

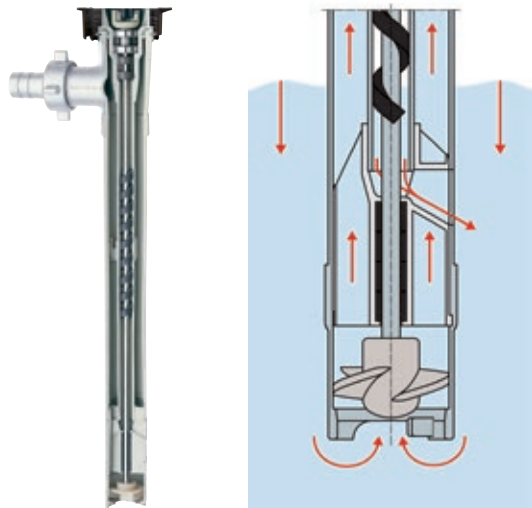
# Technical Data Sheet

Drum pumps F/FP 424



More than just pumps

## Drum pumps F/FP 424



### Advantages/characteristics:

- ▶ No seal in liquid zone
- ▶ Particularly suited for hydrochloric acid and chromic acid
- ▶ Spiral-shaped guide-bearing with large guide length
- ▶ Optimum drainage of the inner tube
- ▶ Multiple bearing drive shaft
- ▶ Low wearout of guide-bearing and shaft
- ▶ Long service life
- ▶ No seal wearout
- ▶ Long service life of bearings
- ▶ Temporary operation against closed valve is possible (hand nozzle, ball valve, etc.), up to indicated max. operating temperature
- ▶ Low-vibration
- ▶ Non-ferrous metalfree version to transport AdBlue® available



Technical data/type	F 424 PP	F 424 PVDF	FP 424 Ex S
Seal type	No seal in liquid zone		
Version	With impeller for max. flow rate, with mixed half axial impeller for max. delivery head (Z-version)		
Pressure-side connection	Thread G 1¼ A		
<b>Materials</b>			
Pump	Polypropylene	Polyvinylidene fluoride	Stainless steel 316 Ti
O-ring <sup>2)</sup>	FKM		
Shaft	Hastelloy C, stainless steel, titanium	Hastelloy C	Stainless steel
Impeller	ETFE		
<b>Dimensions</b>			
Outer tube diameter / Impeller diameter (mm)	41/36 41/35 Z 50/38 50/43 Z	41/36 41/35 Z 50/38	43/38 43/37 Z 50/45 Z
Standard immersion depth (mm)	700, 1 000, 1 200		
Other immersion depths / special lengths (mm) <sup>3)</sup>	200 - 2 000		
<b>Operating range</b>			
Container	Drums, IBCs, tanks, canisters, hobbocks, mixing containers etc.		
Media temperature (°C)	0 to +50	0 to +80	0 to +100
Media temperature ex-application (°C)	-	-	0 to +40
Ambient temperature (°C)	0 to +40	0 to +40	-20 to +40
Weight Ø 41, ID 1 000 mm (kg)	1.0	1.4	-
Weight Ø 43, ID 1 000 mm (kg)	-	-	2.9
Weight Ø 50, ID 1 000 mm (kg)	1.3	1.9	4.0
<b>Certificates</b>			
Ex-designation	None	None	II 1/2 G c IIB T4
Silicone-free version	On request		
<b>Performance data<sup>1)</sup></b>			
	<b>Axial impeller</b>		<b>Half axial impeller (Z-version)</b>
Flow rate max. l/min.	240		160
Delivery head max. mwc	13		30
Viscosity max. mPas	1 200		1 200

1) Depending on pump version, media and motor

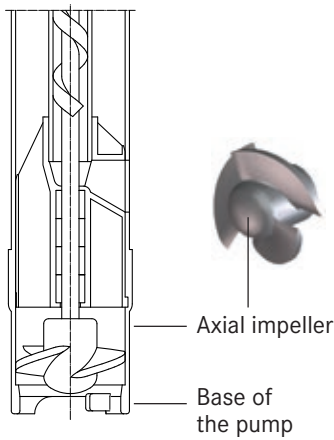
2) For sealing between inner and outer tube (above the fluid level)

3) In gradations of 100 mm

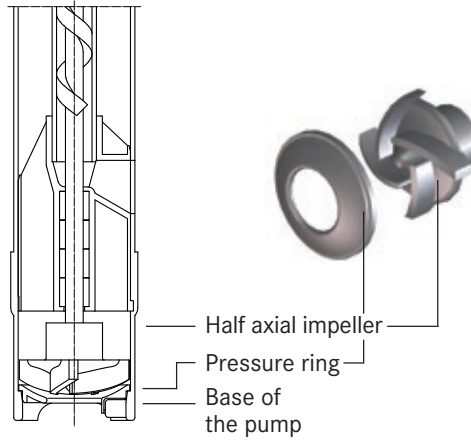
# Design, assembly example and dimensions

## Drum pumps F/FP 424

### Design:

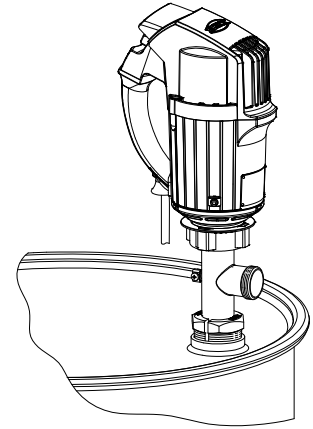


F/FP 424 with guide-bearing and axial impeller



F/FP 424 with guide-bearing and half axial impeller (Z-version)

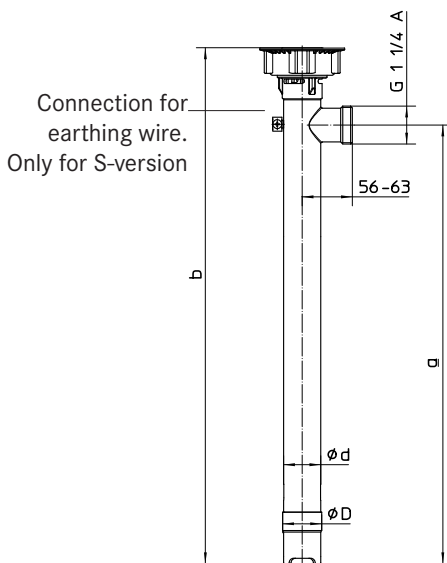
### Assembly example:



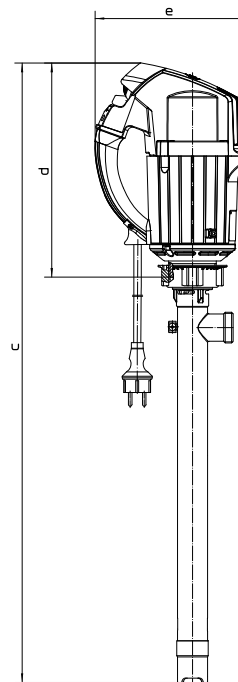
F/FP 424 with compression gland mounted in a drum with bung hole

### Dimensions:

#### Drum pump F/FP 424



#### Drum pump with motor



#### Immersion depths (ID)

Pump material	Ø (mm) Outer tube/impeller	ID (mm)	a (mm)	b (mm)
PP / PVDF	41/36 50/38 50/43 Z	700	715	790
		1 000	1 015	1 090
		1 200	1 215	1 290
		Other	ID + 15	ID + 90
		700	707	782
PP / PVDF	41/35 Z	1 000	1 007	1 082
		1 200	1 207	1 182
		Other	ID + 7	ID + 82
		700	695	780
		1 000	995	1 080
S	43/38 43/37 Z 50/45 Z	1 200	1 195	1 280
		Other	ID - 5	ID + 80

#### F/FP 424 with motor

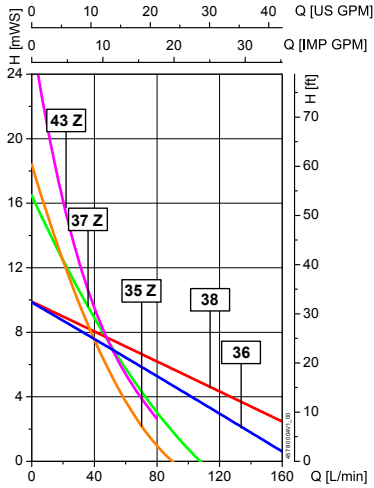
Motor type	c (mm)	d (mm)	e (mm)
FEM 4070	b + d - 16	207	186
F 457 (EL)		225	217
F 458 (-1, EL)		292	209
F 460 Ex (-1, EL)		292	209
FBM 4000 Ex		292	209
F 416 Ex		119	230
F 416-1 Ex		101	120
F 416-2 Ex		101	120

