						-	-	NG700	NG500
650			-			-	-	-	-
700			-			-	-	-	-
750	-	-	-			-	-		
800	-	-	-			-	-		
850	-	-	-			-	-		
900	C60	80	-			-	-	-	
1000			-	-	-	-			

**Table 12: Throttling function: liners for all fluids (10 bar)**

DN	Shaft end		Maximum pressure [bar]	All fluids: all liners				
	s	h3 [mm]		Control pressure				
				4 [bar]	5 [bar]	6 [bar]		
40	M11	24	10	NG2	NG2	NG2		
50				NG5	NG5	NG5		
65				NG10	NG10		NG10	
80						NG15		NG15
100	M14	24		NG20	NG20	NG15		
125		30		NG40	NG30	NG30		
150		35		NG60	NG60	NG60		
200	M19	35		NG80	NG80	NG80		
250				NG120	NG120	NG120		
300	M22	40		NG160	NG160	NG160		
350	C25	45		NG240	NG160	NG160		
400				NG340	NG240	NG240		
450				NG500	NG340	NG500	NG340	
500								-
550				C50	65	-	NG700	NG500
600						-	-	NG700
650			-			-	-	-
700			-			-	-	-
750	-	-	-			-		
800	-	-	-			-		
850	-	-	-			-		
900	C60	80	-			-	-	
1000			-	-	-	-		

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**Table 13: Shut-off function: liners for all fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners All fluids: all other liners			
	s	h3		Control pressure			
		[mm]		3	4	5	6
			[bar]	[bar]	[bar]	[bar]	
40	M11	24	16	NG2	NG2	NG2	NG2
50				NG5	NG5	NG5	NG5
65				NG10	NG10		
80						NG15	NG15
100	M14	24	16	NG20	NG20	NG20	NG20
125		30		NG30	NG30	NG30	NG30
150		35		NG60	NG60	NG60	NG60
200	M19	35	16	NG2	NG2	NG2	NG2
250				NG5	NG5	NG5	NG5

**Table 14: Throttling function: liners for lubricating fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: all liners		
	s	h3		Control pressure		
		[mm]		4	5	6
			[bar]	[bar]	[bar]	
40	M11	24	16	NG5	NG2	NG2
50				NG10	NG5	NG5
65					NG15	NG10
80				NG15		NG15
100	M14	24	16	NG20	NG20	NG20
125		30		NG30	NG30	NG30
150		35		NG60	NG60	NG60
200	M19	35	16	NG2	NG2	NG2
250				NG5	NG5	NG5

**Table 15: Shut-off function and throttling function: liners for lubricating fluids (3 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners			
	s	h3		Control pressure			
		[mm]		3	4	5	6
			[bar]	[bar]	[bar]	[bar]	
700	C50	65	3	NG160	NG160	NG160	NG160
750				NG240	NG240	NG240	NG240
800				NG500			
900	C60	80	3	NG500	NG500	NG500	NG500
1000				NG500	NG500	NG500	

**Table 16: Shut-off function and throttling function: liners for non-lubricating fluids (3 bar)**

DN	Shaft end		Maximum pressure [bar]	Non-lubricating fluids: XC/XU/K liners			
	s	h3		Control pressure			
		[mm]		3	4	5	6
			[bar]	[bar]	[bar]	[bar]	
700	C50	65	3	NG500	NG240	NG240	NG160
750				NG500	NG240	NG240	NG240
800							NG500
900	C60	80	3	NG500	NG500	NG500	NG500
1000				NG500	NG500	NG500	

