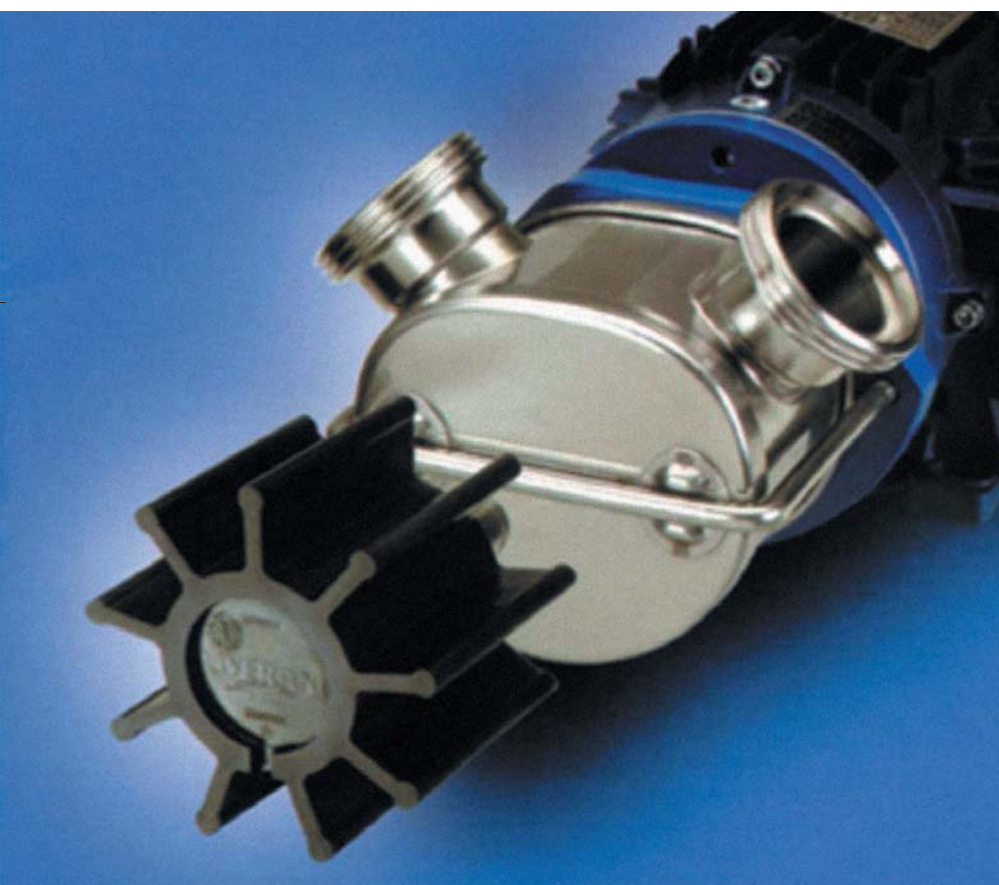
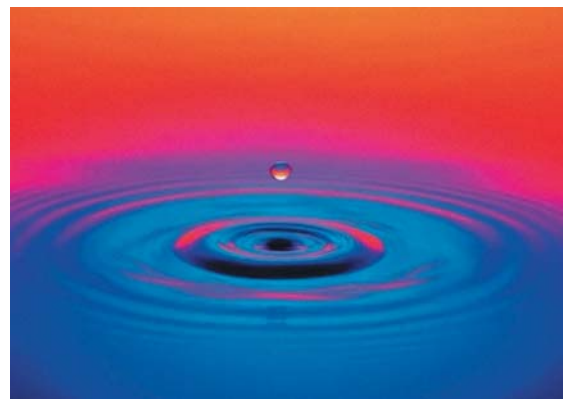


# ČERPADLA S FLEXIBILNÍM OBĚŽNÝM KOLEM

FLEXIBLE IMPELLER PUMPS



## TECHNICKÝ KATALOG

TECHNICAL  
KATALOGUE

**LIVERANI**



# OBSAH

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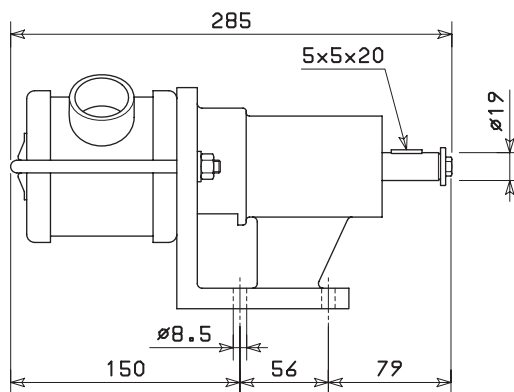
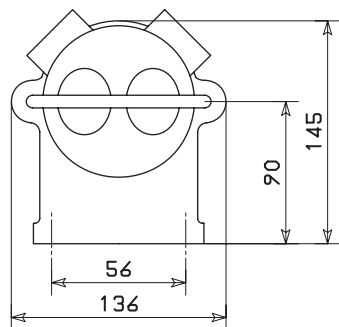
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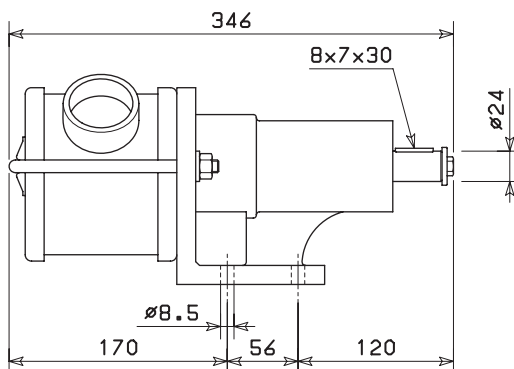
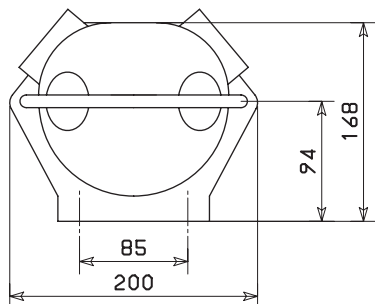
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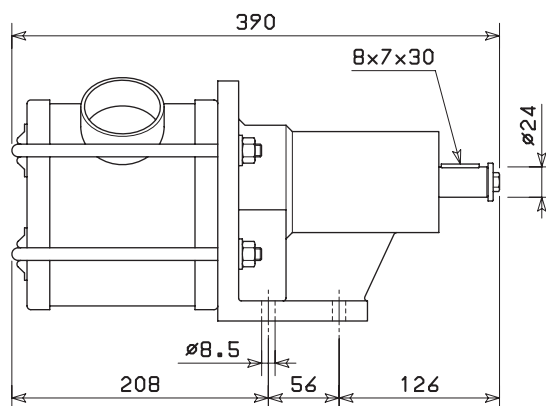
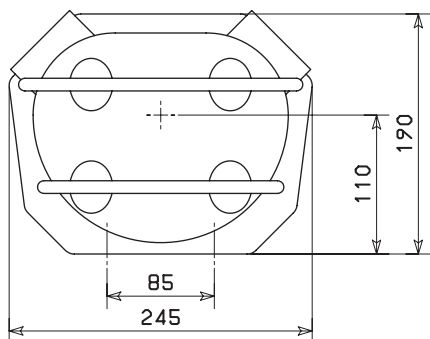
# MINOR



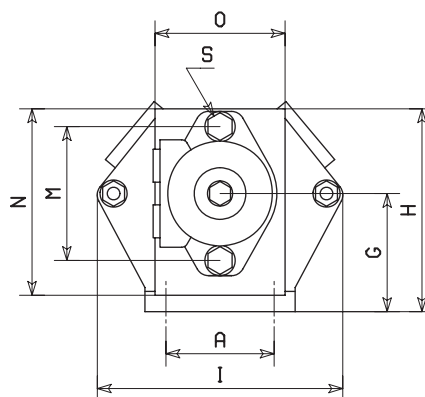
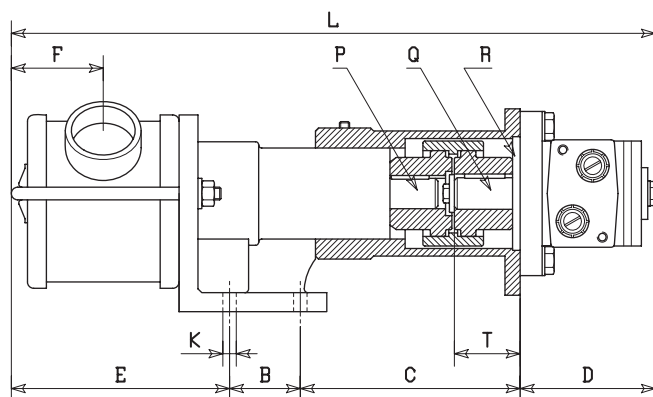
# MAJOR



# MAXI



# MID



Tipo/Typ	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T
MINOR 40	56	56	141	107	150	60	90	157	136	Ø8.5	454	106	146	103	Ø19	Ø25	Ø82.5	M12	69
MAJOR 60	85	56	175	107	170	70	94	161	200	Ø8.5	508	106	146	103	Ø24	Ø25	Ø90	M12	52
MAXI 80	85	56	182	107	208	90	110	177	240	Ø8.5	553	106	146	103	Ø24	Ø25	Ø90	M12	52

