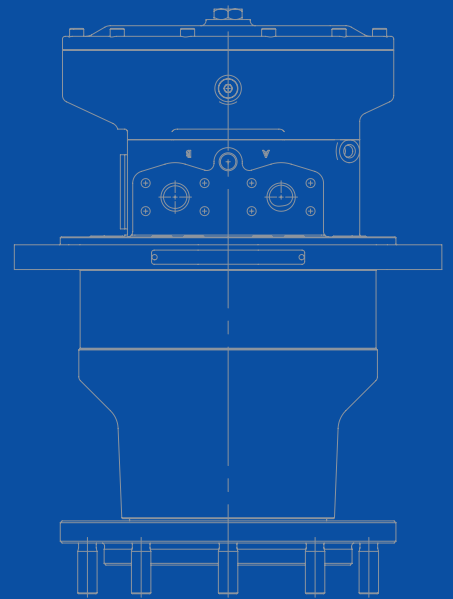
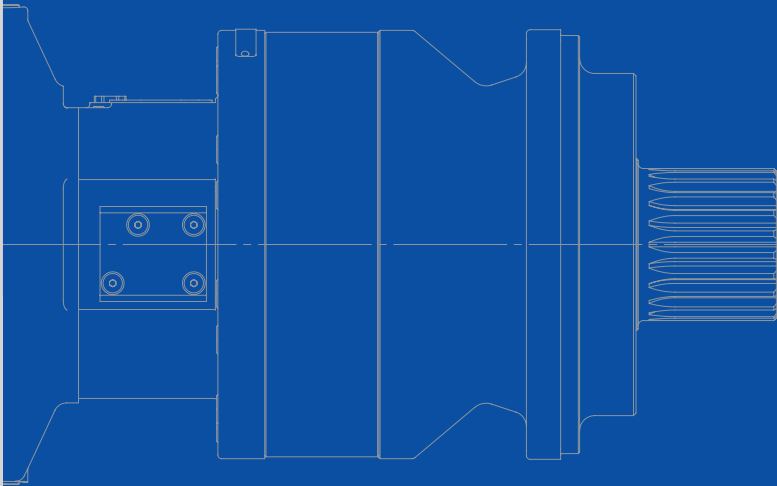


XJ40 | Radial Piston Cam Motor

3330 - 5010 cc/rev



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

About us

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

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

Partnerships

Our approach to business is through developing partnerships; we offer flexibility in design, delivery and service so that we succeed together.

Our partnerships with our customers' and our supply chain are a key part of our success; delivering solutions to meet our customer's requirements and excellent customer service.

Innovation

Our engineers are actively encouraged to challenge the norm and are empowered to innovate both in product design and in our processes and systems. This ensures we are at the forefront of both customer and sector led innovation, whilst achieving continual improvement in our business.

Our team of in-house design engineers invest considerable time in truly understanding our customers' applications and working with them to develop value added solutions.

Global

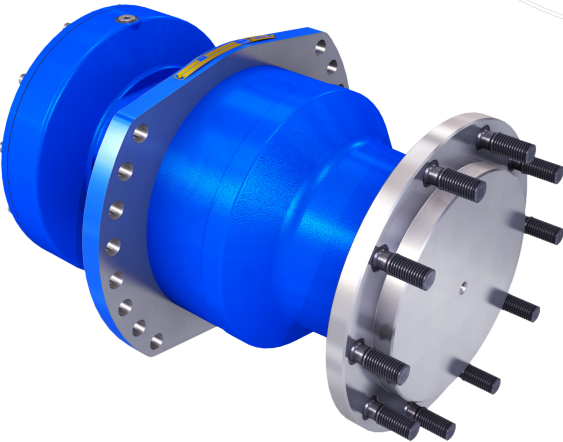
Rotary Power has two wholly owned subsidiaries, Rotary Power Inc. in the USA and Rotary Power GmbH, based in Germany. These facilities offer sales, service and product support for the whole range of Rotary Power products. In addition, a worldwide network of distributors and agents provide sales and support to almost every corner of the globe.

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XJ40 cam motor

for mobile and industrial applications

This compact, radial piston, multi lobed cam motor offers a range of options to meet your application requirements:

- Radial piston, multistroke cam design
- Displacement of 3330 - 5010 cc/rev
- Continuous pressure of 350 bar
- Modular design
- Two speed options
- Brake options
- Freewheel capability

We also provide customised solutions. For more information, please contact one of our engineers who would be happy to discuss your application.

Technical data

XJ40

Nominal displacement (cc/rev)	3330	3770	4180	4600	5010
Geometric displacement (cc/rev)	3332	3768	4184	4602	5010
Specific torque (Nm/bar)	53.0	60.0	66.6	73.2	79.7
Max pressure (bar)*	450	450	450	450	450
Max continuous speed - single speed (rpm)	100	90	85	80	70
Max continuous speed - two speed (rpm)	125	115	110	100	85
Max continuous power (kW)	110	110	110	110	110
Fluids	HL; HLP to DIN 51524 Other specified fluids are possible.				
Normal operating viscosity range	20 to 200 cSt				
Maximum intermittent viscosity range	10 to 2000 cSt				
Normal operating temperature range	+15° to +70° C				
Maximum intermittent temperature range	-20° to +80° C				
Fluid cleanliness	NAS 1638 class 9 / ISO code 18/15				

