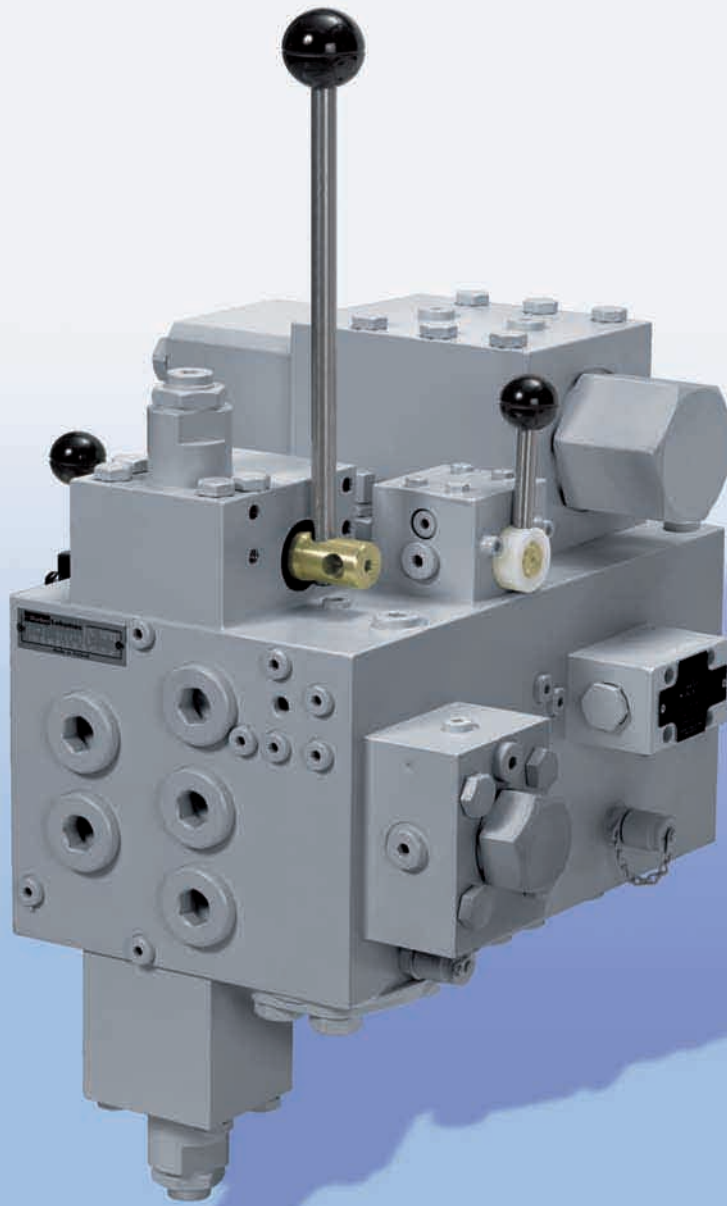




MMW NS30 Mooring Winch Control Manifold

*Catalog FI-EN108-B
November 2007*



 **WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".

FEATURES

All valves to control anchor / mooring winch in one manifold. Flexible, modular design. Easy to adapt to different winches. Direct mounting on motor flanges possible. Excellent controllability. Protected to stand rough marine conditions.

DESCRIPTION

MMW mooring winch manifold includes valves for direction control (heave and lower), load control, pulling force control and constant tension. 2-speed motor control valve (9) and brake control valve (10) are options. Main control valve (5,6,7) is equipped with a hand lever. Hand lever can be mechanically locked in partly open position during constant tension mode. Hydraulic remote control is available as an option. Pressure compensator (27) keeps speed of the winch constant independent on load and limits maximum speed of the winch. Maximum speed is factory set by fixed orifice (14). To avoid circulation of oil and heating the system during mooring function pressure compensator (27) closes before pressure relief valve (26) opens. Two different versions of load control valve (2) are available. Mooring pressure and maximum pulling force can be remote controlled through connection X. Mooring pressure and maximum pulling force can be manually adjusted by pilot valve (3). Pilot valve (3) is available with hand lever and with screw adjustment by tool. Pressure relief valve (11) limits the maximum pressure in the motor connection B. The optional brake control valve (10) can be equipped with fixed or adjustable spring force. 2-speed control valve (9) is operated manually. It can be equipped with a pressure reduction valve to limit 2-speed control pressure. Shuttle valve (12) supplies oil to brake control valve (10), 2-speed control valve (9) and pressure compensator (27). Check valves (13) are working as anti-cavitation valves.

