



ATNU SUGUNA

Technical catalogue and operating manual



LIGHT-DUTY PEDESTAL ROTARY GEAR PUMPS

Bronze: ABZL025M to ABPL100

Cast iron: ACSL025M to ACZL100

Self-priming positive-displacement pumps

Bidirectional rotary gear pumps for viscous, clean liquids. Suitable for low-speed operation with smooth, pulseless flow.

Bronze: water-based fluids; 304 SS shafts; bronze gears; PTFE seal; -20 to 210°F. Cast iron: oil-based fluids only; steel gears and shafts; Viton or PTFE seal; Viton 32 to 280°F, PTFE -20 to 210°F.

Construction - bronze models

Model	NPT	Shaft	Casting	Gear	Bushing	Relief valve	Gasket	Seal
ABZL025M +	1/4	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL025M	1/4	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL025M	1/4	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE
ABZL025 +	1/4	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL025	1/4	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL025	1/4	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE
ABZL038 +	3/8	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL038	3/8	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL038	3/8	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE
ABZL050 +	1/2	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL050	1/2	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL050	1/2	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE
ABZL075 +	3/4	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL075	3/4	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL075	3/4	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE
ABZL100 +	1	304 SS	BR	BR	BR	NA	Cellulose	PTFE
ABBL100	1	304 SS	BR	BR	CG	NA	Cellulose	PTFE
ABPL100	1	304 SS	BR	BR	CG	SS & BR	Cellulose	PTFE

BR = bronze/brass; CG = carbon graphite; SS = stainless steel; + = grease nipple model. Maximum pressure listed by the manufacturer: 125 psi.

Model	NPT	Shaft	Casting	Gear	Bushing	Relief valve	Gasket	Packing / lip seal
ACSL025M	1/4	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL025M +	1/4	Steel	CI	Steel	CI	NA	Cellulose	PTFE
ACSL025	1/4	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL025 +	1/4	Steel	CI	Steel	CI	NA	Cellulose	PTFE
ACSL038	3/8	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL038 +	3/8	Steel	CI	Steel	CI	NA	Cellulose	PTFE
ACSL050	1/2	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL050 +	1/2	Steel	CI	Steel	CI	NA	Cellulose	PTFE
ACSL075	3/4	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL075 +	3/4	Steel	CI	Steel	CI	NA	Cellulose	PTFE
ACSL100	1	Steel	CI	Steel	CI	NA	Cellulose	Viton lip seal
ACZL100 +	1	Steel	CI	Steel	CI	NA	Cellulose	PTFE

CI = cast iron. Viton lip seals have 300-series stainless-steel cases. NPT dimensions are female inlet/outlet ports.

Important operating notes

- Use only non-abrasive, particle-free liquids.
- Wet gears and seals before starting; never dry-run.
- Where a discharge valve can close, install pressure-relief protection.
- The operating section states 100 psi maximum system pressure; the specification states 125 psi maximum. Use 100 psi as the conservative operating limit unless ATNU confirms otherwise.

