316 Stainless Steel Rotary Close-Coupled External Gear Pumps

Description

Shertech self-priming, positive displacement, external rotary gear pumps operate bi-directionally (reversible) and provide a nearly pulseless flow for a wide range of industrial, marine, agricultural, and commercial chemical-duty applications. Mounted directly to NEMA frame AC Totally-Enclosed Fan-Cooled (TEFC) motors using an easy-installation package, or as pump heads only for custom installations. Single-phase motors are thermally overload protected; 3-phase motors are not. Ryton PPS (Polyphenylene Sulfide) spur gears provide quiet operation and chemical compatibility with no metal-to-metal contact. Pumps can operate in a temperature range of 32° to 280° F.

Quality features include a keyed 316 stainless steel shaft supported by a ball bearing and carbon graphite bushings. Wet-end parts are constructed of 316 stainless steel, Ryton PPS, graphite, graphoil, carbon, ceramic, and Viton or Teflon®.

Uses: For use with non-particulate and non-abrasive fluids compatible with pump wet-end construction component materials.

- Capacities up to 24.8 GPM.
- Maximum pressure to 125 PSI and working casing pressure to 200 PSI.
- Max. RPM: 1725.
- Suction lift to 19.5 ft.
- Temperature ranges from 32° to 280° F.
- Large female NPT ports allow use with viscous fluids.
- Pumps are close-coupled with electric motors to handle up to 500 SSU at 1725 RPM or run at reduced speeds to handle a wide range of pump fluid viscosities and specific gravity up to 100,000 SSU. (Maximum torque loads are found in the performance chart.)
- Viton or Teflon® mechanical seals (standard) with carbon on ceramic faces with engineered flush chamber for internal or external flush to handle viscosities beyond 2000 SSU.
- Pumps can operate bi-directionally (reversible).

REPAIR SEALS AND OPTIONS – Standard seals are Viton or Teflon® (Buna-N is optional) with carbon on ceramic faces. Seals can be located in the repair parts list pages in the owner's manual. When switching between standard and optional mechanical seals, be sure to order the matching o-rings in the same material. These can be found in the repair parts list pages of this manual.

Optional Close-Coupled Gear Speed Reducers are available that mount directly between pump and motor to reduce pump speed for high viscosity or high specific gravity applications (See Appendix 2 in the owner's manual).

NOTE: This series of gear pumps is also available as pedestal models for custom applications.

WARNING: Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmospheres. When pumping hazardous or dangerous materials, use only in a room or area designated for that purpose. For your protection, always wear proper clothing, eye protection, etc. in case of any malfunction. For proper handling techniques and cautions, contact your chemical supplier, insurance company and local agencies (fire dept., etc.). Failure to comply with this warning could result in personal injury and/or property damage.

Source: Owner's Manual L-4089 (11/07)

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Model Ordering Codes and Options

Example Model: GMSV4A (will require 1½ HP ODP motor with >1.15 Service Factor*)
(Model pictured above is pump head without motor.)

(1) GM	(2) S	(3) V	(4) 4	(5) A	(6)	(7)

1st	2nd	3rd	4th	5th	6th	7th
Mounting	Material	Seal (Mech)	Gear** Size: Ports	Motor-Mounted Only		
				Brackets	HP	AC Type
GM: Gear Motor Mount	S: 316 Stainless Steel	V: Viton T: Teflon	2: 3/8" 4: 1/2" 6: 1"	A: 56C B: 143/145TC C: 182/184TC	1: 1/3 2: 1/2 3: 3/4 4: 1 5: 1½ 6: 2 7: 3	"Blank": no code single phase ODP motor 3: 3 phase ODP motor T: 1 phase TEFC 3T: 3 phase TEFC

NOTE: Not all order code combinations (configurations) are standard models available from the manufacturer. Custom model configurations may require ordering standard components and/or optional parts that will need to be assembled by the customer.

Manufacturer reserves the right to change model order codes, standard models, specifications, and performance without notification.

(*) ODP motors have > 1.15 service factors. Due to service factor, it is recommended TEFC motors are oversized by one HP increment.

(**) Gears are made of Ryton PPS (Polyphenylene Sulfide).

Maximum motor speed is 1725 RPM.