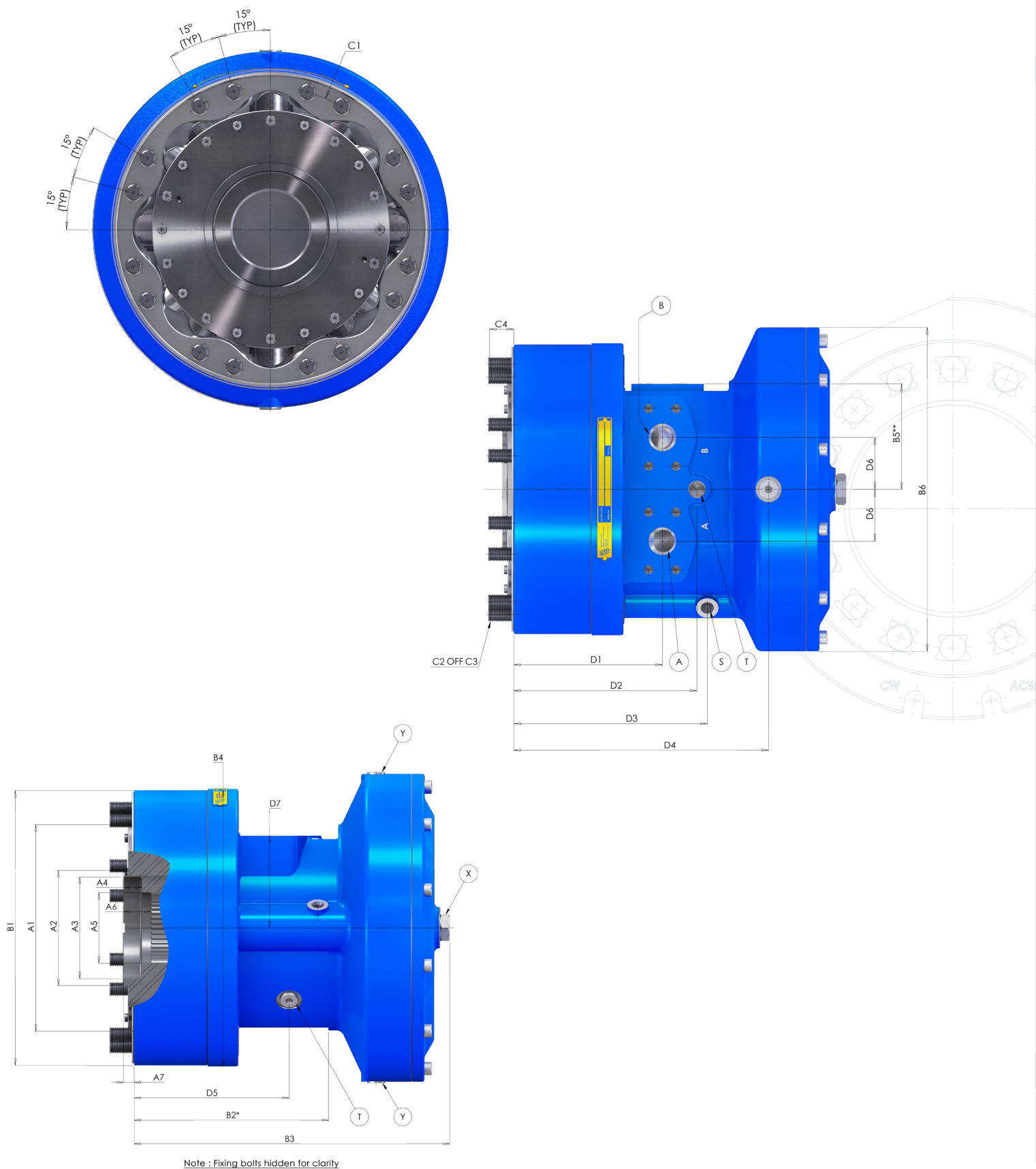
*Maximum values should only be applied for a small portion of the duty cycle.

General notes

XJ40

- All dimensions are in millimetres unless otherwise stated.
- Motor performance data is included to assist in the optimum selection of displacement and frame size. For further details contact Rotary Power.
- Maximum permissible case pressure for retracting piston to allow freewheeling is 6 bar.

Torque motor



Output dimensions Torque motor

Option	A1	A2	A3	A4	A5	A6	A7
Torque unit	ø252	ø140	ø124	23	ø86	34	13
Spline	DIN 5480: N85 x 2 30 x 41 x 9H						

General dimensions Torque motor

	B1	B2*	B3	B4	B5**	B6	Weight (approx)
Two speed	ø335	259	385	ø338	122	ø375	95 kg
One speed	ø335	248	374	ø338	122	ø375	88 kg

* Dimension includes cover plate and bolt heads for non-parking brake option.