Bronze	Cast iron	NPT	RPM	Lift ft	Free GPM	HP	25 GPM	HP	50 GPM	HP	75 GPM	HP	100 GPM	HP
ABZL025M	ACZL025M	1/4	1200	2	1.5	1/6	1.4	1/6	1.3	1/4	1.2	1/4	1.1	1/3
ABBL025M	ACSL025M		1440	2.1	1.7	1/6	1.7	1/4	1.6	1/4	1.6	1/3	1.5	1/3
ABPL025M			1725	2.5	2.1	1/6	2.0	1/4	1.9	1/4	1.9	1/3	1.8	1/3
ABZL025	ACZL025	1/4	1200	2.2	3.1	1/3	3.1	1/3	3.0	1/2	2.9	1/2	2.8	3/4
ABBL025	ACSL025		1440	2.9	3.8	1/2	3.8	1/2	3.7	3/4	3.6	3/4	3.5	1
ABPL025			1725	3.5	4.6	1/2	4.6	1/2	4.5	3/4	4.4	3/4	4.2	1
ABZL038	ACZL038	3/8	1200	5.7	4.7	1/2	4.6	1/2	4.5	3/4	4.4	3/4	4.2	1
ABBL038	ACSL038		1440	6.6	5.6	3/4	5.5	3/4	5.4	1	5.3	1	5.2	1-1/2
ABPL038			1725	7.9	6.6	3/4	6.6	3/4	6.5	1	6.4	1	6.2	1-1/2
ABZL050	ACZL050	1/2	1200	6.7	7.1	1/2	7.0	1/2	6.9	3/4	6.8	3/4	6.6	1
ABBL050	ACSL050		1440	10.3	8.6	3/4	8.5	3/4	8.4	1	8.3	1	8.1	1-1/2
ABPL050			1725	12.3	10.3	3/4	10.2	3/4	10.1	1	9.9	1	9.7	1-1/2
ABZL075	ACZL075	3/4	1200	9.3	13.6	1	13.5	1	13.4	2	13.2	2	12.0	2
ABBL075	ACSL075		1440	12.7	16.3	1-1/2	16.3	1-1/2	16.1	2	16.0	2	15.7	2
ABPL075			1725	15.2	19.6	1-1/2	19.5	1-1/2	19.3	1-1/2	19.2	2	18.8	2
ABZL100	ACZL100	1	1200	11.7	15.9	1	15.8	1	15.6	1-1/2	15.4	2	15.0	2
ABBL100	ACSL100		1440	16.3	19.7	1-1/2	19.6	1-1/2	19.4	2	19.3	2	18.3	3
ABPL100			1725	19.5	23.6	1-1/2	23.5	1-1/2	23.3	2	23.1	2	21.9	3

Flow in GPM. Suction-lift values for packing-seal models may be reduced by packing tightness or liquid viscosity.

Dimensions (Inches)

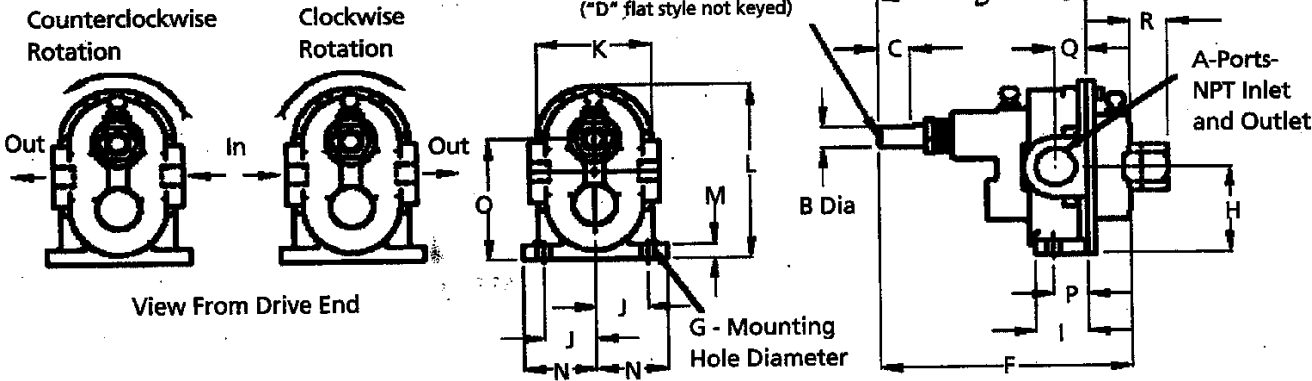
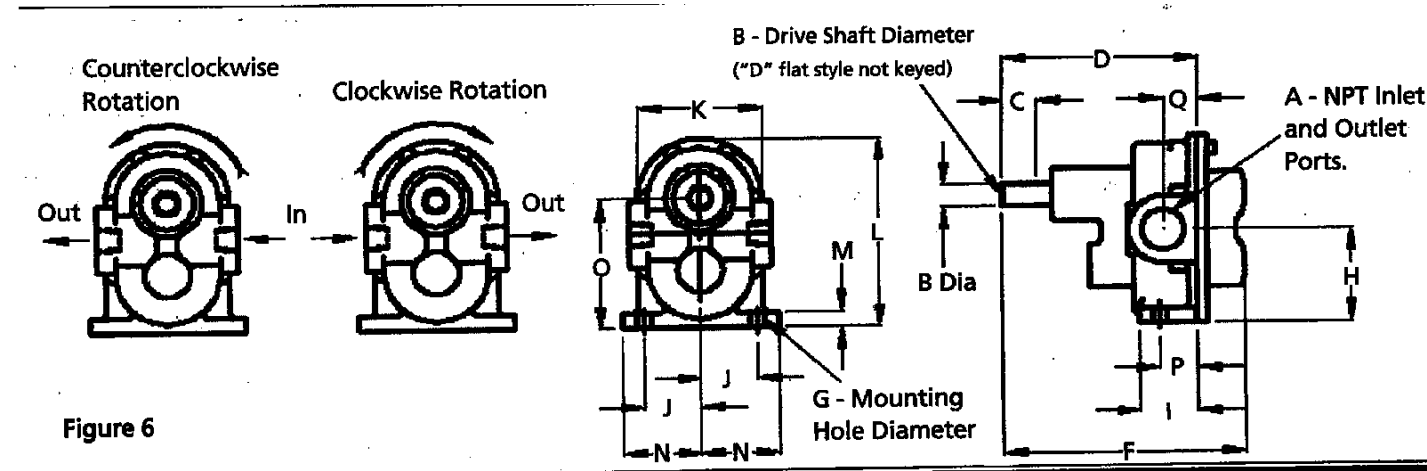


