

Lifting modules and lifting/lowering valves type HMB, HMC, HMT, and HSV, HZV etc.

They are a combination of different valves (flow control valves, throttles, directional valves) for main lift and, in some cases, other additional functions. The lifting modules and lifting/lowering valves are for controlling lifting devices, especially high-rack stackers, order pickers, reach trucks and mobile lifting units. The design of the internal control system is extremely flexible. This enables solutions that are not only precisely tailored to the relevant drive concept (fixed or variable displacement pump) and the customer-specific application, but also affordable.

Control systems for secondary or additional functions can be achieved using directional seated valves or directional spool valves (type SWR or SWS). These valves are directly flange-mounted to the main valve in the form of mounting blocks, therefore making the whole valve combination extremely space-saving.

Features and benefits:

- Flexible design for fixed or variable displacement pump systems
- Low spatial requirements due to steel design
- Flexible combination with directional valves

Intended applications:

- Materials handling (industrial trucks etc.)
- Cranes and lifting equipment
- Road vehicle construction



Nomenclature:	Valve combination according to type consisting of: <ul style="list-style-type: none"> ■ 3-way flow control valves ■ 2-way flow control valves ■ 2-way seated valves ■ Directional spool functions
Design:	Valve bank
Actuation:	Solenoid
p_{max}:	315 bar
Q_{max}:	120 lpm

Design and order coding example

HMT34	- 1/200	- FH5N5	- 30EP12/G24	
				End plate
				<ul style="list-style-type: none"> ■ With two P ports and one R port ■ With prop. idle circulation valve ■ With solenoid valve for the parking brake
				Valve sections, ancillary- and intermediate blocks
				Diverse intermediate blocks for rotating/extending fork for high rack stackers; Function rotating/stifting/lifting/lowering Directional valve sections type SWR 1 with additional functions Directional valve sections type SWS 2
				Connection block
				Pressure setting [bar] of the pressure limiting valve
				Additional versions
				<ul style="list-style-type: none"> ■ Connection blocks type SWR <ul style="list-style-type: none"> ■ With flow divider ■ With/without pressure limiting valve ■ With shut-off valve for P and H (lift)
Basic type	Lift modules and lifting/lowering valves			

Drive concept an field of application:

	Drive concept			Application					
	1	2	3	Scissor lift	Miniature stacker, Walkie stacker	Counter balance truck	Reach truck	Order picker (warehouse)	
								no man aloft	man aloft
HSV	x			x	x				
HZV	x			x	x				x
HSN			x					x	x
HST	x	x			x	(x)		x	x
HMB	(x)	x			(x)			x	x
HMC	x				(x)				x
HMT		x				x	x	x	x
HMS	x	x	x					x	x
HMF	x	x	x					x	x
HMR		x	x					x	x
SWR..SE	x	x					x	x	x
HSW	x				x				

Drive concept:

- 1: Constant delivery pump, lifting/lowering via flow controller (throttle)
- 2: Lifting via speed controlled pump, lowering via flow controller (throttle)
- 3: Lifting/lowering via speed controlled pump

Circuit examples:

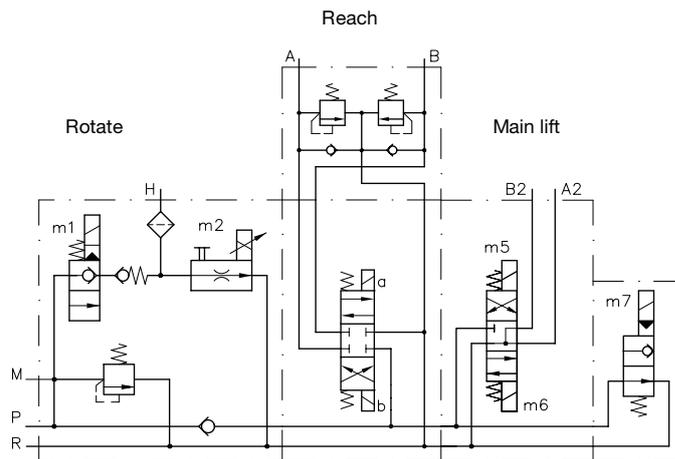
HMT 34-1/200-70F

-G/M/0/2 AN40 BN130

-D/M/0/02

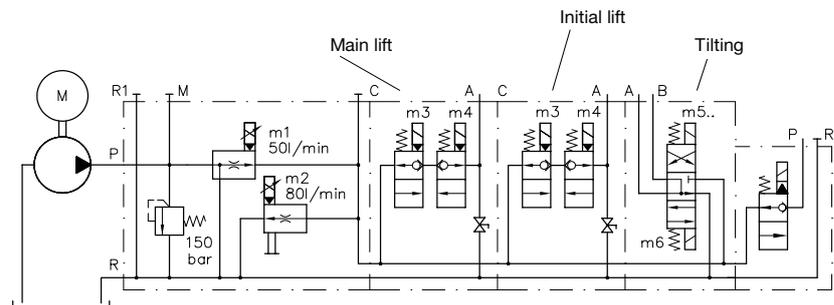
-30E-P12/G 24

Lifting module type HMT, size 3, port size 4 with pressure limiting valve (set for 200 bar), outflow controller with 70 lpm metering throttle (blocked in idle position); section G with shock and suction valves is part of the ancillary block (settings 40 and 130 bar); end plate with idle circulation valve (open in idle position), proportional-solenoid valve for the flow control valve 12V DC, solenoid voltage for directional spool valve and directional seated valves 24V DC



HMC 33-1/150-50/80F-T3 T3/D-20E-G 24

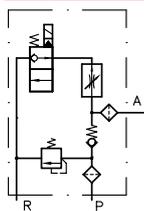
Lifting module type HMC, size 3, port size 3 (G 3/4 (BSP)) with pressure limiting valve (set for 150 bar), 3-way flow control valve with metering throttle up to 50 lpm, 2-way flow controller up to 80 lpm (blocked in idle position), two intermediate blocks type T3 with seated valves and one directly added directional spool valve section type SWR 2 flow pattern D, end plate with additional port P and R as well as a shut off valve for port P, solenoid voltage 24V DC



Function

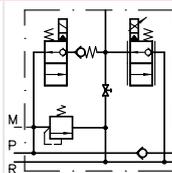
Single devices:

HSV

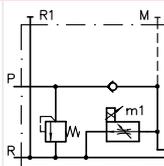


Lifting modules and connection blocks:

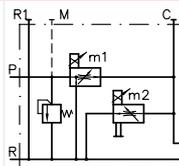
HST



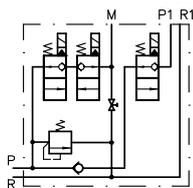
HMB



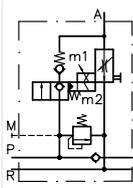
HMC



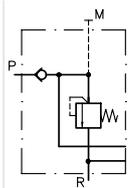
HSN



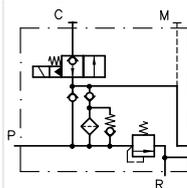
HMT



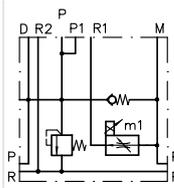
HMS



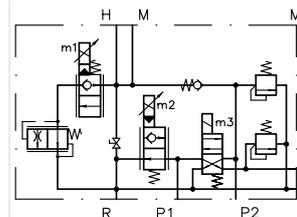
HMF



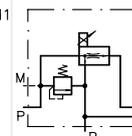
HMR



HSW



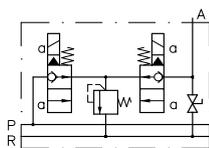
SWR



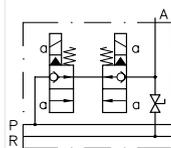
Intermediate blocks (main and initial lift):

Size 2

T 23

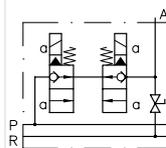


T 2

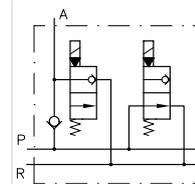


Size 3

T 3, T 34, T 44



T 25



- Size 2: Hole pattern SWR 1, Size 3: Hole pattern SWR 2 / SWS 2

End plates:

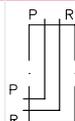
Size 1 and 2

1



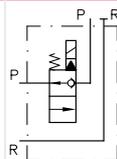
Size 1 and 2

2



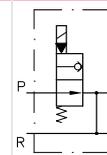
Size 2

20E



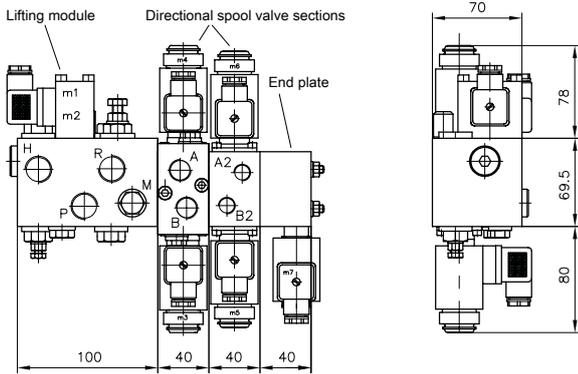
Size 2

30E

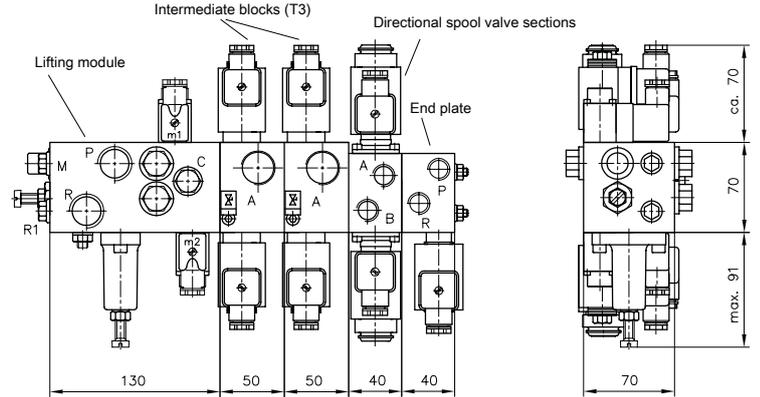


General parameters and dimensions

HMT 34 ...



HMC 33 ...



	Q _{max} [lpm]	p _{max} (bar)	Note	Ports (BSPP)
HSV 21	20	315 ... 400	Individual device	P, R, A = G 3/8
HSV 22	30			P = G 3/8; A, R = G 1/2
HSV 41	40			P, R, A = G 1/2
HSV 61	60			P, R, A = G 1/2
HSV 71	160			P, R, A = G 3/4
HSN	50 -100			H, R = G 3/4; P1 = G 3/8; P = (flange connection)
HST 2	20 - 40	315	Connection blocks of lifting module	P, R, H = G 1/2; M = G 3/8
HST 3	30 - 60		Add-on components:	P, R, H = G 3/4; M = G 3/8
HMB 2	30		- SWR/SWS-Valve sections	P, R = G 1/2; M = G 1/4
HMB 33	90		- Intermediate blocks	P, R = G 3/4; M, R1 = G 1/4
HMC 2	30		- End plates	P, R, A = G 1/2; M = G 1/8
HMC 3 (33)	90			P, R = G 3/4; M, R1 = G 1/4; C = G 3/8
HMT 3	70 - 90			H, P, R = G 1/2; M = G 3/8
HMT 34	70 - 90			H = G 3/4; P, R = G 1/2; M = G 3/8
HMS 4	100			R = G 3/4; C, R1 = G 3/8; M = G 1/4
HMF 4	100			R = G 3/4; C, R1 = G 3/8; M = G 1/4
HMR 4	100			P, R1, R 2 = G 3/4; P1, D = G 3/8; M = G 1/4
HSW 2	25			H, R = G 1/2; P1, P 2 = G 3/8; M = G 1/8
SWR 1 SE	12			P, R, R1 = G 1/4; M = G 1/8
SWR 2 SE	25			P, R = G 3/8; M = G 1/4

- HMB 2, HMC 2, SWR 1 SE: Hole pattern SWR 1, T2; adaptor plates from X12 to SWR 2
- SWR 1 SE, SWR 2 SE: also for external additional functions

Associated technical data sheets:

- Type HMC: [D 7650](#)
- Type HMT: [Sk 7758 HMT](#)
- Type HMB: [Sk 7650 B2](#), [Sk 7650 B33](#)
- Type HST: [Sk 7650 HST ff](#)
- Type HSW: [Sk 7650 HSW](#)

Information on additional lifting modules on inquiry

Similar products:

- Type SWR, SWS 2: [D 7450](#), [D 7451](#)
- Connection blocks type HMPL and HMPV: [D 7700 H](#)

Plugs:

- With LED's and others: [D 7163](#)
- With economy circuit: [D 7813](#), [D 7833](#)