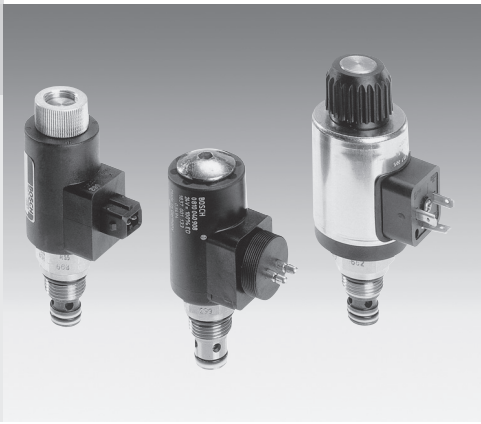
Rexroth
Bosch Group

Cartridge-type poppet valves with solenoid actuation

RE 18136-18/03.04 1/16
Replaces: 09.03

Type Electrically operated



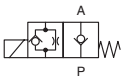
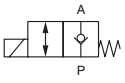
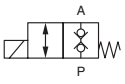
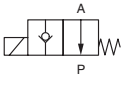
Threaded hole M 20 x 1.5
Maximum working pressure 270 bar
Maximum flow rate 30 l/min

Overview of Contents

Features

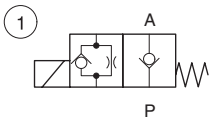
- Direct solenoid-operated directional control poppet valve, sealed on both sides
- Closed port tight and free from leakage
- Reliable switching even under longer operating periods
- Wet pin DC solenoids
- Rotatable solenoid coil
- With concealed emergency override (optional)

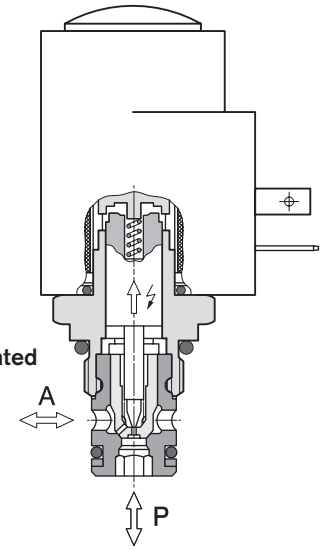
Ordering data and scope of delivery

Symbol	*U*(V)/*f*(Hz)	*P* (W)		DIN/ISO 1)	DIN/ISO 2)	KOSTAL 1)	KOSTAL 2)	JET 1)		Bi-Diode 3)	kg	Material Number
① 	12/00	31	M 20 x 1.5		●						0.43	**0 810 040 909**
						●				●	0.40	**0 810 040 918**
							●			●	0.43	**0 810 040 907**
	24/00				●						0.43	**0 810 040 910**
						●				●	0.40	**0 810 040 919**
							●			●	0.43	**0 810 040 908**
	48/00				●						0.43	**0 810 040 928**
	205/00			●							0.40	**0 810 040 980**
					●						0.43	**0 810 040 913**
					●				●	●	0.43	**0 810 040 935**
② 	12/00	31	M 20 x 1.5		●						0.43	**0 810 040 917**
								●		●	0.40	**0 810 040 931**
	24/00				●						0.43	**0 810 040 929**
						●				●	0.40	**0 810 040 983**
								●		●	0.40	**0 810 040 982**
③	12/00	31	M 20 x 1.5	●							0.45	**0 810 040 951**
				●					●		0.45	**0 810 040 949**
		33			●						0.77	**0 810 040 957**
		31					●				0.48	**0 810 040 947**
								●			0.45	**0 810 040 953**
		33						●			0.74	**0 810 040 960**
	24/00	18						●	●		0.72	**0 810 040 986**
		31		●							0.45	**0 810 040 952**
		33		●							0.74	**0 810 040 964**
					●						0.77	**0 810 040 958**
		31			●				●		0.48	**0 810 040 950**
						●					0.45	**0 810 040 962**
								●			0.45	**0 810 040 954**
		33						●			0.74	**0 810 040 961**
	28/00	31				●			●	●	0.72	**0 810 040 985**
	205/00	31		●					●		0.45	**0 810 040 963**
		35			●						0.77	**0 810 040 959**
	220/00	26			●						0.72	**0 810 040 987**
④ 	24/00	26	M 20 x 1.5	●							0.40	**1 537 410 071**

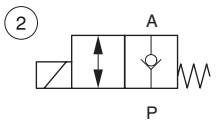
1) Connector not included
2) Connector included
3) Bi-directional double Zener diode

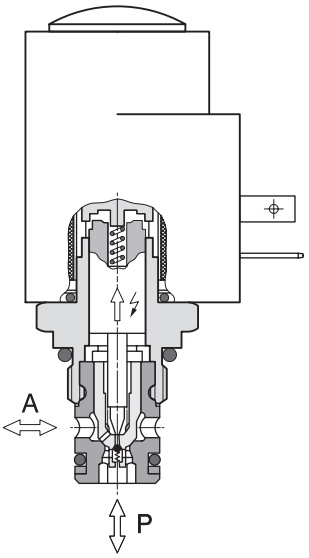
Function, sectional diagrams, symbols



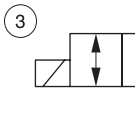


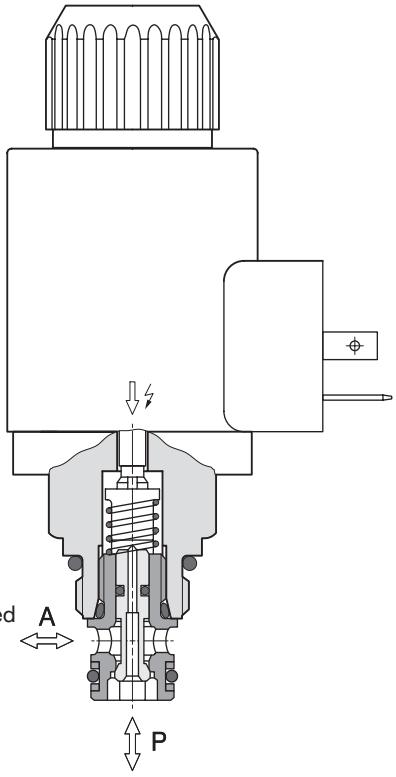
Poppet valve, pilot operated
Solenoid de-energized:
A → P closed
P → A open, $\Delta p = 2$ bar*)
Solenoid energized:
A → P open, $\Delta p = 1$ bar*)
P → A throttled