Single-acting Pneumatic Actuator

# DYNACTAIR NG

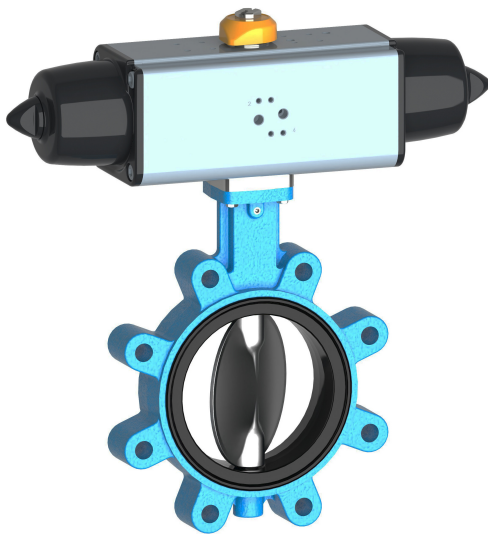


Fig. 5: Unit comprising BOAX-B + DYNACTAIR NG actuator

Table 17: Shut-off function: liners for lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners		
	s	h3 [mm]		Control pressure		
				4 [bar]	5 [bar]	6 [bar]
40	M11	24	10	NG2/4	NG1	NG1
50				NG4/4	NG2	NG2
65				NG4	NG4	NG4
80				NG6/4		
100	M14	24		NG8/4	NG6	NG6
125		30		NG12/4	NG8	NG8
150		NG16/4		NG12	NG12	
200	M19	35		NG25/4	NG16	NG16
250				NG35/4	NG25	NG25
300	M22	40		NG50/4	NG50	NG50
350	C25	45		NG80/4		
400	C36	55		NG120/4	NG80	NG80
450				NG160/4	NG120	NG120
500						
550				C50	65	NG240/4
600						
650			NG350/4	NG240	NG240	
700			-	NG350	NG350	
750			-			
800			-			
900	C60	80	-			-
1000			-	-	-	

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**Table 18: Shut-off function: liners for non-lubricating fluids (10 bar)**

DN	Shaft end		Maximum pressure [bar]	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners				
	s	h3		Control pressure				
		[mm]		4 [bar]	5 [bar]	6 [bar]		
40	M11	24	10	NG4/4	NG2	NG2		
50					NG4	NG4		
65				NG6/4	NG6	NG6		
80					NG8/4	NG8	NG8	
100	M14	24		NG12/4	NG12	NG12		
125		30		NG16/4	NG25	NG25		
150	M19	35		NG50/4	NG35	NG35		
200				NG80/4	NG50	NG50		
250				NG120/4	NG120	NG120		
300				NG160/4				
350	C25	45		NG240/4	NG240	NG240		
400				C36	55	NG350/4	NG350	NG350
450						-	-	-
500				C50	65	-	-	-
550	-	-				-		
600	-	-				-		
650	-	-	-					
700	C60	80	-	-	-			
750			-	-	-			
800			-	-	-			
900			-	-	-			
1000	-	-	-					

**Table 19: Throttling function: liners for all fluids (10 bar)**

DN	Shaft end		Maximum pressure [bar]	All fluids: all liners				
	s	h3		Control pressure				
		[mm]		4 [bar]	5 [bar]	6 [bar]		
40	M11	24	10	NG4/4	NG2	NG2		
50					NG4	NG4		
65				NG6/4	NG6	NG6		
80					NG8/4	NG8	NG8	
100	M14	24		NG12/4	NG12	NG12		
125		30		NG16/4	NG25	NG25		
150	M19	35		NG50/4	NG35	NG35		
200				NG80/4	NG50	NG50		
250				NG120/4	NG120	NG120		
300				NG160/4				
350	C25	45		NG240/4	NG240	NG240		
400				C36	55	NG350/4	NG350	NG350
450						-	-	-
500				C50	65	-	-	-
550	-	-				-		
600	-	-				-		
650	-	-	-					
700	C60	80	-	-	-			
750			-	-	-			
800			-	-	-			
900			-	-	-			
1000	-	-	-					

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**Table 20: Shut-off function: liners for all fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners All fluids: all other liners		
	s	h3		Control pressure		
		[mm]		4	5	6
			[bar]	[bar]	[bar]	
40	M11	24	16	NG4/4	NG2	NG2
50				NG6/4	NG4	NG4
65					NG6	NG6
80				NG8/4		NG8
100	M14	24		NG12/4	NG12	NG12
125		30		NG16/4	NG16	NG16
150		35		NG25/4	NG25	NG25
200	M19	35				

**Table 21: Throttling function: liners for lubricating fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: all liners		
	s	h3		Control pressure		
		[mm]		4	5	6
			[bar]	[bar]	[bar]	
40	M11	24	16	NG4/4	NG4	NG4
50				NG8/4	NG6	NG6
65					NG12/4	NG12
80				NG16/4		NG16
100	M14	24		NG25/4	NG25	NG25
125		30		NG50/4	NG50	NG50
150		35				
200	M19	35				

**Table 22: Shut-off function and throttling function: liners for lubricating fluids (3 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners		
	s	h3		Control pressure		
		[mm]		4	5	6
			[bar]	[bar]	[bar]	
700	C50	65	3	NG240/4	NG120	NG120
750					NG160	NG160
800					NG240	NG240
900	C60	80		NG350/4	NG350	NG350
1000				-	-	-

**Table 23: Shut-off function and throttling function: liners for non-lubricating fluids (3 bar)**

DN	Shaft end		Maximum pressure [bar]	Non-lubricating fluids: XC/XU/K liners			
	s	h3		Control pressure			
		[mm]		4	5	6	
			[bar]	[bar]	[bar]		
700	C50	65	3	NG350/4	NG240	NG240	
750					-	NG350	NG350
800						-	-
900	C60	80		-	-	-	
1000				-	-	-	

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Electric Actuators

## AQ/AQL - BERNARD CONTROLS



Fig. 6: Unit comprising BOAX-B + AQ/AQL actuator

Table 24: Shut-off function: liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure	Lubricating fluids: XC/XU/K liners		Non-lubricating fluids: XC/XU/K liners All fluids: all other liners	
	s	h3		AQL	AQ	AQL	AQ
		[mm]	[bar]				
40	M11	24	10	AQ7L	AQ5	AQ7L	AQ5
50							
65							
80							
100	M14	24					
125		30			AQ10	-	AQ10
150				-		-	AQ15
200	M19	35			AQ15	-	AQ25
250					AQ25	-	AQ30
300					AQ50	-	AQ50
350	C25	45			-	-	-
400	C36	55			-	-	-

Table 25: Throttling function: liners for all fluids (10 bar)

DN	Shaft end		Maximum pressure	All fluids: all liners			
	s	h3		AQL	AQ		
		[mm]	[bar]				
40	M11	24	10	AQ7L	AQ5		
50							
65							
80							
100	M14	24				AQ10	
125		30			-	AQ15	
150				-		AQ25	
200	M19	35			-	AQ30	
250					-		AQ50
300					-		-
350	C25	45			-	-	
400	C36	55			-	-	

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**Table 26: Shut-off function: liners for lubricating fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners		
	s	h3		AQL	AQ	
		[mm]				
40	M11	24	16	AQ7L	AQ5	
50						
65						
80						
100	M14	24				AQ10
125		30		-		
150				-	AQ15	
200	M19	35			-	AQ25
250					-	AQ30
300					-	AQ50
350	C25	45			-	-
400	C36	55			-	-

**Table 27: Throttling function: liners for all fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	All fluids: XU/K liners		
	s	h3		AQL	AQ	
		[mm]				
40	M11	24	16	AQ7L	AQ5	
50						
65						
80						
100	M14	24				AQ10
125		30		-		
150				-	AQ15	
200	M19	35			-	AQ25
250					-	AQ30
300					-	AQ50
350	C25	45			-	-
400	C36	55			-	-

## SQ - BERNARD CONTROLS

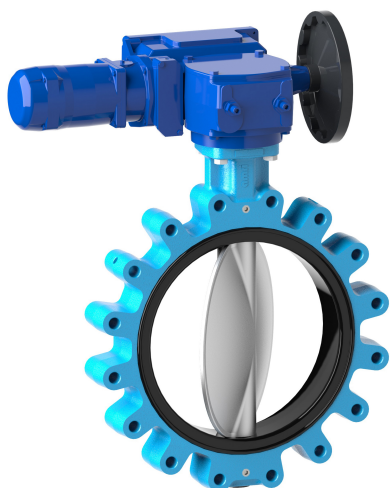


Fig. 7: Unit comprising BOAX-B + SQ - BERNARD CONTROLS actuator

Table 28: Shut-off function: liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners
	s	h3 [mm]		SQ	SQ
40	M11	24	10	SQ6	SQ6
50					
65					
80					
100	M14	24		SQ10	SQ10
125		30			
150		SQ15			
200	M19	35		SQ25	SQ60
250					
300	M22	40		SQ60	SQ80
350	C25	45			
400	C36	55	-	SQ120	
450			-	-	
500			-	-	