Figure 5

Model group	A	B	C	D	F	G	H	I	J	K
025M	1/4	1/2	7/8	5	5 1/2	9/32	1 3/4	1 1/8	7/8	2 1/2
025	1/4	1/2	7/8	5	6	9/32	1 5/8	1 1/4	1 1/8	2 3/8
038	3/8	5/8	1	5 3/8	6 1/2	25/64	1 7/8	1 1/4	1 7/16	2 3/4
050	1/2	5/8	1	5 3/4	7	25/64	1 7/8	1 1/4	1 7/16	2 3/4
075	3/4	5/8	1	5 3/4	7	25/64	2 9/16	1 1/2	1 5/8	3 3/8
100	1	5/8	1	6	7 1/4	25/64	2 9/16	1 1/2	1 5/8	3 3/8

Group	L	M	N	O	P	Q	R*
025M	3 9/16	3/16	1 3/4	2 5/16	11/16	1/2	1 3/16
025	3 9/16	3/16	1 1/2	2 3/8	13/16	15/32	1 3/8
038	4	1/4	1 7/8	2 5/8	3/4	9/16	1 3/8
050	4	1/4	1 7/8	2 5/8	3/4	5/8	1 3/8
075	5 3/16	1/4	2	3 9/16	15/16	3/8	1 27/32
100	5 3/16	1/4	2	3 9/16	15/16	13/16	1 27/32

Model group includes ABZL, ABBL, ABPL and corresponding ACZL size. R applies only to pressure-relief-valve models. Tolerance: ±1/8 in.



Model	A	B	C	D	F	G	H	I	J	K	L	M	N	O	P	Q
ACSL025M	1/4	1/2	7/8	3 3/8	4 1/2	9/32	1 3/4	1 1/8	7/8	2 1/2	3 9/16	3/16	1 3/4	2 5/16	11/16	1/2
ACSL025	1/4	1/2	7/8	3 7/8	4 1/2	9/32	1 11/16	1 9/32	1 1/8	2 3/8	3 9/16	3/16	1 1/2	2 3/8	13/16	15/32
ACSL038	3/8	5/8	1	4	5 3/8	25/64	1 7/8	1 9/32	1 7/16	2 3/4	4	5/16	1 7/8	2 5/8	3/4	9/16
ACSL050	1/2	5/8	1	4 1/2	5 5/8	25/64	1 7/8	1 9/32	1 7/16	2 3/4	4	5/16	1 7/8	2 5/8	3/4	5/8
ACSL075	3/4	5/8	1	4 1/2	5 5/8	25/64	2 9/16	1 1/2	1 5/8	3 3/8	5 3/16	3/8	2	3 9/16	15/16	3/4
ACSL100	1	5/8	1	4 3/4	6	25/64	2 9/16	1 1/2	1 5/8	3 3/8	5 3/16	3/8	2	3 9/16	15/16	13/16

Tolerance: ±1/8 in. Rotation is viewed from the drive end.

Installation

- Place pump close to the liquid source; keep suction short and direct.
- Mount on a flat, solid base and align shafts carefully.
- Support pump and piping independently.

Suction

- Use suction pipe at least equal to port size; increase one size for long runs.
- Seal all joints airtight and fit a suction filter.
- Foot valve required by the source above 500 SSU or specific gravity above 1.4.

Discharge protection

- Never run against a closed discharge.
- Set relief valve 5 psi above normal discharge pressure.
- Do not bypass through an internal relief valve continuously for more than one minute.

Drive

- Clockwise rotation: right-hand port is discharge. Counterclockwise: left-hand port is discharge.
- Relief valve must be on the discharge side.
- Use flexible coupling; maximum recommended pump speed 1725 rpm.

Start-up

- Wet gears and seals, prime fully and never dry-run.
- Reprime after each stop if no foot/check valve is fitted.
- Packing leakage target: one drop per 20-30 seconds, or 10 drops in 3-5 minutes.

Maintenance

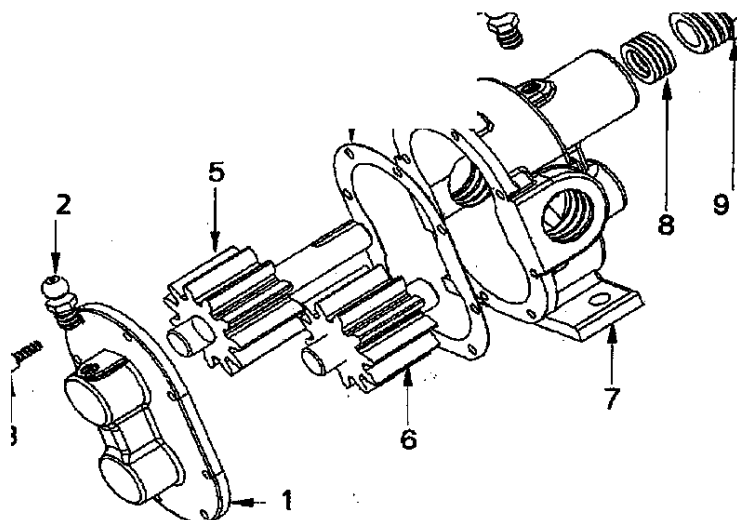
- Disconnect and lock out power before servicing.
- Check alignment, leakage, noise and temperature regularly.
- Clean suction strainer and foot valve. Drain before freezing.

Common faults

- Pump does not run: prime, repair suction leaks, clean foot valve, reduce suction lift.
- Noise/vibration: inspect suction piping, shaft alignment, gears, seals and gasket.