# Performance diagrams<sup>1)</sup>

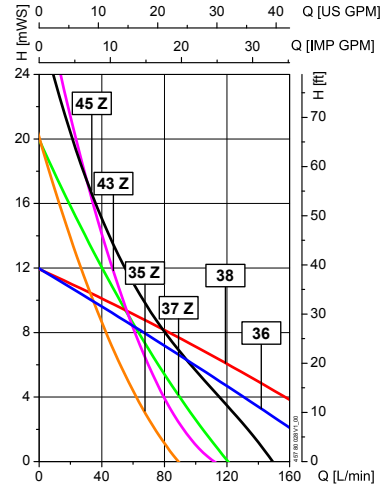
## Drum pumps F/FP 424

The following performance diagrams apply to the indicated motors and impellers (36, 38, 35 Z, 37 Z, 43 Z and 45 Z), for all pump materials respectively.

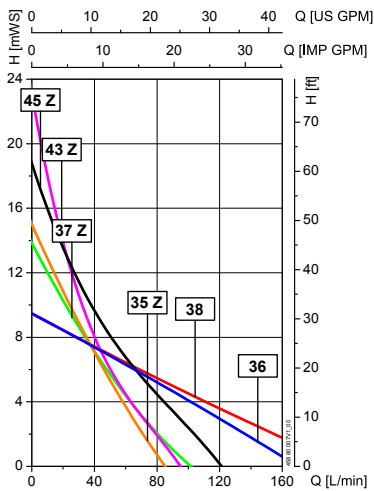
### FEM 4070



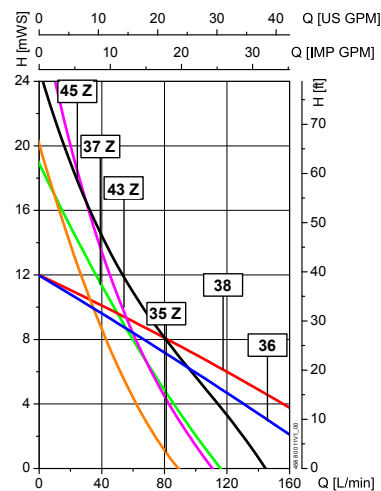
### F 457 / F 457 EL



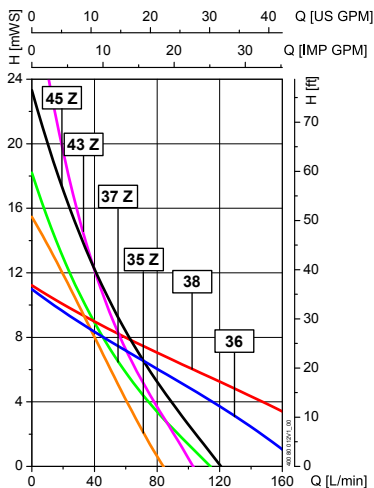
### F 458, F 458 EL, F 460 Ex, F 460 Ex EL



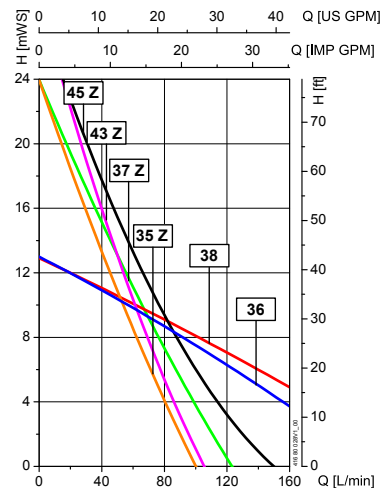
### F 458-1 / F 460-1 Ex



### FBM 4000 Ex



### F 416 Ex, F 416-1 Ex, F 416-2 Ex (6 bar)



1) determined with water at 20 °C, measured values ± 10 % maximum flow rate with open discharge outlet