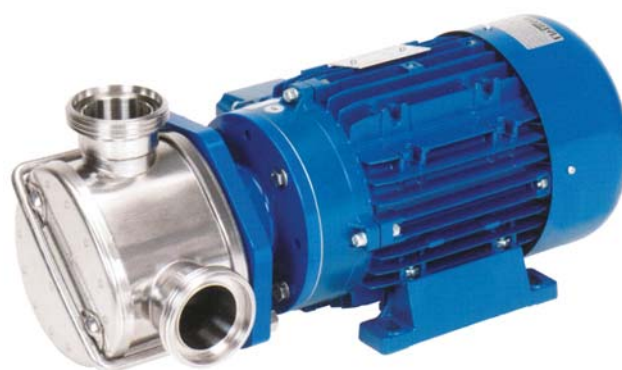
# SOUOSÁ (KOAXIÁLNÍ) ČERPADLA

## COAXIAL PUMPS

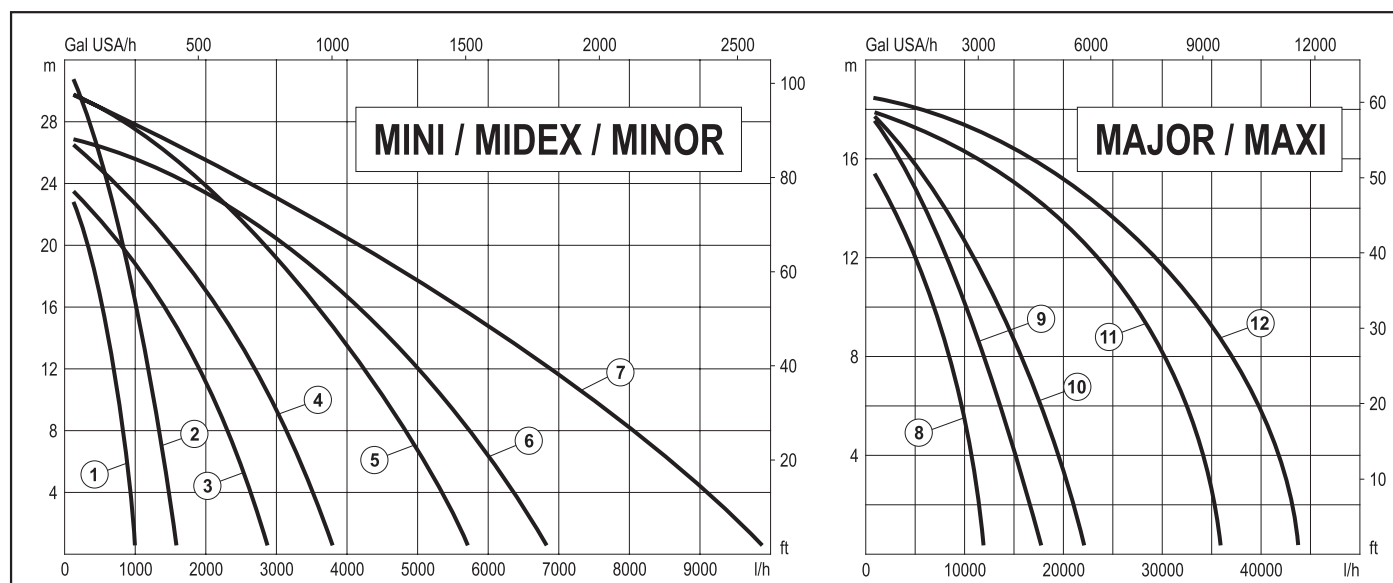
4



EP MINI 3/4" - MIDEX 1"1/4



EP MINOR 40 - MAJOR 60 - MAXI 80



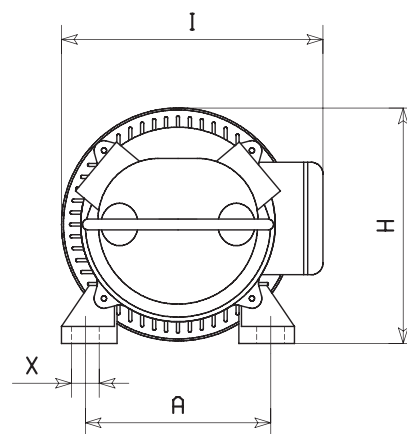
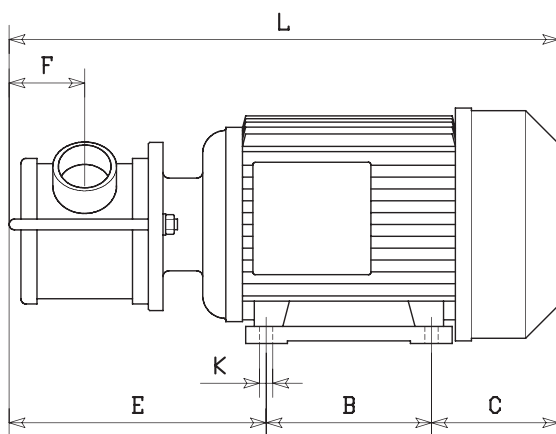
Typ Type	Váha Weight	Motor *			Rychlost Speed	Ot./min Rpm	Křivka Ref.	H (m) = Výtlak					Q (l/h) = Průtok								
		Typ/Type	HP	kW				0	4	8	12	16	18	24	27	30	32	H			
EP MINI 3/4"	9,3 kg	MF TF	0,5	0,37	I	900	I	1000	900	840	720	540	450	0							Q
	9,0 kg	MF TF	0,75	0,56	I	1400	2	1620	1440	1320	1140	1020	900	600	400	180	0				
	10 kg	CC 12-24V	0,4	0,3	I	1400	2	1620	1440	1320	1140	1020	900	600	400	180	0				
EP MIDEX 1"1/4	15 kg	MF TF	0,75	0,56	I	900	4	3840	3480	3180	2760	2160	1800	720	0						
	15 kg	MF TF	I	0,75	I	1400	5	5760	5160	4800	4320	3600	3180	1920	1200	0					
	15 kg	TF	0,75	0,56	2	1400	5	5760	5160	4800	4320	3600	3180	1920	1200	0					
			0,5	0,37		700	3	2880	2600	2300	1900	1400	1100	0							
	15,4 kg	CC 24V	0,7	0,5	I	900	4	3840	3480	3180	2760	2160	1800	720	0						
EP MINOR 40	20 kg	MF TF	2	1,5	I	900	6	6900	6200	5760	5040	4200	3660	1800	0						
	20 kg	TF	2	1,5	I	1400	7	10000	9000	8000	6900	5500	4900	2600	1700	0					
	27 kg	TF	2,5	1,87	2	1400	7	10000	9000	8000	6900	5500	4900	2600	1700	0					
		1,82	1,35	900		6	6900	6200	5760	5040	4200	3660	1800	0							
EP MAJOR 60	38 kg	TF	1,5	1,1	I	470	8	12000	10500	8700	5100	0									
	31 kg	TF	2	1,5	I	700	9	18000	15000	12000	8400	2500	0								
	31 kg	TF	2,5	1,87	I	900	10	22500	19560	15000	11220	3000	0								
EP MAXI 80	68 kg	TF	4,5	3,4	I	470	11	36000	34200	30000	24000	12000	0								
	68 kg	TF	4,5	3,4	I	600	12	43800	41400	36000	30000	16000	0								

\* MF = Jednofázové

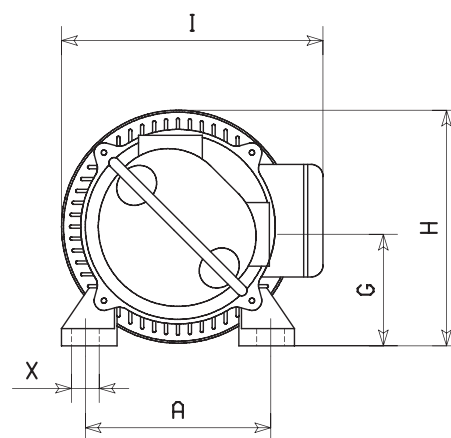
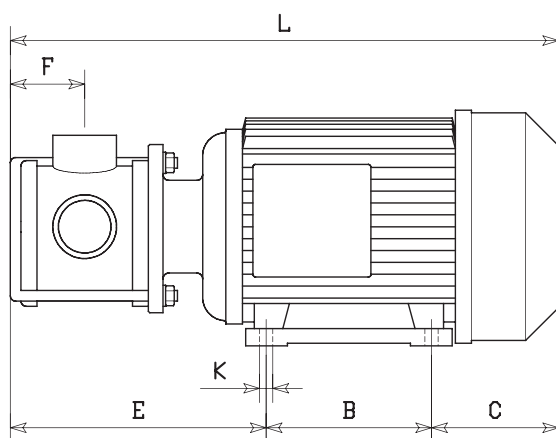
TF = Třífázové

CC = Stejnoseměrný proud

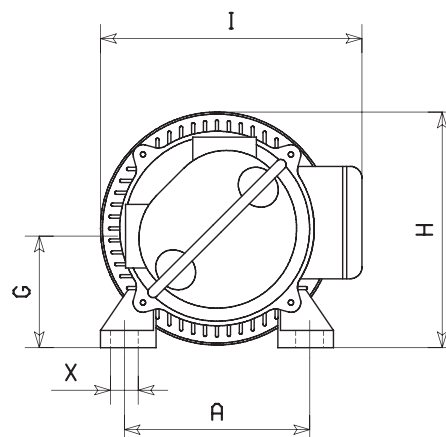
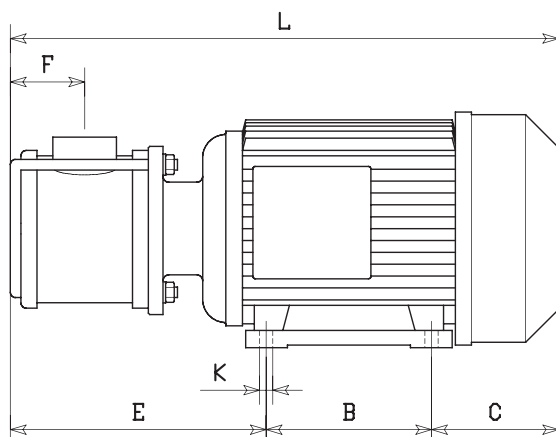
Pos. V



Pos. 90D



Pos. 90S



Tipo Typ	Ot./min Rpm		L	H	I	A	B	C	E	F	G	K	X
EP MINI 3/4"	900	1400	276	140	180	112	90	80	106	26	70	7	12
	900	1400	338	159	215	125	100	85	153	38	70	8	16
EP MIDEX 1"1/4	700/1400		338	159	215	125	100	85	153	38	70	8	16
	900	1400	420	180	238	140	125	95	200	60	84	10	16
EP MINOR 40	900/1400		455	198	250	160	140	107	208	60	94	12	21
	700	900	490	198	250	160	140	107	243	70	82	12	21
EP MAJOR 60	470		514	225	275	190	140	115	259	70	82	12	22
	470	600	630	261	330	216	178	143	309	90	115	12	22