Exploded view

Use the reference number in the drawing and the exact part number in the table. For enquiries: +91 422 4372108 | service@atnugroup.com



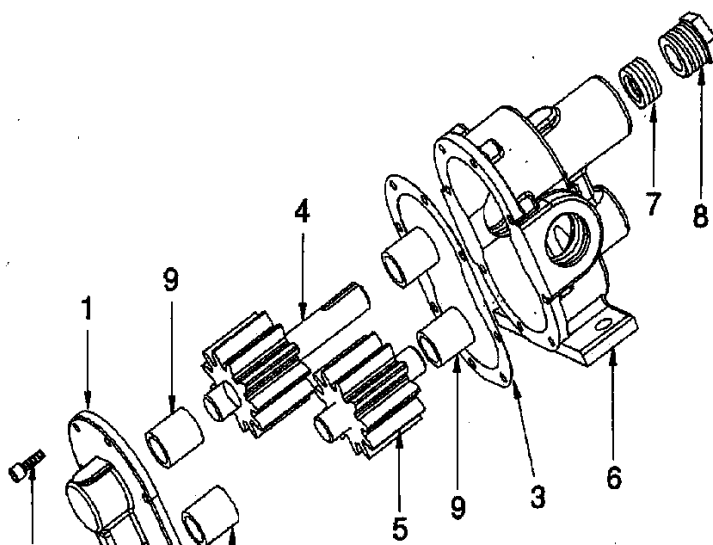
Ref	Description	ABZL025M	ABZL025	ABZL038	ABZL050	ABZL075	ABZL100	Qty
1	Cover	*	*	*	*	*	*	N/A
2	Grease fitting	FAS057	FAS057	FAS057	FAS057	FAS057	FAS057	2
3	Screw	+	+	+	+	+	+	N/A
4	Gasket	RUB023	GK004	GK005	GK005	GK006	GK006	1
5	Drive gear	DSWG001	DSWG002	DSWG003	DSWG004	DSWG005	DSWG006	1
6	Driven gear	DNSWG001	DNSWG002	DNSWG003	DNSWG004	DNSWG005	DNSWG006	1
7	Body	*	*	*	*	*	*	N/A
8a	PTFE packing	RUB024	RUB025					3
8b	PTFE packing			RUB025A	RUB025A	RUB025A	RUB025A	4
9	Packing nut	FAS058	FAS061	FAS062	FAS062	FAS062	FAS062	1

Ref	Description	ACZL025M	ACZL025	ACZL038	ACZL050	ACZL075	ACZL100	Qty
1	Cover	*	*	*	*	*	*	N/A
2	Grease fitting	FAS057	FAS057	FAS057	FAS057	FAS057	FAS057	2
3	Screw	+	+	+	+	+	+	N/A
4	Gasket	RUB026	GK004	GK005	GK005	GK006	GK006	1
5	Drive gear	DSWG013	DSWG014	DSWG015	DSWG016	DSWG017	DSWG018	1
6	Driven gear	DNSWG007	DNSWG008	DNSWG009	DNSWG010	DNSWG011	DNSWG012	1
7	Body	*	*	*	*	*	*	N/A
8a	PTFE packing	RUB024	RUB025					3
8b	PTFE packing			RUB025A	RUB025A	RUB025A	RUB025A	4
9	Packing nut	FAS058	FAS061	FAS062	FAS062	FAS062	FAS062	1

* Part not available (may be supplied on request). + Check local hardware availability. Screw: 1/2 in, 10-24 fully threaded, stainless steel, 3/16 in hex cap head.

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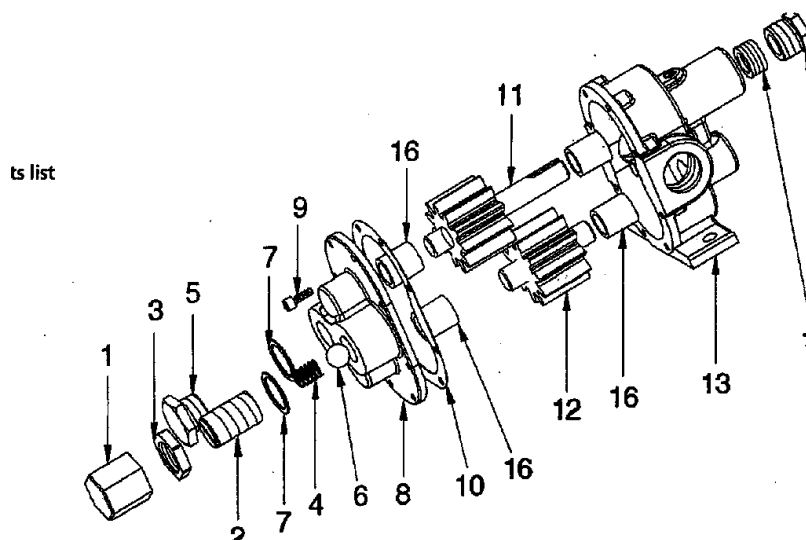


