

# ***blackmer***

## **ML4 SERIES**

### **FLUID PROCESSING AND TRANSFER PUMPS**

**SPEC SHEET 106/4**

Section	100
Effective	December 19
Replaces	July 1995



# BLACKMER ML4 SERIES

## HEAVY-DUTY / MODULAR DESIGN

### A tough pump for tough services

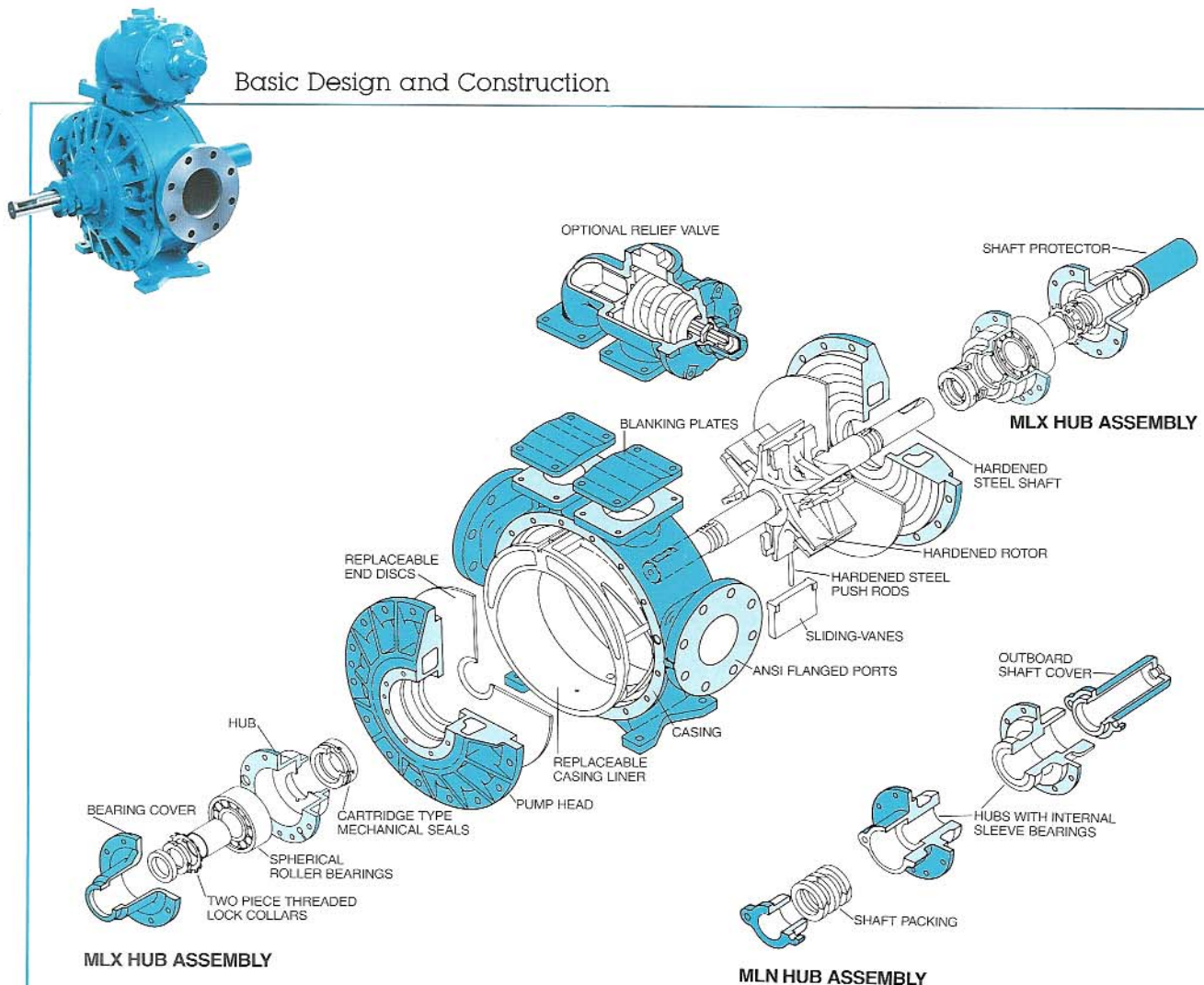
Blackmer's ML4-inch Series positive displacement rotary pumps are designed for the long run. They are ideal for handling everything from thin non-lubricating solvents, to highly viscous liquids or abrasive slurries. Count on the ML4 when you need continuous duty performance over a wide range of services: chemicals, petroleum, paint and coatings, pulp and paper, and food processing.

### ML4 combines proven sliding-vane design with interchangeable hubs engineered to your service

Our unique sliding-vane rotor design is the heart of the ML4 pump and the major reason for Blackmer's sustained high-level performance. But other major benefits are built in too - like energy efficiency, dependable trouble-free operation, low maintenance, smooth non-pulsating flow, easy flushing and reverse shaft rotation capabilities.

And now you can count on Blackmer for even more design leadership. The ML4 is a pump for virtually all services. Simply tell us your pump service and we put the right combination of bearing, seal and hub assembly together to do the job. The removable hub allows quick access to the bearing and sealing areas for routine inspection, without removing the entire pump head.

### Basic Design and Construction





# FLUID PROCESSING PUMPS

## MINIMUM MAINTENANCE

### DESIGN PARAMETERS

**Flow rates:** up to 600 gpm (2,271 lpm).

**Operating temperatures:** to 400°F (204°C).

**Viscosity range:** 30 to 500,000 SSU (1.0 to 108,000 Cs).

**Suspended particle handling:** up to 400 microns at concentrations to 40%.

**Maximum differential pressure:** 200 psi (1,379 kPa) - MLX4 Model.  
225 psi (1,551 kPa) - MLX4 Model with optional construction.

See back page for other models.

### DESIGN FEATURES, OPTIONS AND SPECIFICATIONS

**Vanes:** available in a wide range of materials to match your fluid service. Standard pin lock design automatically alerts operator when

vane replacement is needed before excessive wear can occur.

**Liner:** replaceable for easy rebuilding of the pump chamber if ever necessary.

*Optional* hardened wear-resistant liner is available for handling abrasive fluids.

**End Discs:** protect the heads from wear. Can easily be replaced if ever needed.

*Optional* wear-resistant end discs are available for highly abrasive fluids.

**Rotor & Shaft:** double ended for convenience of driving the pump in either direction.

**Elastomers:** Viton is standard. Also available with PTFE.

**Casing:** available in thermal shock-resistant ductile iron or cast steel conforming to API 676.

**ANSI Compatible Flanges:** standard on all models.

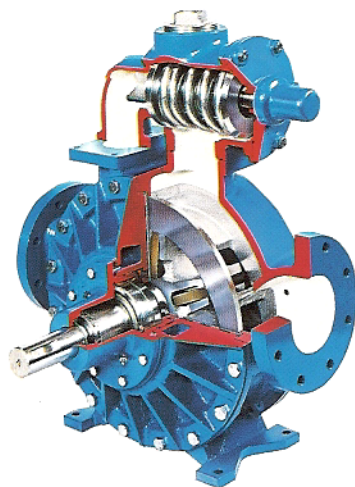
**Drain Plugs:** standard, allow for easy draining.

**Jacketed Heads:** for circulation of steam or hot oil for heating highly viscous fluids, or circulating of coolant for controlling bearing temperature.

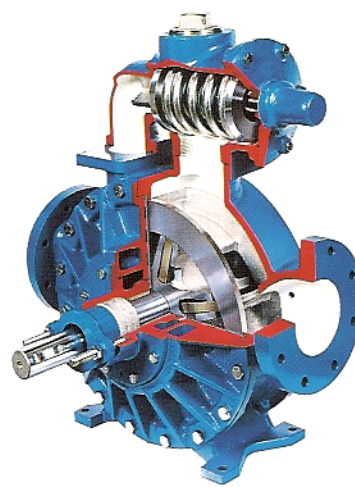
**2-Way Relief Valve:** detachable, with special back-to-tank feature or internal bypassing. (Back-to-tank feature available on ductile iron models only.)