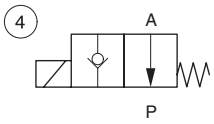


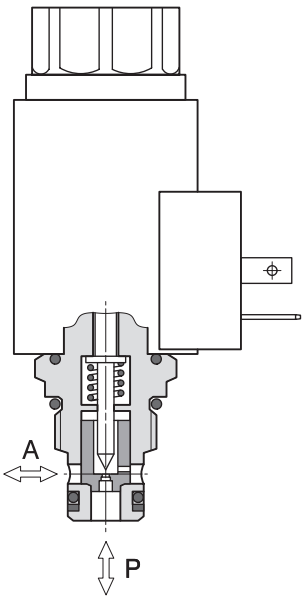
Poppet valve, pilot operated
Solenoid de-energized:
A → P closed
P → A open, $\Delta p = 2$ bar*)
Solenoid energized:
A → P open, $\Delta p = 1$ bar*)
P → A open, $\Delta p = 2$ bar*)





Poppet valve, directly operated
Solenoid de-energized:
A → P and P → A closed in both directions
Solenoid energized:
A → P and P → A open



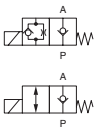


Poppet valve, pilot operated
Solenoid de-energized:
A → P open, $\Delta p = 1$ bar*)
P → A closed
Solenoid energized:
A → P closed
P → A open, $\Delta p = 1$ bar*)

Important
When using valves with an electrical connection which conforms to protection class III (without PE conductor), the protective measures to DIN VDE 0100, Part 410 and DIN VDE 0106, Part 100, must be complied with.

*) Δp: Opening pressure values approximate

Technical data (For applications outside these parameters, please consult us!)

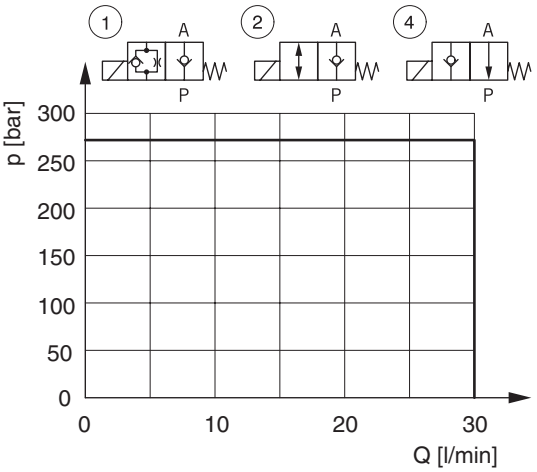
General					
Design		Poppet valve, electrically operated			
Installation position		Optional			
Ambient temperature	°C	–30 to +50			
Weight	kg	See page 2			
Hydraulic					
Pressure fluid		Mineral-oil-based hydraulic oil to DIN/ISO; other fluids, e.g. environmentally friendly types, available on request			
Viscosity range	mm^2/s	10 to 500			
Pressure fluid temperature range	°C	–25 to +80			
Purity class to ISO code		Maximum permissible degree of contamination of pressure fluid to ISO 4406 (C) Class 20/18/15 [1])			
Direction of flow		As per symbol			
Opening pressure (spring)		See page 3			
Symbol		① Pilot operated ② 	④ 	Directly operated ③ 	
Type of mounting		Cartridge with threaded socket M 20 x 1.5			
Working pressure	$15 \cdot 10^5$ load reversals bar	270	270	270	270
	$10 \cdot 10^6$ load reversals bar	160	160	160	210
Maximum flow rate	l/min	30	30	20	20
Electrical					
Solenoid power	W	31	26	31	18, 26, 33, 35
Cyclic duration factor	%	100			
Degree of protection		IP 65 DIN 40050			
Electrical connection		DIN/ISO, KOSTAL or JET right-angle connector			
Max. voltage tolerance		U_B ±10% (c.d.f. 100 %)			
Spark quenching		Bi-directional double Zener diode			

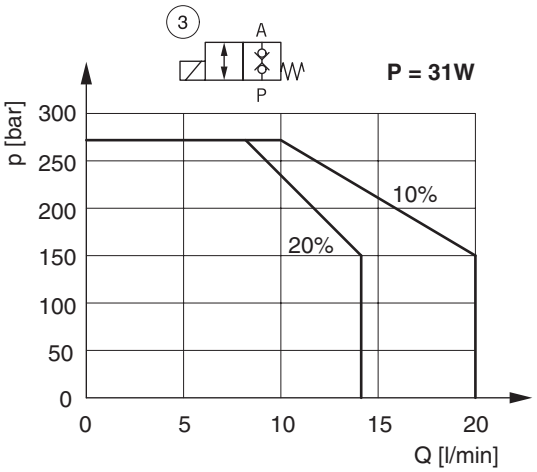
[1]) The purity classes stated for the components must be complied with in hydraulic systems.
Effective filtration prevents problems and also extends the service life of components.
For a selection of filters, see catalog sections RE 50070, RE 50076 and RE 50081.