# Čerpadla s řemenovým pohonem na základové desce, nebo na vozíku BELT DRIVEN PUMPS ON BASE OR TROLLEY



Čerpadla s řemenovým pohonem na základové desce  
 BELT DRIVEN PUMP ON BASE

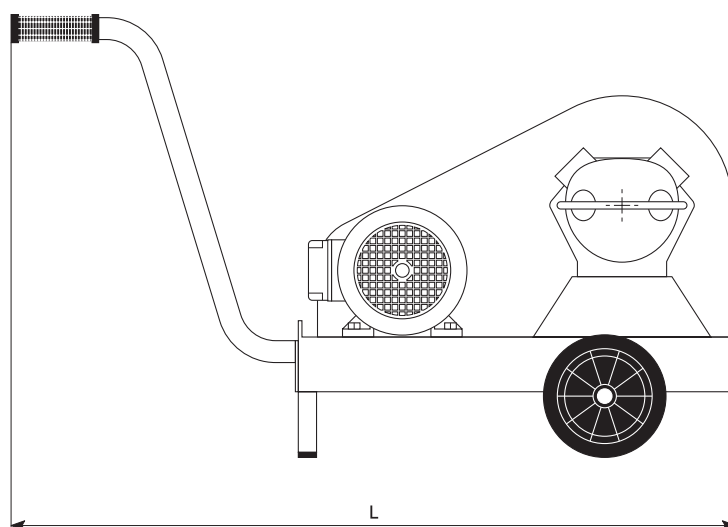
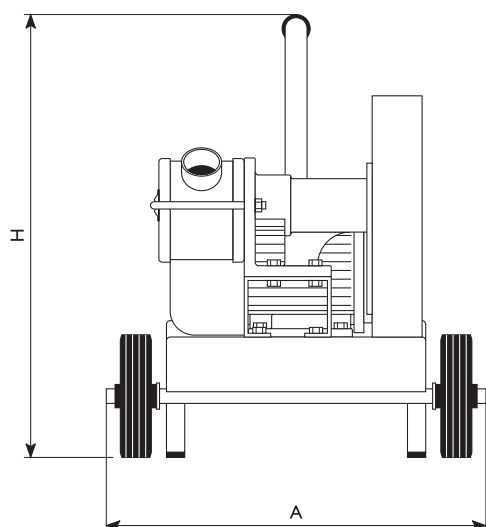
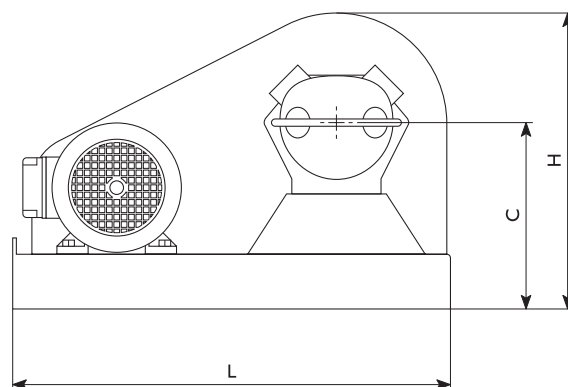
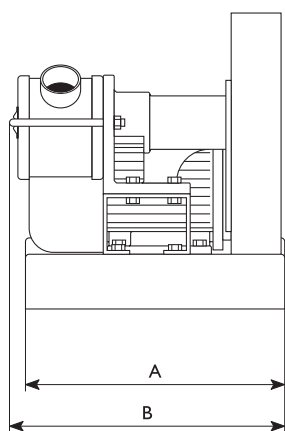
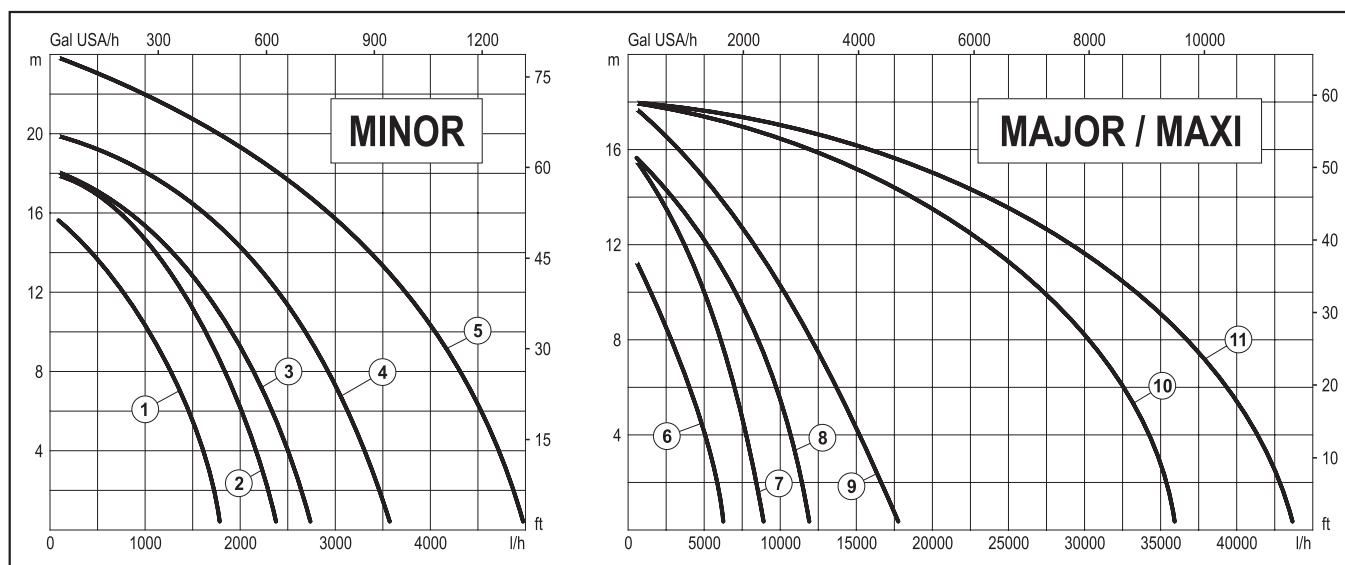


Čerpadla s řemenovým pohonem na vozíku  
 BELT DRIVEN PUMP ON TROLLEY

Typo Typ	Váha * Weight *	Motore/Motor **			Rychlost Speed	Ot./min Rpm	Křivka Ref.	H (m) = Výtlak				Q (l/h) = Průtok				H
		Tipo/Typ	HP	kW				0	4	8	12	16	18	20	24	
GR MINOR 40	36-38 kg	MF TF	2	1,5	I	300	2	2400	2150	1800	1400	700	0			Q
	36-38 kg	MF TF	2	1,5	I	470	4	3600	3300	2900	2400	1600	1000	0		
	36-38 kg	MF TF	2	1,5	I	700	5	5000	4700	4300	3700	3000	2520	1800	0	
	45-46 kg	TF	2,4	1,8	2	470	4	3600	3300	2900	2400	1600	1000	0		
			1,4	I		235	I	1800	1600	1300	750	0				
	40-41 kg	TF	3	2,2	2	700	5	5000	4700	4300	3700	3000	2520	1800	0	
			2	1,5		350	3	2750	2500	2100	1600	800	0			
GR MAJOR 60	42-44 kg	MF TF	2	1,5	I	470	8	12000	10500	8700	5100	0				
	42-44 kg	TF	2,5	1,86	I	700	9	18000	15000	12000	8400	2500	0			
	51-53 kg	TF	2,4	1,8	2	470	8	12000	10500	8700	5100	0				
			1,4	I		235	6	6300	5100	2700	0					
	44-45 kg	TF	3	2,2	2	700	9	18000	15000	12000	8400	2500	0			
			2	1,5		350	7	9000	7800	6000	3700	0				
GR MAXI 80	65-67 kg	TF	5,5	4	I	470	10	36000	34200	30000	24000	12000	0			
	65-67 kg	TF	5,5	4	I	600	11	43800	41400	36000	30000	16000	0			

\* Komplet na desce - komplet na vozíku / Group on base - Group on trolley  
 \*\* MF = Jednofázové TF = Třífázové





Tipo Typ	Komplet na desce /Group on base					Komplet na vozíku /Group on trolley		
	A	B	C	H	L	A	H	L
<b>GR MINOR 40</b>	350	-	245	400	600	500	610	1000
<b>GR MAJOR 60</b>	350	375	250	400	600	500	610	1000
<b>GR MAXI 80</b>	350	430	265	400	600	500	610	1000

# ČERPADLA S PŘEVODOVKOU

## PUMPS WITH GEARMOTOR

8



RID MINOR 40 - MAJOR 60 - MAXI 80



RID MAXI Double



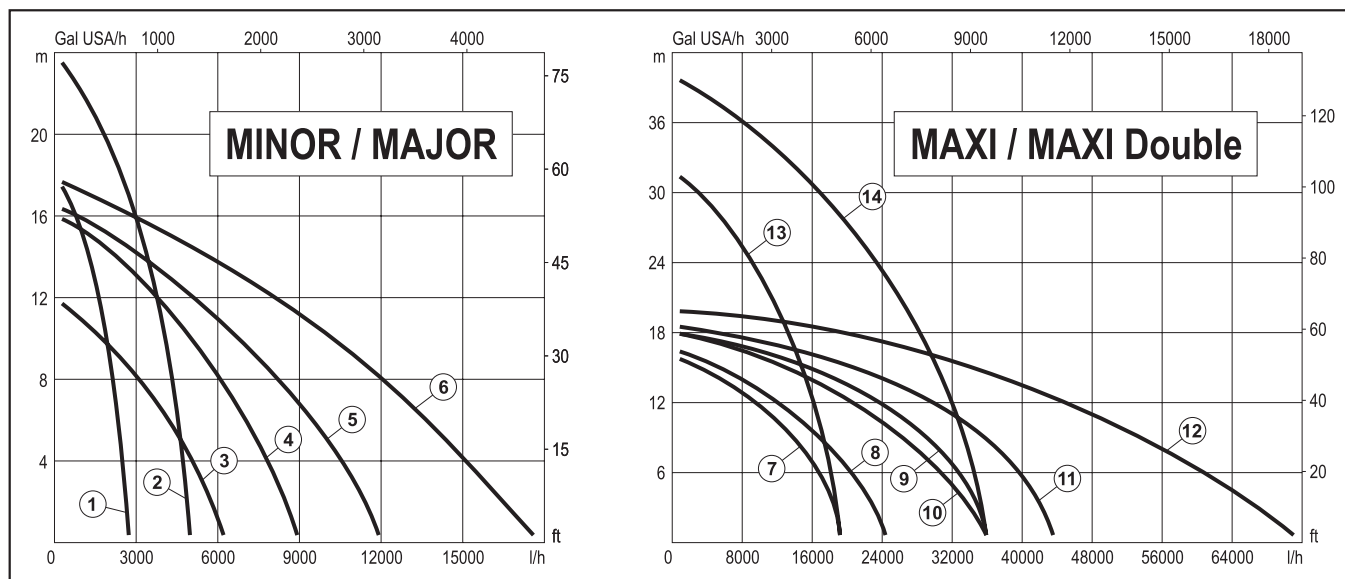
RID MAXI Double 2Q



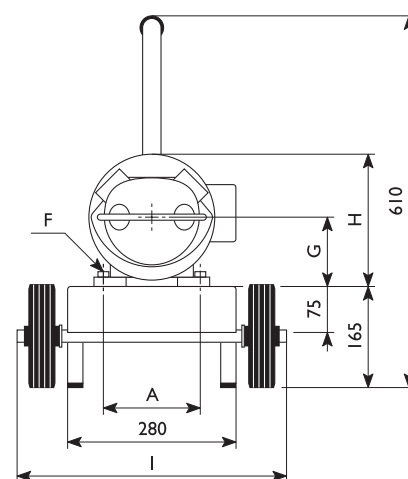
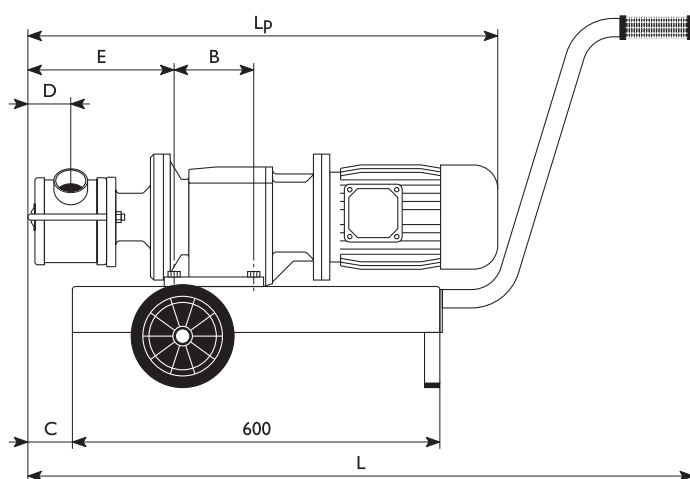
RID MAXI Double 2H

Típo Typ	Váha Weight	Motor *			Rychlost Speed	Ot./min Rpm	Křivka Ref.	H (m) = Výtlak				Q (l/h) = Průtok						H
		Típo/Typ	HP	kW				0	4	12	16	18	20	24	32	40		
RID MINOR 40	38 kg	TF	2	1,5	I	350	I	2750	2500	1600	800	0						
	38 kg	TF	2	1,5	I	700	2	5000	4700	3700	3000	2520	1800	0				
	38 kg	TF	3	2,2	2	700	2	5000	4700	3700	3000	2520	1800	0				
			2	1,5		350	I	2750	2500	1600	800	0						
RID MAJOR 60	48 kg	TF	3	2,2	I	470	5	12000	10500	5100	0							
	48 kg	TF	3	2,2	I	700	6	18000	15000	8400	2500	0						
	48 kg	TF	3	2,2	2	470	5	12000	10500	5100	0							
			2	1,5		235	3	6300	5100	0								
	48 kg	TF	3	2,2	2	700	6	18000	15000	8400	2500	0						
			2	1,5		350	4	9000	7800	3700	0							
RID MAXI 80	79 kg	TF	5,5	4	I	470	9	36000	34200	24000	12000	0						
	79 kg	TF	5,5	4	I	600	11	43800	41400	30000	16000	0						
	79 kg	TF	6	4,5	2	470	9	36000	34200	24000	12000	0						
			4,5	3,3		235	7	19200	18000	9600	0							
	79 kg	TF	6	4,5	2	600	11	43800	41400	30000	16000	0						
			4,5	3,3	300	8	24600	22200	12000	0								
RID MAXI Double 2Q	185 kg	TF	7,5	5,5	I	470	12	72000	65000	45000	30000	20000	0					
	200 kg	TF	7,5	5,5	2	470	12	72000	65000	45000	30000	20000	0					
			4	3		235	10	36000	33000	20500	10000	0						
RID MAXI Double 2H	185 kg	TF	7,5	5,5	I	470	14	36000	35000	32000	29700	28400	27000	23600	14300	0		
	200 kg	TF	7,5	5,5	2	470	14	36000	35000	32000	29700	28400	27000	23600	14300	0		
			4	3		235	13	19200	18500	16200	14300	13200	12000	9000	0			

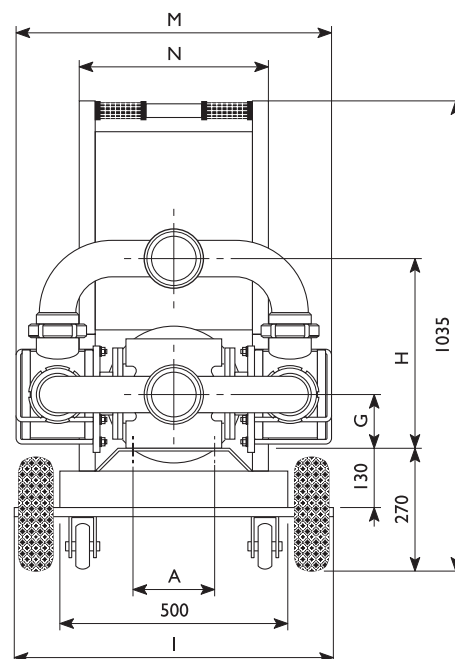
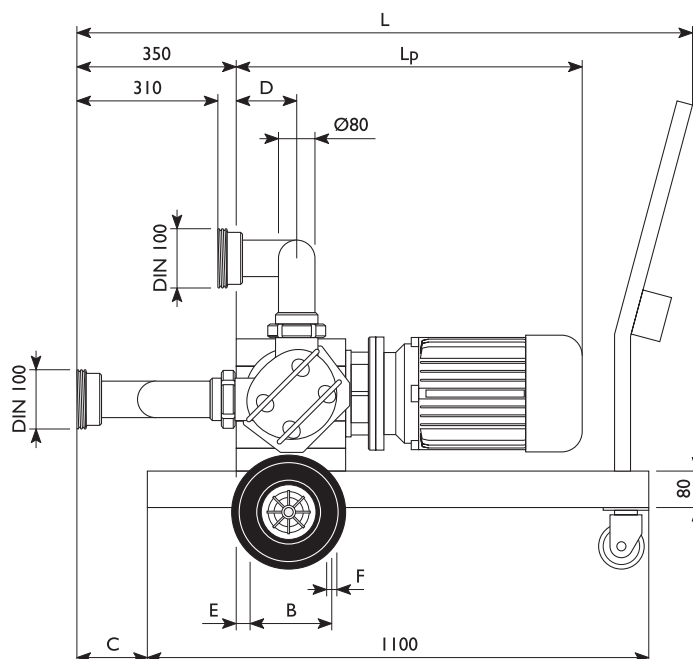
\* TF = Třířázové



RID MINOR - MAJOR - MAXI



RID MAXI Double



Tipo/Typ	A	B	C	D	E	F	G	H	I	L	Lp	M	N
RID MINOR 40	130	107,5	70	60	183	Ø11	103	202	440	1050	688	-	-
RID MAJOR 60	160	130	135	70	245	Ø11	110	210	440	1145	770	-	-
RID MAXI 80	180	149,5	160	90	255	Ø14	130	255	440	1200	850	-	-
RID MAXI Double	175	170	155	135	35	Ø14	120	416	700	1350	730	695	415

# Čerpadla s mechanickým variátorem, nebo s frekvenčním měničem

## PUMPS WITH MECHANICAL SPEED VARIATOR OR FREQUENCY CONVERTER

10



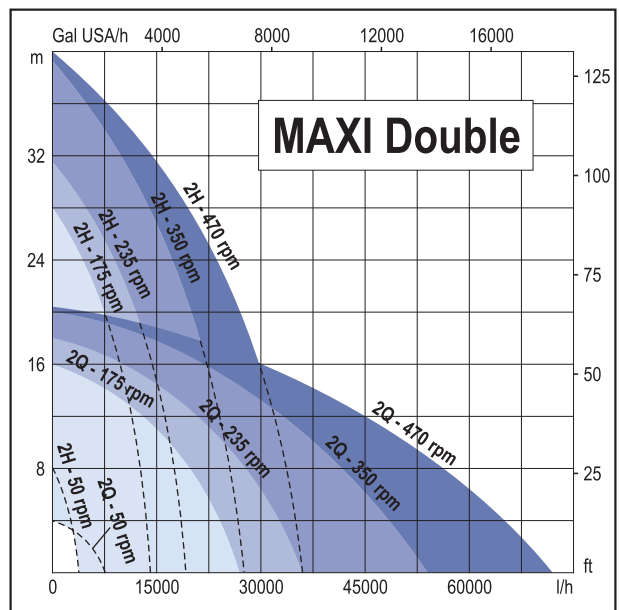
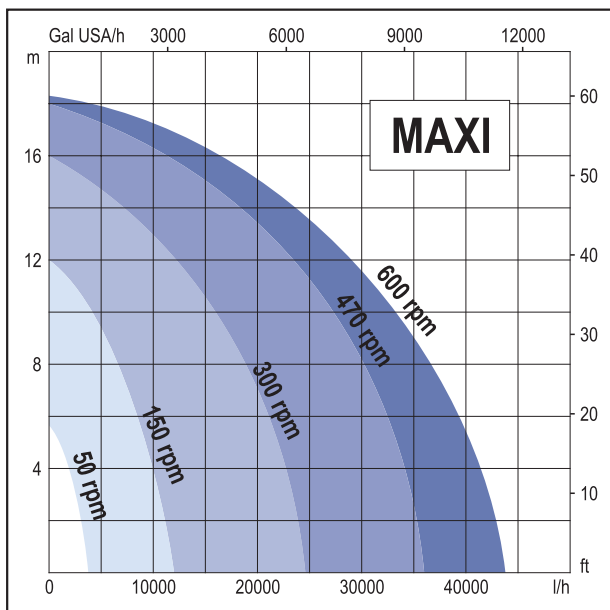
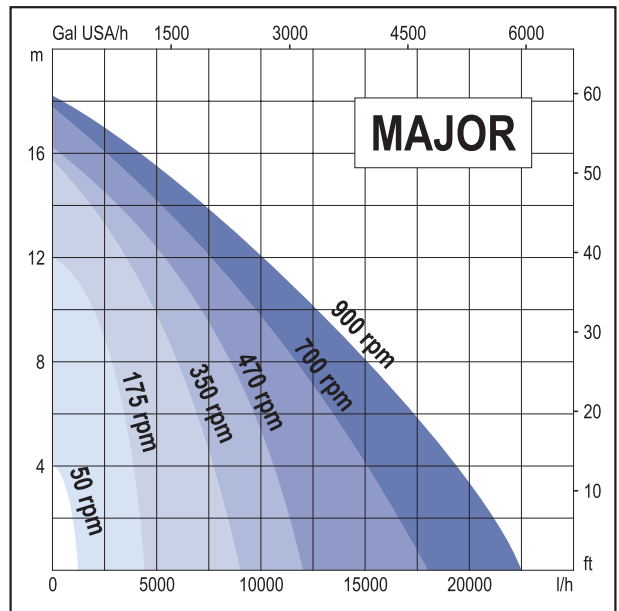
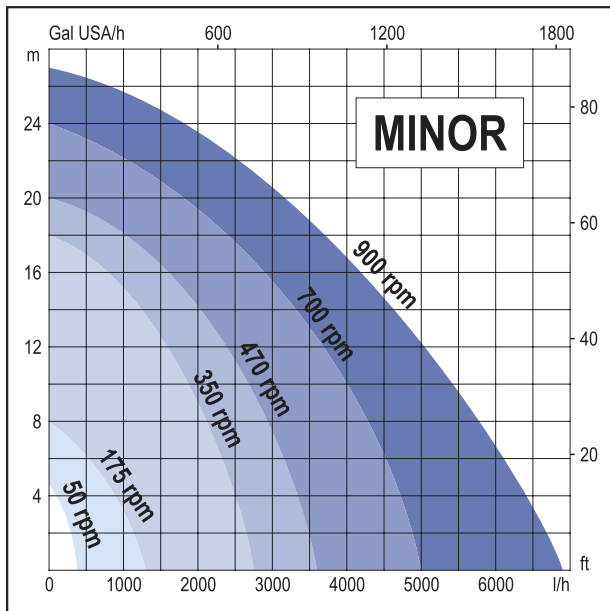
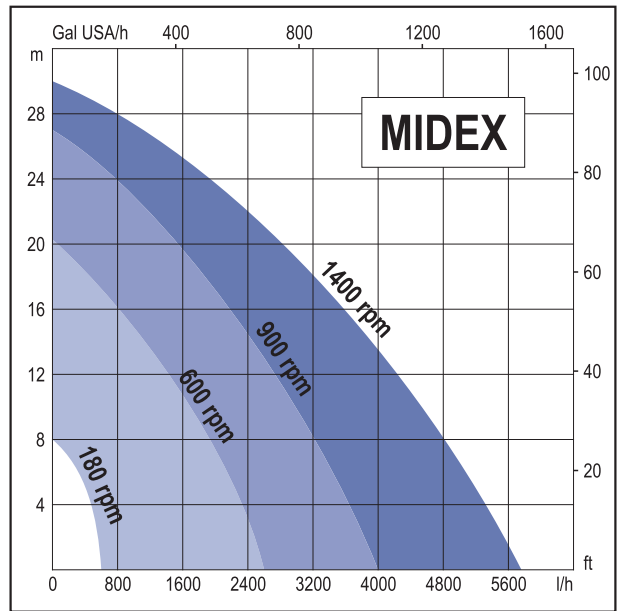
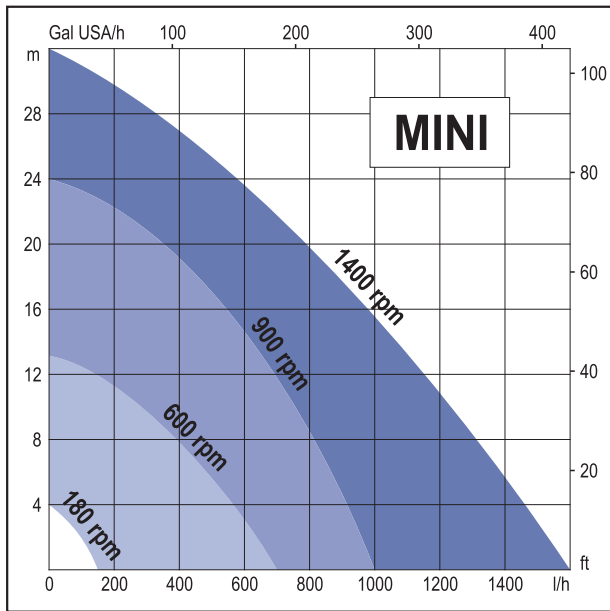
**ČERPADLA S MECHANICKÝM VARIÁTOREM (VA)**  
PUMPS WITH MECH. SPEED VARIATOR (VA)

