C RANGE

METERING PUMP

for polyurethane foam production

You are at the **centre**
of everything we do

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ABOUT US

Rotary Power specialises in the design, development and manufacture of hydraulic motors and pumps.

With a history dating back over 50 years, we understand the exacting and demanding requirements of today's hydraulic applications.

Operating from manufacturing facilities based in the North East of England and Bangalore, India, we continue to invest in the latest CNC machinery, automation and testing facilities. We have a clear focus on continuous improvement in lean cellular manufacturing. These facilities, alongside our European and US operations, offer sales, service and production support for the entire Rotary Power product range. A worldwide network of distribution partnerships provide additional support all over the world.

OUR BUSINESS

We recognise the importance of developing partnerships with our customers. That's why we offer flexibility in design, delivery and service to meet our customer's requirements.

Partnerships with our supply chain are key to Rotary Power's success and allow us to deliver excellent service in order to exceed expectations.

OUR PEOPLE

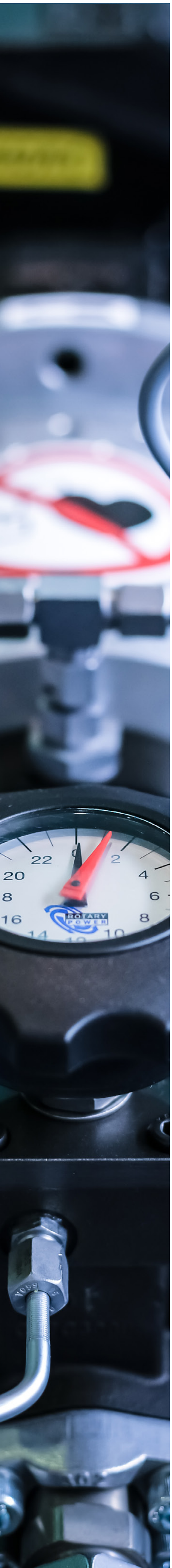
People are at the centre of everything we do. As an innovative engineering and manufacturing business, we take recruitment and career development very seriously.

As part of the British Engines Group, we operate a training and development programme that maintains a strong focus on in-house manufacturing and a commitment to local employment. Our apprenticeship and graduate schemes provide the opportunity to develop and nurture engineering talent from an early stage.

OUR FUTURE

Whether in product design or internal processes and systems, our engineers are actively encouraged to develop new ideas within design and manufacturing. This ensures that we are at the forefront of our customer and sector led innovation, whilst continuously improving our business.

Our team of in-house design engineers invest time into understanding our customer's application and work with them to deliver value added solutions, customised to their application.



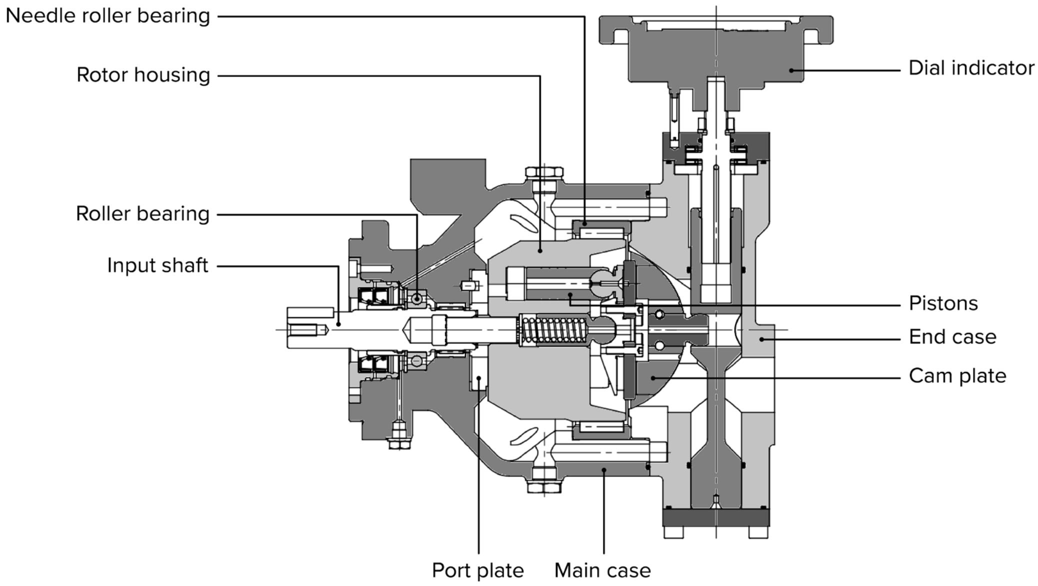
PRODUCT FEATURES

The C Range Metering Pump has been designed specifically for the polyurethane foam industry to provide high accuracy fluid metering with precision flow controls, along with high-pressure capability. The C Range Metering Pump has capacities from 2 - 62 cc per revolution.

Used within foam injection machines for chemical metering, the pump has been applied with the isocyanate's TDI, MDI and TDI/MDI mixes, as well as polyether and polyester resins and methylene chloride.

- A seven piston design for high efficiency and metering accuracy
- Five frame sizes from 2 - 62 cc per revolution
- Corrosion resistant main cases
- High inlet pressures up to 20 bar
- Fixed and variable output options
- Easy installation, maintenance and service
- Various seal options including magnetic drive couplings
- Leakage indicator and lubrication ports
- Large bearings for long service life

The C Range Metering Pump features a cartridge shaft seal to ease service and minimise maintenance time, as well as a leakage indicator for enhanced safety. The no leakage return line reduces the number of hydraulic service lines to the pump and a uniform temperature is maintained through continuous case flushing.



	Model	C01	C04	C07	C20	C38
	Geometric displacement (cc/rev) [in³]	2 [0.12]	6 [0.37]	11.5 [0.70]	33 [2.01]	62 [3.78]
1	**Max. speed (rpm)**	1,800	1,800	1,800	1,800	1,800
2	**Min. speed (rpm)**	200	200	200	200	200
3	**3 max. outlet pressure TDI (bar) [psi]**	210 [3045.8]	210 [3045.8]	210 [3045.8]	210 [3045.8]	210 [3045.8]
3	**Max. outlet pressure MDI, polyol (bar) [psi]**	250 [3625.9]	250 [3625.9]	250 [3625.9]	250 [3625.9]	250 [3625.9]
4	**Min. outlet pressure above inlet (bar) [psi]**	2 [29]	2 [29]	2 [29]	2 [29]	2 [29]
5	**Max. inlet pressure (bar) [psi]**	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]
	Min. inlet pressure (bar)	See graph on page 8				
	Max. viscosity	2,000 cSt, for higher viscosities consult Rotary Power				
	Min. viscosity	1 cSt				
6	**Recommended fluid cleanliness**	ISO/DIS 4406 polyol ISO code 18/13 isocyanate code 16/11				
	Max. temperature	80 °C [176 °F]				
	Optimum temperature	10 °C to 50 °C [50°F to 122 °F]				
	Approximate weight (kg) [lb]	16 [35]	18 [40]	20 [44]	30 [66]	40 [88]

1. Maximum allowable speed is determined by flow stability, please refer to page 8.
2. Minimum speed is determined by flow stability.
3. Pressures shown are fluids complying with cleanliness codes.
4. The outlet pressure must never fall below the inlet pressure. This applies during stationary and start-up conditions.
5. The inlet pressure should be kept to the minimum value possible, based upon the characteristics of the fluid and other factors, please refer to page 21.
6. These recommendations are based upon the minimum conditions for optimum life. Like any mechanical component, normal wear will be accelerated by either poor filtration, contaminated fluid, or by the use of abrasive substances such as carbon black.

PUMP ORDER CODE & ACCESSORIES

BODY TYPE 01	PUMP DISPLACEMENT 02	PUMP CONTROL 03	MAIN CASE 04	SHAFT SEALING INNER 05	SHAFT SEALING OUTER 06	'O' RINGS 07	DIRECTION OF ROTATION 08	SPECIAL OPTIONS 09	BODY TYPE 10
C								00	

BODY TYPE

01	**C**	Rear suction port

PUMP DISPLACEMENT

02	**01**	2 cc /rev (available on M6 only)
	04	6 cc/rev
	07	11.5 cc/rev
	20	33 cc/rev
	38	62 cc/rev

PUMP CONTROL

03*	**CA**	¾ pump
	FA	Fixed displacement
	MB	Handwheel
	MD	Dial indicator
	ME	Spindle
	MF	Aluminum handwheel

MAINCASE

04	**P**	Corrosion protected internal drain
	O	Control assembly only

SHAFT SEALING INNER

05	**0**	No housing or seals
	1	No seals
	2	Viton lip
	3	PTFE Flap
	4	EPDM lip
	5	PTFE lip
	6	Magnetic coupling

SHAFT SEALING OUTER

06	**0**	No housing or seals
	1	No seals
	2	Viton lip
	3	PTFE flap
	4	EPDM lip
	5	PTFE lip
	6	Magnetic coupling

BODY TYPE 01	PUMP DISPLACEMENT 02	PUMP CONTROL 03	MAIN CASE 04	SHAFT SEALING INNER 05	SHAFT SEALING OUTER 06	'O' RINGS 07	DIRECTION OF ROTATION 08	SPECIAL OPTIONS 09	BODY TYPE 10
C								00	

'O' RINGS

07	**N**	Nitrile
	V	Viton
	E	EPDM
	P	PTFE
	D	Peroxide x-linked EPDM
	X	PTFE coated viton

DIRECTION OF ROTATION

08	**L**	Anti-clockwise
	R	Clockwise
	(Looking at pump shaft)	

SPECIAL OPTIONS

09	**00**	Standard

BODY TYPE

10	**A6**	Standard
	M6	Matched

*For special control versions, please contact Rotary Power.