** Dimension given with blanking plate fitted. See page 10 for dimensions with purge valve fitted.

Connection dimensions Torque motor

C1	C2	C3	C4
ø300	16	M16 x 2p	28

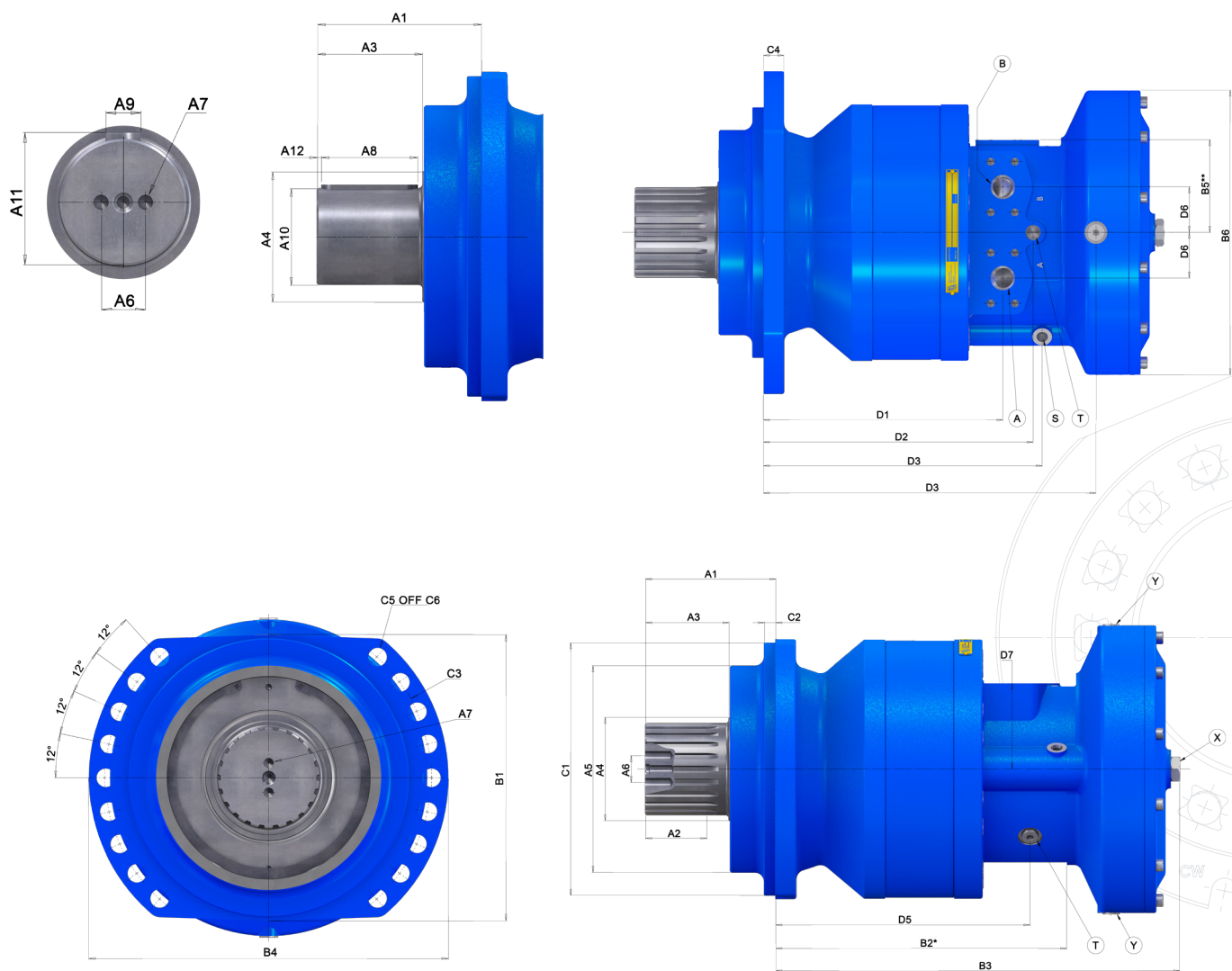
Porting dimensions Torque motor

	D1	D2	D3	D4	D5	D6	D7
Two speed	172	212	224	295	189	60	112
One speed	172	210	N/A	284	178	60	112

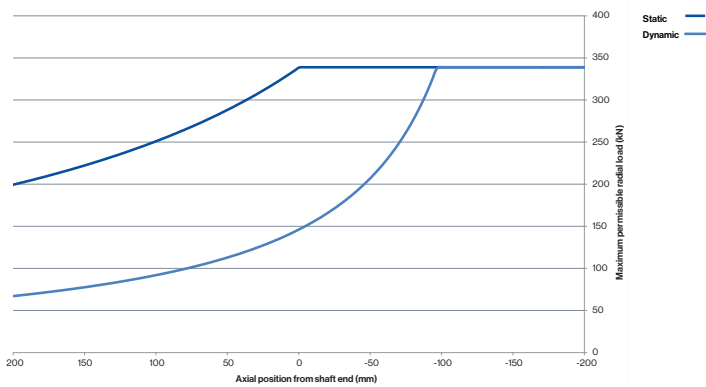
Port	Port specification	Port options		
		Standard	All SAE J514	All BSP ('G' ports)
A	Oil inlet/outlet ports	1¼" SAE J518, CODE 62 4 bolt flange (M12 - 1.75p tappings)	¾" SAE J514 (tapped 1⅙ - 12UNF)	G¾" BSP
B				
T	Drain port	½" SAE J514 (tapped ¾ - 16 UNF)		G½" BSP
X	Manual brake release port	¾" SAE J514 (tapped 1⅙ - 12 UNF)		G¾" BSP
Y	Hydraulic brake release port	½" SAE J514 (tapped ¾ - 16 UNF)		G½" BSP
S	Speed change port	⅜" SAE J514 (Tapped ⅙ - 18 UNF)		G⅜" BSP

Note: All dimensions given are in millimetres unless otherwise stated.

Shaft motor



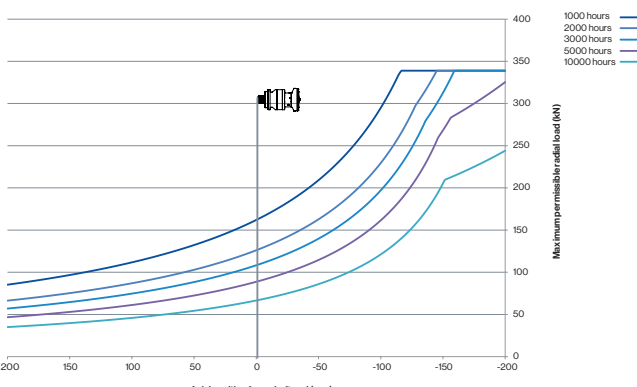
Radial load Shaft motor



Static radial load calculated with zero external axial load, zero torque and maximum displacement (5010cc).

Dynamic radial load envelope calculated with 350 bar pressure differential, zero external axial load, fully reversed bending and maximum displacement (5010cc).