**ČERPADLA S FREKVENČNÍM MĚNIČEM (INV)**  
PUMPS WITH FREQUENCY CONVERTER (INV)

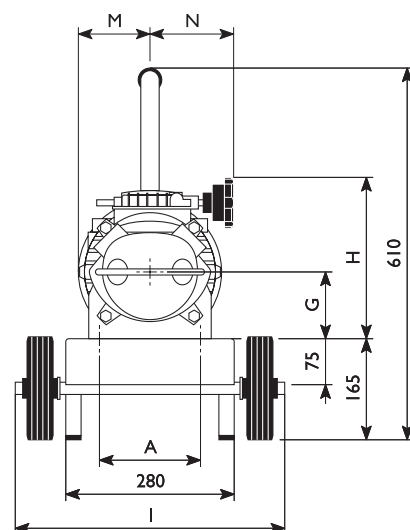
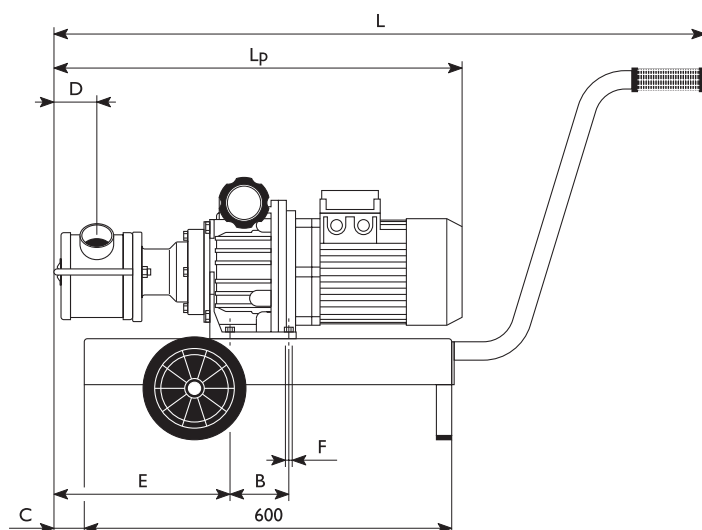
Típo Typ	Napájení /Feeding			Ot. /min Rpm	H (m) = Výtlak					Q (l/h) = Průtok							H
	Típo/Typ *		HP		kW	0	4	8	12	16	18	20	24	27	32	40	
VA MINOR 40	TF 230-400 V 50 Hz	2	1,5	min 175	1320	0											
				350	2750	2500	2100	1600	800	0							
				700	5000	4700	4300	3700	3000	2520	1800	0					
				max 900	6900	6200	5760	5040	4200	3660	3200	1800	0				
VA MAJOR 60	TF 230-400 V 50 Hz	2,5	1,87	min 175	4320	3840	3000	0									
				350	9000	7800	6000	3700	0								
				700	18000	15000	12000	8400	2500	0							
				max 900	22500	19560	15000	11220	3000	0							
VA MAXI 80	TF 230-400 V 50 Hz	5,5	4	min 150	12000	10000	7500	0									
				300	24600	22200	18900	12000	0								
				470	36000	34200	30000	24000	12000	0							
				max 600	43800	41400	36000	30000	16000	0							
INV MINI 3/4"	MF 230 V 50 Hz	TF 400 V 50 Hz	0,75	0,56	min 180	150	0										
					600	700	560	390	150	0							
					900	1000	900	840	720	540	450	350	0				
					max 1400	1620	1440	1320	1140	1020	900	800	600	400	0		
INV MIDEX 1"1/4	MF 230 V 50 Hz	TF 400 V 50 Hz	1	0,75	min 180	600	480	0									
					600	2600	2300	2000	1400	800	400	0					
					900	3840	3480	3180	2760	2160	1800	1600	720	0			
					max 1400	5760	5160	4800	4320	3600	3180	2800	1920	1200	0		
INV MINOR 40	MF 230 V 50 Hz	TF 400 V 50 Hz	2,5	1,87	min 50	380	0										
					175	1320	800	0									
					350	2750	2500	2100	1600	800	0						
					700	5000	4700	4300	3700	3000	2520	1800	0				
INV MAJOR 60	MF 230 V 50 Hz	TF 400 V 50 Hz	3	2,2	max 900	6900	6200	5760	5040	4200	3660	3200	1800	0			
					min 50	1230	0										
					175	4320	3840	3000	0								
					350	9000	7800	6000	3700	0							
INV MAXI 80	TF 230 V 50 Hz	TF 400 V 50 Hz	5,5	4	700	18000	15000	12000	8400	2500	0						
					max 900	22500	19560	15000	11220	3000	0						
					min 50	3800	0										
					150	12000	10000	7500	0								
INV MAXI Double 2Q	TF 230 V 50 Hz	TF 400 V 50 Hz	7,5	5,5	300	24600	22200	18900	12000	0							
					470	36000	34200	30000	24000	12000	0						
					max 600	43800	41400	36000	30000	16000	0						
					min 50	7600	0										
INV MAXI Double 2H	TF 230 V 50 Hz	TF 400 V 50 Hz	7,5	5,5	175	27000	24000	20000	13000	0							
					235	36000	33000	27500	20500	10000	0						
					350	54000	48500	41500	33000	22000	14000	0					
					max 470	72000	65000	56000	45000	30000	20000	0					
					min 50	3800	2000	0									
					175	14100	13500	12600	11400	9700	8600	7400	4500	0			
					235	19200	18500	17500	16200	14300	13200	12000	9000	5900	0		
					350	27600	26700	25500	24000	22200	21000	20000	17200	14800	9700	0	
					max 470	36000	35000	33600	32000	29700	28400	27000	23600	20600	14300	0	

\* MF = Jednofázové

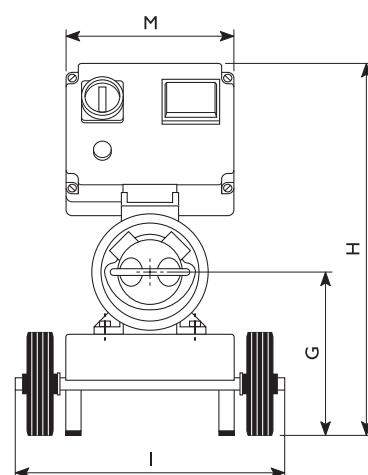
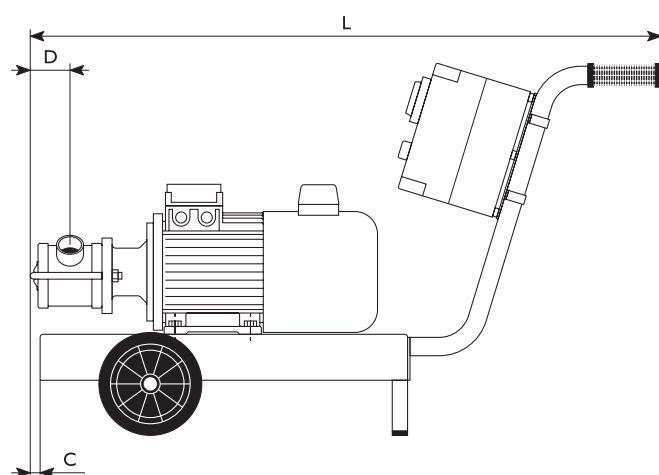
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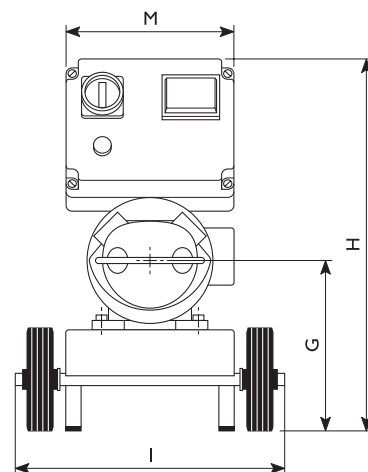
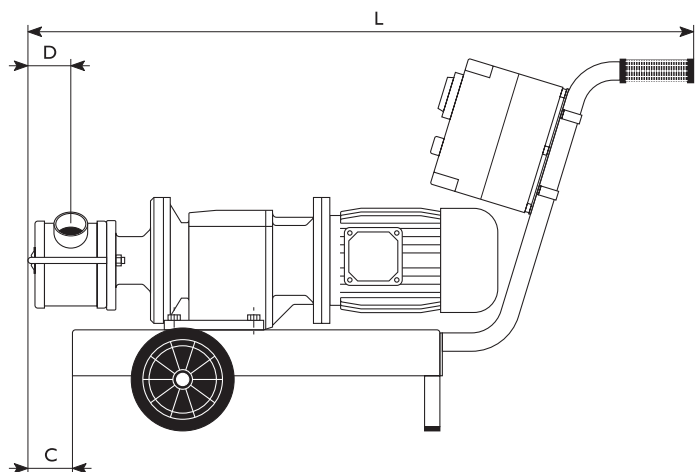
rpm = ot./min