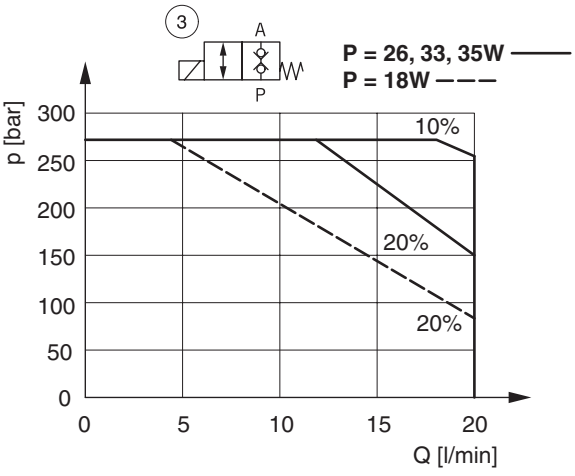
Operating limits

At 10 % and 20 % below nominal voltage

ν = 32 mm²/s

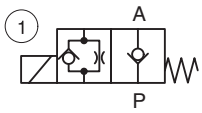


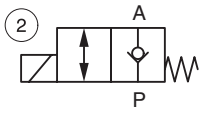




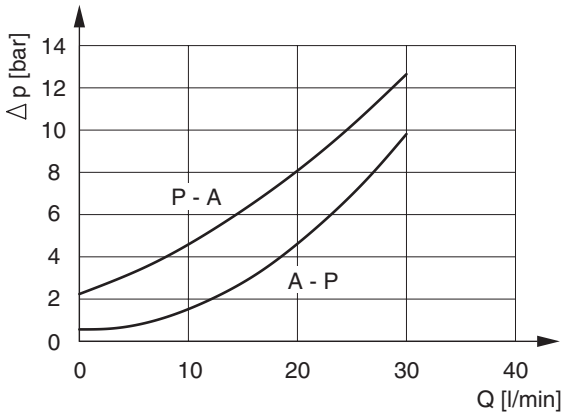
Flow vs. pressure increase

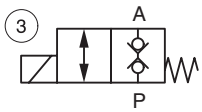
ν = 32 mm²/s



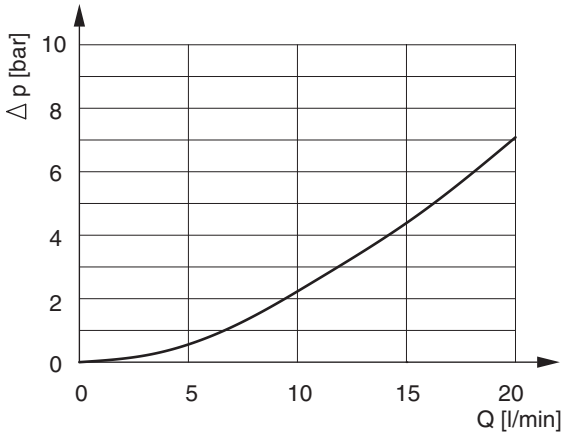


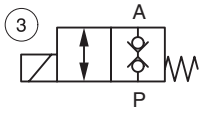
M20x1,5
P = 31W



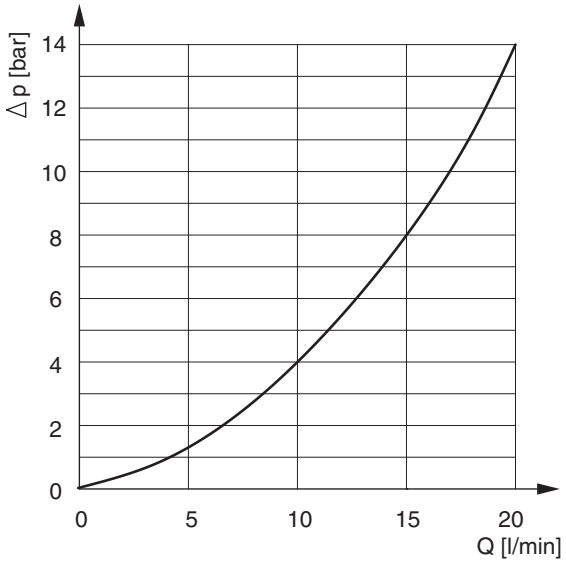


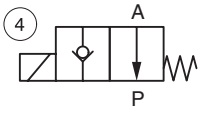
M20x1,5
P = 18, 26, 33, 35W



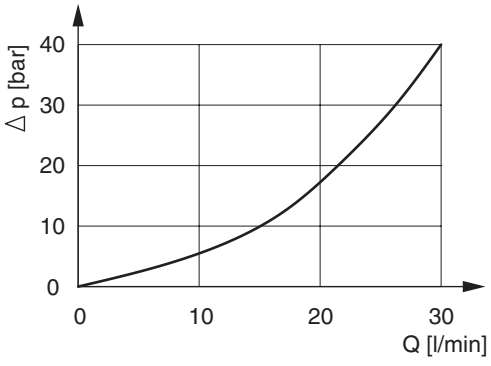


M20x1,5
P = 31W

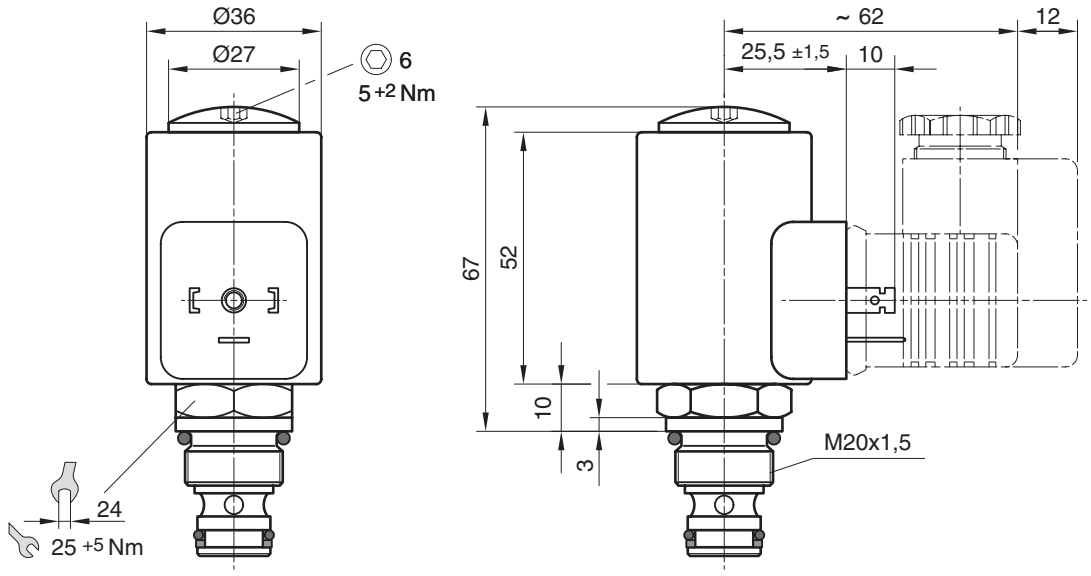


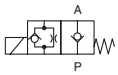
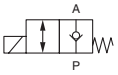


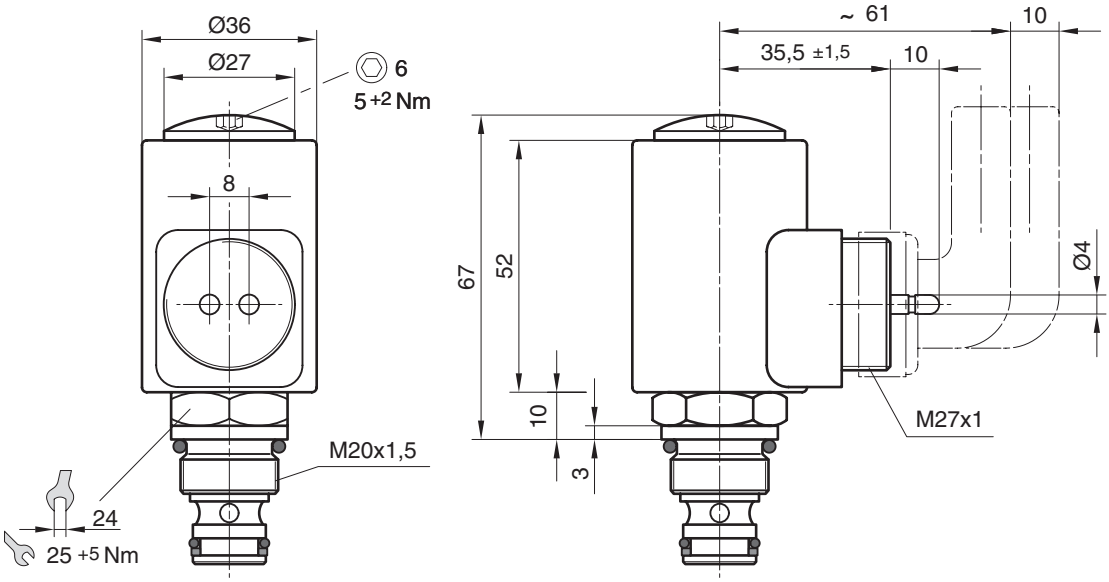
M20x1,5
P = 26W

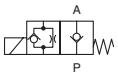
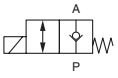


