

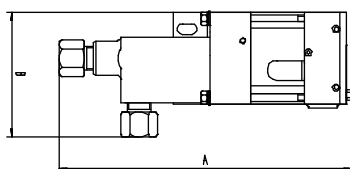
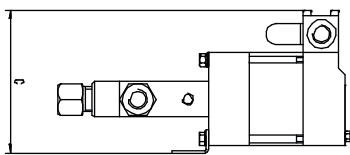
Chemical and offshore industries – MSF and GSF

MSF-Pumps

- » **Single-acting**
- » **With one air drive piston**

Thanks to their robust construction, MSF pumps are especially suited for applications in the chemical industry.

- Distance piece and leakage borehole
- Operating pressures of up to 1,000 bar (14,500 psi)
- MSF pump heads and pistons made of stainless steel
- PTFE seal material with FKM O-ring
- Standard design with bottom inlet
- Maximum air drive pressure: 10 bar (145 psi).



All high-pressure pumps from the MSF series are suitable for use in zone 1, category 2G/2D IIC TX explosion-proof areas (temperature class depending on medium temperature).

Options for MSF pumps

- Seal versions for special media
Order code: See media compatibility guide
- Side inlet:
Order code: MSF37-S
- Special inlet and outlet ports, e.g. inlet/outlet with NPT thread
Order code: MSF37 - NPT
- Air control unit for MSF pumps, consisting of a filter/pressure regulator combination, control pressure gauge and shut-off valve
Order code: MSF37 with C1
- Air control unit as above with additional safety valve in the air drive line for limiting the operating pressure on the high-pressure side - **Order code: MSF37 with C1/SVAir (Please indicate the operating pressure to be set.)**

Type	Pressure ratio*	Displ. Volume **		Outlet pressure ***		Flow capacity l/min ****	Connections			Dimensions in mm			Weight kg
		cm ³	cu.inch	bar	psi		Air Drive L	Inlet A	Outlet B	A	B	C	
MSF4	1:4	30.5	1,86	40	580	14.81	3/8 BSPP	1 BSPP	1/2 BSPP	248	112	120	6.7
MSF8	1:9	14.7	0,90	90	1305	7.07	3/8 BSPP	3/4 BSPP	1/2 BSPP	241	112	120	6.7
MSF12	1:14	9.4	0,57	140	2030	4.55	3/8 BSPP	3/4 BSPP	1/2 BSPP	241	112	120	6.7
MSF22	1:28	4.6	0,28	280	4060	2.22	3/8 BSPP	3/8 BSPP	3/8 BSPP	247	112	108	3.5
MSF37	1:46	2.8	0,17	460	6670	1.36	3/8 BSPP	3/8 BSPP	3/8 BSPP	247	112	108	3.5
MSF72	1:86	1.5	0,09	860	12470	0.48	3/8 BSPP	3/8 BSPP	3/8 BSPP	247	112	108	3.5
MSF111	1:130	1.0	0,06	1000	14500	0.28	3/8 BSPP	3/8 BSPP	3/8 BSPP	247	112	108	3.5

* Ratio – driving surface air drive piston / driven surface high pressure piston (calculated)

** Displacement volume per double stroke (calculated).

*** Static outlet pressure (calculated and maximum allowed)

**** Approximate flow at an air drive of 6 bar / 87 psi and an outlet pressure of 0 bar/psi.

series up to 1,450 bar (21,000 psi)

All high-pressure pumps from the GSF series are suitable for use in zone 1, category 2G/2D IIB TX explosion-proof areas (temperature class depending on medium temperature).

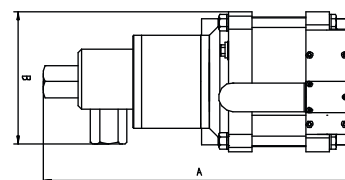
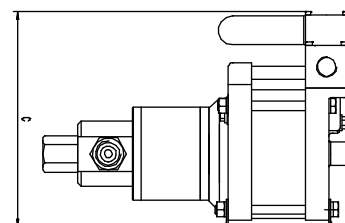


GSF-Pumps

- » **Single-acting**
- » **With one air drive piston**
- » **Operating pressures of up to 1,450 bar (21,000 psi)**

Due to their robust construction, GSF ideally satisfy the requirements for applications in the chemical industry.