L10 life at 150bar, 35rpm Shaft motor



To convert bearing lives from stated speed use the following formula:

$$\text{New life (hours)} = \frac{\text{plotted speed} \times \text{plotted life}}{\text{desired speed}}$$

Output dimensions Shaft motor

Option	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
Key A	170	N/A	109	ø135	ø270	35	2 x M14 x 2p	100	28	100	106
Spline D	170	80	109	ø135	ø270	35	2 x M14 x 2p	N/A	N/A	N/A	N/A
Spline	DIN 5480: W120 x 5 x 30 x 22 x 7h										

General dimensions Shaft motor

	B1	B2*	B3	B4	B5**	B6	Weight (approx)
Two speed	339	403	529	ø425	122	ø375	171 kg
One speed	339	392	518	ø425	122	ø375	164 kg

* Dimension includes cover plate and bolt heads for non-parking brake option.

** Dimension given with blanking plate fitted. See page 10 for dimensions with purge valve fitted.

Connection dimensions Shaft motor

C1	C2	C3	C4	C5	C6
ø330	15	ø385	27	16	ø22.5

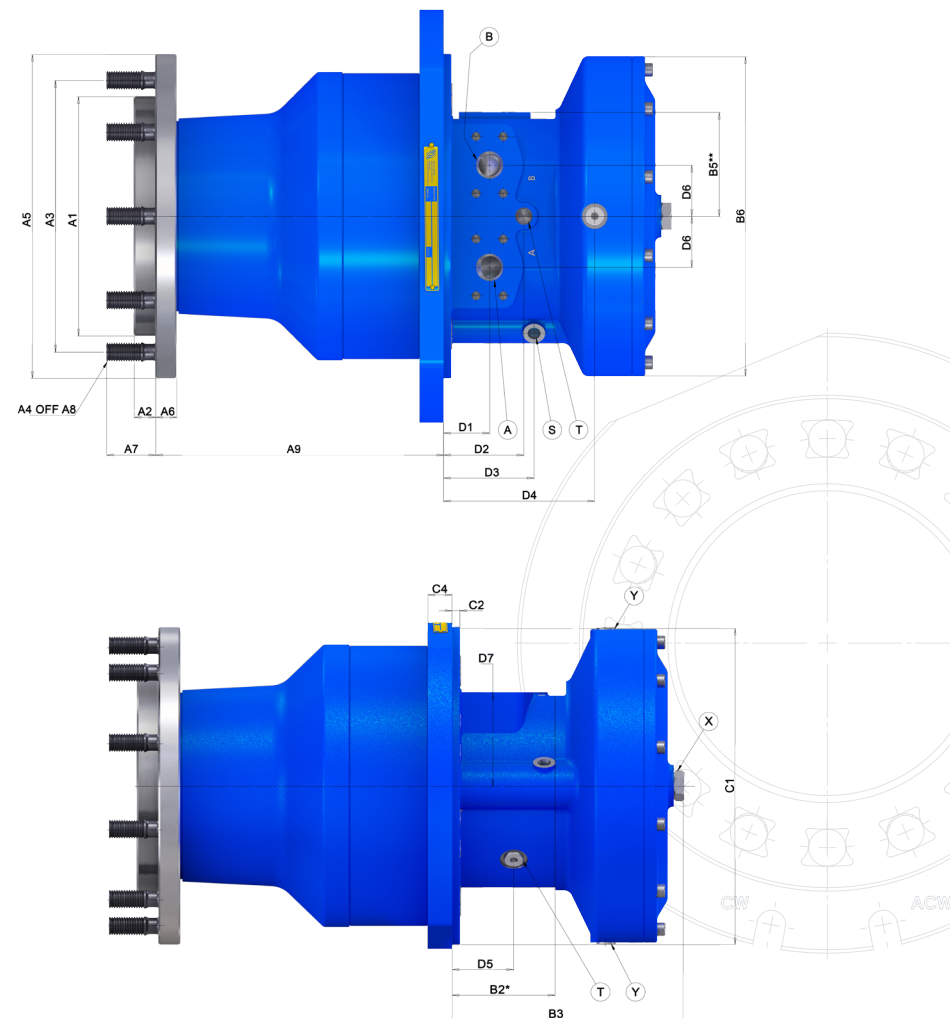
Porting dimensions Shaft motor

	D1	D2	D3	D4	D5	D6	D7
Two speed	316	356	368	439	333	60	112
One speed	54	92	N/A	428	322	60	112

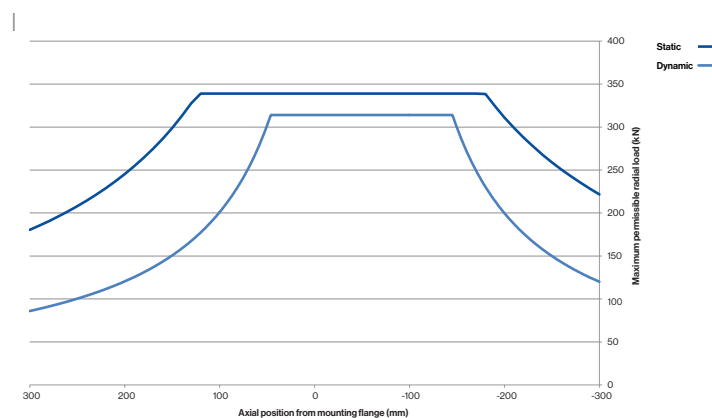
Port	Port specification	Port options		
A	Oil inlet/outlet ports	Standard	All SAE J514	All BSP ('G' ports)
B		1 1/4" SAE J518, CODE 62 4 bolt flange (M12 - 1.75p tappings)	3/4" SAE J514 (tapped 1 1/16 - 12UNF)	G 3/4" BSP
T	Drain port	1/2" SAE J514 (tapped 3/4 - 16 UNF)		
X	Manual brake release port	3/4" SAE J514 (tapped 1 1/16 - 12 UNF)		
Y	Hydraulic brake release port	1/2" SAE J514 (tapped 3/4 - 16 UNF)		
S	Speed change port	3/8" SAE J514 (tapped 9/16 - 18 UNF)		

Note: All dimensions given are in millimetres unless otherwise stated.