RELIEF VALVES

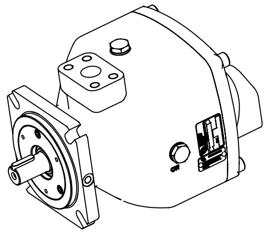
Pressure port mounted system relief valves can be supplied upon request. Sandwiched between the pressure port and outlet flange, the relief valves provide a safety pressure override and are fed directly back to inlet or vented to air as required.

MAGNETIC DRIVE COUPLINGS

Magnetic drive couplings can be installed where additional reliability is required. (Note: this is a sealed arrangement preventing external oil leakage) Due to the heat generation created by the coupling, it maybe necessary to provide additional oil flow for cooling purposes. Magnetic drive couplings are available upon request and consultation.

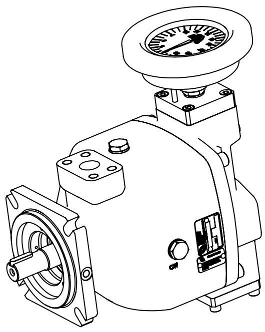
Please contact Rotary Power for more details.

PUMP DISPLACEMENT CONTROL TYPE



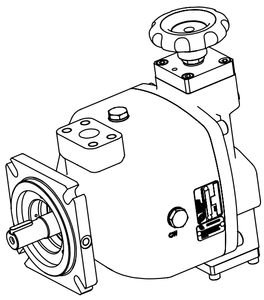
FA

- Fixed displacement



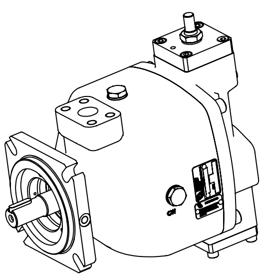
MD

- Dial indicator
- Variable displacement
- Manual fine adjustment



MB/MF

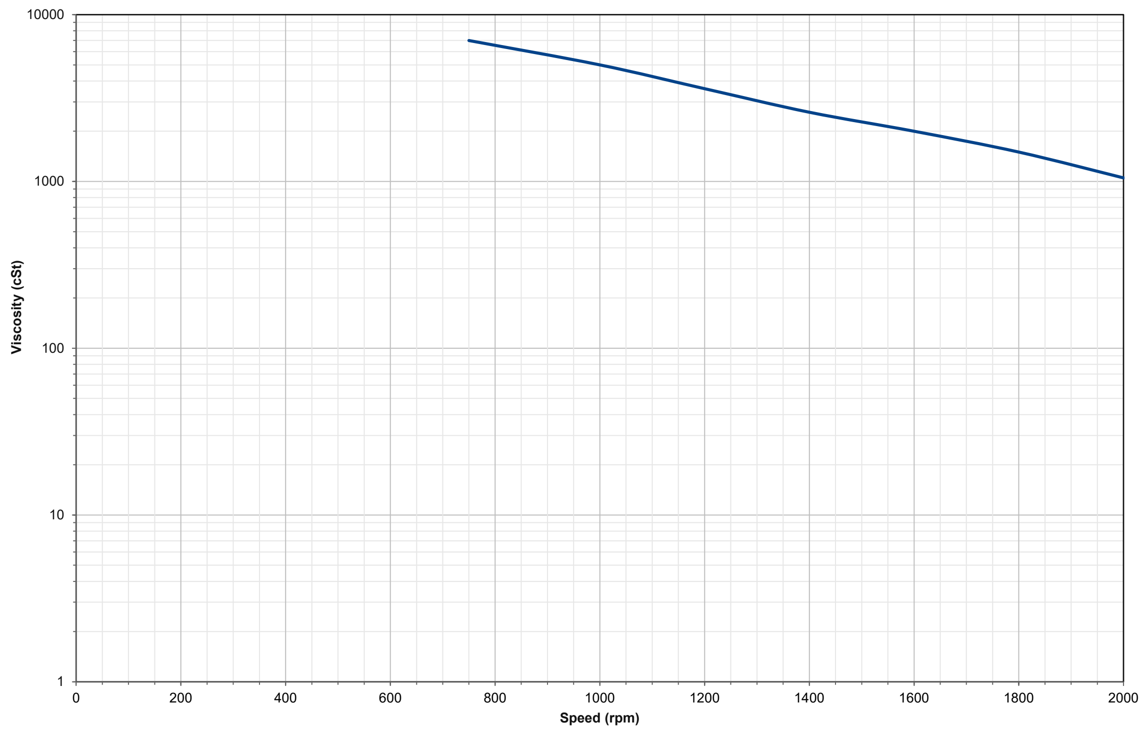
- Hand wheel
- Variable displacement
- Manual fine adjustment



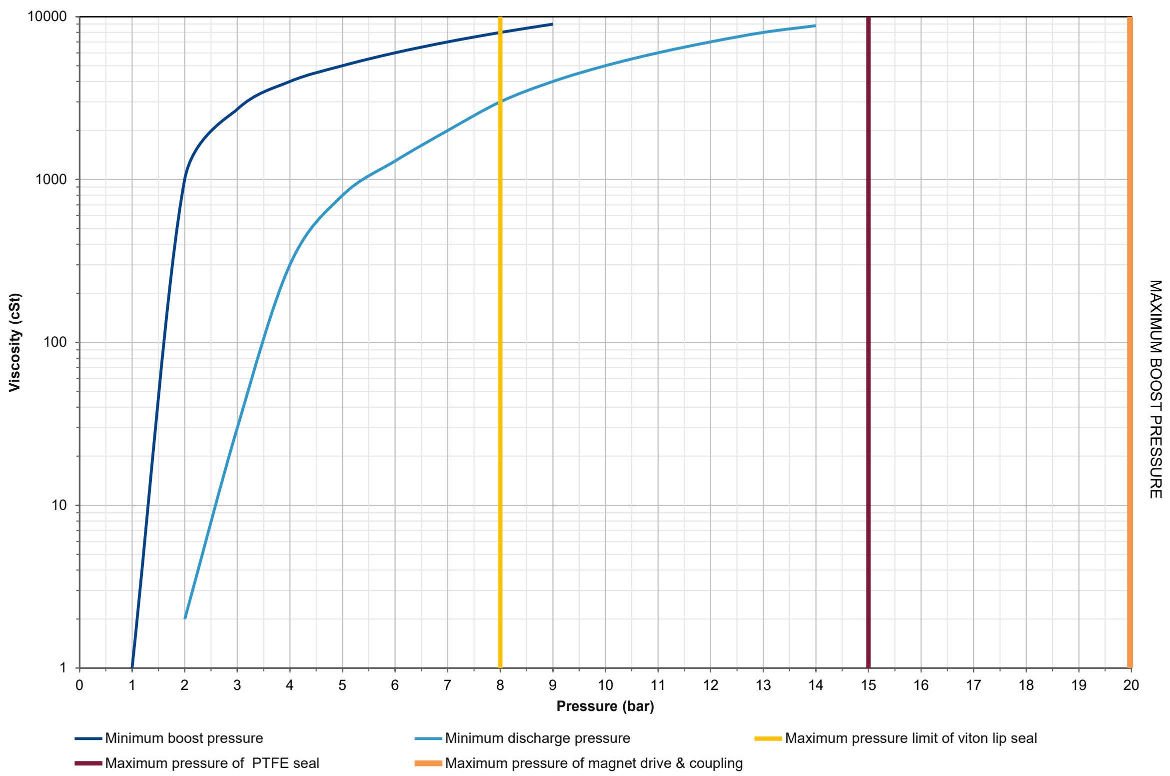
ME

- Spindle shaft for auxiliary attachment
- Variable displacement
- Manual fine adjustment