Unit dimensions (in mm) M 20 x 1.5

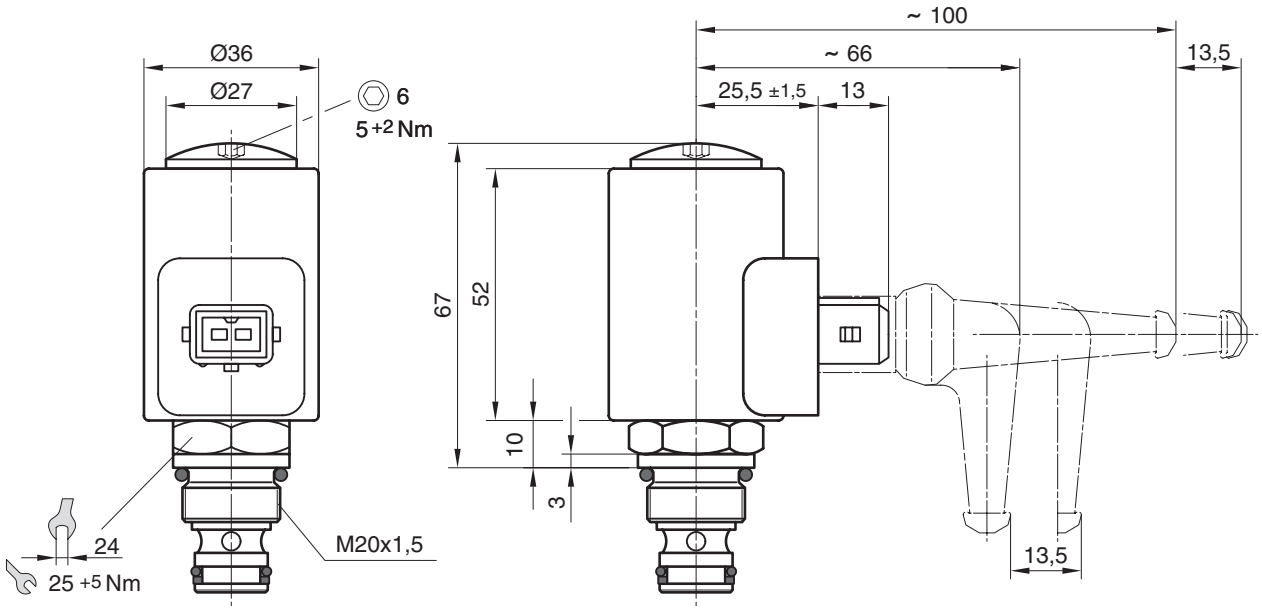


DIN/ISO connector version	① 	**0 810 040 909**	**0 810 040 928**
		0 810 040 910	**0 810 040 935**
		0 810 040 913	**0 810 040 980**
	② 	**0 810 040 917**	**0 810 040 929**

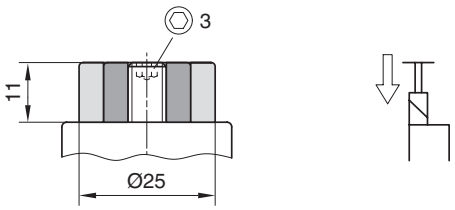


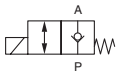
KOSTAL connector version	① 	**0 810 040 907**	**0 810 040 918**
		0 810 040 908	**0 810 040 919**
	② 	**0 810 040 983**	