**Base Mounted Unit Assemblies:** complete with pump, base, gear reducer, couplings and coupling guards, ready to accept a standard NEMA motor. All units are available with or without motors or drives.

### TWO PRE-ENGINEERED PUMP MODELS TO CHOOSE FROM



**Model MLX** - Designed for handling all types of liquids from light non-lubricating to viscous abrasive slurries and waste oils. The hub assembly in this model features external grease-lubricated spherical roller bearings and can be fitted with a wide selection of Blackmer mechanical seals. Two-piece threaded lock collars allow for vertical or horizontal pump mounting. Options include hardened or wear resistant internal components.



**Model MLN** - Ideal for handling thin to highly viscous fluids such as oils, asphalts, molasses and adhesives. The MLN features internal self-lubricating carbon sleeve bearings and PTFE-impregnated shaft packing. Options include Blackmer or commercial single or double mechanical seals.

## PUMP PERFORMANCE DATA

SSU	30	500	2,000	5,000	20,000	50,000	100,000	200,000	500,000
Cs	1.0	110	630	2,200	4,250	10,500	21,000	44,000	108,000
RPM	600	600	600	600	500	300	200	155	68
GPM	550	583	583	583	485	291	193	149	64
M <sup>3</sup> /H	125	132	132	132	110	66	44	34	14
HP	21.4	24.2	28.6	35.0	31.7	23.1	14.1	15.6	6.5

Horsepower (HP) and nominal flow rates are for the conditions specified at 50 psi (345 kPa) differential pressure. Refer to performance curves for capacities and horsepower at other operating conditions.

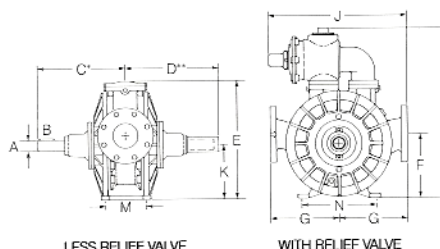
NOTE: Viscosity for the MLX4 pump model is limited to 100,000 SSU (21,000 Cs.)

## MAXIMUM OPERATING LIMITS

PUMP MODEL	DIFFERENTIAL PRESSURE		VISCOSITY		FLOW RATE		TEMPERATURE		WORKING PRESSURE		PUMP SPEED
	PSI	kPa	SSU	Cs	GPM	M <sup>3</sup> /H	°F	°C	PSI	kPa	RPM
MLX4	200	1,379	100,000	21,000	590	134	300	148	250	1,724	600
MLN4	150	1,034	500,000	108,000	590	134	400	204	200	1,379	600

## FLANGES

STANDARD
4-Inch ANSI Compatible



## TECHNICAL ASSISTANCE

In some applications, selecting the right pump may require more detailed information than can be presented here. Your Blackmer representative can help you find the correct equipment to ensure the best performance possible for your specific application.

If you have a unique fluid handling problem, please contact your Blackmer representative or contact Blackmer's Fluid Processing and Transfer Pur Group at our main office list below.

## DIMENSIONS – Inches (mm)

PUMP MODEL	A	B KEY	C*	D**	E	F	G	J	K	L	M	N	APPROXIMATE WEIGHT – LBS (KG)	
													WITH RELIEF VALVE	LESS RELIEF VALVE
ML4	1 3/4 (44)	3/8 (10)	14 1/8 (359)	15 7/8 (403)	19 1/16 (484)	10 1/4 (260)	11 (279)	22 1/4 (565)	8 3/4 (222)	27 3/8 (695)	6 1/2 (165)	12 (305)	445 (202)	393 (179)

\* All ML4 pumps have double ended shafts.

\*\* Dimension for MLX4 pump model is 15" (381mm).  
Dimension for MLN4 pump model is 15 1/4" (387mm).



A DOVER RESOURCES COMPANY

1809 Century Avenue, Grand Rapids, Michigan 49509, U.S.A.  
(616) 241-1611 • Telex: 4320148 • Fax: (616) 241-3752

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