## INV MINI - MIDEX



INV MINOR - MAJOR - MAXI

[illegible]

# TABULKA KOROZE OBĚŽNÉHO KOLA

## IMPELLER CORROSION TABLE

13

	Materiál	Material
<b>NBR</b>	Nitril	Nitrile
<b>EPDM</b>	EPDM	Epdm
<b>CR</b>	Neopren	Neoprene rubber
<b>NR</b>	Přírodní guma	Natural rubber
<b>VMQ</b>	Silikon	Silicon

	Charakteristika	Characteristic
<b>A</b>	Vynikající	Excellent
<b>B</b>	Ucházející / dobré	Fair/Good
<b>C</b>	Nevhodné / špatné	Not advisable/Poor
<b>*</b>	Proměnlivé	Variable
<b>-</b>	Neproměnlivé	Not available

Teploty uvedené v tabulce v závorkách musí být brány do úvahy jako nejvyšší teploty, které mohou být použity. Teplota 20°C představuje víceméně pokojovou teplotu. Slovo „proměnlivé“ znamená, že mezi různými typy polymerů mohou být různé reakce podle typu polymeru na koncentraci výrobku a jeho teplotu.

Temperatures reported in parentheses must be considered the highest temperatures that can be used. The temperature of 20° C corresponds to an average room temperature.

The term "Variable" means that within the same family of polymers there can be different behaviours according to the kind of polymer, the concentration of the product and the temperature at which it is used.

Prodotto	NBR	EPDM	CR	NR	VMQ
Acetato di etile	C	A (55° C) C (70° C)	C	C	B (20° C)
Aceto	B (20° C) * (60° C)	A (60-90° C)	B (90° C)	B (20° C)	A (20° C)
Acido Acetico (30%)	B (20° C)	A	B (20° C)	B (20° C)	-
Acido Borico	A (60° C) B (90° C)	A (60° C) B (90° C)	A (70° C) B (90° C)	A (20° C) B (85° C)	A (20° C)
Acido Bromico (40%)	C	A (90° C)	*	B (20° C)	C
Acido Cianidrico	B (60° C)	A (60° C)	*	-	B (20° C)
Acido Citrico	A (90° C) B (100° C)	A	A	A (20° C)	A (20° C)
Acido Cloridrico concentrato	C	C	C	*	C
Acido Cloroacetico	C	B (70-90° C)	A (20° C) C (40° C)	*	*
Acido Cromico	C	B	*	*	*
Acido Fluoridrico (50%)	C	B (60° C)	*	C (20° C)	*
Acido Fluoridrico concentrato	C	C	C	C	C
Acido Fluoroborico	A (60° C) B (85° C)	A (60° C) B (80° C)	A (60° C) B (85° C)	A (20° C) B (65° C)	A (20° C)
Acido Formico	*	A (90° C)	*	B (20° C)	B (20° C)
Acido Fosforico (85%)	C	A (80° C)	A (40° C)	B (65° C)	C
Acido Lattico concentrato	A (20° C)	A (60° C)	A (20° C) B (60° C) C (80° C)	-	-
Acido Nitrico (10%)	C	A (40° C) C (80° C)	C (40° C)	C	B (20° C)
Acido Nitrico (70%)	-	C	C	C	C
Acido Ossalico concentrato	B (60° C)	A (120° C)	B (60° C)	B (20° C)	B (20° C)
Acido Palmitico	A (70° C)	B (20° C)	B (20-70° C)	B (20° C)	C
Acido Picrico	C	A (20° C)	B (20° C)	C	C
Acido Picrico (10%)	B (70° C)	B (90° C)	A (20° C) C (40° C)	B (20° C)	C
Acido Solforico (50%)	A (20° C) C (80° C)	B (60-80° C)	B (70° C)	B (26° C)	*



Prodotto	NBR	EPDM	CR	NR	VMQ
Acido Solforico (80%)	B (40° C) C (60–80° C)	A (60° C) C (80° C)	C	C	C
Acido Stearico	A (120° C)	B (60° C)	B (60–70° C)	*	B (20° C)
Acqua	A (80° C)	A (135° C)	B (100° C)	A (20° C) B (80° C)	B (80° C)
Alcol Benzilico	C	B (40° C) C (60° C)	*	C	-
Alcol Etilico	A (60° C) B (85° C)	A (90° C)	A (70° C) B (80° C)	A (20° C) B (65° C)	B (20° C)
Alcol Metilico	B (65° C)	A (70° C) B (80° C)	A (60° C) B (80° C)	B (37° C)	A (70° C)
Alcol Propilico	B (90° C)	B (90° C)	A (60° C) B (90° C)	A (20° C) B (65° C)	A (20° C)
Ammonio Idrato concentrato (38%)	A (90° C)	-	A (90° C)	A (65° C)	-
Anidride Solforosa	C	C (20° C)	C (20° C)	C	A (20° C)
Anilina	C	A (90° C)	C	C	B (20° C)
Benzina	A (120° C)	C	C	C	C
Birra	A (60° C) B (120° C)	A (60° C) B (80° C)	A (60° C)	A (20° C)	A (20° C)
Bromo gas	C	C	C	C	C
Burro	A (60° C)	A (60° C)	B (20° C) C (60° C)	C	B (20° C)
Butadiene	*	*	*	C	C
Butano	A (90° C) B (120° C)	C	A (60° C)	C	C
Calcio Idrato	A (20° C) B (90° C)	A (20° C)	A (20° C) B (90° C)	A (20° C) B (65° C)	A (20° C)
Calcio Ipoclorito	C	A (120° C)	C	C	B (20° C)
Cherosene	A (120° C)	C	B (20° C)	C	C
Cloro Umido	C	*	C	C	C
Chloroformio	C	C	C	C	C
Gelatina	A (90° C)	A (80° C)	A (60° C) B (80° C)	A (20° C) B (65° C)	A (20° C)
Glicerina	A (120° C)	A (80° C) B (90° C)	A (70° C)	A (20° C) B (65° C)	A (20° C)
Glucosio	A (90° C)	A (80° C)	A (60° C)	A (20° C) B (48° C)	A (20° C)
Iodio	B (60° C) A (20° C) 6,5%	B (70° C) A (20° C) 6,5%	C	C	C
Latte	A (60° C)	A (120° C)	A (60° C)	A (20° C) B (37° C)	A (20° C)
Magnesio Cloruro	A (80° C) B (100° C)	A (80° C) B (100° C)	A (80° C) B (100° C)	A (20° C) B (85° C)	A (20° C)
Magnesio Solfato	A (80° C) B (100° C)	A (80° C) B (100° C)	A (80° C) B (90° C)	B (85° C)	A (20° C)
Mercurio	A (60° C)	A (60° C)	A (60° C)	A (20° C)	A (20° C)
Metiletilchetone	C	A (60° C) B (90° C)	C	C	C
Nafta	A (120° C)	C	C	C	C
Olio di Anilina	C	B (20° C)	C	C	C
Olio di Cotone	A (90° C) B (100° C)	A (20° C) C (80° C)	B (65° C)	C	A (20° C)
Olio di fegato di merluzzo	A (20° C) B (50° C)	A (20° C)	B (20° C)	C	B (20° C)
Olio di Granoturco	C	*	B (20° C)	C	A (20° C)
Olio di Lino	A (90° C)	B (20° C)	B (80° C)	C	C
Olio di Oliva	A (120° C)	B (20° C)	*	C	*
Olio di Ricino	A (100° C)	A (60° C)	A (70° C)	A (25° C)	A (20° C)
Olio di Soia	A (120° C)	*	B (20° C)	C	C
Olio Idraulico (esteri fosforici)	C	A (120° C)	C	C	*
Olio SAE n. 10	A (120° C)	C	*	C	*
Olio vegetale	A (90° C)	*	C (20° C)	C	A (20° C)
Paraffina	A (60° C)	C	B (20° C)	*	C
Percloroetilene	*	C	C	C	*
Sodio Cloruro	A (70° C)	B (90° C)	A (100° C)	A (20° C) B (65° C)	B
Sodio Idrato	B (65° C)	A (20° C)	B (90° C)	A (20° C) B (65° C)	B (20° C)
Succo di frutta	A (60° C)	A (120° C)	A (60° C)	*	A (20° C)
Succo di pomodoro	A (60° C)	A (20° C)	A (60° C)	-	-

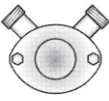
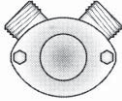

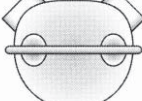
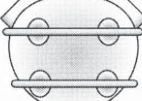

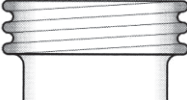




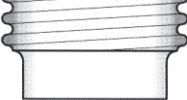


Prodotto	NBR	EPDM	CR	NR	VMQ
Toluolo	C	C	C	C	C
Tricloroetilene	C	C	C	C	C
Trietanolammina	C (20° C) 100% B (37° C)	A (70° C)	A (70° C)	B (26° C)	C
Vino	A (90° C)	A (90° C)	A (90° C)	A (20° C) B (65° C)	A (20° C)
Whisky	A (90° C)	A (90° C)	A (60° C) C (90° C)	A (20° C) B (65° C)	A (20° C)
Xilolo	C	C	C	C	C
Zolfo fuso 120° C	C	A (120° C)	A (20° C)	C (20° C)	A (20° C) C (120° C)
Zucchero di canna	A (60° C) B (90° C)	A (80° C)	A (20° C) B (90° C)	A (20° C)	A (20° C)