CHARACTERISTICS

Design	Manifold
Mounting position	Optional
Ambient temperature range	-30° C ... +50° C
Operating pressure (P, A, B)	350 bar
Tank line pressure (T)	50 bar
Drain line pressure (L)	Minimum (open to tank)
Nominal flow	NS30: 420 l/min
Fluid	Mineral oil according to DIN 51524 and DIN 51525
Fluid temperature range	-20° C ... + 70° C
Contamination level	Max. permissible contamination level according to NAS 1638 Class 8 (class 9 for 15 Micron and smaller) or ISO 17/14
Material of the manifold	Carbon steel
Protection	All adjustment screws, levers and other moving parts are protected to stand rough marine conditions
Surface treatment	Sand blasted and primer painted with 2-component epoxy paint

Ordering code

Type: **MMW-30-MH-08-LC1-BR1-TS1-MC1-LD1-AN/350**

Anchor - mooring winch control manifold

Nominal size

30 = NG30, nominal flow 420 l/min

Main control valve

M = manual hand lever
MH = manual hand lever and hydraulic remote control
(Hydraulic control is suitable only for a coarse control)

Spool type of the main control valve

08 = spool 08



Load control valve

LC1 = load control valve with improved stability

- area ratio 1:20
- opening pressure 20 bar in the port (X)
- full open 50 bar in the port (X)
- check valve spring 2 bar

LC2 = screw-in type counterbalance cartridge

- area ratio 1:4,5
- with integrated relief function (140...350 bar, setting: 1,3 x max. load pressure)
- check valve spring 0,3 bar

Brake control

- BR0 = no brake control valve
- BR1 = hydraulic 4-way brake control valve (5 bar spring)
- BR2 = hydraulic 4-way brake control valve (adjustable spring 3...12 bar)
- BR3 = hydraulic 4-way brake control valve (adjustable spring 10...40 bar)

2-speed control

- TS0 = no 2-speed control
- TS1 = manual 2-speed control
- TS2 = manual 2-speed control with pressure reduction valve

Mooring control

- MC0 = fixed tension setting with remote control part
- MC1 = manually adjustable tension with remote control part

