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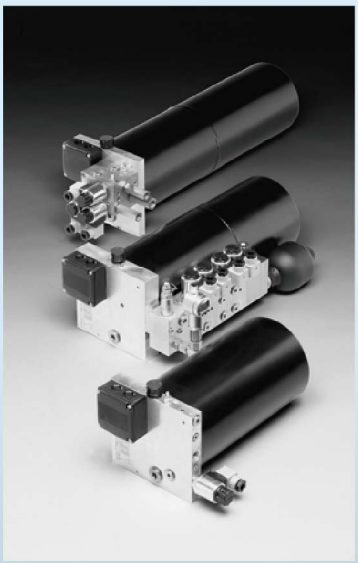
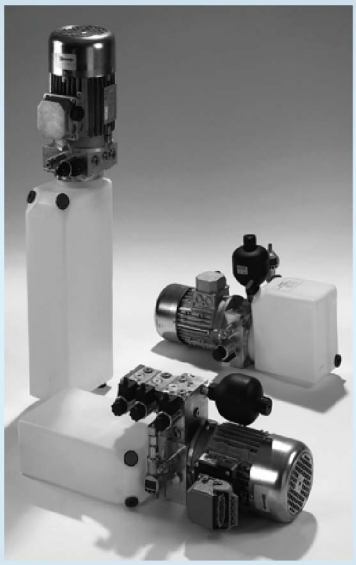
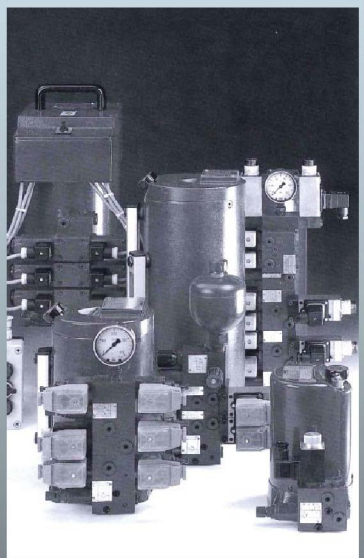
HYDAC ENERGY SAVING
COMPACT POWER PACK

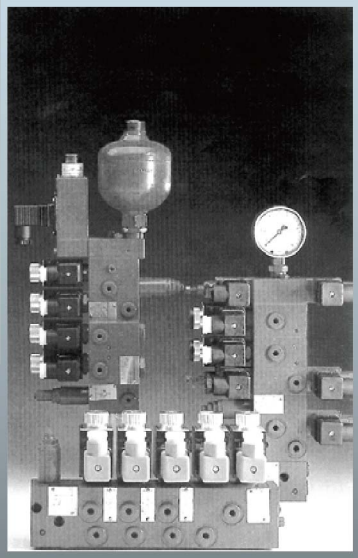
HYDAC Fluid Technology
Compact Power Units Overview
AC / DC











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HYDAC Compact Power Units

Duty types to EN60034-1

For over 25 years, HYDAC Fluidtechnik has been building compact power units which in these changing times have remained at the cutting edge of technological development. They are noted generally for their compact installation dimensions and high power density. Starting from 0.32 l/min, there are many different models to provide tailor-made solutions for the customer.

DCM

DC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty

up to 5.6 l/min
S2 = starting at 1min*
S3 = starting at 3 %*

DC power units for controlling tail-lifts and other robust mobile applications. Can be installed in three positions – particularly splashproof

DC1

DC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty

up to 18.4 l/min
S2 = starting at 1.5 min*
S3 = starting at 4 %*

DC power units for controlling tail-lifts, storage and retrieval machines, working platforms, forklifts etc....

CO1

AC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty

up to 20 l/min
S2 = 5 min*
S3 = 20 %*

Power unit with low installation height and transparent oil tank (steel tank available as an option). For scissor-lift platforms, dock levellers, machine tools, wind turbines, vehicle hoists ...

CO2

AC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty
Continuous-operation**
periodic duty

up to 20 l/min
S2 = 5 min*
S3 = 25 %*
S6 = 25 %*

AC power unit with steel tank for more robust applications, e.g. energy technology, points switching, machine tools...
(**with cooler module)

CO3

AC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty
Continuous-operation
periodic duty

up to 30 l/min
S2 = 10 min*
S3 = 30 %*
S6 = 30 %*

Modular power units in AC or 3-phase design with oil conditioning concept and energy-efficient single or double pump unit e.g. for lathes, machine tools...