Produkt	NBR	EPDM	CR	NR	VMQ
Kyselina octová (30 %)	B (20° C)	A	B (20° C)	B (20° C)	-
Hydroxid amonný (38 %)	A (90° C)	-	A (90° C)	A (65° C)	-
Anilín	C	A (90° C)	C	C	B (20° C)
Anilínový olej	C	B (20° C)	C	C	C
Pivo	A (60° C) B (120° C)	A (60° C) B (80° C)	A (60° C)	A (20° C)	A (20° C)
Benzylinový alkohol	C	B (40° C) C (60° C)	*	C	-
Kyselina boritá	A (60° C) B (90° C)	A (60° C) B (90° C)	A (70° C) B (90° C)	A (20° C) B (85° C)	A (20° C)
Kyselina bromičná	C	A (90° C)	*	B (20° C)	C
Butadien	*	*	*	C	C
Butan	A (90° C) B (120° C)	C	A (60° C)	C	C
Želatina	A (60° C)	A (60° C)	B (20° C) C (60° C)	C	B (20° C)
Hydroxid vápenatý	A (20° C) B (90° C)	A (20° C)	A (20° C) B (90° C)	A (20° C) B (65° C)	A (20° C)
Chlornan vápenatý	C	A (120° C)	C	C	B (20° C)
Tekutý třtinový cukr	A (60° C) B (90° C)	A (80° C)	A (20° C) B (90° C)	A (20° C)	A (20° C)
Ricinový olej	A (100° C)	A (60° C)	A (70° C)	A (25° C)	A (20° C)
Chlor (vlhký)	C	*	C	C	C
Kyselina chlorooctová		B (70–90° C)	A (20° C) C (40° C)	*	*
Chloroform	C	C	C	C	C
Kyselina chromová	C	B	*	*	*
Kyselina citronová	A (90° C) B (100° C)	A	A	A (20° C)	A (20° C)
Rybí tuk	A (20° C) B (50° C)	A (20° C)	B (20° C)	C	B (20° C)
Kukuřičný olej	A (120° C)	*	B (20° C)	C	A (20° C)
Bavlníkový olej	A (90° C) B (100° C)	A (20° C) C (80° C)	B (65° C)	C	A (20° C)
Motorová nafta	A (120° C)	C	C	C	C
Etylacetát	C	A (55° C) C (70° C)	C	C	B (20° C)
Etylalkohol	A (60° C) B (85° C)	A (90° C)	A (70° C) B (80° C)	A (20° C) B (65° C)	B (20° C)
Kyselina tetrafluoroboritá	A (60° C) B (85° C)	A (60° C) B (80° C)	A (60° C) B (85° C)	A (20° C) B (65° C)	A (20° C)
Kyselina mravenčí	*	A (90° C)	*	B (20° C)	B (20° C)
Ovocná šťáva	A (60° C)	A (120° C)	A (60° C)	*	A (20° C)
Želatina	A (90° C)	A (80° C)	A (60° C) B (80° C)	A (20° C) B (65° C)	A (20° C)
Glukóza	A (90° C)	A (80° C)	A (60° C)	A (20° C) B (48° C)	A (20° C)
Glycerin	A (120° C)	A (80° C) B (90° C)	A (70° C)	A (20° C) B (65° C)	A (20° C)
Hydraulický olej	C	A (120° C)	C	C	*
Kyselina solná (koncentrovaná)	C	C	C	*	C
Kyselina kyanovodíková	B (60° C)	A (60° C)	*	B (20° C)	B (20° C)

Produkt	NBR	EPDM	CR	NR	VMQ
Kyselina fluorovodíková (50%)	C	B (60° C)	*	C (20° C)	*
Kyselina fluorovodíková (koncentrovaná)	C	C	C	C	C
Jód	B (60° C) A (20° C) 6,5%	B (70° C) A (20° C) 6,5%	C	C	C
Kerosín	A (120° C)	C	B (20° C)	C	C
Kyselina mléčná (konc.)	A (20° C)	A (60° C)	A (20° C) B (60° C) C (80° C)	-	-
Lněný olej	A (90° C)	B (20° C)	B (80° C)	C	C
Chlorid hořečnatý	A (80° C) B (100° C)	A (80° C) B (100° C)	A (80° C) B (100° C)	A (20° C) B (85° C)	A (20° C)
Síran hořečnatý	A (80° C) B (100° C)	A (80° C) B (100° C)	A (80° C) B (90° C)	B (85° C)	A (20° C)
Rtuť	A (60° C)	A (60° C)	A (60° C)	A (20° C)	A (20° C)
Metylalkohol	B (65° C)	A (70° C) B (80° C)	A (60° C) B (80° C)	B (37° C)	A (70° C)
Metyl-etyl-keton	C	A (60° C) B (90° C)	C	C	C
Mléko	A (60° C)	A (120° C)	A (60° C)	A (20° C) B (37° C)	A (20° C)
Kyselina dusičná (10 %)	C	A (40° C) C (80° C)	C (40° C)	C	B (20° C)
Kyselina dusičná (70 %)	-	C	C	C	C
Olivový olej	A (120° C)	B (20° C)	*	C	*
Kyselina šťavelová (konc.)	B (60° C)	A (120° C)	B (60° C)	B (20° C)	C
Kyselina palmitová	A (70° C)	B (20° C)	B (20–70° C)	B (20° C)	C
Parafín	A (60° C)	C	B (20° C)	*	C
Perchloroethylen	*	C	C	C	*
Benzín	A (120° C)	C	C	C	C
Kyselina fosforová (85 %)	C	A (80° C)	A (40° C)	B (65° C)	C
Kyselina pikrová	C	A (20° C)	B (20° C)	C	C
Kyselina pikrová (10 %)	B (70° C)	B (90° C)	A (20° C) C (40° C)	B (20° C)	C
Borovicový olej	B (120° C)	C	C	C	C
Olivový olej	B (90° C)	B (90° C)	A (60° C) B (90° C)	A (20° C) B (65° C)	A (20° C)
Olej SAE č. 10	A (120° C)	C	*	C	*
Chlorid sodný	A (70° C)	B (90° C)	A (100° C)	A (20° C) B (65° C)	B
Hydrát sodný	B (65° C)	A (20° C)	B (90° C)	A (20° C) B (65° C)	C (20° C)
Sójový olej	A (120° C)	*	B (20° C)	C	
Kyselina stearová	A (120° C)	B (60° C)	B (60–70° C)	*	B (20° C)
Síra roztavená (120° C)	C	A (120° C)	A (20° C)	C (20° C)	A (20° C) C (120° C)
Oxid siřičitý	C	C (20° C)	C (20° C)	C	A (20° C)
Kyselina sírová (50 %)	A (20° C) B (80° C)	B (60–80° C)	A (70° C)	B (26° C)	*
Kyselina sírová (80%)	B (40° C) C (60–80° C)	A (60° C) C (80° C)	C	C	C
Toluen	C	C	C	C	C
Rajčatová šťáva	A (60° C)	A (20° C)	A (60° C)	-	-
Trichloretylen	C	C	C	C	C
Trietanolamin	C (20° C) 100% B (37° C) 80%	A (70° C)	A (70° C)	B (26° C)	C
Rostlinný olej	A (90° C)	*	C (20° C)	C	A (20° C)
Ocet	B (20° C) * (60° C)	A (60–90° C)	B (90° C)	B (20° C)	A (20° C)
Voda	A (80° C)	A (135° C)	B (100° C)	A (20° C) B (80° C)	B (80° C)
Whisky	A (90° C)	A (90° C)	A (60° C) C (90° C)	A (20° C) B (65° C)	A (20° C)
Víno	A (90° C)	A (90° C)	A (90° C)	A (60° C) B (65° C)	A (20° C)
Xylen	C	C	C	C	C

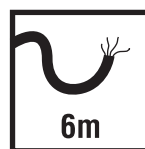
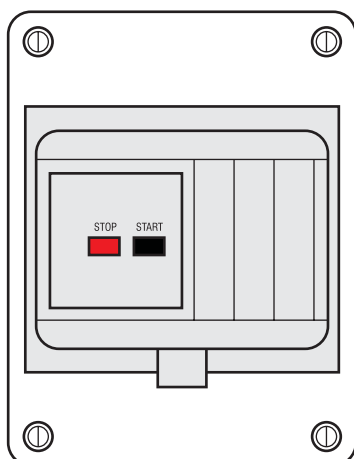
## POTRUBNÍ PŘÍPOJKY PIPE FITTINGS

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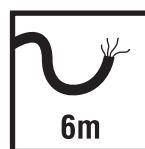
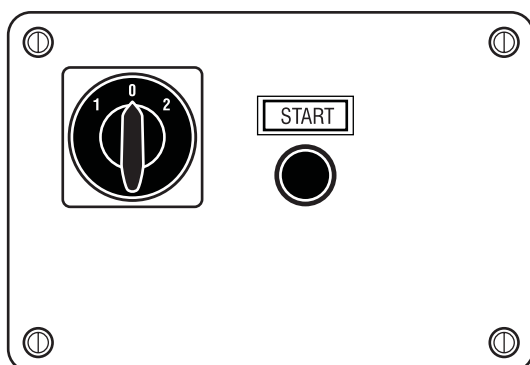
Typo Typ		Mini	Midex	Minor	Major	Maxi
						
Garolla		Non disponibile Not available	Garolla 40	Garolla 40 Garolla 50	Garolla 50 Garolla 60 Garolla 70	Garolla 70 Garolla 80 Garolla 100
DIN 11851		DIN 25	DIN 32 DIN 40	DIN 40 DIN 50	DIN 50 DIN 60	DIN 65 DIN 80 DIN 100
BSP-M		BSP-M 3/4"	PSR-M 1" 1/4	BSP-M 1" 1/4 BSP-M 1" 1/2	BSP-M 2"	BSPM 2" 1/2 BSP-M 3"
BSP-F		Non disponibile Not available	BSP-F 1"	BSP-F 1" BSP-F 1" 1/4	BSP-F 1" 1/2 BSP-F 2"	BSP-F 2" 1/2 BSP-F 3
Macon		Non disponibile Not available	Macon 40	Macon 40 Macon 50	Macon 40 Macon 50	Macon 70
Triclover		Triclover 1"	Triclover 1" 1/2	Triclover 1" 1/2	Triclover 2"	Triclover 3"
SMS		SMS 25	SMS 38	SMS 38	SMS 51	SMS 76
BSM		BSM 1"	BSM 1" 1/2	BSM 1" 1/2	BSM 2" BSM 2" 1/2	BSM 3"
Friederich		Non disponibile Not available	Friederich 40	Friederich 40	Friederich 40 Friederich 60	Friederich 60