Wheel motor



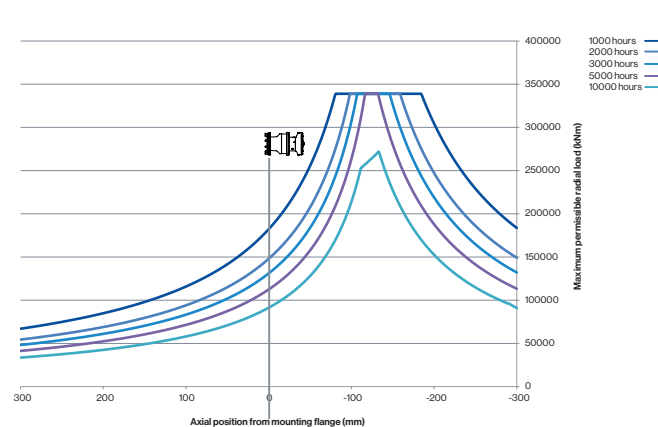
Radial load Wheel motor



Static radial load calculated with zero external axial load, zero torque and maximum displacement (5010cc).

Dynamic radial load envelope calculated with 350 bar pressure differential, zero external axial load, fully reversed bending and maximum displacement (5010cc).

L10 life at 150 bar, 35rpm Wheel motor



To convert bearing lives from stated speed use the following formula:

$$\text{New life (hours)} = \frac{\text{plotted speed} \times \text{plotted life}}{\text{desired speed}}$$

Output dimensions Wheel motor

Option	A1	A2	A3	A4	A5	A6	A7	A8	A9	
K	ø175	13	ø225	10	ø280	22	59	M22 x 1.5p	253	light duty
L	ø220	13	ø275	8	ø315	22	51	M20 x 1.5p	253	light duty
P	ø220	13	ø275	12	ø315	22	51	M20 x 1.5p	253	light duty
Q	ø280	25	ø335	10	ø380	25	58	M22 x 1.5p	338	standard duty

General dimensions Wheel motor

	B1	B2*	B3	B4	B5**	B6	Weight (approx)
Two speed	390	267	141	ø484	122	ø375	197 kg
One speed	339	392	130	ø484	122	ø375	190 kg

* Dimension includes cover plate and bolt heads for non-parking brake option.

** Dimension given with blanking plate fitted. See page 10 for dimensions with purge valve fitted.

Connection dimensions Wheel motor

C1	C2	C3	C4	C5	C6
ø380	13	ø385	24	16	ø22.5

Porting dimensions Wheel motor

	D1	D2	D3	D4	D5	D6	D7
Two speed	54	94	106	177	71	60	112
One speed	54	92	N/A	166	60	60	112

Port	Port specification	Port options		
A	Oil inlet/outlet ports	Standard	All SAE J514	All BSP ('G' ports)
B		1¼" SAE J518, CODE 62 4 bolt flange (M12 - 1.75p tappings)	¾" SAE J514 (tapped 1¼ - 12UNF)	G¾" BSP
T	Drain port	½" SAE J514 (tapped ¾ - 16 UNF)		G½" BSP
X	Manual brake release port	¾" SAE J514 (tapped 1¼ - 12 UNF)		G¾" BSP
Y	Hydraulic brake release port	½" SAE J514 (tapped ¾ - 16 UNF)		G½" BSP
S	Speed change port	¾" SAE J514 (tapped ¾ - 18 UNF)		G¾" BSP

Note: All dimensions given are in millimetres unless otherwise stated.

Parking brake

Please contact a Rotary Power engineer for more information regarding your particular requirements.

Extra options

Mechanical face seal

Wheel motors can be supplied with a mechanical face seal for additional protection when used in harsh environments.

Speed sensor

All XJ motors can be supplied with a proximity speed sensor for application where accurate speed measurement is critical.

Purge valve

All XJ motors can be supplied with a purge valve to aid with system cooling.

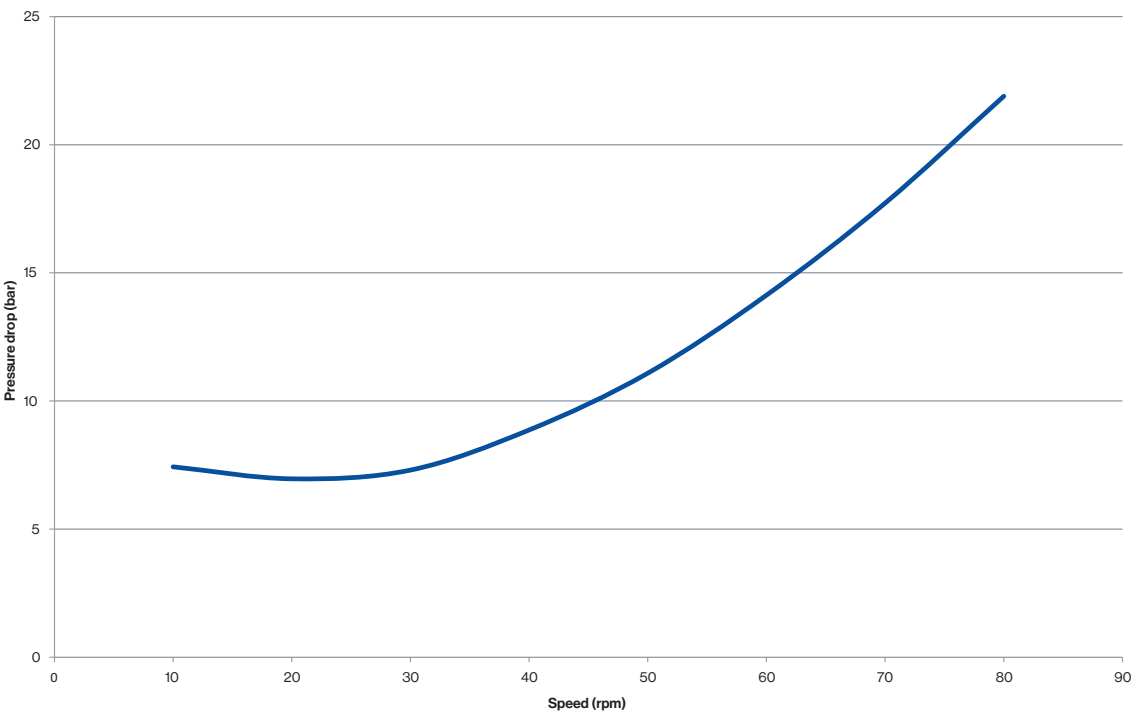
Note: when the purge valve is fitted, dimension B5 is 154mm in all motor configurations.