MAXIMUM PUMP SPEED (RPM) FOR FLUID VISCOSITY



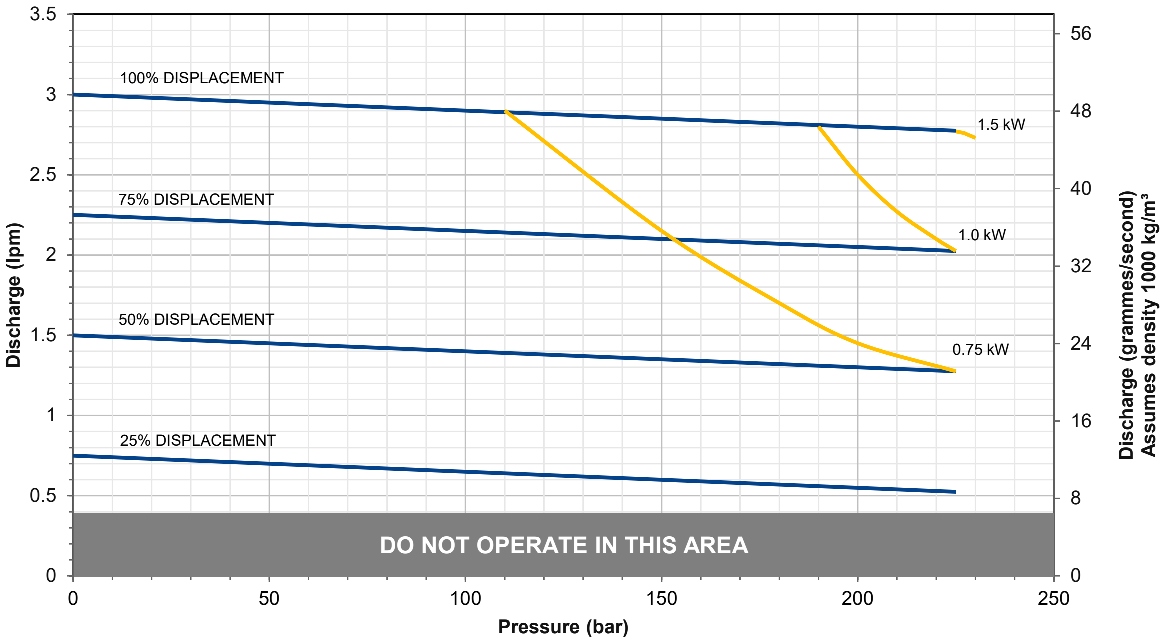
C PUMP MINIMUM BOOST REQUIREMENT (1,500 RPM) AND MINIMUM DISCHARGE PRESSURE



PERFORMANCE ISOCYANATE

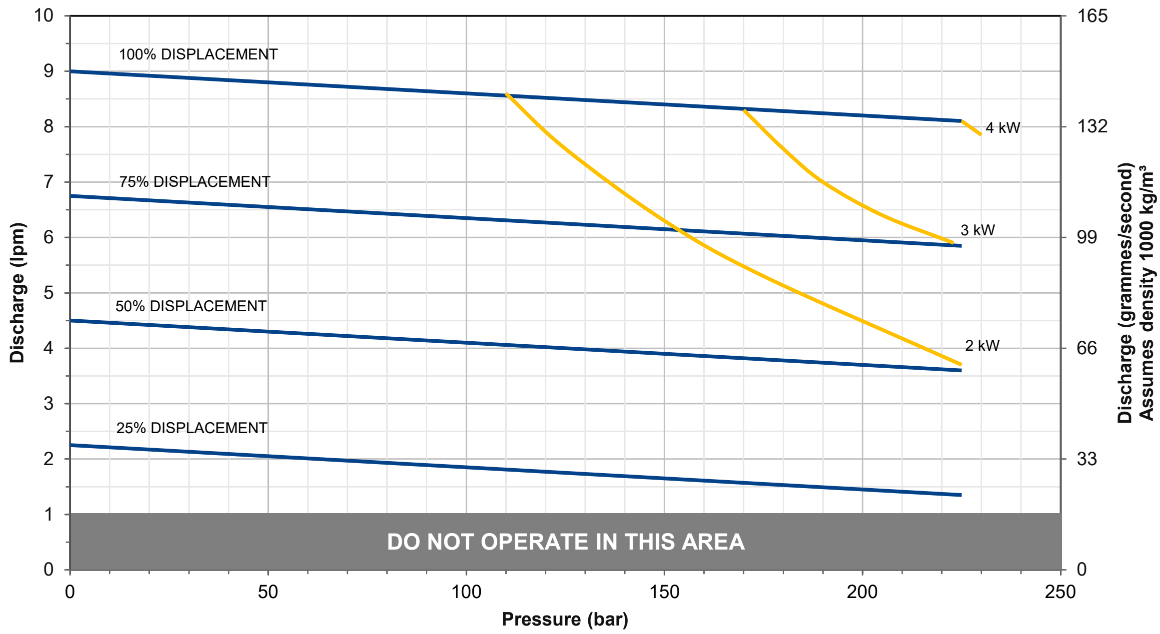
C01 DELIVERY VS PRESSURE

Isocyanate 3.5 cSt @ 1,500 RPM



C04 DELIVERY VS PRESSURE

Isocyanate 3.5 cSt @ 1,500 RPM

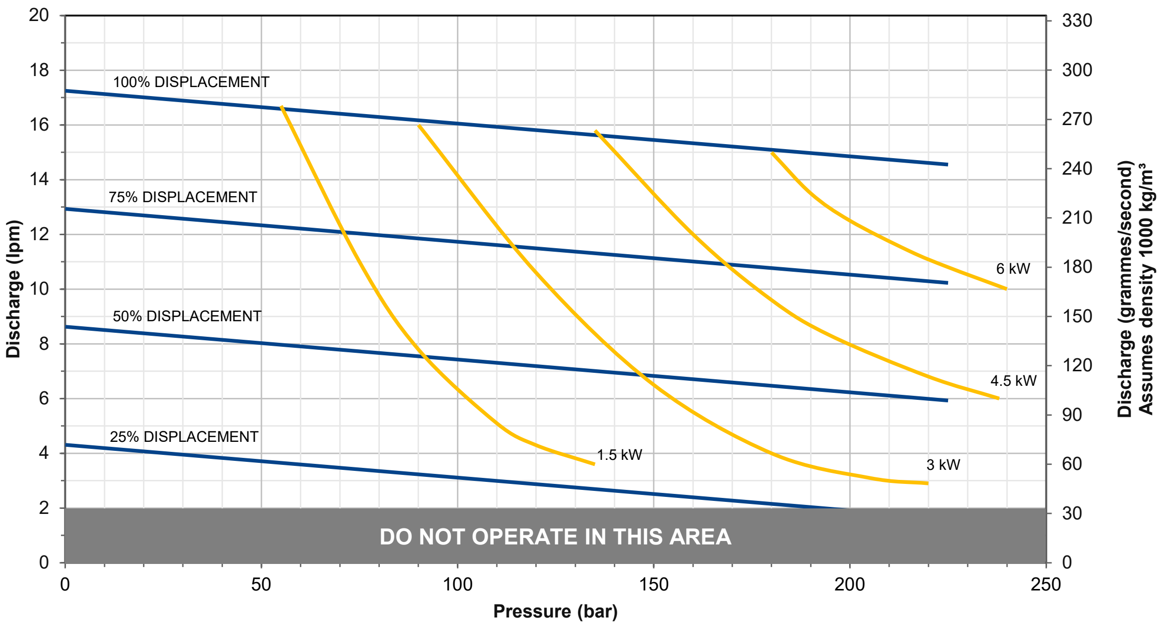


The graphs indicate discharge flows at 1,500 rpm and various swash angles on Isocyanate fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