- Material: GSF pump heads and pistons made of stainless steel
- Standard design with bottom inlet
- Maximum air drive pressure: 10 bar (145 psi)
- Distance piece and leakage borehole
- PTFE seal material with FKM O-ring



Options for GSF pumps

- Seal versions for special media
Order code: See media compatibility guide
- Side inlet:
Order code: GSF35-S
- Special inlet and outlet ports, e.g. inlet/outlet with NPT thread
Order code: G35(L) - NPT
- Air control unit for GSF pumps, consisting of a filter/pressure regulator combination, control pressure gauge and shut-off valve
Order code: GSF35 with C2
- Air control unit as above with additional safety valve in the air drive line for limiting the operating pressure on the high-pressure side - **Order code: GSF35 with C2/SVAir (Please indicate the operating pressure to be set.)**

Type	Pressure ratio*	Displ. Volume **		Outlet pressure ***		Flow capacity l/min ****	Connections			Dimensions in mm			Weight kg
		cm ³	cu.inch	bar	psi		Air Drive L	Inlet A	Outlet B	A	B	C	
GSF10	1:11	90.0	5.49	110	1595	18.53	3/4 BSPP	1 BSPP	3/4 BSPP	411	190,5	272	20.0
GSF15	1:16	62.0	3.78	160	2320	12.86	3/4 BSPP	1 BSPP	3/4 BSPP	411	190,5	272	20.0
GSF25	1:28	35.3	2.15	280	4260	7.24	3/4 BSPP	3/4 BSPP	3/4 BSPP	400	181	272	19.0
GSF35	1:40	24.5	1.49	400	5800	5.02	3/4 BSPP	3/4 BSPP	3/4 BSPP	400	181	272	19.0
GSF60	1:63	15.7	0.96	630	9135	3.21	3/4 BSPP	3/4 BSPP	1/2 BSPP	412	181	272	18.0
GSF100	1:113	8.8	0.54	1050	15225	1.81	3/4 BSPP	3/4 BSPP	1/2 BSPP	412	181	272	18.0
GSF150	1:151	6.6	0.40	1450	21025	1.36	3/4 BSPP	3/4 BSPP	1/2 BSPP	412	181	272	18.0

Chemical and offshore industries – GX series up to 1,000 bar (14,500 psi)

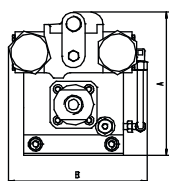
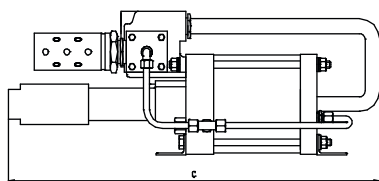
All high-pressure pumps from the GX series are suitable for use in zone 1, category 2G/2D IIC TX explosion-proof areas (temperature class depending on medium temperature).

GX-Pumps

» Operating pressures of up to 1,000 bar (14,500 psi)

The GX pumps are distinguished by their high pump capacity. Their robust construction, stainless-steel wetted parts and high resistance to corrosion air drive section make them ideal for the rough operating conditions in the offshore industry.

- Material: Stainless-steel pump heads and pistons
- Standard models with UHMWPE seals and FKM O-ring



Options for GX pumps

- UHMWPE seals and optionally available with (depending on medium used):
 - FKM O-Ring **Order code: GX35 - V**
 - NBR O-Ring **Order code: GX35 - N**
 - EPR O-Ring **Order code: GX35 - E****See media compatibility guide**
- Air control unit for GX pumps, consisting of a filter/pressure regulator combination, control pressure gauge and shut-off valve
Order code: GX35 with C3
- Air control unit as above with additional safety valve in the air drive line for limiting the operating pressure on the high-pressure side - **Order code: GX with C3/SVAir (Please indicate the operating pressure to be set.)**

Other options available on request.

Type	Pressure ratio*	Displ. Volume **		Outlet pressure ***		Flow capacity l/min ****	Connections			Dimensions in mm			Weight kg
		cm ³	cu.inch	bar	psi		Air Drive L	Inlet A	Outlet B	A	B	C	
GX35	1:36	110	6.71	360	5220	24.50	3/4 BSPP	1 FNPT	3/8 FNPT	237	244	632	24.0
GX60	1:66	65	3.97	600	8700	23.00	3/4 BSPP	1 FNPT	3/8 FNPT	237	244	632	24.0
GX100	1:117	36	2.20	1000	14500	9.00	3/4 BSPP	1 FNPT	3/8 FNPT	237	244	632	24.0
GX170	1:177	36	2.20	1000	14500	5.50	3/4 BSPP	1 FNPT	3/8 FNPT	274	249	622	30.0

* Ratio – driving surface air drive piston / driven surface high pressure piston (calculated)

** Displacement volume per double stroke (calculated).

*** Static outlet pressure (calculated and maximum allowed)

**** Approximate flow at an air drive of 6 bar / 87 psi and an outlet pressure of 0 bar/psi.