

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

WARRANTY

Use only MASTERFLEX® precision tubing with MASTERFLEX® pumps to ensure optimum performance. Use of other tubing may void applicable warranties.

The Manufacturer warrants this product to be free from significant deviations from published specifications. If repair or adjustment is necessary within the warranty period, the problem will be corrected at no charge if it is not due to misuse or abuse on your part as determined by the Manufacturer. Repair costs outside the warranty period, or those resulting from product misuse or abuse, may be invoiced to you.

The warranty period for this product is two (2) years from the date of purchase.

PRODUCT RETURN

To limit charges and delays, contact the seller or Manufacturer for authorization and shipping instructions before returning the product, either within or outside of the warranty period. When returning the product, please state the reason for the return. For your protection, pack the product carefully and insure it against possible damage or loss. Any damages resulting from improper packaging are your responsibility.

TECHNICAL ASSISTANCE

If you have any questions about the use of this product, contact the Manufacturer or authorized seller.

MASTERFLEX®

(US & Canada only) Toll Free 1-800-MASTERFLEX • 1-800-637-3739
(Outside US & Canada) 1-847-549-7600 • 1-847-381-7050
www.masterflex.com • techinfo@masterflex.com
*EN809 manufactured by:
Cole-Parmer Instrument Company
28W092 Commercial Avenue
Barrington, IL 60010

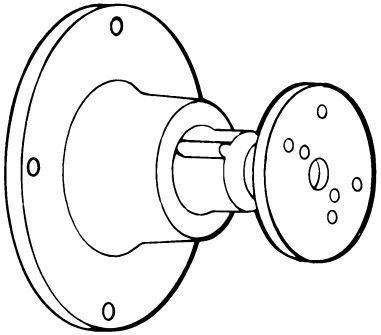
Printed in U.S.A.

OPERATING MANUAL

MASTERFLEX® L/S®

NEMA MOTOR-TO-PUMP ADAPTERS

NEMA Model No.	Gear Ratio
77495-00	3.7:1
77495-20	18.3:1



A-1299-0412B
Edition 08

MASTERFLEX®

(US & Canada only) Toll Free: 1-800-MASTERFLEX • 1-800-637-3739
(Outside US & Canada) 1-847-549-7600 • 1-847-381-7050
www.masterflex.com • techinfo@masterflex.com

⚠ WARNING: PRODUCT USE LIMITATION

This product is not designed for, nor intended for use in, patient connected applications; including, but not limited to, medical and dental use and, accordingly, has not been submitted for FDA approval.

DESCRIPTION

Series 77495 MOTOR-TO-PUMP ADAPTERS enable compatible NEMA 56C motors to drive MASTERFLEX® L/S® Pump Heads. All kinds of liquids can be delivered at desired flow rates. Each assembly is composed of a planetary gear system in a rugged aluminum housing with a mounting gasket, plus a motor shaft adapter.

Two Adapter models for NEMA motors with different gear ratios, are available to obtain desired flow rates, depending upon motor speed, Pump Head type, tubing size and material, plus backpressure conditions.

The Adapters are compatible with all MASTERFLEX® L/S® Pump Heads.

PUMP FOR LIQUIDS
ORIGINAL INSTRUCTIONS

C-FLEX, NORPRENE, PHARMED, TYGON - Reg TM Saint-Gobain Performance Plastics Corp.
VITON - Reg TM E.I. duPont DeNemours & Co.
Trademarks bearing the ® symbol in this publication are registered in the U.S. and other countries.

SPECIFICATIONS

NEMA Model No.	Gear Ratio	Input Speed (max)	Output Speed (max)
77495-00	3.7:1	2200 rpm	600
77495-20	18.3:1	3600 rpm	200

Drive Mounting:	NEMA 56C
Pump Mounting:	MASTERFLEX® L/S®
Operating Temperature:	32°F (0°C) to 122°F (50°C)
Storage Temperature Range:	14°F (-10°C) to 149°F (65°C)
Weight:	2 lbs (.9 kg)
Dust/Water Resistance:	IP56 with pump and motor mounted
Torque Output:	70 oz-in (12 kg-cm) (3.7:1 Gear Ratio) 210 oz-in (15 kg-cm) (18.3:1 Gear Ratio)
Dimensions: L × W × H	5.75 in × 6.5 in × 6.5 in (146 × 165 × 165 mm)
Humidity:	0-95%
Altitude:	Less than 2000 meters
Compliance:	(for CE mark) EN809 (EU Machine Drive)

(4) Mount the Adapter Housing

- Align the flat on the SHAFT ADAPTER with the mating “D” hole in the GEAR mechanism.

  Maintain the above alignment and carefully place the Adapter flange against the face of the motor housing.

  It may be necessary to turn the Adapter to obtain the proper pump head orientation. This is because the tubing in some Pump Heads exits from the *top* while tubing in others exits from the *side*. Also, be sure to allow adequate space for operation of the tube loading lever on the EASY-LOAD pumps.

(5) Install Adapter Bolts

- With all the components properly aligned, use the four bolts provided to secure the Adapter assembly to the motor.

The last step is installation of the Pump Head. Refer to instructions furnished with the Pump Head.

MAINTENANCE

Replaceable parts include the SHAFT ADAPTER, No. A-4103-CR and the GASKET, No. A-3871, available through your Dealer.

Cleaning

Wash with mild detergent. Do not immerse nor use excessive fluid.