# Part numbers

## Drum pumps F/FP 424



More than just pumps

Standard immersion depths								
Type	Material			Diameter (mm)		Part no.		
	Pump	Shaft	O-ring <sup>1)</sup>	Ø outer tube	Ø impeller	700 mm	1 000 mm	1 200 mm
F 424 Connection thread G 1¼ A	PP	HC	FKM	41	36	10-424 40 007	10-424 40 010	10-424 40 012
			FKM		35 Z	10-424 40 107	10-424 40 110	10-424 40 112
			FKM	50	38	10-424 40 207	10-424 40 210	10-424 40 212
		FKM	43 Z		10-424 40 307	10-424 40 310	10-424 40 312	
		FKM	41		36	10-424 40 407	10-424 40 410	10-424 40 412
		FKM		35 Z		10-424 40 510	10-424 40 512	
	PVDF	HC	FKM	41	36	10-424 40 707	10-424 40 710	10-424 40 712
			FKM		36	10-424 60 007	10-424 60 010	10-424 60 012
		HC	FKM	50	35 Z	10-424 60 107	10-424 60 110	10-424 60 112
			FKM		38	10-424 60 207	10-424 60 210	10-424 60 212
FP 424 Ex Connection thread G 1¼ A	S	S	FKM	43	38	10-424 22 007	10-424 22 010	10-424 22 012
			FKM		37 Z	10-424 22 107	10-424 22 110	10-424 22 112
			FEP	43	38	10-424 29 307	10-424 29 310	10-424 29 312
			FEP		37 Z	10-424 29 407	10-424 29 410	10-424 29 412
			FKM	50	45 Z	10-424 22 207	10-424 22 210	10-424 22 212
			FEP		45 Z	10-424 29 507	10-424 29 510	10-424 29 512

Special lengths								
Type	Material			Diameter (mm)		Part no.		
	Pump	Shaft	O-ring <sup>1)</sup>	Ø outer tube	Ø impeller	500 mm	800 mm	1 500 mm
F 424 Connection thread G 1¼ A	PP	HC	FKM	41	36	10-424 40 005	10-424 40 008	10-424 40 015
			FKM		35 Z			10-424 40 115
			FKM	50	38			10-424 40 215
		FKM	41		35 Z		10-424 40 515	
		FKM			36		10-424 40 715	
		PVDF	HC	FKM	41	36		10-424 60 015
	FKM			35 Z			10-424 60 115	
	FP 424 Connection thread G 1¼ A	S	S	FKM	43	38	10-424 22 005	10-424 22 015
FKM				37 Z		10-424 22 105	10-424 22 115	
FKM				50	45 Z	10-424 22 205	10-424 22 215	

Other immersion depths/other O-rings/other connections on request

1) For sealing between inner and outer tube (above the fluid level)

Hose connections with union nut G 1¼						
Material		Size				
Connection	Union nut	DN 13	DN 19	DN 25	DN 32	
Polypropylene (PP)	PP	10-959 04 081	10-959 04 053	10-959 04 052	10-959 04 054	
Polyvinylidene fluoride (PVDF)	PVDF	10-959 04 082	10-959 04 101	10-959 04 102	10-959 04 103	
Stainless steel (S) 316 Ti	Brass nickel-plated		10-959 04 061	10-959 04 041	10-959 04 042	
Stainless steel (S) 316 Ti	S		10-959 04 062	10-959 04 063	10-959 04 064	

# Pump kits

## Drum pumps F/FP 424



### Pre-configured kits consist of:

- 1 Motor with cable and plug
- 2 Pump with mechanical seal
- 3 Hose line
- 4 Hand nozzle
- 5 Compression gland

Also for ex-applications



Pump kit	For highly flammable liquids			
<b>Examples of media</b>	Acetone, petrol, ethanol, methanol, butanol, toluene, xylene			
Flow rate max. (l/min. )	55 <sup>1)</sup> (240) <sup>2)</sup>		50 <sup>1)</sup> (200) <sup>2)</sup>	
Delivery head max. (mwc)	13 <sup>2)</sup>		9.5 <sup>2)</sup>	
Temperature max. (°C)	100 (with ex-applications max. 40)			
Viscosity (mPas)	800 <sup>2)</sup>		600 <sup>2)</sup>	
<b>Pump</b>	<b>FP 424 Ex S-43/38</b>			
Pump material	Stainless steel 316 Ti			
O-ring <sup>3)</sup> material	FKM			
Immersion depth (mm)	1 000	1 200	1 000	1 200
Ex-designation	Ex II 1/2 G c IIB T4			
<b>Motor</b>	<b>F 416 Ex</b>		<b>F 460 Ex</b>	
Technical data	460 watt at 6 bar		230 V, 50 Hz, 460 watt	
Rpm setting	Optional		No	
Low-voltage protection	-		Yes	
Protection class	-		IP 55	
Connection cable length (m)	-		5	
Plug type	-		Safety plug	
Ex-designation	Ex II 2 G cp IIC T6		Ex II 2 G Ex de IIC T6	
<b>Hose line</b>	Universal, DN 21			
Length (m)	2, integrated electrically conductive			
Hose mounting	Hose fitting, brass			
<b>Hand nozzle</b>	Brass, PTFE			
<b>Compression gland</b>	PP, conductive			
Connection thread	G2			
Weight (kg)	7.4	7.9	10.9	11.4
<b>Part no.</b>	10-416 24 010	10-416 24 012	10-460 24 010	10-460 24 012

Pump kits	For acids and lyes		For cleaning and disinfectant agent "FES 800"	AdBlue® for IBC-container drainage	
<b>Examples of media</b>	Potassium hydroxide, sodium hydroxide, ammonia water, calcium hydroxide, caustic sulphite, formic acid (up to 50 %), acetic acid (up to 80 %)		Chlorine bleach (sodium hypochlorite), cleaning and disinfectant chemicals	AdBlue®, urea	
Flow rate max. (l/min. )	60 <sup>1)</sup> (165) <sup>2)</sup>		60 <sup>1)</sup> (165) <sup>2)</sup>	50 <sup>1)</sup> (85) <sup>2)</sup>	35 <sup>1)</sup> (85) <sup>2)</sup>
Delivery head max. (mwc)	9.5 <sup>2)</sup>		9.5 <sup>2)</sup>	18 <sup>2)</sup>	18 <sup>2)</sup>
Temperature max. (°C)	50		50	50	50
Viscosity (mPas)	600 <sup>2)</sup>		600 <sup>2)</sup>	800	8
<b>Pump</b>	<b>F 424 PP-41/36</b>		<b>F 424 PP-41/36</b>	<b>F 424 PP/S-41/35 Z</b>	
Pump material	PP, HC		PP, HC	PP, S	
O-ring <sup>3)</sup> material	FKM		FKM	FKM	
Immersion depth (mm)	1 000	1 200	800 (for 60 litre canister)	1 200	
<b>Motor</b>	<b>FEM 4070</b>				
Technical data	230 V, 50 Hz, 500 watt				
Rpm setting	Yes				
Low-voltage protection	Yes				
Protection class	IP 24				
Connection cable length (m)	5				
Plug type	2-pole				
<b>Hose line</b>	PVC, DN 19		PVC, DN 19	PVC, DN 19	Special, DN 16
Length (m)	2		2	3	6
Hose mounting	2 hose clamps		2 hose clamps	2 hose clips	
<b>Hand nozzle</b>	PP, EPDM		PP, EPDM	PP, FKM	AL, FKM (self-closing)
<b>Compression gland</b>	PP, conductive		PP, conductive	PP, conductive	
Connection thread	G2		G2	G2	
Weight (kg)	5.1	5.3	4.9	10.1	10.1
<b>Part no.</b>	10-407 44 010	10-407 44 012	10-407 44 208	10-407 44 112	10-407 41 ZV6

1) In a kit with hose and hand nozzle

2) Applies only to pumps without hand nozzle, without hose

3) For sealing between the inner and outer tube (above the fluid level)

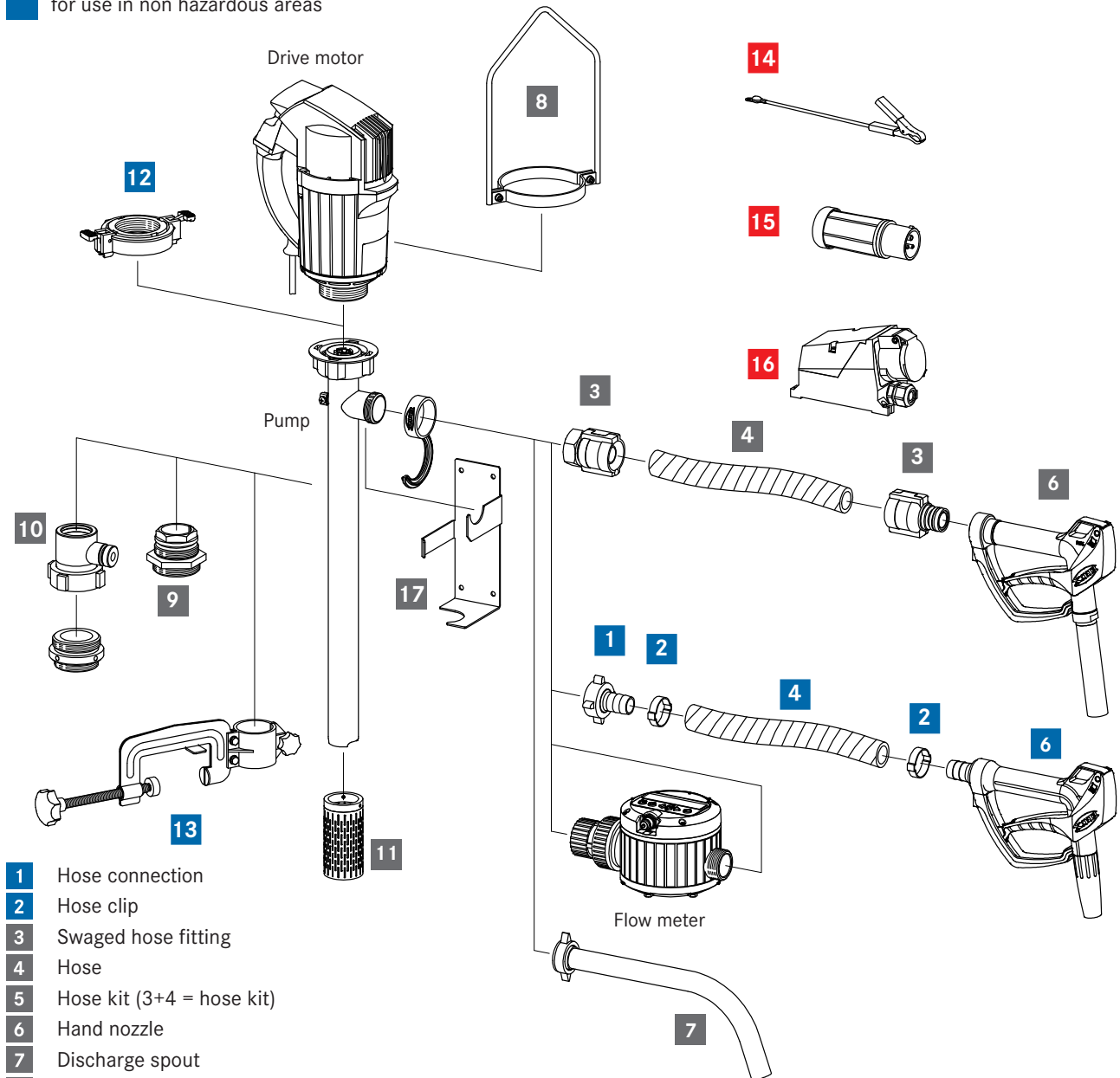
# Accessories

## Drum pumps F/FP 424

### Accessories for drum pump F/FP 424

Compatible with drum pumps from the F/FP 424 series, we offer a wide selection of accessories, for example, compression glands, hoses, hand nozzles. More information can be found in the FLUX accessory brochure, in the price list or on our homepage: [www.flux-pumps.com](http://www.flux-pumps.com).

- for use in hazardous areas
- for use in hazardous and non hazardous areas
- for use in non hazardous areas



- 1 Hose connection
- 2 Hose clip
- 3 Swaged hose fitting
- 4 Hose
- 5 Hose kit (3+4 = hose kit)
- 6 Hand nozzle
- 7 Discharge spout
- 8 Carrying handle
- 9 Compression gland
- 10 Fume gland
- 11 Suction strainer
- 12 Quick action coupling
- 13 Attachment clamp
- 14 Earth (ground) wire
- 15 Explosion-proof plug
- 16 Explosion-proof socket
- 17 Wall bracket

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