Locking device for main control valve

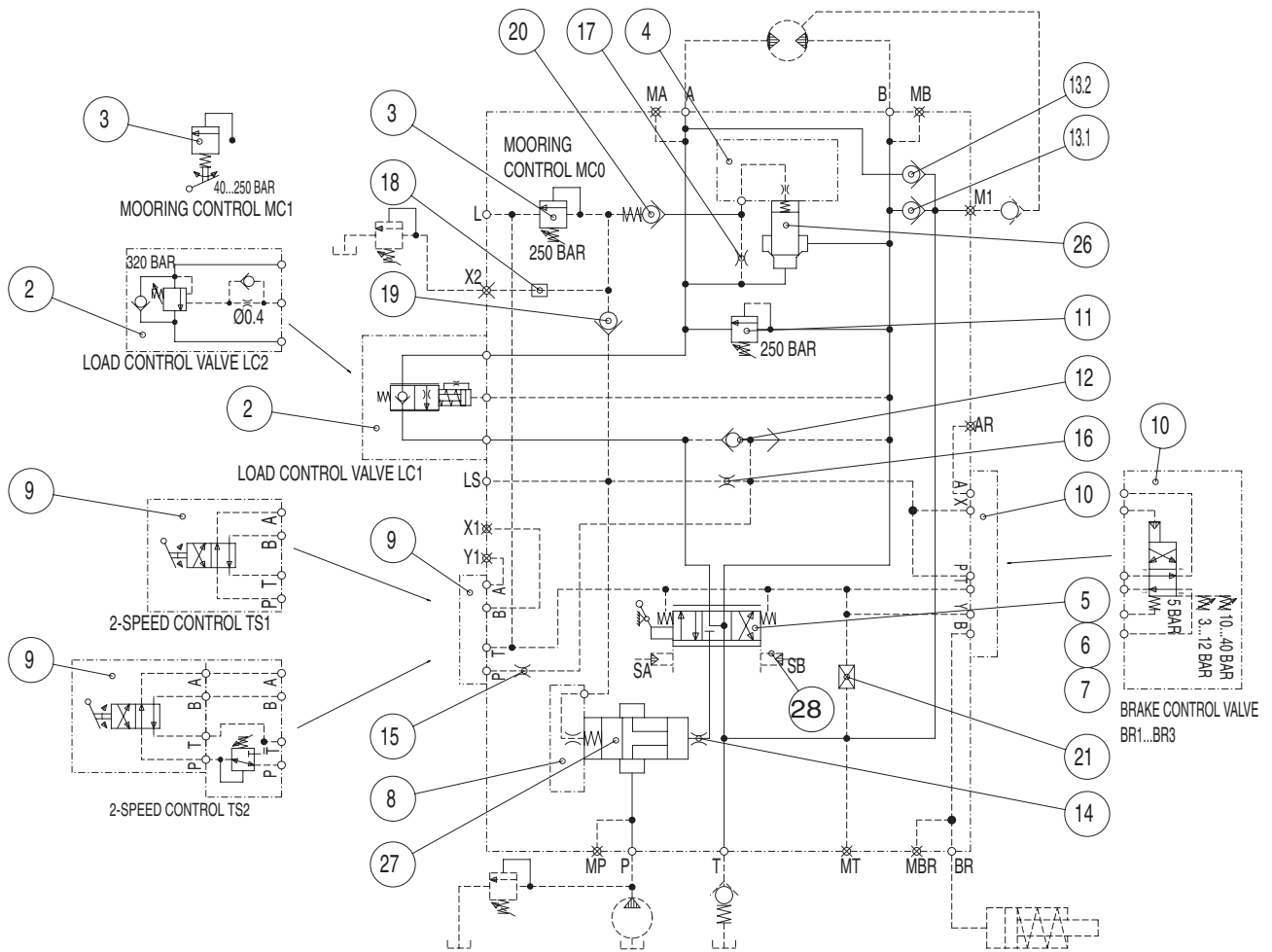
- LD0 = no locking device
- LD1 = mechanical locking device