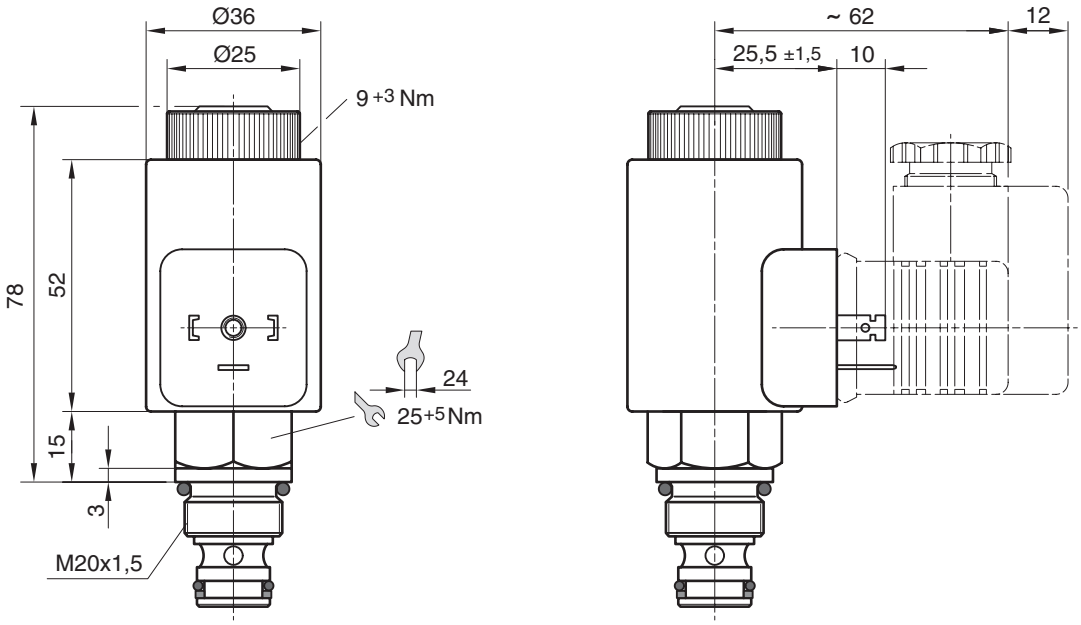
Unit dimensions (in mm) M 20 x 1.5

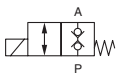


Version with emergency manual override

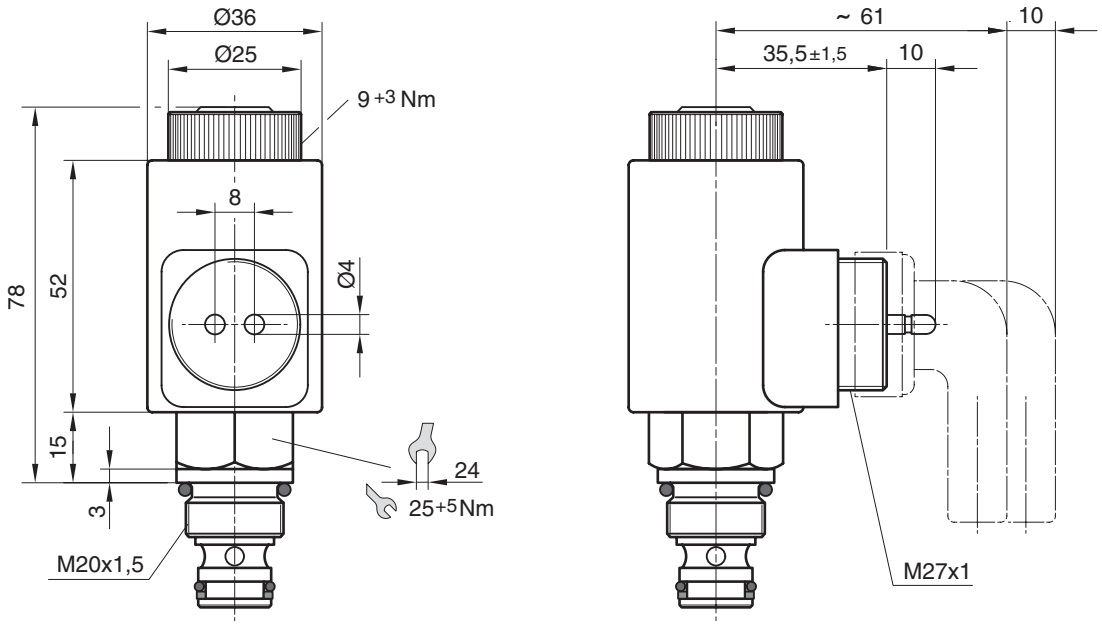


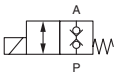
JET connector version	② 	**0 810 040 931**	**0 810 040 982**

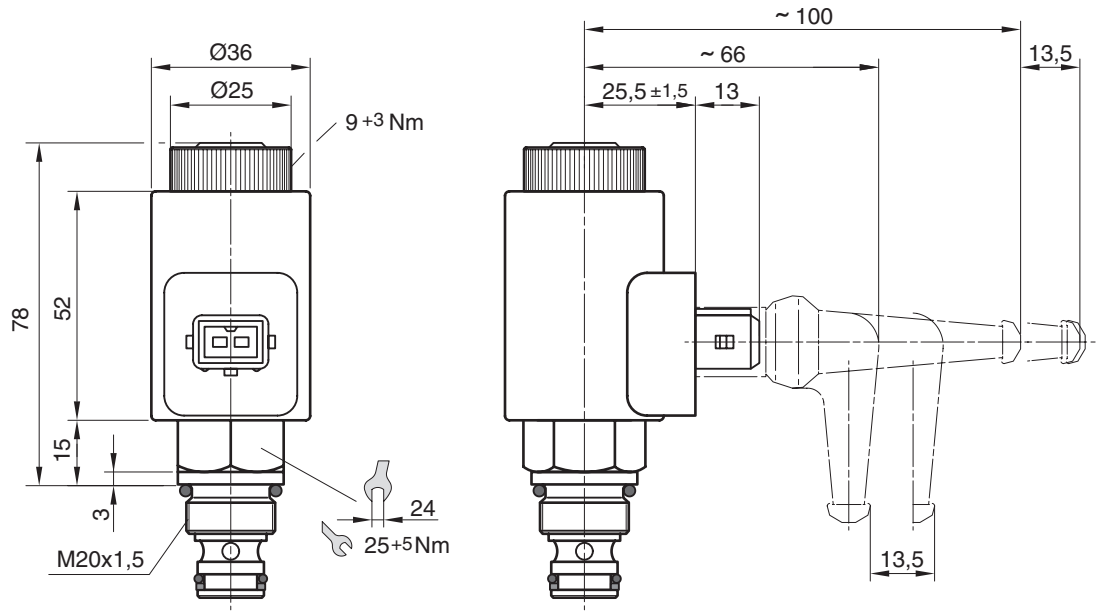


DIN/ISO connector version	③ 	**0 810 040 949**	**0 810 040 952**
		0 810 040 950	**0 810 040 963**
		0 810 040 951	

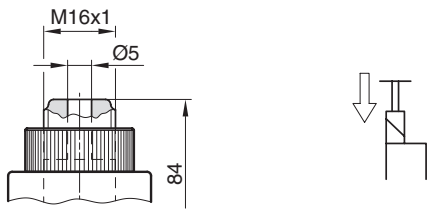
Unit dimensions (in mm) M 20 x 1.5

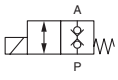


KOSTAL connector version	③ 	**0 810 040 947** **0 810 040 962**	**0 810 040 985**

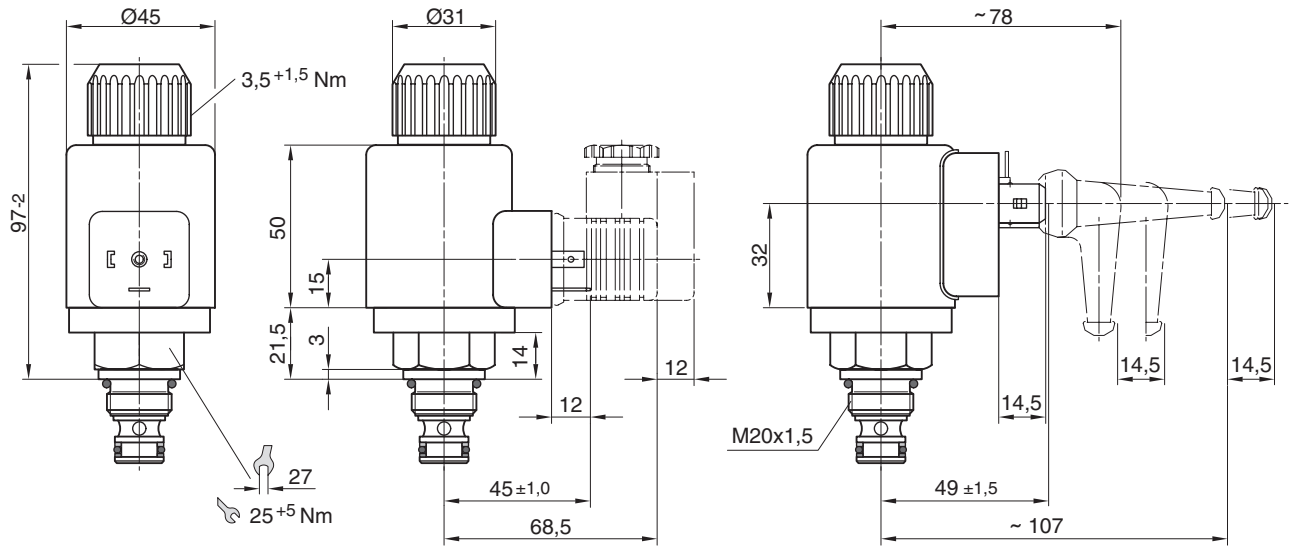


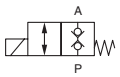
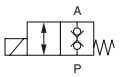
Version with emergency manual override