PERFORMANCE ISOCYANATE

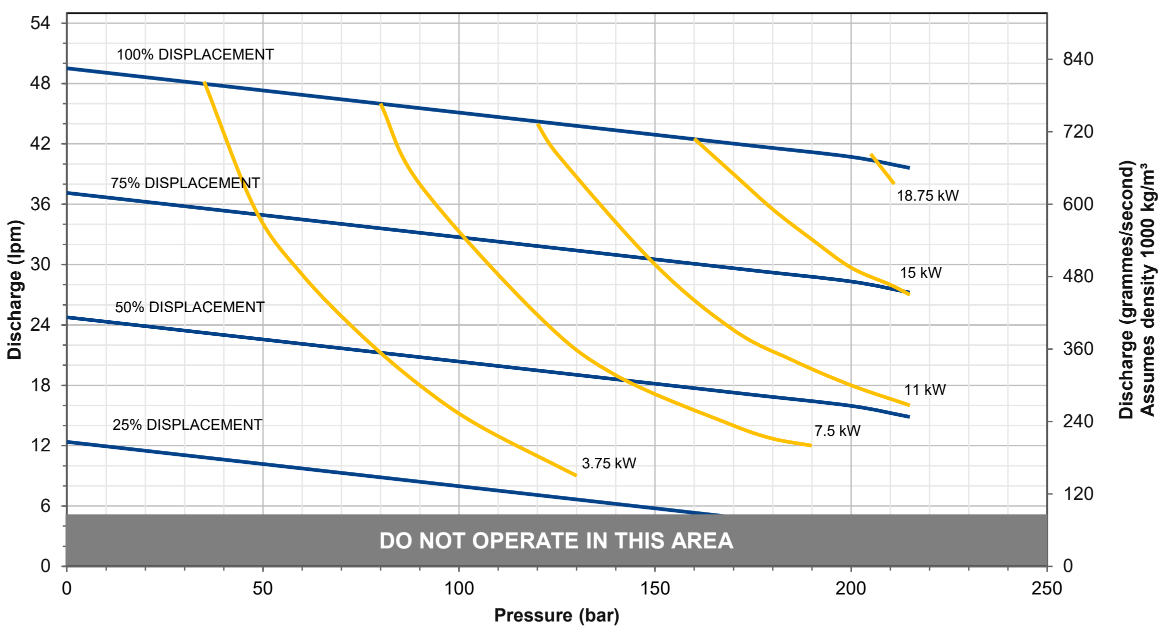
C07 DELIVERY VS PRESSURE

Isocyanate 3.5 cSt @ 1,500 RPM



C20 DELIVERY VS PRESSURE

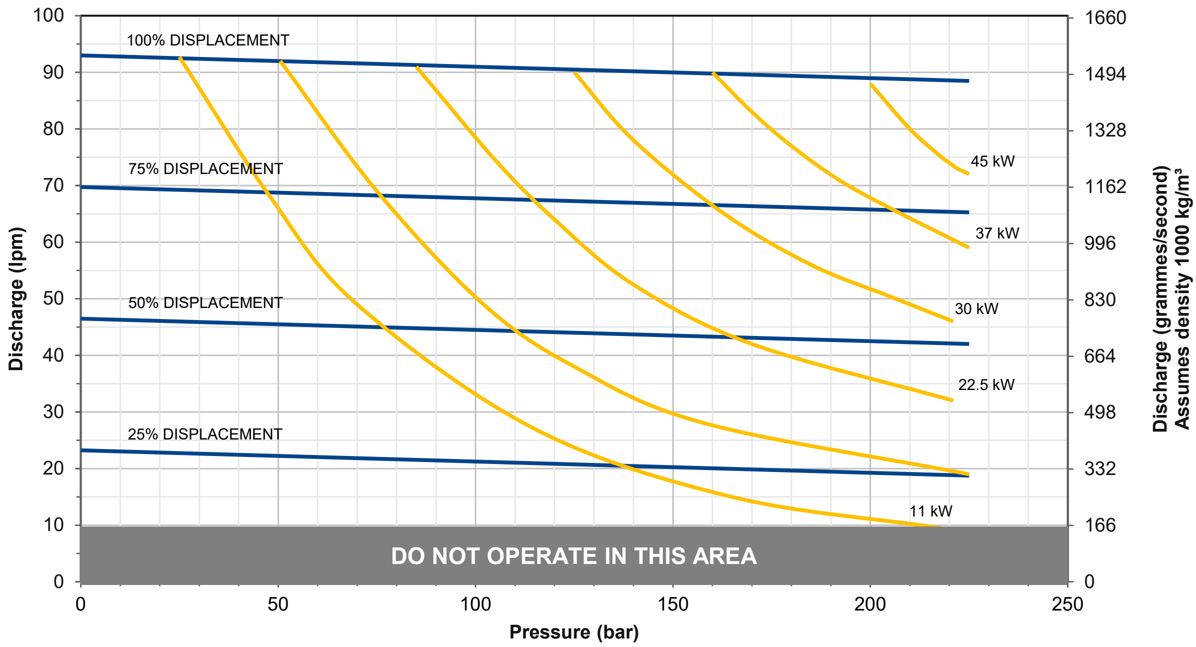
Isocyanate 3.5 cSt @ 1,500 RPM



The graphs indicate discharge flows at 1,500 rpm and various swash angles on Isocyanate fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

C38 DELIVERY VS PRESSURE

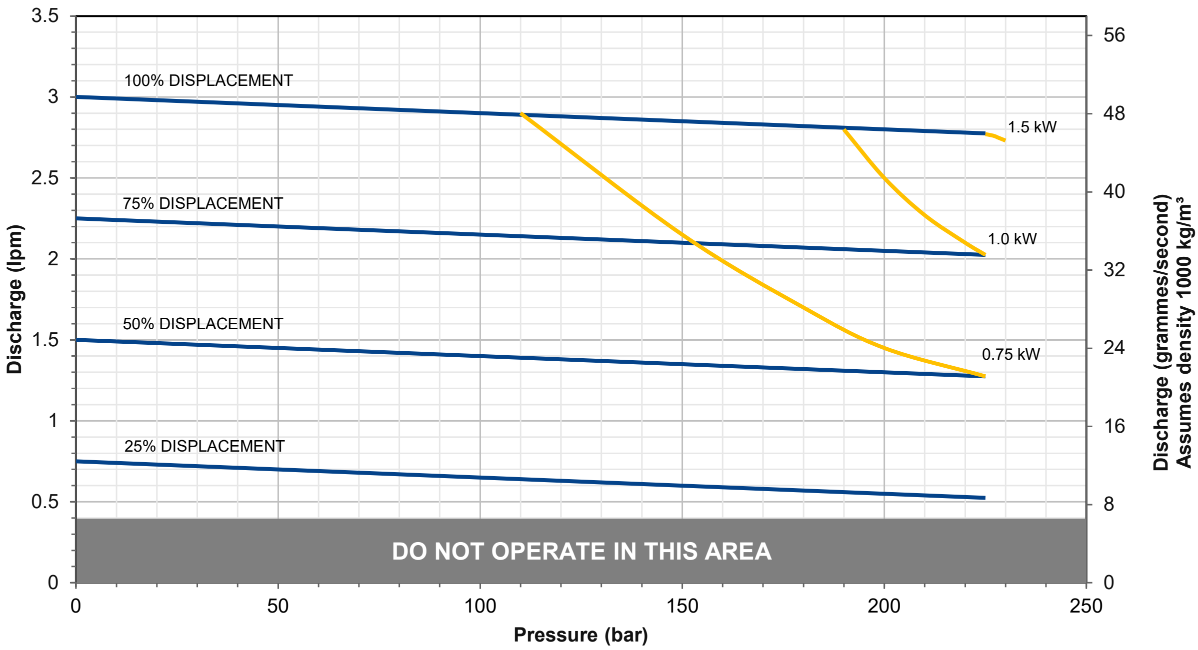
Isocyanate 3.5 cSt @ 1,500 RPM



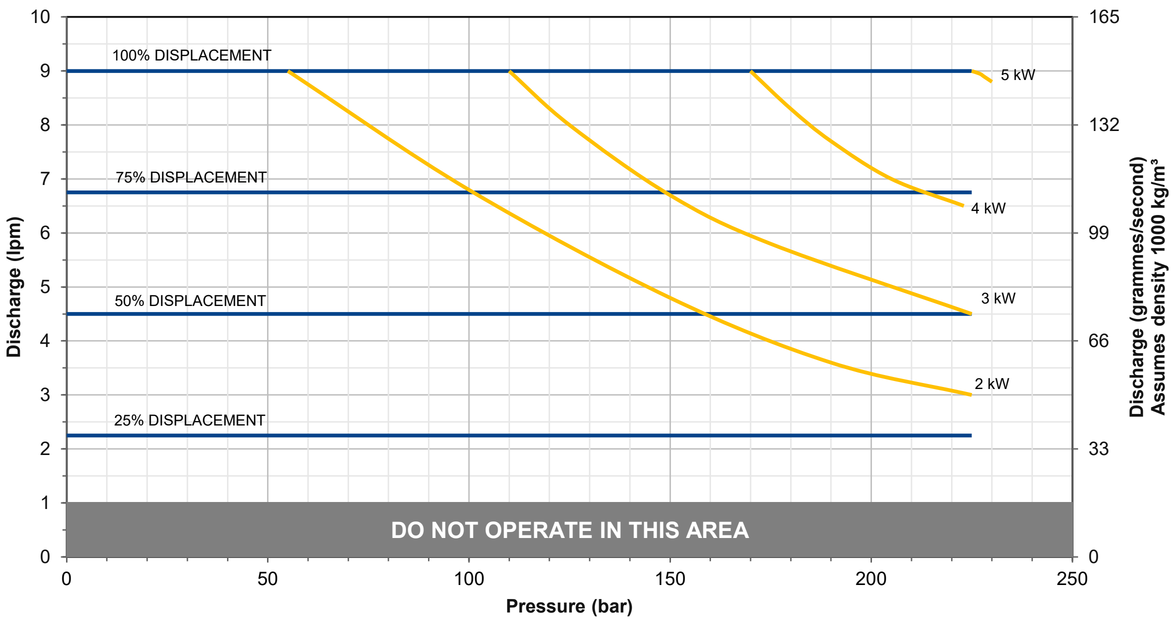
The graphs indicate discharge flows at 1,500 rpm and various swash angles on Isocyanate fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

PERFORMANCE POLYOL

C01 DELIVERY VS PRESSURE
Polyol 2,000 cSt @ 1,500 RPM



C04 DELIVERY VS PRESSURE
Polyol 2000 cSt @ 1,500 rpm

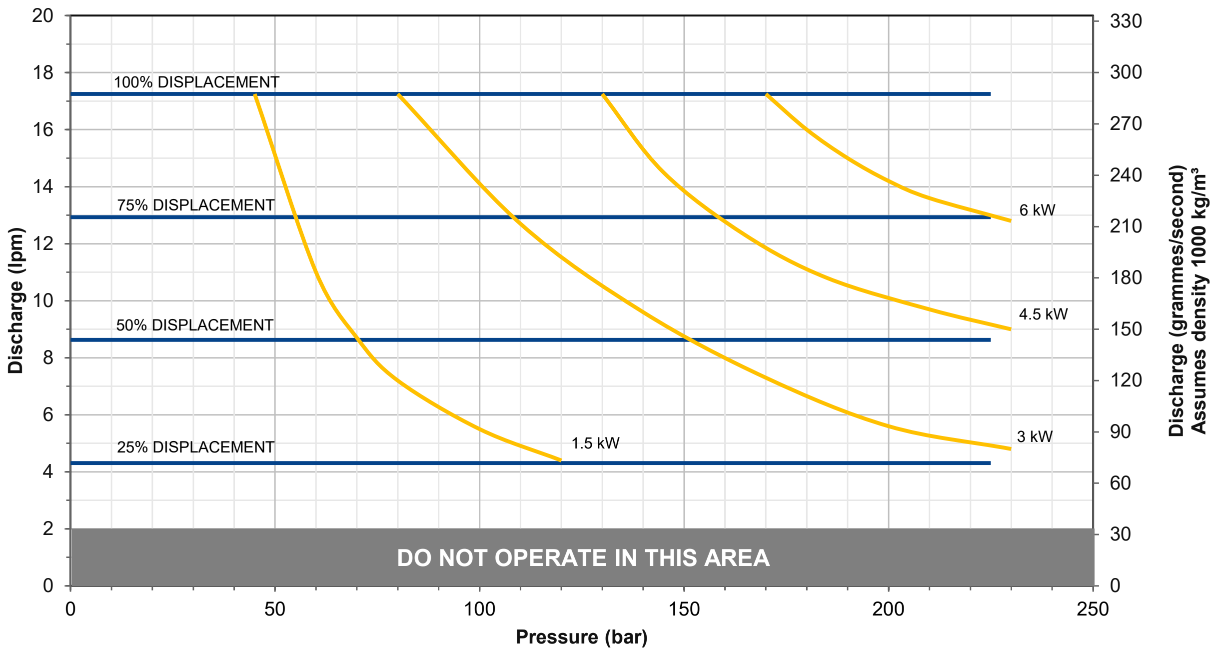


The graphs indicate discharge flows at 1,500 rpm and various swash angles on Polyol fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

PERFORMANCE POLYOL

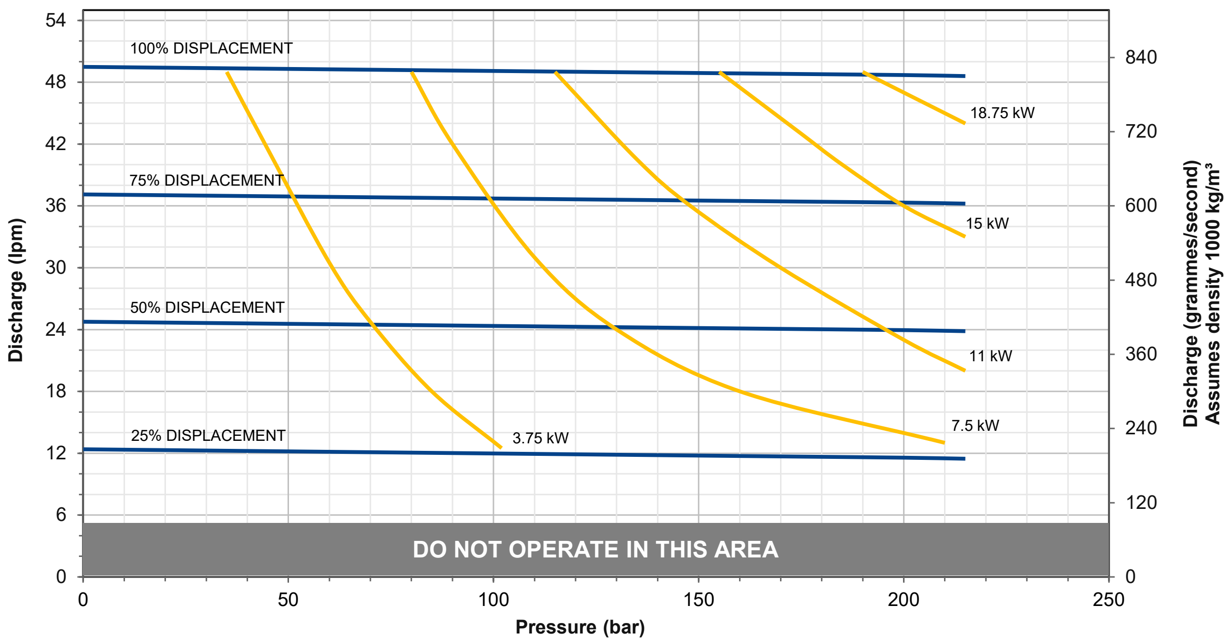
C07 DELIVERY VS PRESSURE

Polyol 2,000 cSt @ 1,500 RPM



C20 DELIVERY VS PRESSURE

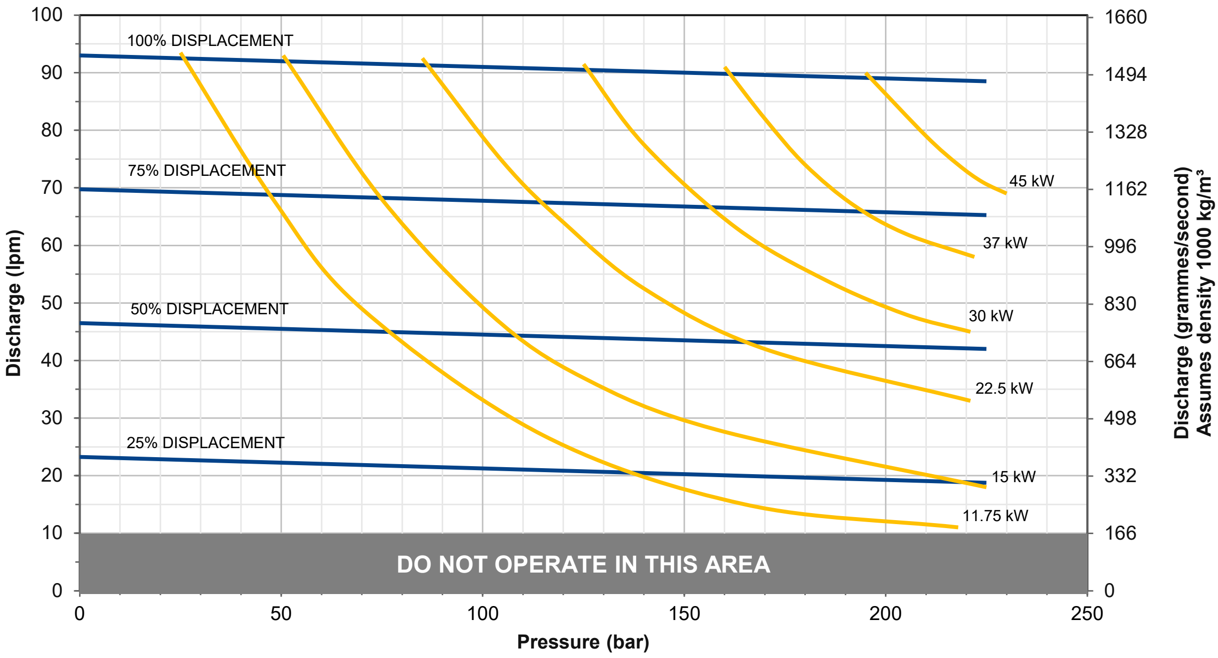
Polyol 2,000 cSt @ 1,500 RPM



The graphs indicate discharge flows at 1,500 rpm and various swash angles on Polyol fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

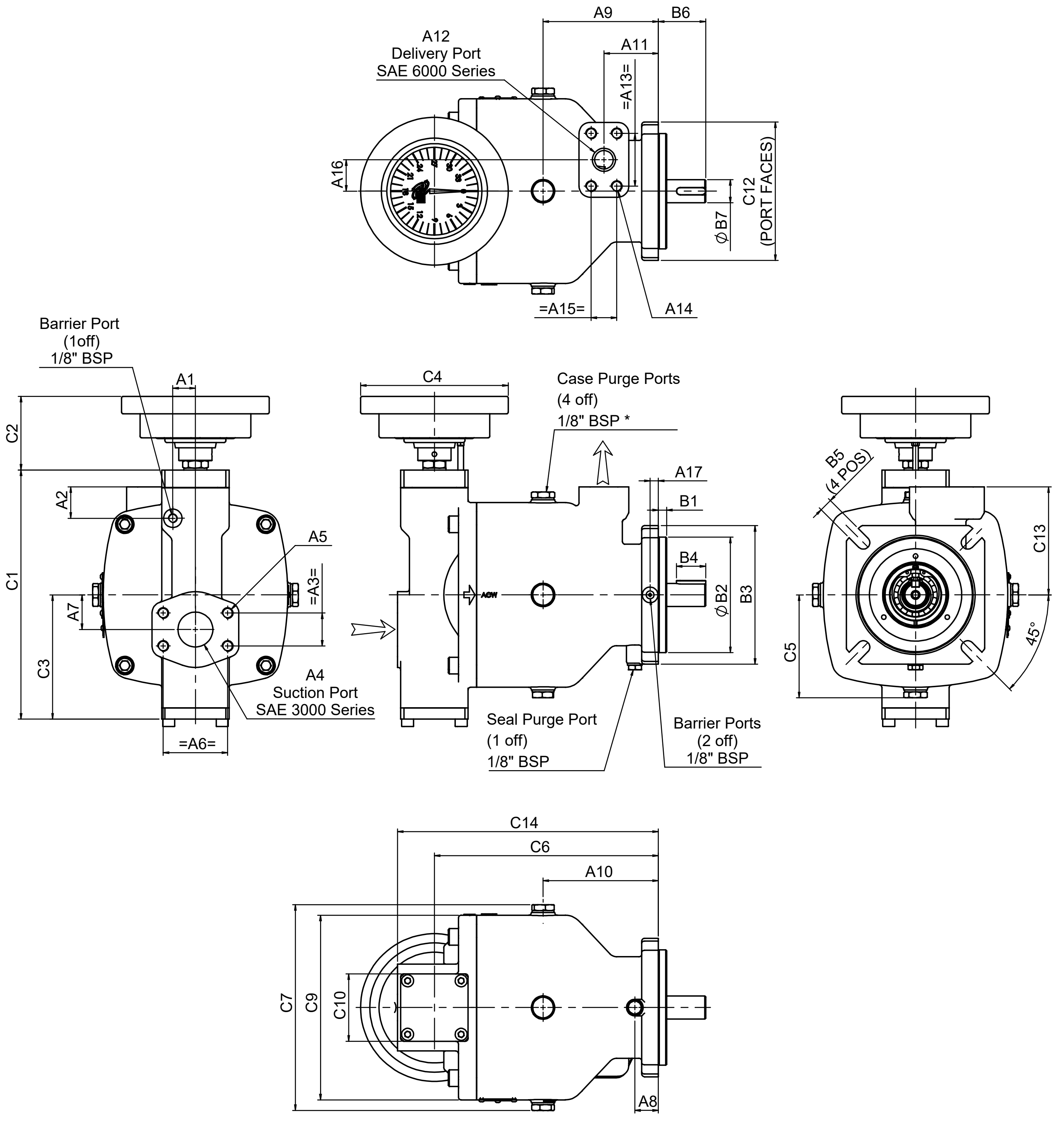
C38 DELIVERY VS PRESSURE

Polyol 2,000 cSt @ 1,500 RPM



The graphs indicate discharge flows at 1,500 rpm and various swash angles on Polyol fluid (2,000 cSt). Figures shown do not include power loss when using magnetic drives. Power curves show the required electric motor power at given conditions (yellow).

INSTALLATION DRAWINGS
C01 / C04 / C07 / C20 / C38 - MD



* C38 models use 3/8" BSP case purge ports

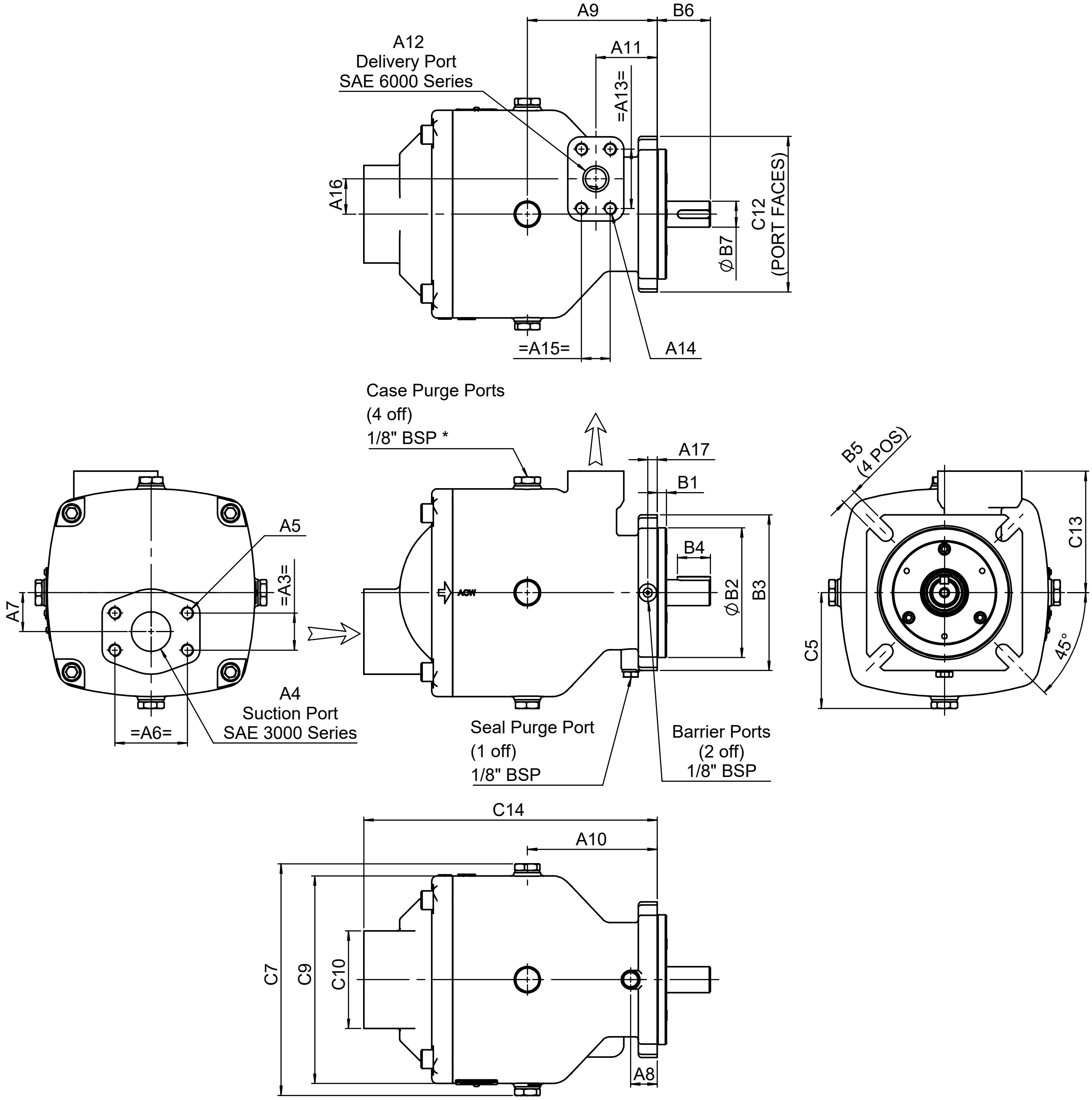
INSTALLATION DATA
C01 / C04 / C07 / C20 / C38 - MD

	C01		C04		C07		C20		C38	
A1	11	[0.43]	11	[0.43]	11	[0.43]	20	[0.79]	24.5	[0.97]
A2	16.5	[0.65]	16.5	[0.65]	16.5	[0.65]	32	[1.26]	33	[1.3]
A3	22.2	[0.87]	22.2	[0.87]	22.2	[0.87]	35.7	[1.41]	35.7	[1.41]
A4	ø¾ "		ø¾ "		ø¾ "		ø1.5 "		ø1.5 "	
A5	M10 x 23	[0.91]	M10 x 23	[0.91]	M10 x 23	[0.91]	M12 x 27	[1.06]	M12 x 24	[0.94]
A6	47.6	[1.88]	47.6	[1.88]	47.6	[1.88]	69.85	[2.75]	69.85	[2.75]
A7	35.5	[1.4]	36	[1.42]	36	[1.42]	36	[1.42]	37.5	[1.48]
A8	13	[0.51]	14	[0.55]	14	[0.55]	26.5	[1.04]	25.5	[1]
A9	87	[3.43]	80	[3.15]	80	[3.15]	107	[4.22]	125	[4.93]
A10	87	[3.43]	57	[2.25]	57	[2.25]	87	[3.43]	125	[4.83]
A11	49	[1.93]	37	[1.46]	37	[1.46]	49.75	[1.96]	59	[2.32]
A12	ø½ "		ø½ "		ø½ "		ø1 "		ø1 "	
A13	40.49	[1.59]	40.49	[1.59]	40.49	[1.59]	57.15	[2.25]	57.15	[2.25]
A14	M8 x 20	[0.79]	M8 x 20	[0.79]	M8 x 20	[0.79]	M12 x 27	[1.06]	M12 x 27	[1.06]
A15	18.24	[0.72]	18.24	[0.72]	18.24	[0.72]	27.76	[1.09]	27.76	[1.09]
A16	12.5	[0.49]	17.5	[0.69]	17.5	[0.69]	30.9	[1.22]	34	[1.34]
A17	9	[0.35]	9.6	[0.38]	9.6	[0.38]	10	[0.39]	9	[0.35]
B1	8	[0.32]	8	[0.32]	8	[0.32]	8	[0.32]	9	[0.35]
B2	ø80 h9	[3.15]	ø80 h9	[3.15]	ø80 h9	[3.15]	ø100 h9	[3.94]	ø125 h9	[4.92]
B3	90	[3.54]	95.3	[3.75]	95.3	[3.75]	110	[4.33]	150	[5.91]
B4	25 x 5	[0.98 x 0.20]	25 x 5	[0.98 x 0.20]	25 x 4.75	[0.98 x 0.19]	31.75 x 8	[1.25 x 0.31]	32 x 8	[1.26 x 0.31]
B5	8.6	[0.34]	9	[0.35]	9	[0.35]	10.5	[0.41]	14	[0.55]
B6	36.2	[1.43]	33.4	[1.32]	33.4	[1.32]	50.2	[1.98]	42.2	[1.66]
B7	ø13 h6	[0.51]	ø13 h6	[0.51]	ø17.45 h6	[0.69]	ø25 h6	[0.99]	ø25 h6	[0.99]
C1	163	[6.42]	161	[6.34]	163	[6.42]	205	[8.07]	270	[10.63]
C2	70	[2.76]	70	[2.76]	76	[2.99]	77	[3.03]	80	[3.15]
C3	87	[3.43]	84.5	[3.33]	87	[3.43]	108	[4.26]	134.5	[5.28]
C4	ø110	[4.33]	ø102	[4.02]	ø102	[4.02]	ø102	[4.02]	ø160	[6.30]
C5	70	[3.76]	68.5	[2.71]	68.5	[2.71]	87.5	[3.45]	111	[4.37]
C6	142	[5.59]	137.5	[5.42]	137.5	[5.42]	185	[7.29]	242.7	[9.56]
C7	140	[5.52]	137	[5.4]	137	[5.4]	176	[6.93]	223	[8.79]
C9	119	[4.69]	119	[4.69]	119	[4.69]	155	[4.53]	200	[7.88]
C10	65	[2.56]	65	[2.56]	65	[2.56]	94	[3.7]	73	[2.88]
C12	89	[3.5]	104	[4.09]	98	[3.86]	110	[4.33]	150	[5.91]
C13	63.6	[2.5]	74.4	[2.93]	74.4	[2.93]	100	[3.94]	117	[4.61]
C14	171	[6.74]	166.8	[6.57]	166.8	[6.57]	222	[8.75]	282.7	[11.14]

For MB and ME pump installation drawings and data, please consult Rotary Power.

Sizes are listed in mm, inches shown in brackets

INSTALLATION DRAWINGS
C01 / C04 / C07 / C20 / C38 - FA



* C38 models use 3/8" BSP case purge ports

INSTALLATION DATA
C01 / C04 / C07 / C20 / C38 - FA

	C01		C04		C07		C20		C38	
A3	22.2	[0.87]	22.2	[0.87]	22.2	[0.87]	35.7	[1.41]	35.7	[1.41]
A4	ø¾ "		ø¾ "		ø¾ "		ø1.5 "		ø1.5 "	
A5	M10 x 23	[0.91]	M10 x 23	[0.91]	M10 x 23	[0.91]	M12 x 27	[1.06]	M12 x 24	[0.94]
A6	47.6	[1.88]	47.6	[1.88]	47.6	[1.88]	69.85	[2.75]	69.85	[2.75]
A7	35.5	[1.4]	35.5	[1.4]	35.5	[1.4]	36	[1.42]	37.5	[1.48]
A8	13	[0.51]	14	[0.55]	14	[0.55]	26.5	[1.04]	25.5	[1]
A9	87	[3.43]	80	[3.15]	80	[3.15]	107	[4.22]	125	[4.93]
A10	87	[3.43]	57	[2.25]	57	[2.25]	87	[3.43]	125	[4.83]
A11	49	[1.93]	37	[1.46]	37	[1.46]	49.75	[1.96]	59	[2.32]
A12	ø½ "		ø½ "		ø½ "		ø1 "		ø1 "	
A13	40.49	[1.59]	40.49	[1.59]	40.49	[1.59]	57.15	[2.25]	57.15	[2.25]
A14	M8 x 20	[0.79]	M8 x 20	[0.79]	M8 x 20	[0.79]	M12 x 27	[1.06]	M12 x 27	[1.06]
A15	18.24	[0.72]	18.24	[0.72]	18.24	[0.72]	27.76	[1.09]	27.76	[1.09]
A16	12.5	[0.49]	17.5	[0.69]	17.5	[0.69]	30.9	[1.22]	34	[1.34]
A17	9	[0.35]	9.6	[0.38]	9.6	[0.38]	10	[0.39]	9	[0.35]
B1	8	[0.32]	8	[0.32]	8	[0.32]	8	[0.32]	9	[0.35]
B2	ø80 h9	[3.15]	ø80 h9	[3.15]	ø80 h9	[3.15]	ø100 h9	[3.94]	ø125 h9	[4.92]
B3	90	[3.54]	95.3	[3.75]	95.3	[3.75]	110	[4.33]	150	[5.91]
B4	25 x 5	[0.98 x 0.20]	25 x 5	[0.98 x 0.20]	25 x 4.75	[0.98 x 0.19]	31.75 x 8	[1.25 x 0.31]	32 x 8	[1.26 x 0.31]
B5	8.6	[0.34]	9	[0.35]	9	[0.35]	10.5	[0.41]	14	[0.55]
B6	36.2	[1.43]	33.4	[1.32]	33.4	[1.32]	50.2	[1.98]	42.2	[1.66]
B7	ø13 h6	[0.51]	ø13 h6	[0.51]	ø17.45 h6	[0.69]	ø25 h6	[0.99]	ø25 h6	[0.99]
C5	70	[3.76]	68.5	[2.71]	68.5	[2.71]	87.5	[3.45]	111	[4.37]
C7	140	[5.52]	137	[5.4]	137	[5.4]	176	[6.93]	223	[8.79]
C9	119	[4.69]	119	[4.69]	119	[4.69]	155	[4.53]	200	[7.88]
C10	65	[2.56]	65	[2.56]	65	[2.56]	94	[3.7]	73	[2.88]
C12	89	[3.5]	104	[4.09]	98	[3.86]	110	[4.33]	150	[5.91]
C13	63.6	[2.5]	74.4	[2.93]	74.4	[2.93]	100	[3.94]	117	[4.61]
C14	171	[6.74]	166.8	[6.57]	166.8	[6.57]	222	[8.75]	282.7	[11.14]

For MB and ME pump installation drawings and data, please consult Rotary Power.

Sizes are listed in mm, inches shown in brackets

PUMP APPLICATION

GENERAL OPERATING PRESSURES

The pump design features hydrostatic bearing faces for optimum efficiency and long life. The hydrostatic balance required for these bearings means that inlet pressure must never exceed outlet pressure, even when the pump is not rotating. This is simple to achieve on tank pressured systems. For systems using boost pump, a relief valve should be used or a check valve can be placed parallel with the pump. This allows a flow from inlet to outlet so that the pressures can be balanced from inlet to outlet during the start-up of the pump (this valve should close as soon as the outlet pressure exceeds the inlet pressure).

Warning: The inlet pressure must not exceed outlet pressure. Failure to comply with this instruction may lead to damage or failure of the pump.

OUTLET PRESSURE

If the fluid contains certain fillers such as blowing agents or other additives, the maximum outlet pressure may need to be limited in order to achieve reliable running and reasonable life. Please contact Rotary Power for these applications.

Maximum pump outlet pressures should not exceed the following values in any circumstances:

- TDI fluid = 210 bar [3,046 psi]
- MDI Polyol fluid = 250 bar [3,636 psi]
- Minimum outlet pressure = 2 bar [29 psi]

INLET PRESSURE

To achieve the correct inlet pressure conditions, the following must be considered at the inlet port of the pump.