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Performance (with Oil)

Viton Pump Models	Teflon Pump Models	*Port Size	Max. Input Torque in.-lbs.	Pump RPM	Suction** Lift (ft)	GPM Pumping 10 Wt. Oil at 70° F (500 SSU) Free Flow GPM	HP	25 PSI GPM	HP	50 PSI GPM	HP	75 PSI GPM	HP	100 PSI GPM	HP	125 PSI GPM	HP
GMSV2A	GMST2A	3/8"	45	900	1.5	2.5	1/4	2.5	1/4	2.4	1/4	2.3	1/4	2.1	1/4	1.8	1/3
GMSV2A	GMST2A	3/8"	45	1200	2.2	3.3	1/4	3.3	1/4	3.2	1/4	3.1	1/3	2.9	1/3	2.6	1/2
GMSV2A	GMST2A	3/8"	45	1725	3.5	4.8	1/4	4.8	1/3	4.7	1/2	4.6	1/2	4.4	3/4	4.1	3/4
GMSV2A3T	GMST2A3T	3/8"	45	1725	3.5	4.8	1/4	4.8	1/3	4.7	1/2	4.6	1/2	4.4	3/4	4.1	3/4
GMSV2A33T	GMST2A33T	3/8"	45	1725	3.5	4.8	1/4	4.8	1/3	4.7	1/2	4.6	1/2	4.4	3/4	4.1	3/4
GMSV4A	GMST4A	1/2"	90	900	5.1	5.6	1/3	5.5	1/3	5.4	1/2	5.3	3/4	5.0	1	4.5	1
GMSV4A	GMST4A	1/2"	90	1200	6.7	7.5	1/3	7.4	1/2	7.3	3/4	7.2	1	6.9	1	6.4	1½
GMSV4A	GMST4A	1/2"	90	1725	12.3	10.8	1/2	10.7	3/4	10.6	3/4	10.5	1	10.2	1½	9.7	1½
GMSV4A5T	GMST4A5T	1/2"	90	1725	12.3	10.8	1/2	10.7	3/4	10.6	3/4	10.5	1	10.2	1½	9.7	1½
GMSV4A53T	GMST4A53T	1/2"	90	1725	12.3	10.8	1/2	10.7	3/4	10.6	3/4	10.5	1	10.2	1½	9.7	1½
GMSV6C	GMST6C	1"	160	900	8.1	12.6	1/2	12.5	3/4	12.3	1	12.1	1	11.7	1½	11.1	1½
GMSV6C	GMST6C	1"	160	1200	11.7	16.7	3/4	16.6	1	16.4	1½	16.2	1½	15.8	2	15.2	2
GMSV6C	GMST6C	1"	160	1725	19.5	24.8	3/4	24.7	1	24.5	1½	24.3	2	23.9	3	23.3	3
GMSV6C7T	GMST6C7T	1"	160	1725	19.5	24.8	3/4	24.7	1	24.5	1½	24.3	2	23.9	3	23.3	3
GMSV6C73T	GMST6C73T	1"	160	1725	19.5	24.8	3/4	24.7	1	24.5	1½	24.3	2	23.9	3	23.3	3

Test data taken on SAE 10 wt. oil at 70° F. (500 SSU).
Performance in water will decrease by about 10%, and HP required will also be reduced by 10% (see the chart below).
Pump performance when pump is new. As pump wears, the performance will decrease.
(*) Female NPT inlet and outlet (in inches).
(**) Suction lift requires wetted gears and primed seal chamber.

NOTES: Max. PSI = 125, Max. Viscosity = 500 SSU at 1725 RPM with standard spur gears, Max. RPM = 1725
Max. Specific Gravity = 1.1 at 125 PSI, up to 1.6 at lower PSI & viscosity. Max. Input Torque = See chart above.
Reverse Rotation = Pumps can be run in reverse rotation.
The pump relationship between volume (GPM), pressure (PSI), speed (RPM) and horsepower is shown on performance chart in Shertech Motor Manual form L-4082. When pumping a more viscous liquid, a slower speed, a larger pipe size pump, and possibly a larger motor should be selected.
Manufacturer reserves the right to change performance without notification.