Ref	Description	ABBL025M	ABBL025	ABBL038	ABBL050	ABBL075	ABBL100	Qty
1	Cover	*	*	*	*	*	*	N/A
2	Screw	+	+	+	+	+	+	N/A
3	Gasket	RUB023	GK004	GK005	GK005	GK006	GK006	1
4	Drive gear	DSWG001	DSWG002	DSWG003	DSWG004	DSWG005	DSWG006	1
5	Driven gear	DNSWG001	DNSWG002	DNSWG003	DNSWG004	DNSWG005	DNSWG006	1
6	Body	*	*	*	*	*	*	N/A
7a	PTFE packing	RUB024	RUB025					3
7b	PTFE packing			RUB025A	RUB025A	RUB025A	RUB025A	4
8	Packing nut	FAS058	FAS061	FAS062	FAS062	FAS062	FAS062	1
9	Bushing	CG013	CG015	CG009	CG009A	CG009A	CG009	4

* Part not available (may be supplied on request). + Check local hardware availability. Screw: 1/2 in, 10-24 fully threaded, stainless steel, 3/16 in hex cap head.

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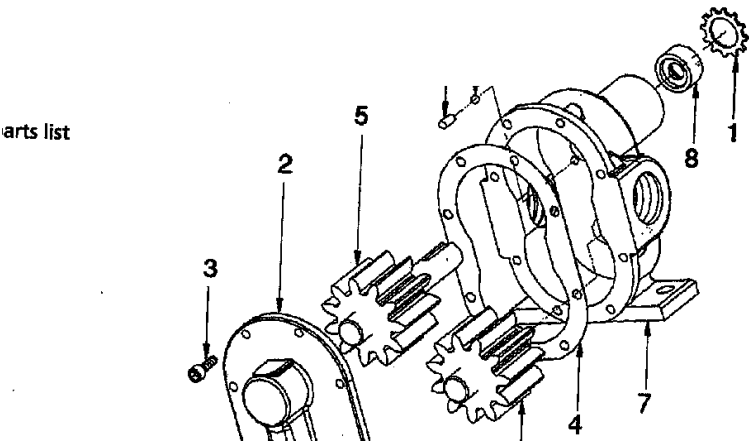


Ref	Description	ABPL025M	ABPL025	ABPL038	ABPL050	ABPL075	ABPL100	Qty
1	Valve cap	*	*	*	*	*	*	1
2	Valve stem	*	*	*	*	*	*	1
3	Valve locknut	*	*	*	*	*	*	1
4	Valve spring	SPR005	SPR006	SPR006	SPR006	SPR007	SPR007	1
5	Hex plug	*	*	*	*	*	*	1
6	Ball	*	*	*	*	*	*	1
7	Valve gasket	WAS006	WAS007	WAS007	WAS007	WAS008	WAS008	1
8	Cover	*	*	*	*	*	*	N/A
9	Screw	+	+	+	+	+	+	N/A
10	Gasket	RUB023	GK004	GK005	GK005	GK006	GK006	1
11	Drive gear	DSWG001	DSWG002	DSWG003	DSWG004	DSWG005	DSWG006	1
12	Driven gear	DNSWG001	DNSWG002	DNSWG003	DNSWG004	DNSWG005	DNSWG006	1
13	Body	*	*	*	*	*	*	N/A
14a	PTFE packing	RUB024	RUB025					3
14b	PTFE packing			RUB025A	RUB025A	RUB025A	RUB025A	4
15	Packing nut	FAS058	FAS061	FAS062	FAS062	FAS062	FAS062	1
16	Bushing	CG013	CG015	CG009	CG009A	CG009A	CG009	4

* Part not available (may be supplied on request). + Check local hardware availability. Screw: 1/2 in, 10-24 fully threaded, stainless steel, 3/16 in hex cap head.