CA2

AC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 250 bar
Short-time duty
Intermittent duty

up to 12.6 l/min
S2 = 3 min*
S3 = 10 %*

Power unit concept with oil-immersed motorpump unit. Particularly suitable for outdoor use, e.g. in traffic barriers, dock levellers, for points switching...

HP

AC

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 500 bar
Short-time duty
Intermittent duty

up to 5.25 l/min
S2 = 3 min*
S3 = 10 %*

High-pressure hydraulics in the most compact space.
Three-phase power unit, e.g. for clamping of forming tools, brake calliper operation...

L

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 500 bar

up to 12 l/min

Modular valve stacking system for high pressure hydraulics. For expansion of the control functions of HP compact power units.

ML

bar 100 | 200 | 300 | 400 | 500 — l/min 5 | 10 | 15 | 20 | 25 | 30

Up to 350 bar

up to 20 l/min

Modular valve stacking system. Simple expansion (also as retrofit) of control functions for compact power units.

* Note: Duty cycle is for guidance only and will depend on the ambient temperature, for example. The max. oil temperature of 80°C must not be exceeded!

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HYDAC Compact Power Units with DC Motor

DC Mobile

Up to 250 bar
Up to 5.6 l/min
Short-time duty S2 = from 1 min*
Intermittent duty S3 = starting at 3 %*

GENERAL

- Maximum protection against salt and spray through the use of specially formed plastic parts such as tank and cowl
- Reduction in noise emissions achieved with vibration-resistant plastic casing
- Can be installed in 3 different positions without having to undertake any modifications
- Outputs of 1.2 to 2.2 kW in 12 and 24 Volt DC, and 3 different tank sizes are possible due to modular design

SPECIFICATIONS

Flow rate:	2.5 to 5.6 l/min
Operating pressure:	max. 200 bar
Peak pressure:	up to max. 250 bar
Duty cycle:	S2 (short-time duty)
Motor:	Pn = 1.2 kW ... 2.2 kW
Motor voltages:	12 and 24 Volt
Protection class:	DIN EN 60034-5 min IP 54
Pump displacement:	0.8 cm³/rev. ... 2.6 cm³/rev
Tank volume:	4.0 ... 7.5 l
Useable volume:	2.2 – 6.3 l
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	-20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm²/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Cooling:	Convection cooling
Weight:	from 9 to 12 kg
Return flow rate:	up to max. 20 l/min
Installation position:	Vertical, horizontal, horizontal on side

Further details in Brochure No. 5.309.0

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HYDAC Compact Power Units with DC Motor

DC1

Up to 250 bar
Up to 18.4 l/min
Short-time duty S2 = starting at 1.5 min*
Intermittent duty S3 = starting at 4%*

GENERAL

- Space-saving design due to small flange
- Very low noise levels due to special construction
- Possible to have different hydraulic controls in the same flange due to flexible configuration of cartridge valves and / or by fitting control blocks and standard function modules

SPECIFICATIONS

Flow rate:	up to 18.4 l/min
Operating pressure:	max. 250 bar
Peak pressure:	up to max. 300 bar (on request)
Duty cycle:	S2 (short-time duty) S3 (intermittent duty)
Motor:	Pn = 1.7 kW ... 3.0 kW
Motor voltages:	12 and 24 Volt
Protection class:	DIN EN 60034-5 min IP 54
Pump displacement:	1.0 cm^3/rev. ... 8.0 cm^3/rev
Tank volume:	1.8 - 8.4 l
Useable volume:	1.2 - 7.8 l
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	-20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 - 380 mm^2/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Cooling:	Convection cooling
Weight:	from 15 to 25 kg
Return flow rate:	up to max. 40 l/min
Installation position:	Vertical, horizontal

Further details can be found in Brochure No. 5.307.0

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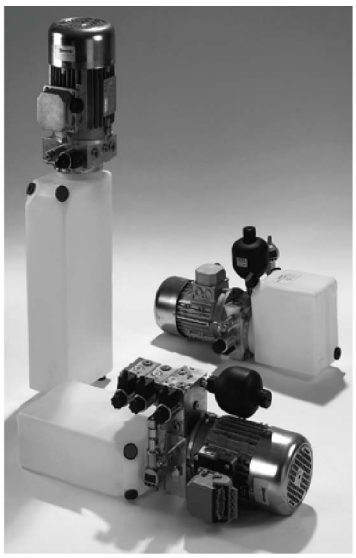

