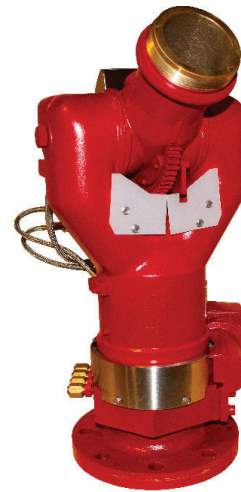


HMB-4 REMOTE CONTROL HYDRAULIC MONITOR

NDD300

- 6 Feature Hydraulic Actuation Control
- 360 Rotation, 90/-45 Elevation
- Integrated Cast Straightening Vanes
- Brass Waterway (Marine Compatible)
- 1100 GPM Max Flow



Description

The National Foam HMB-4 Monitor is part of the HMB-4 Remote Control Monitor System. It is a 4" cast bronze hydraulically operated monitor capable of continuous 360° rotation in either direction. Control functions shall include elevation control, rotation control, and provision for nozzle spray/straight stream functions. Rotation and elevation swivel joints are driven by hydraulic motors. The unit is supplied with a 3-1/2" MNPSH threaded discharge and 4" Flat Face Flange inlet. The monitor is suitable for use with aspirating or non-aspirating nozzles. Adapters are available for mounting of nozzles with 2-1/2 NH threads and National Foam PC-100 flange.

Features

- Extremely compact and simple design
- Full 360° continuous monitor rotation
- Elevation angles from +90° to -45° from horizontal
- Integrally cast straightening vanes in monitor waterway drastically reduces turbulence, resulting in less than 10 psi (0.68 bar) friction loss at 1000 gpm (3785 lpm)
- Monitor accepts mounting of National Foam PC type brass and stainless steel foam nozzles
- Maximum flow is 1100 gpm (4164 lpm) for foam nozzles and 2000 gpm (7571 lpm) for water nozzles

- Spring assist available for heavier foam nozzles
- Elevation and rotation manual override

Applications

Part of HMB-4 Remote Control Monitor System, which in addition to the HMB-4 monitor consists of the following: the HPCM-1-EX hydraulic power control module (Data Sheet NDD310), the model REC remote electric control station (NDD320), and if desired the model MCM multiple control module (NDD330).

Specifications

The National Foam HMB-4 Monitor shall be a split water-way, cast bronze, hydraulically operated monitor with a 4"-150# FF flanged inlet and 3-1/2" MNPSH threaded discharge. The waterway shall have integrally cast straightening vanes to reduce turbulence. Monitor shall have a maximum flow of 1100 gpm (4164 lpm) for use with foam nozzles and 2000 gpm (7571 lpm) for water nozzles. Swivel joints shall be integral part of cast body and shall be dual race type with bronze ball bearings and Buna N O-Rings. The monitor shall be capable of continuous 360° rotation in either direction. Monitor base shall include six 1/8 FNPT hydraulic ports. The horizontal swivel joint shall incorporate a means to convey hydraulic oil from the non-rotating base to the rotating portion of the monitor for operation of the elevation and nozzle functions. The maximum elevation/depression of

the monitor shall be 90° above and 45° below horizontal. The rotational and elevation joints shall be driven through a worm gear arrangement by Gerotor type hydraulic motors. Monitor shall be suitable for use with petroleum based hydraulic oil with a viscosity range of 150-250 SSU @ 100°F (38°C) and shall have a demand not exceeding 1 gpm @ 1000 psi hydraulic pressure (3.79 lpm @ 68.9 bar). Monitor shall have provision for accepting counterbalance device.

Technical Data

Performance Data:

Max Elevation:....	90° above horizontal
Max Depression:..	45° below horizontal
Rotation:	360° continuous
Max Working Press:....	200 psi (13.8 bar)
Max Flow:	
Foam Nozzles.....	1100 gpm(4164 lpm)
Water Nozzles	2000 gpm (7571 lpm)
Drive Speed	11°/sec. at 1 gpm
	@1000 psi
	hydraulic pressure
	(3.79 lpm @ 68.9 bar)
Press. Loss:.....	• 10 psi @ 1000 gpm
	(0.69 bar) @ (3785 lpm)
	• 6 psi @ 750 gpm
	(0.41 bar) @ (2839 lpm)
	• 3 psi @ 500 gpm
	(0.21 bar) @ (1893 lpm)

Hydraulic Port Designations:

Port #1 ...	Straight Stream Nozzle Pattern
Port #2 ...	Spray Stream Nozzle Pattern
Port #3 ...	Nozzle Elevation
Port #4 ...	Nozzle Depression
Port #5 ...	Counterclockwise Rotation
Port #6 ...	Clockwise Rotation

HMB-4

REMOTE CONTROL HYDRAULIC MONITOR

NDD300

Technical Data (cont.)

Connections:

Inlet.....4"-150 lb. ASA FF flange
 Discharge.....3½" Male NPSH thread

Hydraulic Oil:

Petroleum based Hydraulic Oil with
 Viscosity range of 150 – 250 SSU @
 100°F (38°C)

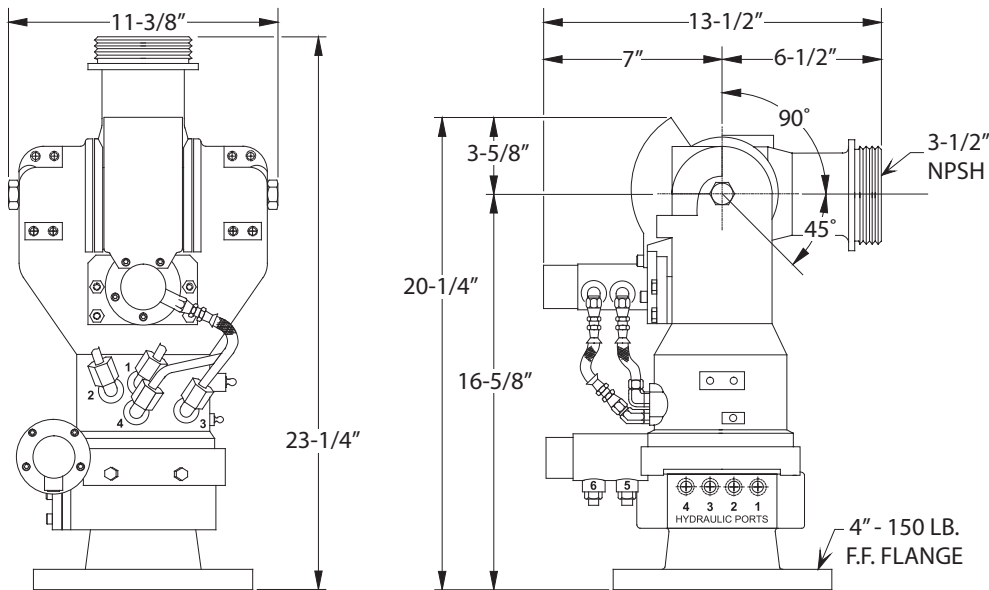
Material of Construction:

BodyCast brass ASTM B584
 (chemical properties only)
 with red polyurethane finish
 Swivel JointsCast Brass
 Ball Bearings Grade #1 Bronze
 O-Rings.....Buna N70
 Gears....Brass and Chrome-Plated Steel

Hardware ...Stainless Steel, ASTM A276
 Hydraulic Motors.....Steel with
 epoxy coating
 Adapters.....Cast brass ASTM B584
 Spring Brackets.....Stainless Steel
 Springs.....Stainless Steel

Finish:.....Red Polyurethane

Weight (Monitor only): 105 lbs. (47.6 kg)



HMB-4 REMOTE CONTROL MONITOR

ORDERING INFORMATION

Part Number	Description	Weight
1252-0204-7	HMB-4 Remote Control Hydraulic Monitor, Brass with Manual Override	115 lb - 52.2 kg
1243-2474-0	Adapter, 3-1/2" F SW NPSH X 2-1/2" MNH, Brass	3 lb - 1.4 kg
1243-2476-0	Adapter, 3-1/2" F SW NPSH X PC-100 Flange, Brass	3 lb - 1.4 kg
1251-8101-2	Counterbalance Kit for PC-31 Nozzle	10 lb - 4.5 kg
1251-8101-6	Counterbalance Kit for PC-40, 50 & 60 Nozzle	10 lb - 4.5 kg
1251-8101-9	Counterbalance Kit for PC-90, 100 & 110 Nozzle	10 lb - 4.5 kg

ASSOCIATED PRODUCTS

NDD310	HPCM-1-EX Hydraulic Power Control Module
NDD320	REC Remote Electronic Control
NDD330	MCM Multiple Control Module