Table 29: Throttling function: liners for all fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners
	s	h3 [mm]		SQ - Intel+
40	M11	24	10	SQ10
50				
65				
80				
100	M14	24		SQ15
125		30		
150	M19	35		SQ25
200				
250				
300	M22	40		SQ80
350	C25	45		
400	C36	55	SQ120	
450				-
500				-

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**Table 30: Shut-off function: liners for lubricating fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	
	s	h3 [mm]		SQ	
40	M11	24	16	SQ6	
50					
65					
80					
100	M14	24			
125		30		SQ10	
150				SQ15	
200	M19	35			SQ25
250					SQ60
300	M22	40			
350	C25	45			SQ80
400	C36	55			SQ120
450				-	
500				-	

**Table 31: Throttling function: liners for all fluids (16 bar)**

DN	Shaft end		Maximum pressure [bar]	All fluids: XU/K liners	
	s	h3 [mm]		SQ - Intel+	
40	M11	24	16	SQ10	
50					
65					
80					
100	M14	24			
125		30		SQ15	
150					
200	M19	35			SQ25
250					SQ60
300	M22	40			SQ80
350	C25	45			SQ120
400	C36	55			-
450				-	
500				-	

## SQ - AUMA

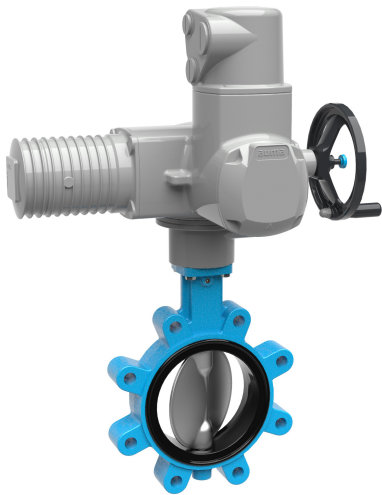


Fig. 8: Unit comprising BOAX-B + SQ - AUMA actuator

Table 32: Shut-off function: liners for lubricating fluids and non-lubricating fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners	Non-lubricating fluids: XC/XU/K liners All fluids: all other liners											
	s	h3 [mm]		SQ - AUMA	SQ - AUMA											
40	M11	24	10	SQ05.2	SQ05.2											
50																
65																
80																
100	M14	24				10	SQ05.2	SQ05.2								
125		30														
150																
200	M19	35							10	SQ05.2	SQ05.2					
250																
300	M22	40										10	SQ05.2	SQ07.2		
350	C25	45												SQ10.2	SQ10.2	
400	C36	55												10	SQ05.2	SQ12.2
450																
500																
500																

Table 33: Throttling function: liners for all fluids (10 bar)

DN	Shaft end		Maximum pressure [bar]	All fluids: all liners									
	s	h3 [mm]		SQ - AUMA									
40	M11	24	10	SQ05.2									
50													
65													
80													
100	M14	24			10	SQ05.2							
125		30											
150													
200	M19	35					10	SQ05.2					
250													
300	M22	40							10	SQ05.2	SQ07.2		
350	C25	45									SQ10.2	SQ10.2	
400	C36	55									10	SQ05.2	SQ12.2
450													
500													
500													

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Table 34: Shut-off function: liners for lubricating fluids (16 bar)

DN	Shaft end		Maximum pressure [bar]	Lubricating fluids: XC/XU/K liners
	s	h3 [mm]		SQ - AUMA
40	M11	24	16	SQ05.2
50				
65				
80				
100	M14	24	16	SQ05.2
125		30		
150				
200	M19	35		SQ07.2

Table 35: Throttling function: liners for all fluids (16 bar)

DN	Shaft end		Maximum pressure [bar]	All fluids: XU/K liners
	s	h3 [mm]		SQ - AUMA
40	M11	24	16	SQ05.2
50				
65				
80				
100	M14	24	16	SQ05.2
125		30		
150				
200	M19	35		SQ07.2







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