Price List and Specifications for Pump Heads Only (Motors not included)

List Price	Model	NEMA Motor Frame Required	Max. RPM	Pump Shaft Size	Required Motor Shaft	Motor Adapter	PUMP CONSTRUCTION (Wet End) Port*	Body & Cover Castings	Gear Material	Shaft, Keys & Clip	Gasket Material	O-Rings & Seals**	Ship Wt. (lbs.)
	Viton Models												
$	GMSV2A	56C	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton PPS	316 SS	Graphoil	Viton	8.9
$	GMSV4A	56C	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton PPS	316 SS	Graphoil	Viton	17.5
$	GMSV6C	182/184TC	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton PPS	316 SS	Graphoil	Viton	23.1
	Teflon Models												
$	GMST2A	56C	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton PPS	316 SS	Graphoil	Teflon®	8.9
$	GMST4A	56C	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton PPS	316 SS	Graphoil	Teflon®	17.5
$	GMST6C	182/184TC	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton PPS	316 SS	Graphoil	Teflon®	23.1

SS = Stainless Steel CI = Cast Iron CG = Carbon Graphite Ryton = PPS (Polyphenylene Sulfide)
(*) Female NPT inlet and outlet (in inches).
(**) Standard Shaft Seals have carbon on ceramic faces and 316 SS components.

NOTE: Driver data is subject to change without notice; see label on driver for specifications and wiring information.
Manufacturer reserves the right to change specifications without notification.

To Order Optional Motors

For custom applications or configurations, select a pump head from above and a C-Frame motor from the motor section of this catalog.

Source: Owner's Manual L-4089 (11/07)

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Price List and Specifications for Standard Motor-Mounted Models

List Price	Model	Motor HP	AC Motor Type	NEMA Frame	Motor Voltage*	Amps	PH**	Pump Motor RPM	Shaft Size	Motor Shaft	Motor Adapter	PUMP CONSTRUCTION (Wet End) Port***	Body & Cover Casting	Gear Material	Shaft, Keys & Clips	Gasket Material	O-Rings & Seals ****	Ship Wt. (lbs.)
	Viton Models																	
$	GMSV2A3T	3/4	TEFC	56C	115/230	11.2/5.6	1	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton	316 SS	Graphoil	Viton	36.9
$	GMSV2A33T	3/4	TEFC	56C	230/460	2.6/1.3	3	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton	316 SS	Graphoil	Viton	35.9
$	GMSV4A5T	1½	TEFC	56C	115/230	18.4/9.2	1	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton	316 SS	Graphoil	Viton	60.5
$	GMSV4A53T	1½	TEFC	56C	230/460	4.8/2.4	3	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton	316 SS	Graphoil	Viton	53.5
$	GMSV6C7T	3	TEFC	182/184TC	230	14.7	1	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton	316 SS	Graphoil	Viton	120.1
$	GMSV6C73T	3	TEFC	182/184TC	230/460	8.2/4.1	3	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton	316 SS	Graphoil	Viton	88.1
	Teflon Models																	
$	GMST2A3T	3/4	TEFC	56C	115/230	11.2/5.6	1	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton	316 SS	Graphoil	Teflon®	36.9
$	GMST2A33T	3/4	TEFC	56C	230/460	2.6/1.3	3	1725	1/2 Keyed	5/8 Keyed	CI	3/8	316 SS	Ryton	316 SS	Graphoil	Teflon®	35.9
$	GMST4A5T	1½	TEFC	56C	115/230	18.4/9.2	1	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton	316 SS	Graphoil	Teflon®	60.5
$	GMST4A53T	1½	TEFC	56C	230/460	4.8/2.4	3	1725	5/8 Keyed	5/8 Keyed	CI	1/2	316 SS	Ryton	316 SS	Graphoil	Teflon®	53.5
$	GMST6C7T	3	TEFC	182/184TC	230	14.7	1	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton	316 SS	Graphoil	Teflon®	120.1
$	GMST6C73T	3	TEFC	182/184TC	230/460	8.2/4.1	3	1725	20mm Keyed	1⅛ Keyed	CI	1	316 SS	Ryton	316 SS	Graphoil	Teflon®	88.1

SS = Stainless Steel CI = Cast Iron CG = Carbon Graphite Ryton = PPS (Polyphenylene Sulfide) TEFC = Totally-Enclosed Fan-Cooled Motor

(*) Motors are rated at 60 hertz only.

(**) Single-phase motors are thermally overload protected (reset may be automatic or manual); 3-phase motors are not thermally protected.

(***) Female NPT inlet and outlet (in inches).

(****) Standard Shaft Seals have carbon on ceramic faces and 316 SS components.

NOTE: Driver data is subject to change without notice; see label on driver for specifications and wiring information. Manufacturer reserves the right to change specifications without notification.

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