## ŘÍDÍCÍ SKŘÍŇKY CONTROL PANELS

18

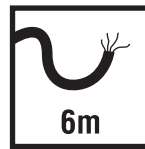
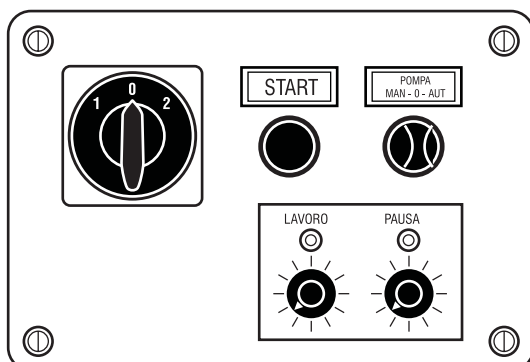


CE kontrolní panel  
*CE control panel*



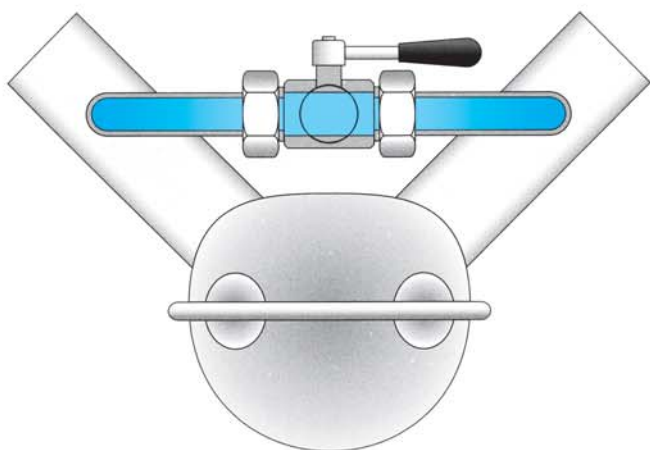
CE kontrolní panel s doplňkovým paralelním vypínáním pomocným kontaktem 24V NC, senzorem teploty, tlakovým spínačem, snímačem hladiny apod.

*CE control panel with supplementary 24V NC shunt trip for temperature sensor, pressure switch, level sensor, etc.*

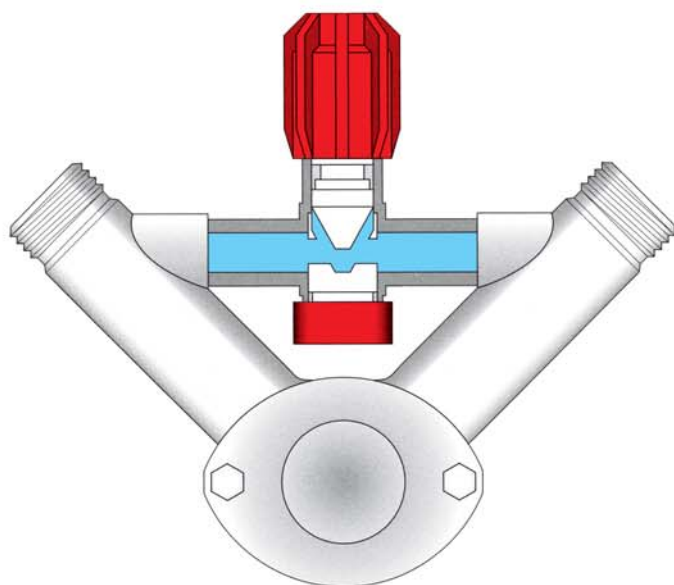


CE kontrolní panel se dvěma časovými přepínači, s dvanácti pozicemi chod/prodleva a dvěma volbami časového rozpětí (stanovují se při objednávce):  
Volba 1: LIV1 chod 2-24 minut, prodleva 10-120 minut  
Volba 2: LIV1 chod 2-24 minut, prodleva 1-12 hodin

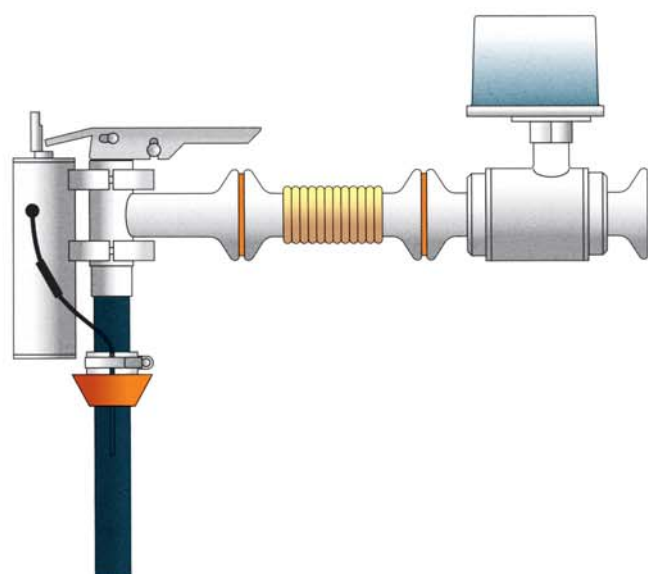
*2 time rate options (to be stated in case of order):  
Option 1: LIV 1 run 2-24 minutes, pause 10-120 minutes  
Option 2: LIV 2 run 2-24 minutes, pause 1-12 hours*



Kulový ventil bypassu pro modely: Mini, Minor, Major, Maxi.  
*Ball bypass valve for pump types: Mini, Minor, Major, Maxi*



Pružinový ventil bypassu pro modely: Midex.  
*Spring bypass valve for Midex pump types.*



Sada pro plnění sudů.  
*Kit for barrel filling.*

Automatická pistole z nerezové oceli se zpětným ventilem a tlakovým spínačem.  
*Stainless steel automatic gun with no return valve and pressure switch.*

Sada smí být použita pouze s kontrolním panelem s doplňkovým paralelním vypínáním pomocným proudem 24V NC. Je-li čerpadlo poháněno pomocí frekvenčního měniče, musí být měnič vybaven vypínáním pomocným proudem 24VNC.  
*The kit must be used only with a control panel with a supplementary 24V NC shunt trip. In case of pump driven by frequency converter, the last must be fitted with a supplementary NC trip.*

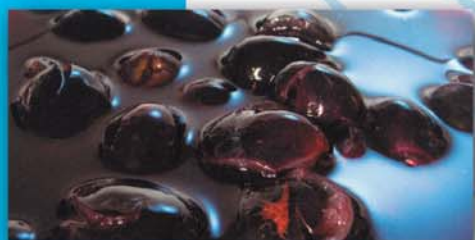
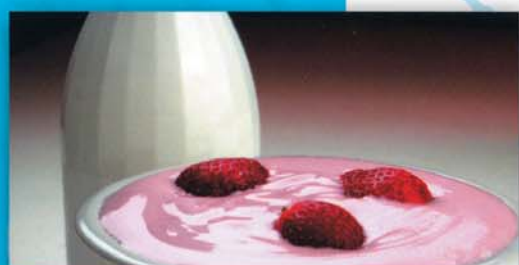
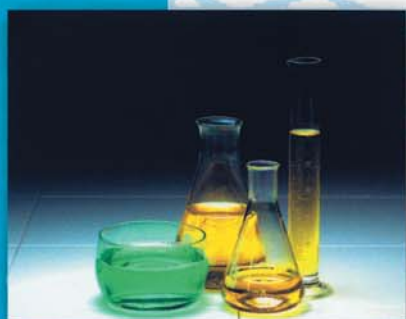
# NÁHRADNÍ DÍLY

## SPARE PARTS

Pos.	POPIS	MATERIÁL	MINI	MIDEX	MINOR	MAJOR	MAXI
1	Přední kryt	Nerezová ocel AISI 304			x	x	x
		Nerezová ocel AISI 316	x	x			
2	Kryt těsnícího kroužku	Přyz NBR	x	x	x	x	x
3	Pouzdro	Nerezová ocel AISI 304			x	x	x
		Nerezová ocel AISI 316	x	x			
7	Oběžné kolo	Přírodní kaučuk (NR)	x	x	x	x	x
		Neopren (CR)	x	x	x	x	x
		Nitril (NBR)	x	x	x	x	x
		EPDM	x	x	x	x	x
		Silikon (VMQ)			x	x	x
8	Zadní kryt	Nerezová ocel AISI 304			x	x	x
		Nerezová ocel AISI 316	x	x			
9	Mechanické těsnění	Nerez. ocel-grafit-NBR	x	x	x	x	x
		Karbid wolframu-NBR	x	x	x	x	x
		Karbid wolframu-Viton	x	x	x	x	x
10	Podpěra S/P	Hliník			x	x	x
	Podpěra MID	Hliník			x	x	x
11	Podložka	Nerezová ocel AISI 304			x	x	x
12	Matka	Chromanová mosaz			x	x	x
13	Kuličkové ložisko	Komerční			x	x	x
14	Hřídel	Nerezová ocel AISI 420			x	x	x
15	Ploský klín	Nerezová ocel AISI 304			x	x	x
16	Kroužek Seeger	Ocel			x	x	x
17	Kladka	Hliník			x	x	x
18	Podložka	Nerezová ocel AISI 304			x	x	x
19	Šroub	Nerezová ocel AISI 304			x	x	x
20	Ochranný kroužek	Přyz NBR	x		x	x	
21	Třmenový šroub	Nerezová ocel AISI 304			x	x	x
	Šroub	Nerezová ocel AISI 304	x	x			
22	Třmenový šroub	Nerezová ocel AISI 304					x
	Rozpěrný kroužek	Nerezová ocel AISI 304		x	x	x	
23	Kroužek Seeger	Nerezová ocel AISI 304		x	x	x	
	Kuličkové ložisko	Komerční					x
24	Ploský klín	Nerezová ocel AISI 304	x				
25	Příruba MID	Hliník			x	x	x
26	Šroub	Ocel			x	x	x
27	Spojka čerpadla	Ocel			x	x	x
28	Šroub	Ocel			x	x	x
29	Válcová spojka	Nylon			x	x	x
30	Motorová spojka	Ocel			x	x	x
31	Oběžný motor	Komerční			x	x	x
32	Centrální kroužek	Nerezová ocel AISI 304			x	x	x
33	Ploský klín	Ocel			x	x	x
34	Podložka	Nerezová ocel AISI 304			x	x	x
35	Šroub	Nerezová ocel AISI 304			x	x	x







# LIVERANI

**FLUID TRANSFER TECHNOLOGY**

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