Exploded view

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Ref	Description	ACSL025M	ACSL025	ACSL038	ACSL050	ACSL075	ACSL100	Qty
1	Retaining ring	FAS080	FAS080	FAS083	FAS083	FAS083	FAS083	1
2	Cover	*	*	*	*	*	*	N/A
3	Screw	+	+	+	+	+	+	N/A
4	Gasket	RUB026	GK004	GK005	GK005	GK006	GK006	1
5	Drive gear	DSWG007	DSWG008	DSWG009	DSWG010	DSWG011	DSWG012	1
6	Driven gear	DNSWG007	DNSWG008	DNSWG009	DNSWG010	DNSWG011	DNSWG012	1
7	Body	*	*	*	*	*	*	N/A
8	Lip seal, Viton	MS009	MS009	MS010	MS010	MS010	MS010	1
9	Ball	*	*	*	*	*	*	2
10	Retainer pin	*	*	*	*	*	*	2

* Part not available (may be supplied on request). + Check local hardware availability. Screw: 1/2 in, 10-24 fully threaded, stainless steel, 3/16 in hex cap head.

Table 1 - viscosity vs. speed

Viscosity (SSU)	Speed (rpm)
50-500	1725
1,200	1600
2,500	1300
7,000	1000
20,000	600
50,000	400
100,000	200

Table 2 - horsepower increase (%)

psi	500	1,000	5,000	10,000	50,000	100,000
2	10	20	40	80	120	150
20	12	25	50	90	150	200
40	15	30	60	105	180	250
60	20	40	80	120	220	300
80	25	50	100	160	260	350
100	30	60	120	200	300	400

Recommended installation arrangement

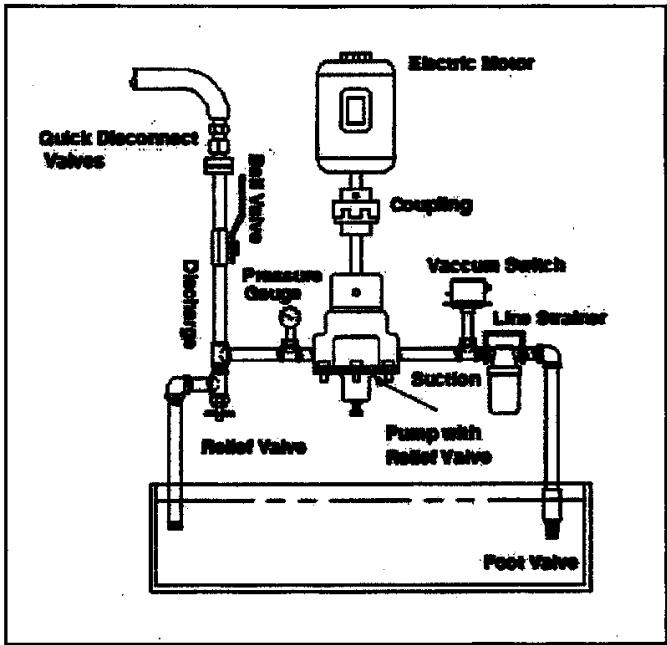


Figure 17 Gear Pump Installation

Increase suction/discharge piping by at least one pipe size - preferably two - above the pump-port size for viscous service. Fit a foot valve and strainer on suction, and a pressure gauge, isolating valve and pressure-relief valve on discharge. Connect the pump to the motor with a coupling.