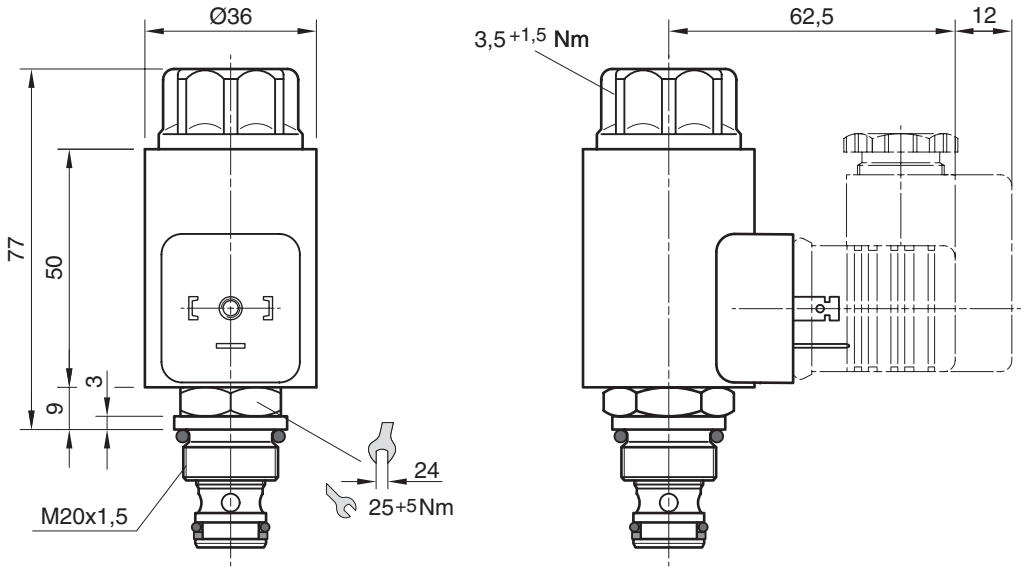
JET connector version	③ 	**0 810 040 953**	**0 810 040 954**

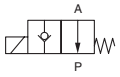
Unit dimensions (in mm) M 20 x 1.5



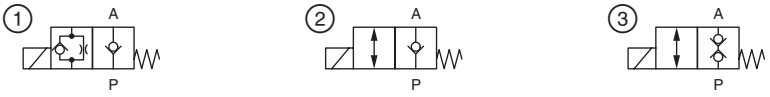
DIN/ISO connector version	③ 	**0 810 040 957**	**0 810 040 964**
		0 810 040 958	**0 810 040 987**
		0 810 040 959	
JET connector version	③ 	**0 810 040 960**	**0 810 040 986**
		0 810 040 961	

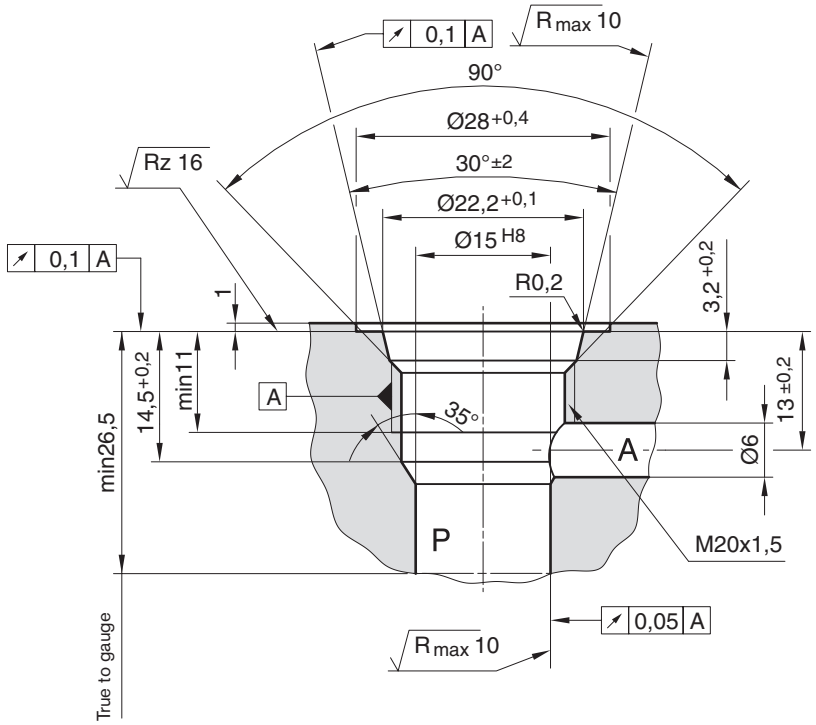
Unit dimensions (in mm) M 20 x 1.5

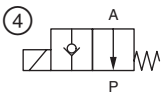


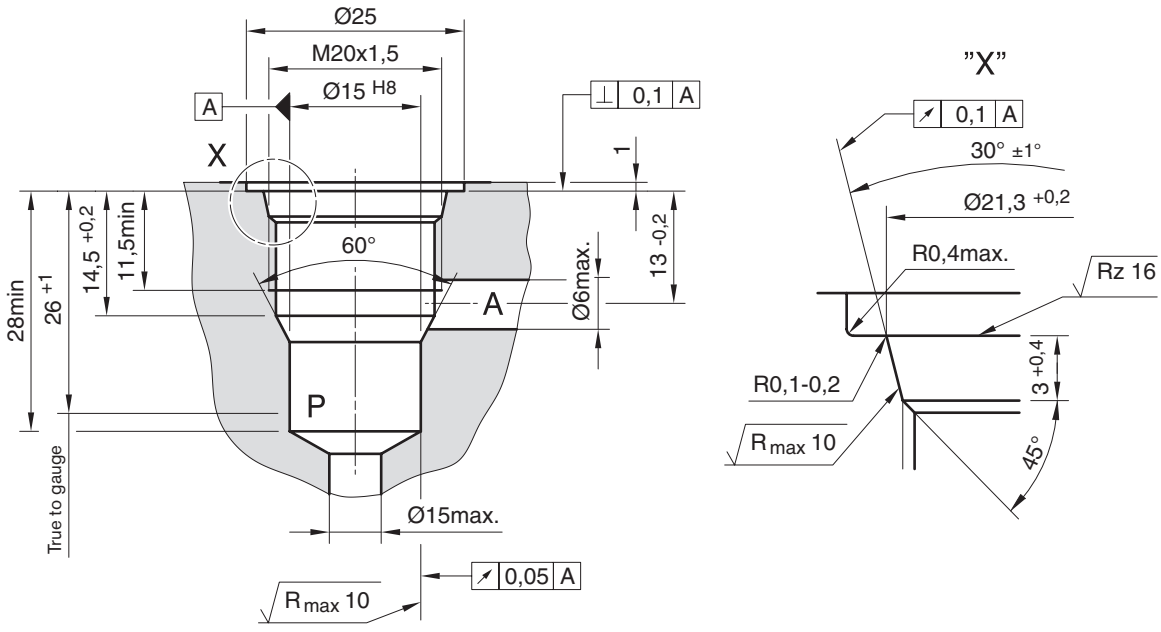
DIN/ISO connector version	④ 	**1 537 410 071**	