Note: this list of options is not exhaustive. Please contact Rotary Power if an option you require is not listed.

Performance

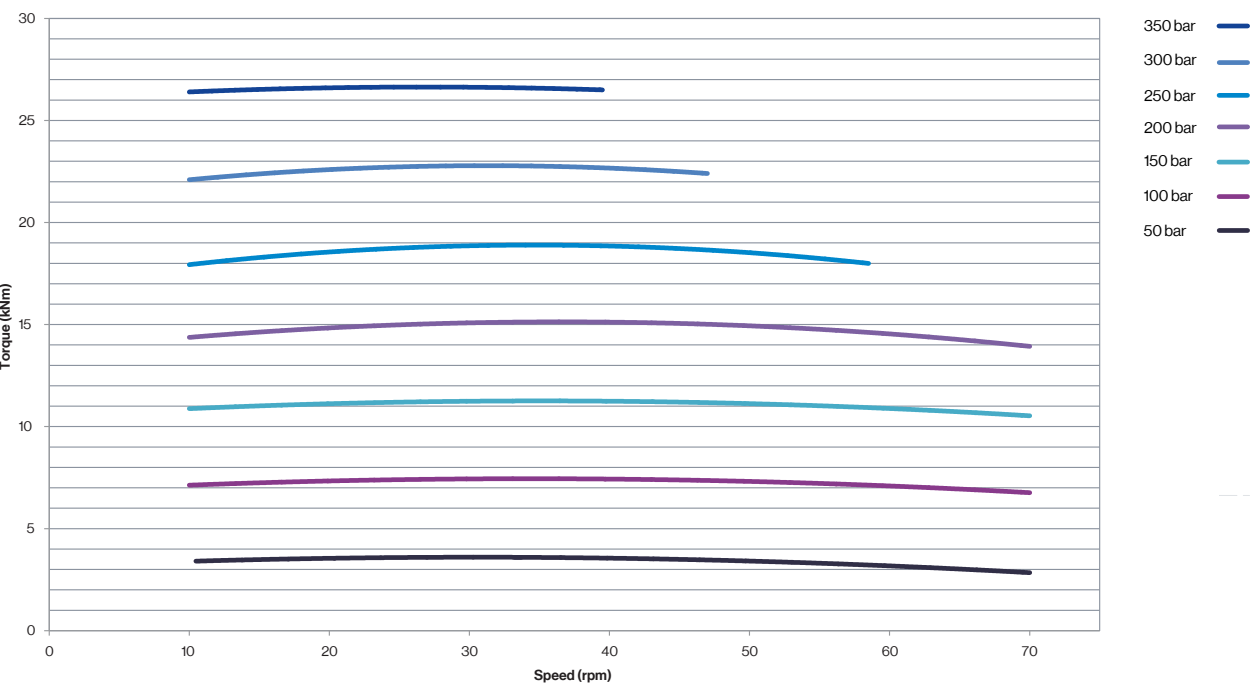
All performance graphs plotted for maximum displacement (5010cc) using ISO46 at 50°C.

No load pressure drop XJ40



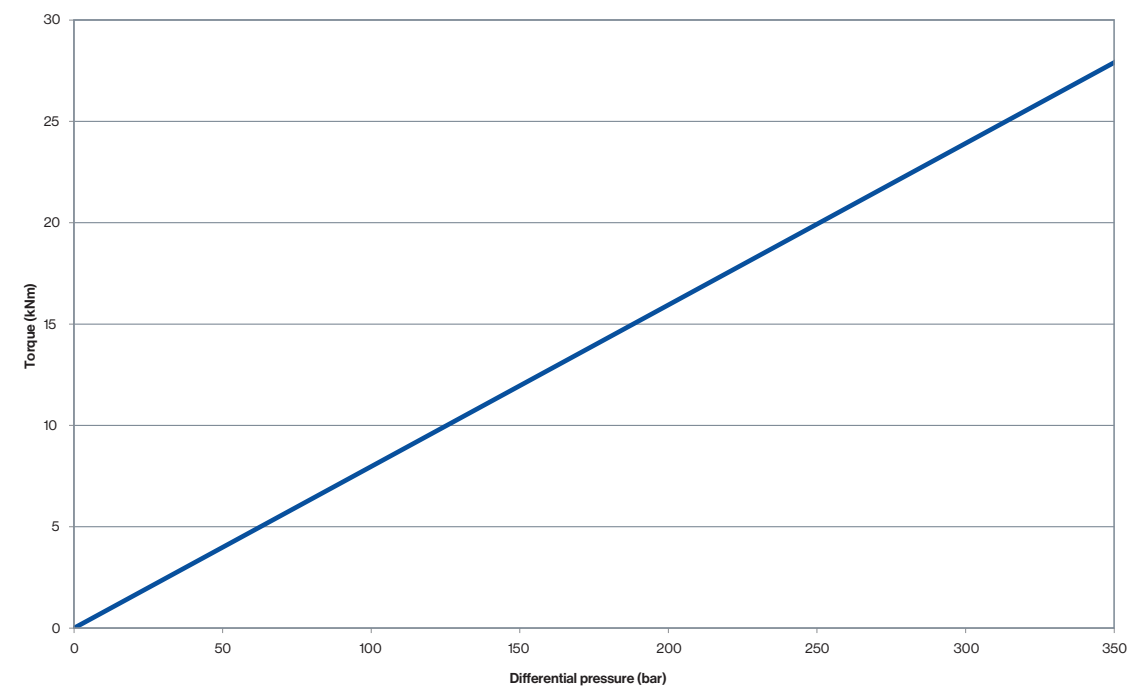
Note: this graph should be considered if the motor is in an 'over run' situation.