Design letter

Seal class

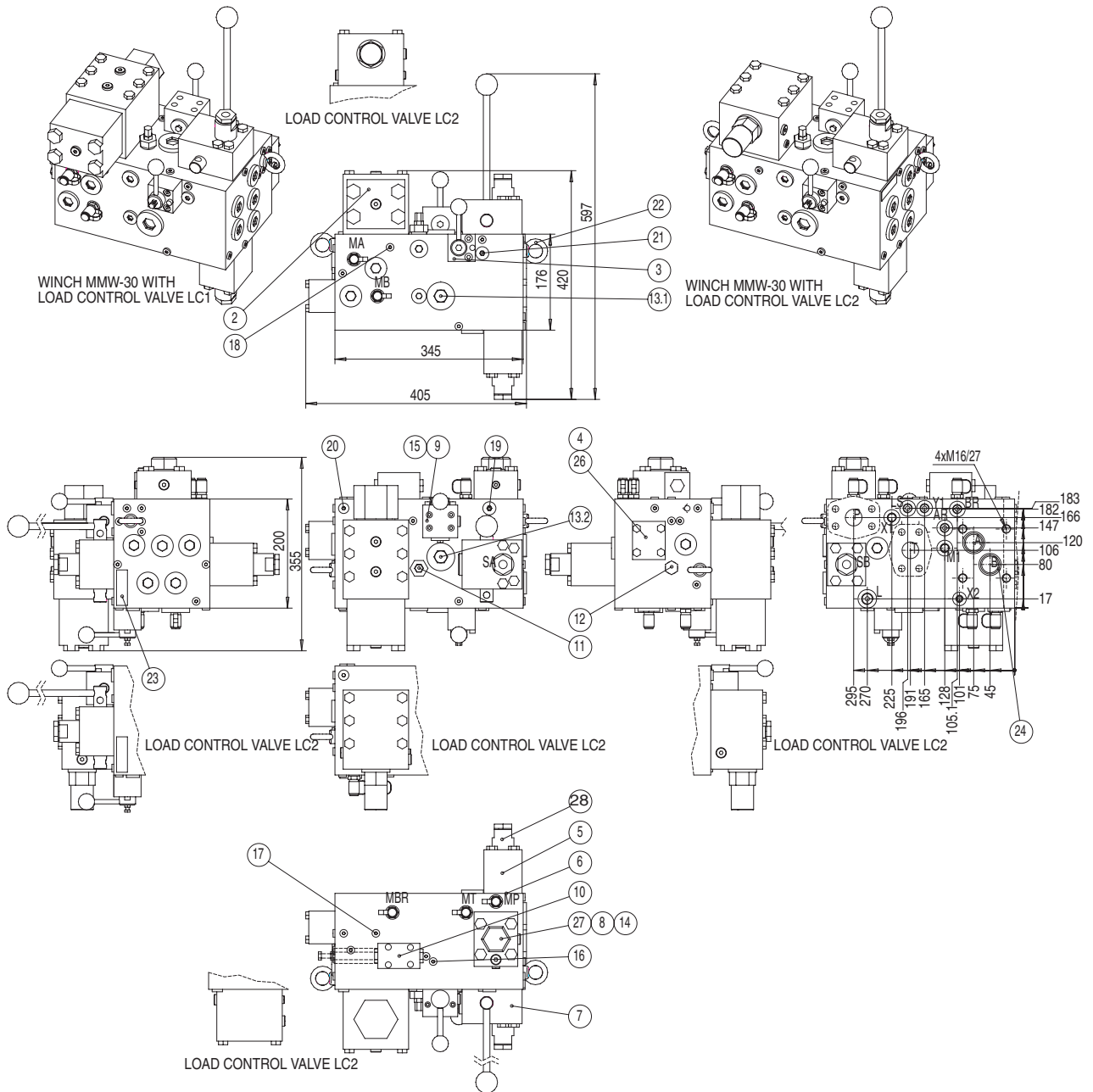
N = N.B.R. (Buna N)

Factory setting of maximum flow (l/min)



POS	TYPE	DESCRIPTION
1	Main manifold	Manifold of carbon steel.
2	Load control valve (LC1 or LC2)	Takes care of stable control of a load during lower. The valve is opened by a pilot pressure taken from the motor port B. Built-in check valve for lifting. Two versions available.
3	Pilot valve	Adjusts mooring pressure and maximum pulling force. Nominal flow 20 l/min. Pressure range 30...350 bar. Pressure area of the version with rotating hand lever: 210 bar / one rev. Pressure area setting with screw.
5, 6, 7	Main control valve	Control of speed and direction of the winch during heave and lower. In NS30 version main spool is integrated into the main manifold.
9	2-speed control valve (option)	Controls displacement of dual displacement hydraulic motor. 4/2-way valve with rotating spool. Connects 2-speed control ports X1 and Y1 to high pressure or to drain. In case of single acting 2-speed actuator one control port can be plugged. Sandwich type pressure reducing valve can be used to limit 2-speed control pressure (version TS2).
10	Brake control valve (option)	Opens the brake when the system pressure in the motor port A or B is higher than the spring force of the brake control valve (10). Available with fixed or variable spring force. Cetop 3 interface.
11	Pressure relief valve	Protects the motor port (B) against high pressure. Factory setting 250 bar (adjustable, max. allowed setting 350 bar).
12	Shuttle valve	Gives a pressure signal to a brake connected to port BR, to 2-speed motor connected to ports X1 and/or Y1, pressure compensator (27) and to port LS.
13	Check valve	Anti-cavitation valves. Equalise pressure difference in between A and B ports.
14	Orifice	Diameter of the fixed orifice (14) sets maximum speed of the winch. Maximum flow setting is made by factory according to coding.
15	Orifice	Thread for M6x6-0.8 mm orifice (art. no. KU006080). Damps the 2-speed controller.
18	Orifice	Thread for orifice (M6).
19	Check valve	Connects pilot line of the pressure compensator to the pilot valve (3).
20	Check valve	Connects pilot line of the pressure relief valve to the pilot valve (3).
21	Plug	R ¼ DIN906 plug. Must be removed if the leakage port L is plugged. Note: Back pressure in port T increases setting of pilot valve (3) when the plug (21) is removed.
26	Mooring valve (cartridge)	Limits maximum pulling force and controls constant tension. Pressure is adjusted by pilot valve (3) or by external pressure relief valve connected to the port (X2).
27	Pressure compensator (cartridge)	Keeps speed of the winch constant independent on load and limits maximum speed of the winch. During mooring function the pressure compensator (27) closes before pressure relief valve (26) opens to avoid circulation of oil and heating the system.