HYDAC Compact Power Units with 3-Phase Motor

CO1

Up to 250 bar
Up to 20 l/min
Short-time duty S2 = 5 min*
Intermittent duty S3 = 20%*

GENERAL

- Space-saving design due to small flange
- Possible to have different hydraulic controls in the same flange due to flexible configuration of cartridge valves and / or by fitting control blocks and standard function modules
- Very low noise levels due to special construction

SPECIFICATIONS

Flow rate:	up to 20 l/min
Operating pressure:	max. 250 bar
Peak pressure:	up to max. 300 bar (on request)
Duty cycle:	S2 (short-time duty) S3 (intermittent duty)
Motor:	Pn = 0.37 kW ... 3.0 KW (4; 5.5 KW upon request)
Motor voltages:	3 Ph. 230/400V -50 Hz (others on request)
Protection class:	DIN EN 60034-5 min IP 54
Pump displacement:	1.0 cm^3/rev. ... 10.0 cm^3/rev
Tank volume:	1.8 – 8.4 l
Useable volume:	1.2 – 7.8 l
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	–20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm^2/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Cooling:	Convection or air cooling
Weight:	from 12 to 20 kg
Return flow rate:	up to max. 40 l/min
Installation position:	Vertical, horizontal

Further details can be found in Brochure No. 5.306.0

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HYDAC Compact Power Units with 3-Phase Motor

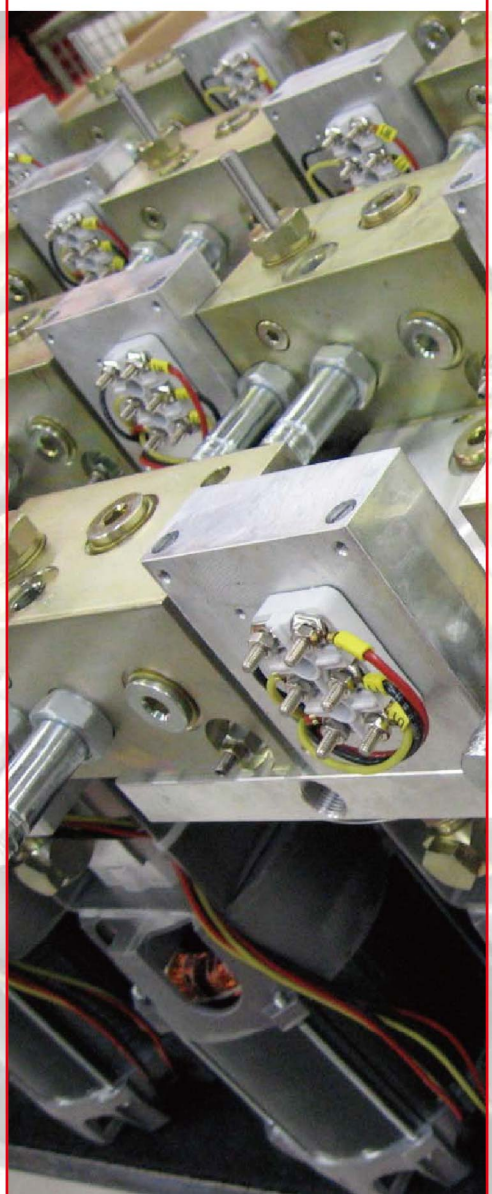
CO2

Up to 250 bar
Up to 20 l/min

Short-time duty	**S2 = 5 min***
Intermittent duty	**S3 = 25%***
Continuous-operation periodic duty	**S6 = 25 %***
(with cooler module)	

GENERAL

- Compact and lightweight power packs achieved through the use of progressive motors and aluminium flanges
- Robust version through the use of metal tank
- Wide variety of controls using standard function modules
- Easy to maintain as control valves are easily accessible
- Low-noise version



SPECIFICATIONS

Flow rate:	**up to 20 l/min**
Operating pressure:	**max. 250 bar**
Peak pressure:	**up to max. 300 bar (on request)**
Duty cycle:	**S2 (short-time duty)** **S3 (intermittent duty)** **S6 (continuous-operation periodic duty)**
Motor:	**Pn = 0.37 kW ... 5.5 kW**
Motor voltages:	**3 Ph. 230/400V -50 Hz (others on request)**
Protection class:	**DIN EN 60034-5 min IP 54**
Pump displacement:	**1.0 cm³/rev. ... 10.0 cm³/rev**
Tank volume:	**2.5 – 16.6 l (steel tank, square: 19 l)**
Useable volume:	**2.0 – 14.5 l**
Operating fluid:	**Hydraulic oil to DIN 51524 Part 1 and 2**
Temperature range of operating fluid:	**-20°C to max. +80°C**
Ambient temperature range:	**-20°C to max. +40°C**
Viscosity range:	**10 – 380 mm²/s is recommended**
Filtration:	**Class 21/19/16 to ISO 4406 or cleaner**
Cooling:	**Convection or air cooling**
Weight:	**from 12 to 20 kg**
Return flow rate:	**up to max. 40 l/min**
Installation position:	**Vertical, horizontal**

Further details can be found in Brochure in preparation

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HYDAC Compact Power Units with AC or 3-Phase Motor
CO3

Up to 250 bar
Up to 30 l/min

Short-time duty	**S2 = 10 min***
Intermittent duty	**S3 = 30%***
Continuous-operation periodic duty	**S6 = 30 %***

GENERAL

- Actuation of consumers made flexible by optional combination of double pump (energy efficiency)
- Robust aluminium oil tank with volume of 20 to 70 litres
- Low-noise motor
- High duty cycle possible

SPECIFICATIONS

Flow rate:	**1.3 to 30 l/min**
Operating pressure:	**max. 250 bar**
Duty cycle:	**S2 (short-time duty)** **S3 (intermittent duty)** **S6 (continuous-operation periodic duty)**
Motor	**0.55 to 5.5 kW**
Motor voltages:	**3 Ph. 230/400V -50 Hz (others on request)**
Protection class:	**DIN EN 60034-5 min IP 54**
Pump parameters:	**1.0 – 10.0 cm³ (up to 32 ccm³ on request)** **Double pump also possible**
Tank volume:	**20, 30, 44 & 70 l**
Useable volume:	**17, 25, 36 & 58 l**
Operating fluid:	**Hydraulic oil to DIN 51524 Part 1 + Part 2**
Temperature range of operating fluid:	**-20°C to max. +80°C**
Ambient temperature range:	**-20°C to max. +40°C**
Viscosity range:	**10 – 380 mm²/s is recommended**
Filtration:	**Class 21/19/16 to ISO 4406 or cleaner**
Cooling:	**Air or water cooler**
Weight:	**from 17 to 70 kg**
Return flow rate:	**up to max. 60 l/min**
Installation position:	**Vertical, horizontal**

Further details can be found in Brochure No. 5.310.0

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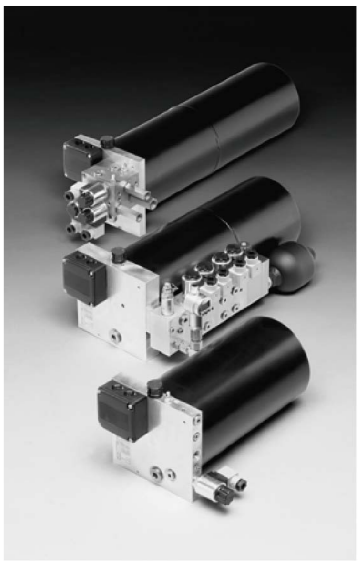


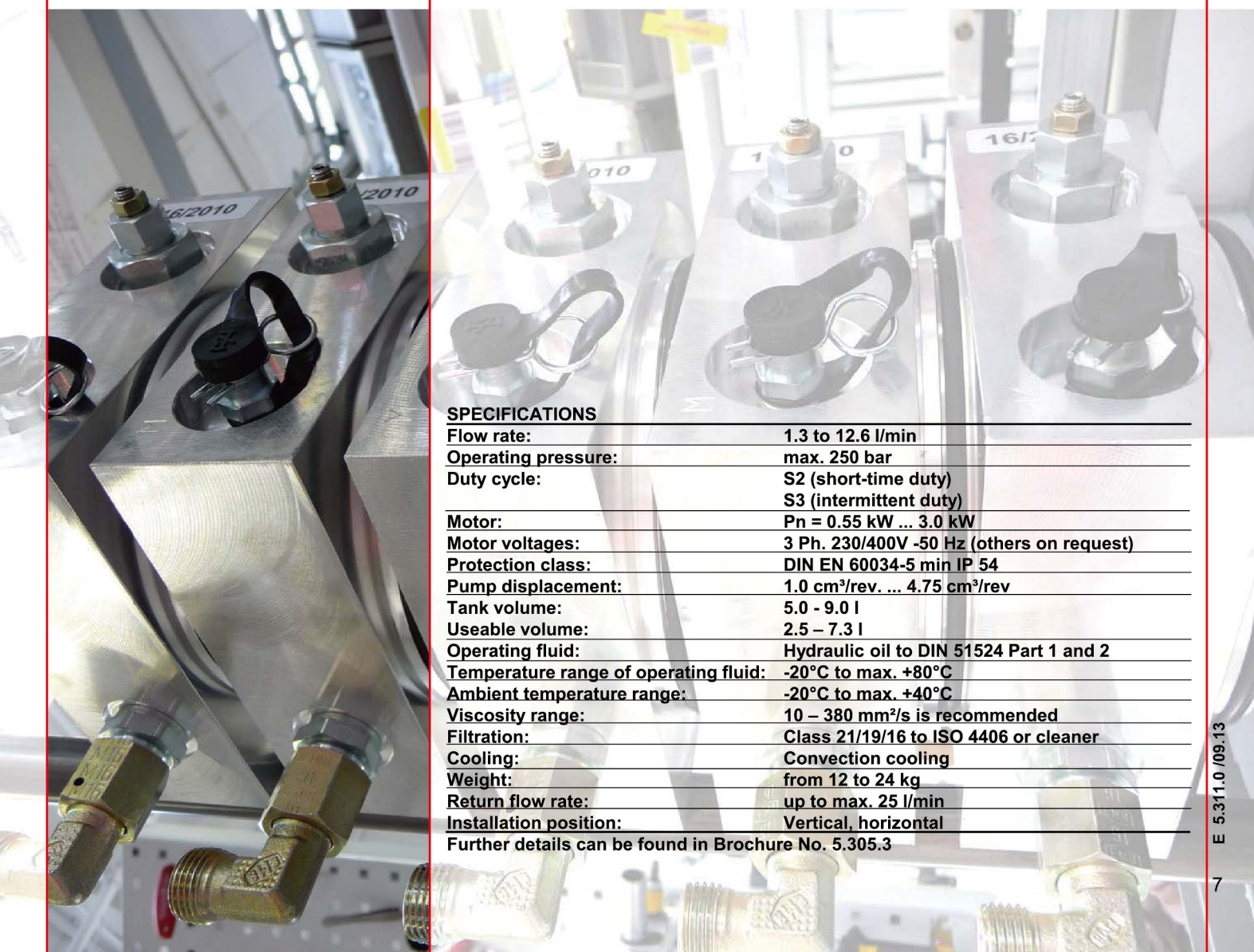
HYDAC Compact Power Units with Oil-Immersed Motor/Pump Unit

CA

Up to 250 bar
Up to 12.6 l/min
Short-time duty **S2 = 3 min***
Intermittent duty **S3 = 10%***

GENERAL

- Very compact and low-noise as motor-pump unit is oil-immersed in the tank
- High leakage resistance and stability due to deep-drawn steel tank
- Space-saving design due to small flange
- Standard terminal board on the front face simplifies electrical installation
- High performance compact units



SPECIFICATIONS

Flow rate:	1.3 to 12.6 l/min
Operating pressure:	max. 250 bar
Duty cycle:	S2 (short-time duty) S3 (intermittent duty)
Motor:	Pn = 0.55 kW ... 3.0 kW
Motor voltages:	3 Ph. 230/400V -50 Hz (others on request)
Protection class:	DIN EN 60034-5 min IP 54
Pump displacement:	1.0 cm³/rev. ... 4.75 cm³/rev
Tank volume:	5.0 - 9.0 l
Useable volume:	2.5 – 7.3 l
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	-20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm²/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Cooling:	Convection cooling
Weight:	from 12 to 24 kg
Return flow rate:	up to max. 25 l/min
Installation position:	Vertical, horizontal

Further details can be found in Brochure No. 5.305.3

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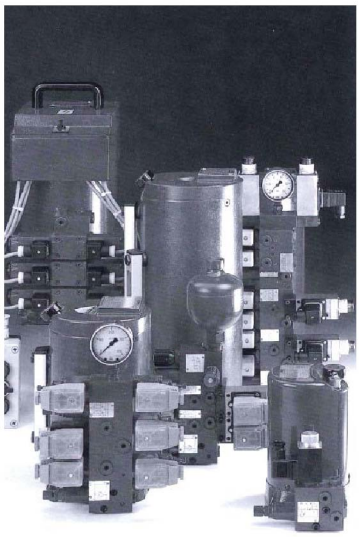
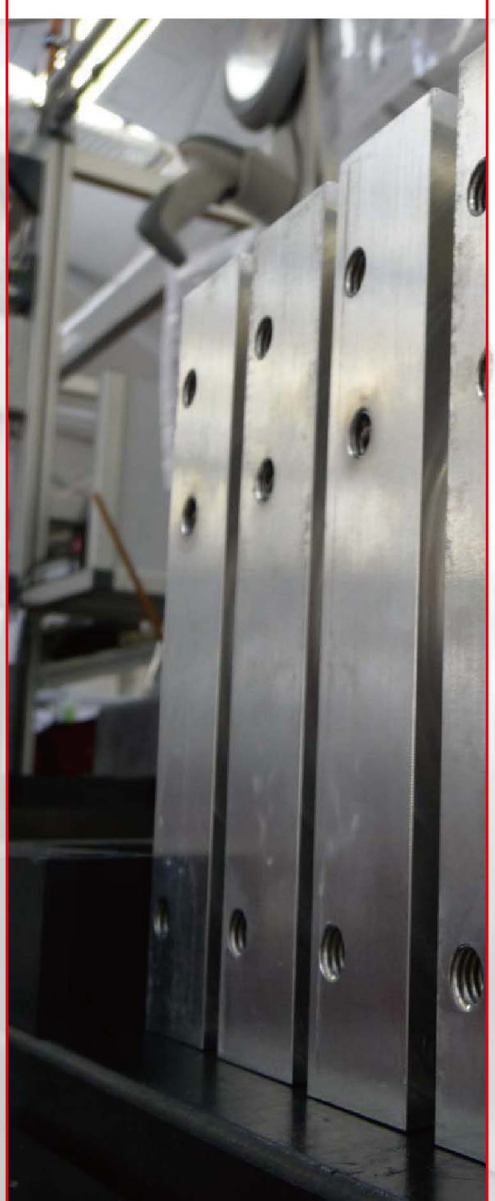


HYDAC Compact Power Units
High Pressure Power Unit with 3-Phase Motor
HP

Up to 500 bar
Up to 5.25 l/min
Short-time duty **S2 = 3 min***
Intermittent duty **S3 = 10%***

GENERAL

- High power density and simultaneously compact construction
- Position of terminal box in the top of the unit simplifies electrical installation
- Radial piston pump is oil-immersed in the sturdy tank
- Very low noise emissions due to noise-damping cast-iron housing
- Wide range of build-on controls available



SPECIFICATIONS

Flow rate:	0.3 to 5.25 l/min
Operating pressure:	max. 500 bar
Duty cycle:	S2 (short-time duty) S3 (intermittent duty)
Motor:	Pn = 1.2 kW ... 2.2 kW
Voltages:	3 Ph. 230/400V -50 Hz (others on request)
Protection class:	DIN EN 60034-5 min IP 54
Pump displacement:	0.3 cm^3/rev. ... 5.25 cm^3/rev
Tank volume:	1.1 - 7.0 l
Useable volume:	0.7 – 5.8 l
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	–20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm^2/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Cooling:	Convection cooling / air cooling
Weight:	from 7.2 to 25.7 kg
Return flow rate:	up to max. 10 l/min
Installation position:	vertical

Further details can be found in Brochure No. 5.301.6

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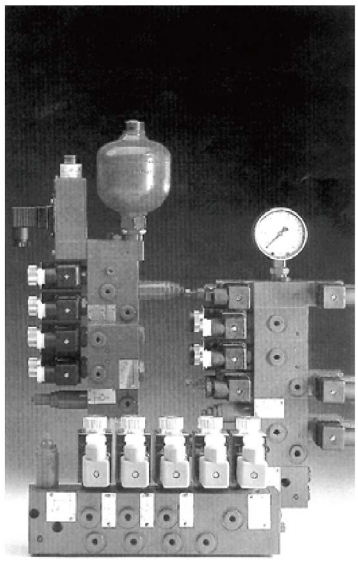

HYDAC Valve Stacking System L

Up to 500 bar
Up to 12 l/min

GENERAL

- Individually extendable stacking system for controlling low-volume consumers and pressure/load-holding tasks.
- A high level of flexibility for both designers and builders
- Small dimensions combined with high power density
- No leakage thanks to short, robust connections
- Valve stack can be extended by retrofitting with additional modules

SPECIFICATIONS

Flow rate:	up to 12 l/min
Operating pressure:	max. 500 bar
Voltages:	24 and 230 volts
Protection class:	DIN EN 60034-5 min IP 65
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	-20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm²/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Weight:	from 0.2 to 2.2 kg per individual module
Return flow rate:	up to max. 15 l/min
Can be flange-mounted to:	CO1, DC1, CA and HP power units

Further details can be found in Brochure No. 5.304.2

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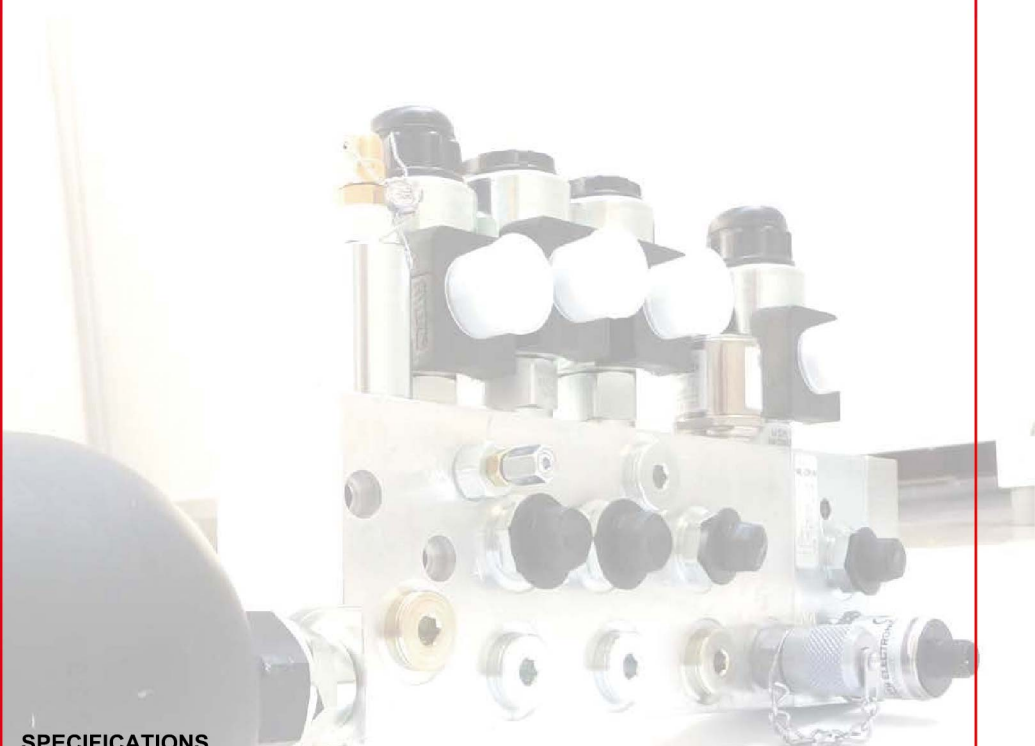
HYDAC Valve Stacking System ML

Up to 350 bar
Up to 20 l/min

GENERAL

- Individually extendable stacking system with integrated installation and sealing elements.
- A high level of flexibility for both designers and builders
- Small dimensions combined with high power density
- No leakage thanks to short, robust connections
- Valve stack can be extended by retrofitting with additional modules

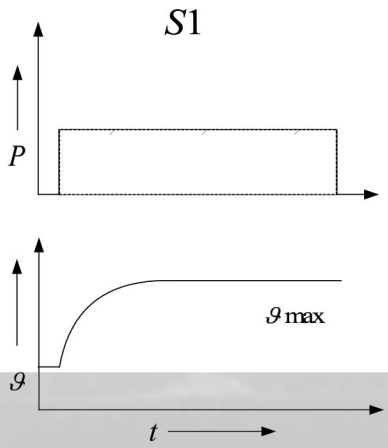


SPECIFICATIONS

Flow rate:	12 to 20 l/min
Operating pressure:	max. 350 bar
Voltages:	24 and 230 volts
Protection class:	DIN EN 60034-5 min IP 65
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature range of operating fluid:	-20°C to max. +80°C
Ambient temperature range:	-20°C to max. +40°C
Viscosity range:	10 – 380 mm²/s is recommended
Filtration:	Class 21/19/16 to ISO 4406 or cleaner
Weight:	from 0.5 to 6.4 kg per individual module
Return flow rate:	up to max. 20 l/min
Can be flange-mounted to:	CO1, DC1, CA and HP power units

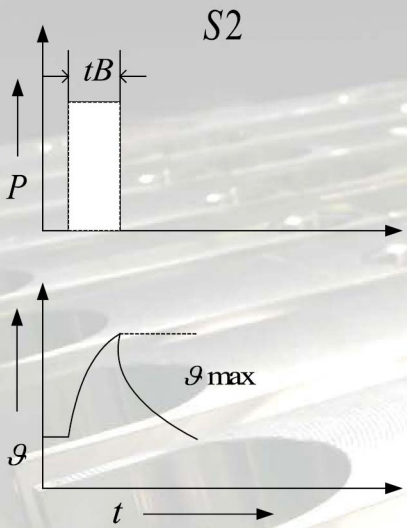
Further details can be found in Brochure No. 5.308.

Information on Intermittent Duty



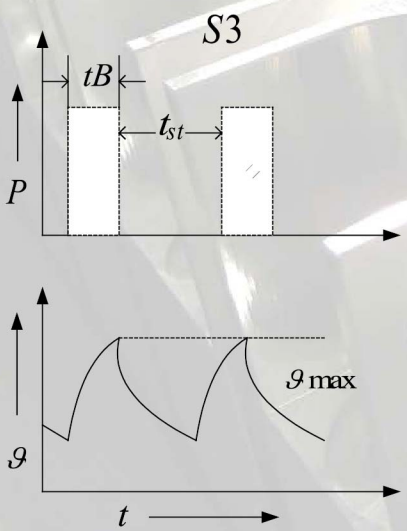
CONTINUOUS DUTY (duty type S1)

- No leakage thanks to short, robust connections
- Can be extended by retrofitting with additional modules
- With S1, thermal equilibrium is reached: thermal energy supplied = thermal energy dissipated, and in this connection the maximum temperature is 80° C
- Compact power units cannot be operated continuously



SHORT-TIME DUTY (duty type S2)

- With S2, the operation time on load is not sufficient to reach thermal equilibrium
- Compact power units are designed for short-time operation S2



INTERMITTENT PERIODIC DUTY (duty type S3)

- The cycle time (T b + T st) is so short that thermal equilibrium is not reached
- The cycle time must not exceed 10 minutes
- Compact power units are designed for intermittent periodic operation S3

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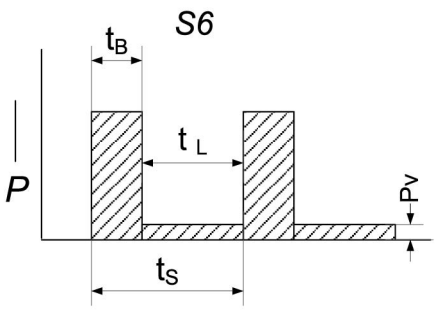
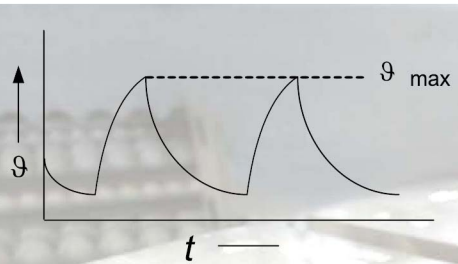
Information on Intermittent Duty



CONTINUOUS-OPERATION PERIODIC DUTY (duty type S6)

- The cycle time – time with constant load and a rest period (tB + t L) – is so short that thermal equilibrium is not reached
- The cycle time must not exceed 10 minutes
- Some Compact power units are designed for continuous-operation periodic duty S6



CALCULATING A COMPACT POWER UNIT

- **Calculation example:**

  The relative duty cycle tr is calculated as follows:

$$T_R = \frac{T_B}{T_B + T_L} \times 100\ \%$$

- T_B = 20 sec
- T_L = 80 sec

$$T_R = \frac{20}{20 + 80} \times 100\ \% = 20\ \%$$

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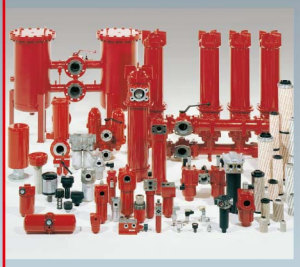
編號：DEF 3 000



過濾器產品總型錄
編號：DEF 7.000

工業水過濾技術
編號：DEF 7.700

系統化流體服務
編號：DEF 7.929

小型液壓動力設備
編號：DEF 5.300

配件總型錄 編號：DEF 6.100

電子量測元件 編號：E18.000.0

冷卻系統 編號：DEF 5.7000

HYDAC 總部
HYDAC 分公司
HYDAC 代理商

HYDAC INTERNATIONAL

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