1. The inlet pressure must not exceed outlet pressure.
2. The inlet pressure must be high enough, with more viscous fluids, to eliminate cavitation within the pump.
3. The shaft seal life is dependent upon the case pressure (also pump speed and fluid cleanliness). The lower the inlet pressure, the longer the seal life.

The correct procedure for specifying the required pressure at the inlet port of the pump is:

1. Check requirements for the specified fluid with the fluid supplier/manufacturer.
2. Check the minimum boost requirement chart on page 8 for more details relating to recommended inlet pressure with regards to fluid viscosity.

SHAFT SEAL

Shaft seal life is dependent upon many factors:

1. Shaft speed
2. Fluid lubricity
3. Fluid pressure
4. Fluid contaminant level
5. Nature and size of fillers used

See available seal options on page 5.

APPLICATIONS

Rotary Power offers two specifications for each C Range Metering Pump model. The standard option offers a greater range of serviceability and is recommended for most applications. When transferring fluids with a viscosity below 20 cSt, we recommend our close tolerance matched piston and rotor alternative. Please contact Rotary Power if you require further details.

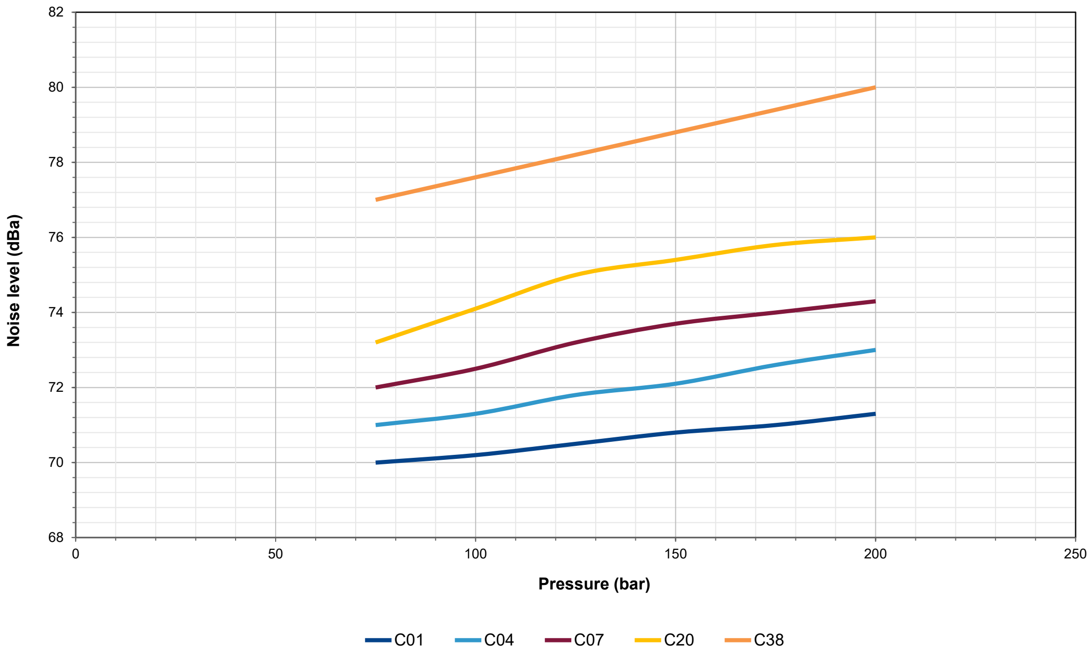
The performance charts located on page 8 refer to a standard model. The performance can be improved with special matching on the rotor and pistons.

PIPEWORK SIZING

All pipework sizing should be calculated taking into consideration whether it is for pump inlet or delivery (outlet). The pressure drop (as a result of pi pe/hose bends and restrictions such as valves/manifolds in the system) should also be considered during this decision.

NOISE

The noise of the C Range Metering Pump will vary with respect to the displacement and speed. For typical noise performance, please refer to the graph below.



C Range noise @ maximum displacement, 1,500 rpm measured 1m from rear of pump. Fluid viscosity 20cSt, fluid density 880 kg/m³ (includes background noise 56 dBa).

OUTPUT FLOW

Pumps fitted with variable displacement control should not be operated at less than 10% of the full displacement.

MATERIAL

A combination of high grade steels and spheroidal graphite (SG) iron are used. All major components are treated for internal corrosion resistance by a number of heat treatment processes. The shaft seal material is a combination of Viton and polytetrafluoroethylene (PTFE) running on a ceramic brush.

COMMISSIONING & INSTALLATION

- The pump shaft rotation must be in compliance with the pump body indicators i.e. clockwise (CW) shaft rotation whilst looking from the shaft end of the pump.
- The inlet and outlet pipework must be connected to the correct pump ports. A case drainpipe is not required.
- There are five bleed points located in the pump body. Depending upon the orientation of the pump, one or more of these bleed points must be used to ensure that the pump case is completely filled prior to start-up.
- Care should be taken to purge all of the air from the inlet and outlet pipework prior to its start-up. During this operation, the pump shaft should be rotated slowly in order to fill the rotating group.
- The space between the inner and outer shaft seals must be filled at all times with a suitable barrier fluid i.e. Mesamol. Access to this space is provided by two ⅛" BSP ports located at either side of the mounting flange. Care must be taken to completely purge this space of all air in order to allow lubrication of the outer shaft seal. The supply of barrier fluid can be maintained using small transparent reservoirs connected to the access ports.
- Inner seal leakage can be detected by regular inspection of the barrier fluid in the reservoirs.
- Barrier fluids, which are incompatible with the pumped fluid, must not be used. This includes hygroscopic fluids or fluids containing water.
- Pressurising the barrier fluid may cause shaft seal failure. Therefore, pressurised fluid or a grease system, such as a sprung dash-pot and trap arrangement must not be used.
- Pumps fitted with a manual adjustment (types MD, MB and ME) have a leakage indicator port to provide access to the space between the inner and the outer seals of the swash adjusting shaft. This space should be provided with the same barrier fluid reservoir system as described above.
- Initial start-up of the pump should always take place with the minimum permitted outlet pressure running for a period of time on recirculation and at full flow, in order to purge any air that may still be in the system.
- Check and set the system relief valves.
- Check the inlet and outlet pressure of the pump whilst stationary and running in all conditions. Ensure that the relationship between the recorded pressures are within the system design parameters and also comply with the pump requirements provided in this catalogue.
- Take fluid samples and check for cleanliness.
- Measure flows within the required working range and ensure that a stable delivery is achieved.
- Check the temperature of the fluid at the pump outlet and the pump main case and compare with the fluid temperature at the pump inlet. Any significant difference (over 15 °C - 20 °C) [59 °F - 68 °F] should be investigated.
- After the first few hours of operation, clean or renew all filters as appropriate.

OPERATION

It is recommended that inlet pressure should always be maintained at the inlet port during start-up and running. Pumps fitted with manual variable displacement controls should not be adjusted when the pressure, at either port, is greater than 100 bar [1,450 psi].

Adjustment of a manual control should always be completed by turning the control in a clockwise direction.

1. To increase the flow, release the lock nut and turn the control clockwise, then lock in position.
2. To decrease the flow, release the lock nut and turn the control anti-clockwise to two turns below the required flow. To lock, turn clockwise to the required setting and lock in position.

The system must always be full of fluid otherwise immediate pump damage will occur. Barrier fluid levels should be maintained and checked for contamination regularly.

MAINTENANCE

Preventative maintenance of the C Range Metering Pump is kept to a minimum. The pump is a self-lubricating unit so no additional lubrication to internal components or shaft seals is necessary. Filters should be free flowing and replaced where necessary to prevent restriction. Barrier lubrication systems must be topped up and inspected for contamination. All fittings and screws must be checked periodically to ensure they are kept tight and free from leaks. Drive couplings should be periodically inspected for wear.

SERVICE

The shaft seals will wear and need periodic replacement. Seal kits are available for on-site renewal and it is recommended that on-site stocks are held for immediate use. Units returned for factory overhaul must be flushed clean and all hazardous fluids must be neutralised before despatch to Rotary Power.

GENERAL

Protective plugs and covers should remain in position until the pump is installed. Ensure your system is clean prior to installation.

DRIVE SHAFT COUPLING

A flexible drive coupling is recommended to allow for axial and radial misalignment. It is important that the drive coupling does not impose an axial or radial load into the drive shaft. Failure to comply with this instruction will result in erratic performance and pump failure.

MOUNTING

A location spigot and slotted fair bolt flange are provided for mounting. To ensure the unit fits correctly, the bore of recipient housing should have a 1mm lead in chamfer, as well as a flat machined face. A bore size clear of the spigot by 0.025 mm - 0.075 mm [0.001 in - 0.003 in] is recommended.

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