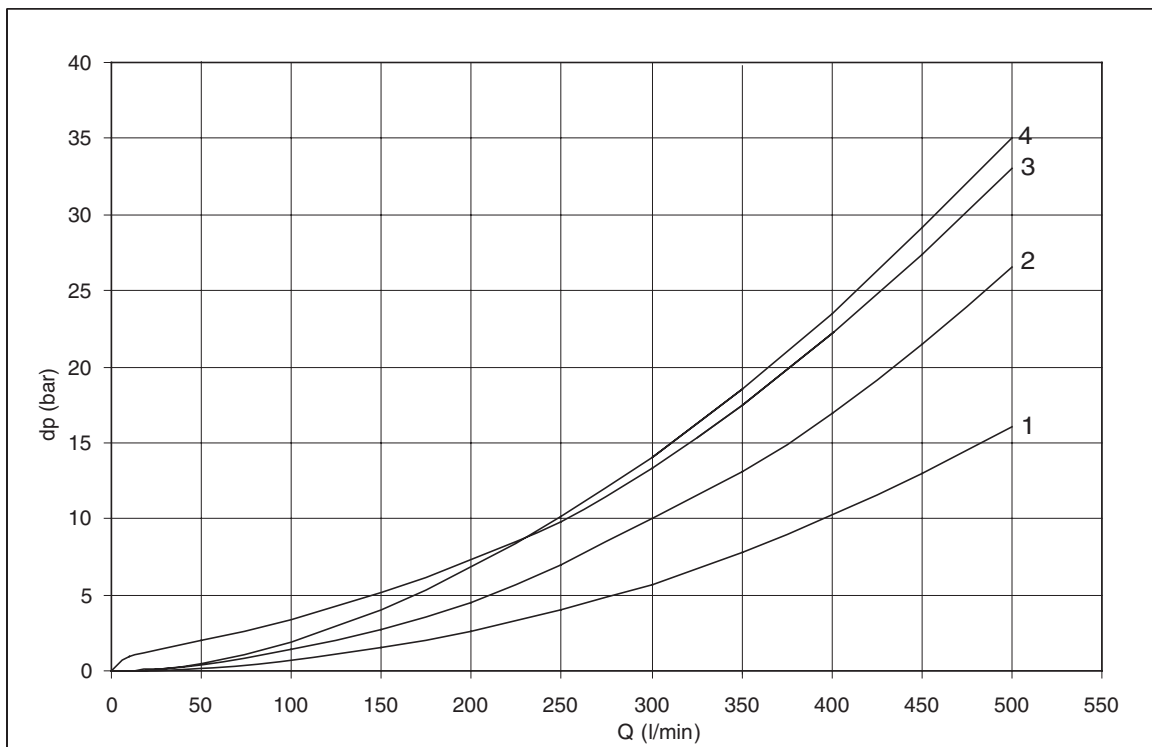
MMW-30-MH--LC1-BR1-AN**



Connections

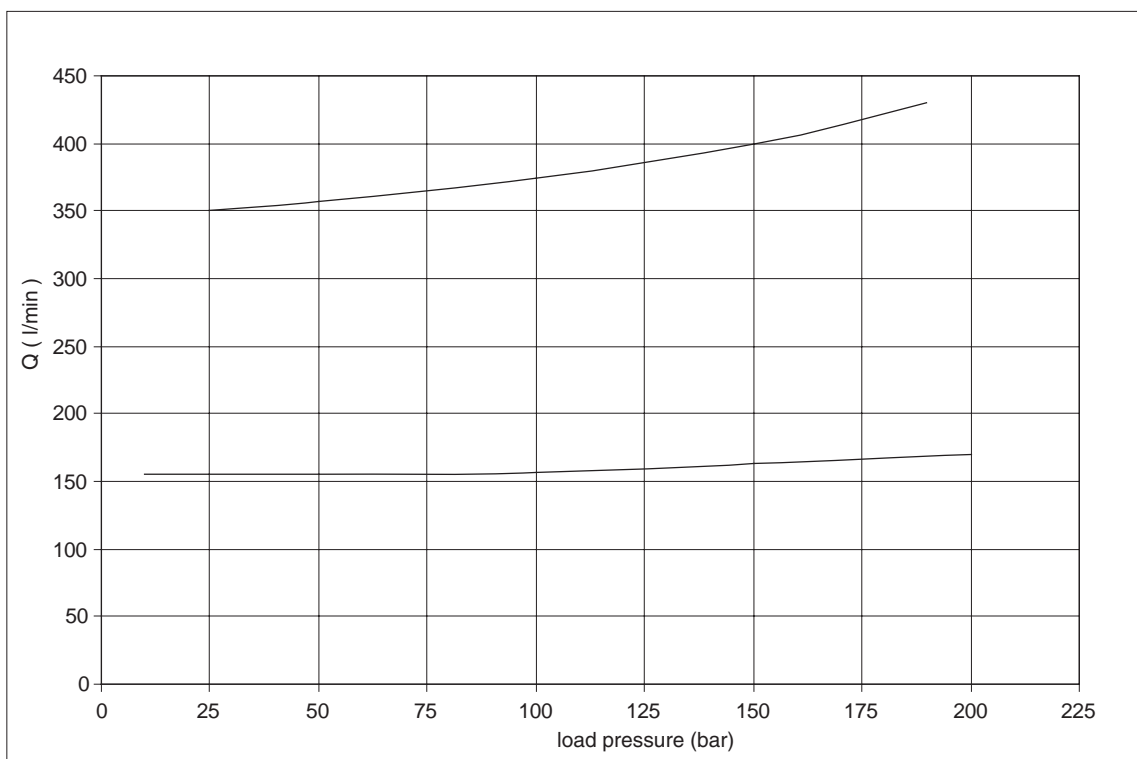
CODE	SIZE NS30	FUNCTION	NOTE
P	SAE 1 ¼" 6000 psi	Inlet connection for a pump	Variable displacement pump with constant pressure or LS controller.
T	SAE 1 ¼" 6000 psi	Return connection to tank	Minimum 2 bar back pressure valve is required.
A, B	D = 30,5 mm	Motor connections	Size NS30 manifold can be assembled directly on motor flanges with adapter. See Parker Calzoni program.
L	R ½" BSP	Drain connection	Separate pipe to tank with no back pressure is required.
LS	R 3/8" BSP	Load signal	For a load sensing pump.
AR, BR	R 3/8" BSP	Brake line	Hydraulic brake, closed by a spring.
SA, SB	R 3/8" BSP	Remote control connections of the main control valve	
X1, Y1	R 3/8" BSP	2-speed control connections	
X2	R ¼" BSP	Remote control connection of the mooring valve (26)	With a M6 thread for an orifice.
M1	R 3/8" BSP	Connection for motor case drain	
MP, MT, MA, MB, MBR	R ¼" BSP	Measuring connections	