Torque output XJ40

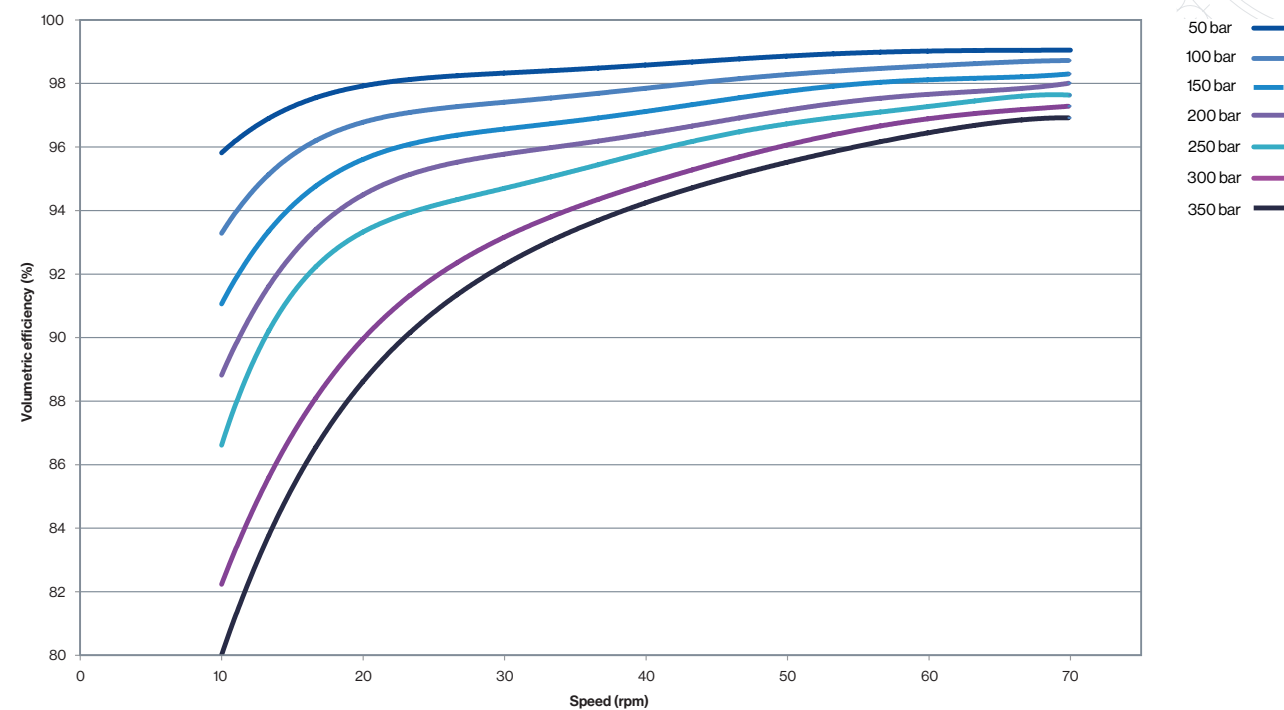


Performance

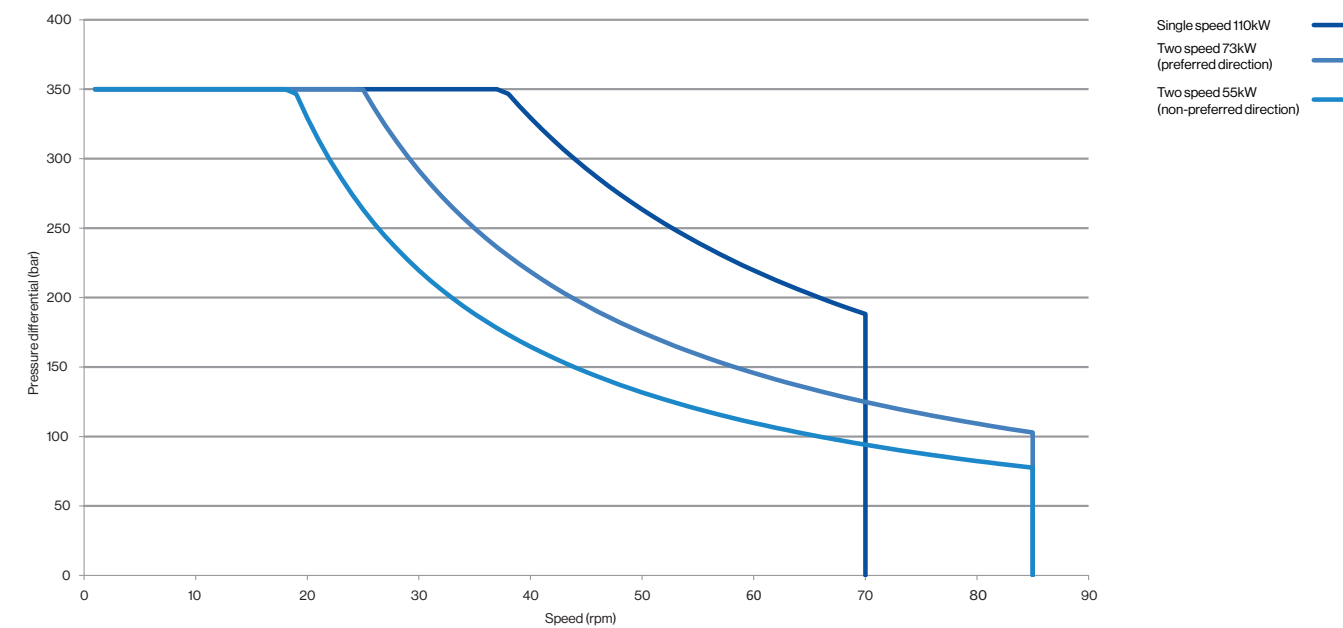
0 rpm torque XJ40



Volumetric efficiency vs speed XJ40



Power envelope XJ40



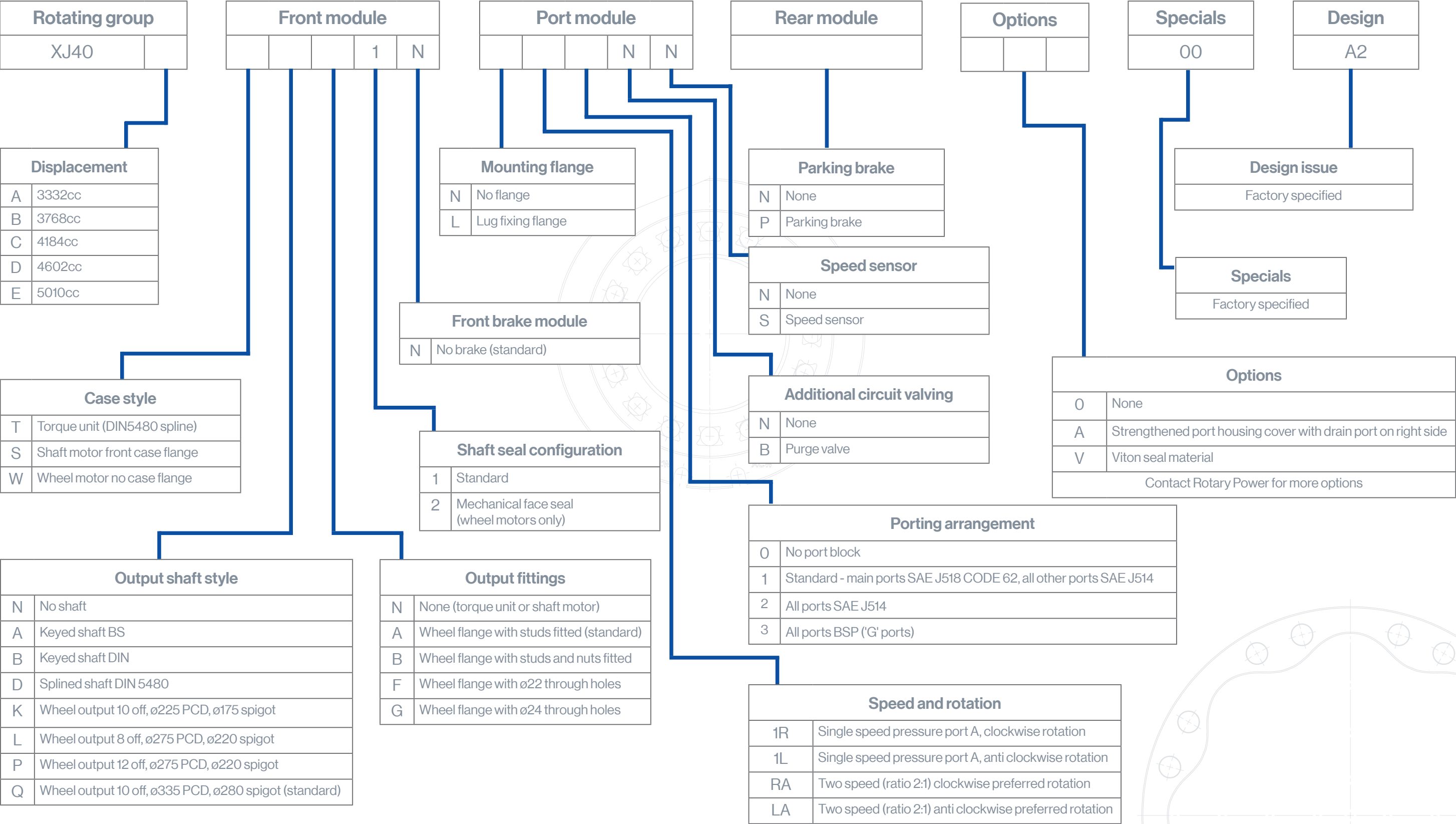
Freewheeling XJ40

Maximum permissible case pressure for retracting piston to allow freewheeling is 6 bar.

Motor specification code

Example: XJ40B SDN1N N1L1NN P 000 00 A2

XJ40, 3768CC, shaft motor, splined shaft DIN 5480, no fittings (shaft motor), standard seals, no front brake, no rear fixing flange, single speed pressure port 'A' anti clockwise rotation, standard main ports SAE J518 CODE 62, no additional circuit valving, no speed sensor, parking brake, no options, no allocated factory special codes, design issue A2.



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