Threaded hole, thread M 20 x 1.5

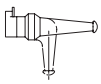
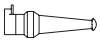


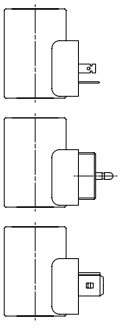






Accessories and spare parts

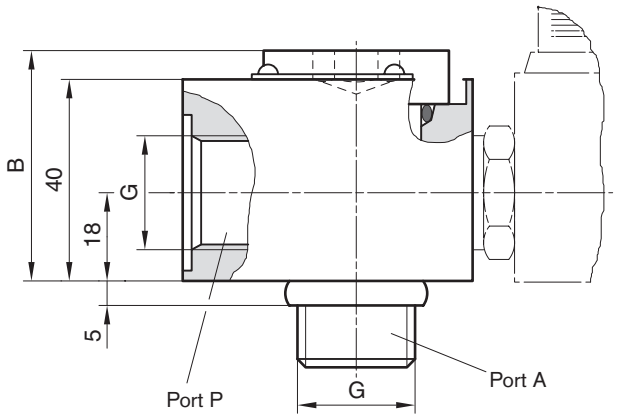
Symbol	Remarks			Material Number
	DIN/ISO ISO 4400 M 16 x 1.5 Standard	grey	A	**1 834 484 058**
		black	B	**1 834 484 057**
	with LED	15 … 30 V =	A	**1 834 484 136**
			B	**1 834 484 137**
		Pg 9 230 V ~	A	**1 834 484 103**
	with free-wheeling diode and LED	15 … 30 V =	A	**1 834 484 138**
			B	**1 834 484 139**
	with rectifier		A	**1 834 484 134**
			B	**1 834 484 135**
	KOSTAL			**1 834 484 046**
	JET			**1 834 484 094**
				**1 834 484 095**
	Seal kit	0 810 040 907 … 987		**1 817 010 272**
		1 537 410 071		**1 537 010 304**

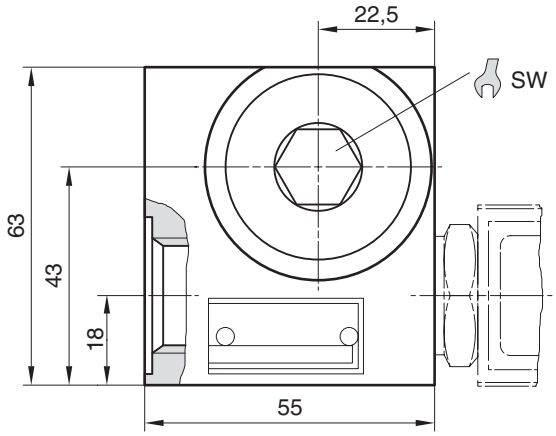
Symbol	Valve	Solenoid coil	Valve	Solenoid coil
	0 810 040 907	**1 837 001 333**	0 810 040 953	**1 837 001 324**
	0 810 040 908	**1 837 001 334**	0 810 040 954	**1 837 001 325**
	0 810 040 909	**1 837 001 328**	0 810 040 957	**1 837 001 226**
	0 810 040 910	**1 837 001 329**	0 810 040 958	**1 837 001 227**
	0 810 040 913	**1 837 001 330**	0 810 040 959	**1 837 001 305**
	0 810 040 917	**1 837 001 328**	0 810 040 960	**1 837 001 223**
	0 810 040 918	**1 837 001 333**	0 810 040 961	**1 837 001 224**
	0 810 040 919	**1 837 001 334**	0 810 040 962	**1 837 001 332**
	0 810 040 928	**1 837 001 336**	0 810 040 963	**1 837 001 330**
	0 810 040 929	**1 837 001 329**	0 810 040 964	**1 837 001 227**
	0 810 040 931	**1 837 001 326**	0 810 040 980	**1 837 001 330**
	0 810 040 935	**1 837 001 330**	0 810 040 982	**1 837 001 326**
	0 810 040 937	**1 837 001 331**	0 810 040 983	**1 837 001 334**
	0 810 040 949	**1 837 001 328**	0 810 040 985	**1 837 001 454**
	0 810 040 950	**1 837 001 329**	0 810 040 986	**1 837 001 235**
	0 810 040 951	**1 837 001 328**	0 810 040 987	**1 837 001 489**
	0 810 040 952	**1 837 001 329**		

Mounting block

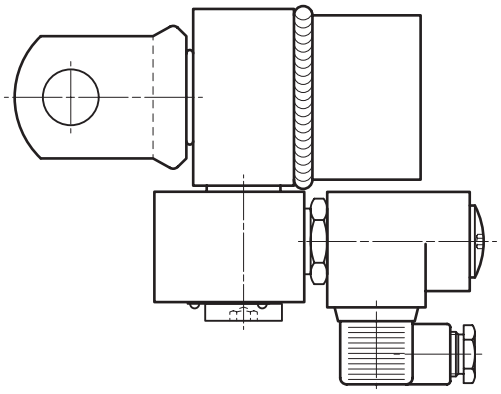
For installing the electrically operated
2/2 poppet valve with M 20 x 1.5
mounting thread directly in a cylinder line.

Dimensions (in mm)



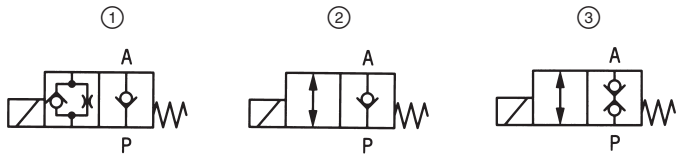


Example



Mounting block (incl. accessories)	**G**	**B**	**SW**	**(incl.)**	**[kg]**	**Material Number**
	M 16 x 1.5	36	10	21 x 1.5	0.78	**1 815 100 230**
	M 18 x 1.5	39	12	22 x 1.5		**1 815 100 231**
	M 22 x 1.5	46	14	26 x 2.0		**1 815 100 232**
	G $^{3}/_{8}$ ISO 228	36	10	21 x 1.5		**1 815 100 233**
	G $^{1}/_{2}$ ISO 228	46	14	26 x 2.0		**1 815 100 234**

Summary table

Symbol	
Electrical connection 	DIN/ISO KOSTAL JET 
Plug-in connector	+ included – not included
Diode	[1]) Bi-directional double Zener diode [2]) Rectifier bridge (4-way diode)

Material Number 0 810 ...	Symbol	U (V) f (Hz)		Plug-in connector	P (W)	Thread		Diode	Special version	Replacement Material Number 0 810 ...
~~040 900~~	①	12/00	DIN/ISO	+	30	M 20 x 1.5				040 909
~~040 901~~	①	24/00	DIN/ISO	+	30	M 20 x 1.5				040 910
~~040 902~~	①	12/00	KOSTAL	+	30	M 20 x 1.5				040 907
~~040 903~~	①	24/00	KOSTAL	+	30	M 20 x 1.5				040 908
~~040 904~~	①	190/00	DIN/ISO	+	30	M 20 x 1.5				040 913
~~040 905~~	①	12/00	Cable	–	30	$^3/_4$-16 UNF-2A				
~~040 906~~	①	24/00	Cable	–	30	$^3/_4$-16 UNF-2A				
040 907	①	12/00	KOSTAL	+	31	M 20 x 1.5		1)		
040 908	①	24/00	KOSTAL	+	31	M 20 x 1.5		1)		
040 909	①	12/00	DIN/ISO	+	31	M 20 x 1.5				
040 910	①	24/00	DIN/ISO	+	31	M 20 x 1.5				
~~040 911~~	①	12/00	KOSTAL	–	30	M 20 x 1.5				
~~040 912~~	①	24/00	KOSTAL	–	30	M 20 x 1.5				
040 913	①	205/00	DIN/ISO	+	31	M 20 x 1.5				
~~040 914~~	①	12/00	KOSTAL	–	30	M 20 x 1.5				040 918
~~040 915~~	①	24/00	KOSTAL	–	30	M 20 x 1.5				040 919
~~040 916~~	①	12/00	KOSTAL	–	30	M 20 x 1.5			+	
040 917	②	12/00	DIN/ISO	+	31	M 20 x 1.5				
040 918	①	12/00	KOSTAL	–	31	M 20 x 1.5		1)		
040 919	①	24/00	KOSTAL	–	31	M 20 x 1.5		1)		
~~040 920~~	①	12/00	KOSTAL	–	30	$^3/_4$-16 UNF-2A				040 932
~~040 921~~	①	24/00	KOSTAL	–	30	$^3/_4$-16 UNF-2A				040 933
~~040 922~~	①	12/00	DIN/ISO	–	30	M 20 x 1.5				
~~040 923~~	①	12/00	KOSTAL	–	30	M 20 x 1.5			+	
~~040 924~~	①	24/00	KOSTAL	–	30	M 20 x 1.5			+	
~~040 925~~	①	24/00	KOSTAL	+	30	M 20 x 1.5			+	
040 928	①	48/00	DIN/ISO	+	31	M 20 x 1.5				
040 929	②	24/00	DIN/ISO	+	31	M 20 x 1.5				
040 930	①	24/00	KOSTAL	+	31	M 20 x 1.5		2)	+	
040 931	②	12/00	JET	–	31	M 20 x 1.5		1)		

~~———~~ withdrawn (no longer available)

Summary table

Material Number 0 810 ...	Symbol	U (V) f (Hz)		Plug-in connector	P (W)	Thread		Diode	Special version	Replacement Material Number 0 810 ...
040 932	①	12/00	KOSTAL	–	31	3/4-16 UNF-2A				
040 933	①	24/00	KOSTAL	–	31	3/4-16 UNF-2A				
040 934	①	24/00	DIN/ISO	+	31	M 20 x 1.5			+	
040 935	①	205/00	DIN/ISO	+	31	M 20 x 1.5	+	1)		
040 936	②	24/00	KOSTAL	–	31	M 20 x 1.5		2)	+	
040 937	②	24/00	KOSTAL	–	31	M 20 x 1.5		1)	+	
040 938	①	48/00	DIN/ISO	+	31	M 20 x 1.5	+			
040 939	②	24/00	KOSTAL	–	31	M 20 x 1.5		2)	+	
~~040 940~~	③	12/00	DIN/ISO	+	35	M 20 x 1.5				040 957
~~040 941~~	③	24/00	DIN/ISO	+	35	M 20 x 1.5				040 958
~~040 942~~	③	190/00	DIN/ISO	+	35	M 20 x 1.5				040 959
~~040 943~~	③	12/00	KOSTAL	+	36	M 20 x 1.5				
~~040 944~~	③	24/00	KOSTAL	+	36	M 20 x 1.5				
~~040 945~~	③	12/00	DIN/ISO	+	30	M 20 x 1.5				040 957
~~040 946~~	③	24/00	DIN/ISO	+	30	M 20 x 1.5				040 958
040 947	③	12/00	KOSTAL	+	30	M 20 x 1.5				
~~040 948~~	③	24/00	KOSTAL	+	30	M 20 x 1.5				040 962
040 949	③	12/00	DIN/ISO	–	31	M 20 x 1.5	+			
040 950	③	24/00	DIN/ISO	+	31	M 20 x 1.5	+			
040 951	③	12/00	DIN/ISO	–	31	M 20 x 1.5				
040 952	③	24/00	DIN/ISO	–	31	M 20 x 1.5				
040 953	③	12/00	JET	–	31	M 20 x 1.5				
040 954	③	24/00	JET	–	31	M 20 x 1.5				
~~040 955~~	③	12/00	JET	–	30	M 20 x 1.5	+			040 960
~~040 956~~	③	24/00	JET	–	30	M 20 x 1.5	+			040 961
040 957	③	12/00	DIN/ISO	+	33	M 20 x 1.5				
040 958	③	24/00	DIN/ISO	+	33	M 20 x 1.5				
040 959	③	205/00	DIN/ISO	+	35	M 20 x 1.5				
040 960	③	12/00	JET	–	33	M 20 x 1.5				
040 961	③	24/00	JET	–	33	M 20 x 1.5				
040 962	③	24/00	KOSTAL	–	31	M 20 x 1.5				
040 963	③	205/00	DIN/ISO	–	31	M 20 x 1.5	+			
040 964	③	24/00	DIN/ISO	–	33	M 20 x 1.5			+	
040 980	①	205/00	DIN/ISO	–	31	M 20 x 1.5				
040 981	①	24/00	KOSTAL	–	31	M 20 x 1.5			+	
040 982	②	24/00	JET	–	31	M 20 x 1.5		1)		
040 983	②	24/00	KOSTAL	–	31	M 20 x 1.5		1)		
040 985	③	28/00	KOSTAL	–	31	M 20 x 1.5	+	1)		
040 986	③	24/00	JET	–	18	M 20 x 1.5	+			
040 987	③	220/00	DIN/ISO	+	26	M 20 x 1.5				

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Notes

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