PRESSURE DROP CURVES OF THE MANIFOLD

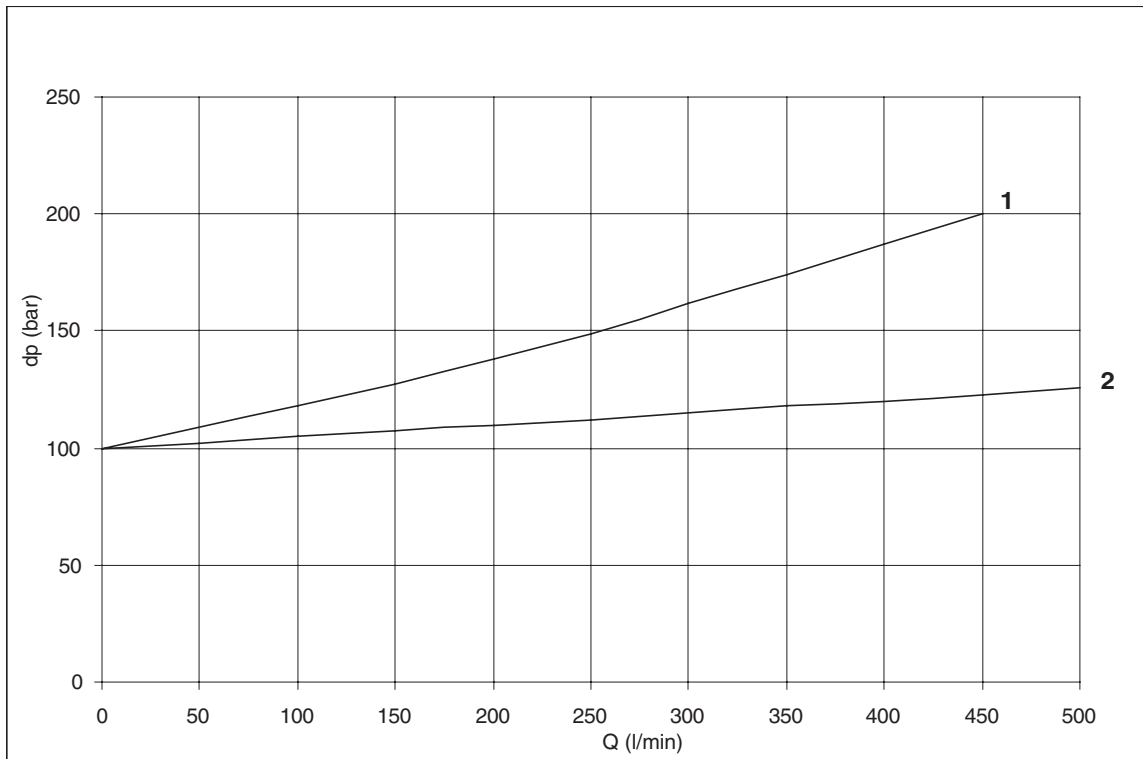


Curve 1 B -> T **Curve 3** P -> A (pos 27 full open) with the load control valve LC1
Curve 2 P -> B (pos 27 full open) **Curve 4** A -> T with the load control valve LC1

FLOW RATE CURVES



FLOW CHARACTERISTIC CURVES NS30



Curve 1 Mooring valve 26

Curve 2 Shock valve 11

ITEM	QTY	PART	CODE NS30
2	1	Load control valve LC1	LC1: 29528600 LC2: 39692500
3	1	Mooring control valve	MC0: PROC0403 MC1: 39707300
4	1	Cover	44323300
5	1	Spring cover without pilot control cylinder	3971203
7	1	Control cover without pilot control cylinder	31042501
8	1	Compensator cover	39645900
9	1	2-speed valve	TS0: 41023900 TS1: 39626400 TS2: 31039500
10	1	Brake control valve	BR0: 49478500 BR1: SUDE0680 BR2: 41013200 BR3: 41013201
11	1	Pressure relief valve	PRSU1601
12	1	Shuttle valve	VVCO0400
13	2	Check valve	41019000
14	1	Orifice	410237
15, 16, 17	1	Orifice	KU006080
19	1	Check valve	VAHA0012
20	1	Check valve	VAOC1401
26	1	Cartridge	44316403
27	1	Compensator cartridge	44324300
28	2	Pilot control cylinder	REMOTE23
-	1	Complete seal kit	TS210076

Parker Hannifin Oy

Lokomec
Tampere
Finland



Parker Hannifin Oy

Lokomec

Polunmäenkatu 22, P.O. Box 116
FIN-33721 Tampere, Finland

Tel: +358 20 753 2600

Fax: +358 20 753 2601

www.lokomec.fi

www.parker.com

Catalog FI-EN108-B

FIN 11/2007