EQUIPMENT SELECTION

To obtain a proper match of system components for efficient operation, an evaluation of the expected operating conditions should be made. Motor **loading** is the most important factor. It determines whether one or two Pump Heads can be used. Also, operating conditions, such as fluid density, viscosity and temperature contribute to loading the pump in varying degrees. Backpressure, tubing size and material are additional factors. Tubing materials like TYGON®, NORPRENE®, PHARMED® BPT and VITON® fluoroelastomer increase the load more than silicone and C-FLEX® tubing. Even motor temperature and voltage may have an effect on load capabilities.

Keep these considerations in mind when selecting motor horsepower or torque. Sometimes it may be necessary to compensate for difficult or unusual operating conditions. Refer to your motor specifications for details.

The procedure for teaming-up an Adapter with the appropriate motor and pump head is very straightforward:

(1) Verify Required Flow Rate

- Table 1 shows flow rates for individual Adapters and standard tubings.

Use only MASTERFLEX® Precision tubing with MASTERFLEX® Pumps to ensure optimum performance. Use of other tubing may void applicable warranties.

Table 1

Flow rates* for NEMA (77495-00) Adapter models in mL/min					
Tubing	Motor Speed in rpm				
	900	1100	1440	1725	2200
L/S® 13	15	18	23	30	36
L/S® 14	51	63	82	100	130
L/S® 16	200	240	310	380	480
L/S® 15, L/S® 25	410	510	660	800	1000
L/S® 17, L/S® 24	680	840	1100	1300	1700
L/S® 18, L/S® 35	930	1150	1500	1800	2300
L/S® 36	1200	1450	1900	2300	2900

Flow rates* for NEMA (77495-20) Adapter models in mL/min						
Tubing	Motor Speed in rpm					
	900	1100	1440	1725	2900	3450
L/S® 13	3.0	3.6	4.7	6	9.5	12
L/S® 14	10	13	17	20	33	40
L/S® 16	39	48	63	75	130	150
L/S® 15, L/S® 25	83	100	130	160	270	320
L/S® 17, L/S® 24	140	170	220	270	450	540
L/S® 18, L/S® 35	190	230	300	360	600	720
L/S® 36	240	290	380	460	760	920

* Flow rates for L/S Standard, EASY-LOAD®, EASY-LOAD II®, EASY-LOAD 3® and 3-roller cartridge Pump Heads. High performance Pump Head flow rates will be slightly higher.

Be sure the Adapter to be installed will accommodate the intended range of pumping applications.

(2) Select Motor

- The specifications section shows motor speed capacities for individual Adapters. Besides having the proper mounting face, the motor to be used must not exceed the speeds indicated.

  In no case will a motor H.P. greater than 1/4 be required for the Pump Heads compatible with these Adapters.

  Table 2 shows the volume per pump revolution for specific tubing numbers. Use Tables 1 and 2 as guides in selecting the proper tubing for the required flow rate.

Table 2

Tubing	Volume per pump Revolution (mL)
L/S®13	0.06
L/S® 14	0.21
L/S® 16	0.80
L/S® 15, L/S® 25	1.7
L/S® 17, L/S® 24	2.8
L/S® 18, L/S® 35	3.8
L/S® 36	4.8

(3) Select a Compatible Pump Head

- The Adapters are compatible with all L/S Pump Heads. Pump Head selection is based primarily on required flow rates using a specific tubing (see Tables 1 and 2).

INSTALLATION

The Adapter can be installed between the selected motor and Pump Head in just a few minutes. First, check the motor manufacturer's specifications to ensure that the motor meets the NEMA 56C face mounting requirements. Then proceed with these steps:

(1) Mount the Motor Drive

- Select a site and mounting surface appropriate for the pumping operations. Refer to the motor manufacturer's instructions.

(2) Install the Shaft Adapter

- Figure 1 shows the proper alignment of all components:

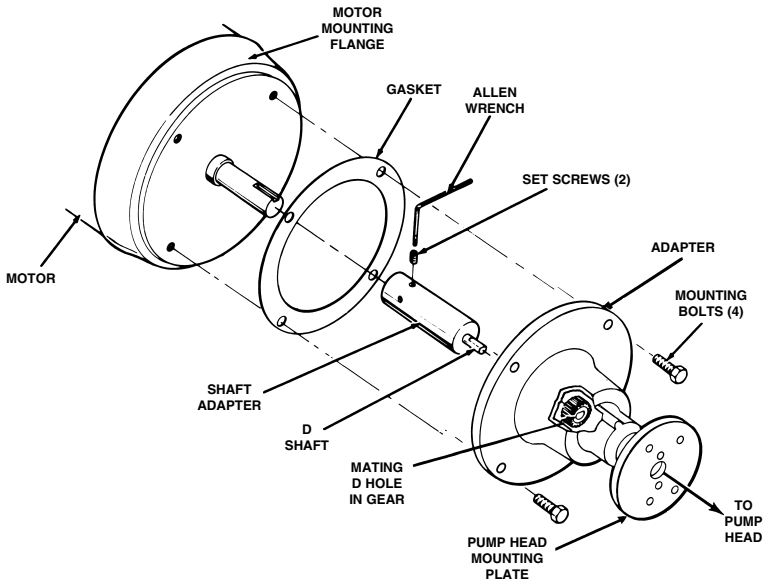


Figure 1: Adapter components aligned with a drive motor and Pump Head.

- Mount the SHAFT ADAPTER fully onto the motor drive shaft.
- Tighten the two SET SCREWS. Use the Allen wrench provided. If the motor shaft has a flat, be sure that one of the SET SCREWS is tightened against it.

(3) Mount the Gasket

- Place the GASKET over the motor face, as shown in the drawing.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP