

Power Unit PEC

PRODUCT MANUAL



HÄGGLUNDS

More than an ordinary drive supplier.

The worse it is, the better equipped we are. After more than four decades of supplying drive systems for heavy industrial applications, Hägglunds is accustomed to difficult demands. We provide what you need to get the toughest jobs done right – no matter how harsh the environment or how specialised the task.

Performance. Flexibility. Security.

Hägglunds unique hydraulic drive systems – combined with our wealth of experience – provide advantages no other drive supplier can match. With Hägglunds drives on your equipment, you receive:

- Maximum torque from zero speed.
- High performance regardless of conditions.
- Precise control of infinitely variable speed.
- Standardised modules for design freedom.
- Smaller, lighter, more effective installations.
- Superior protection of equipment and processes.

Here. There. Everywhere.

A global leader in industrial drive solutions, Hägglunds has offices in nearly twenty countries and distribution partners in many more. We are where you are – with short lead times and fast, comprehensive service that answers your needs.

Function - This is how it works

A complete hydraulic drive system from Hägglunds Drives comprises the Power unit with electric motor, pump and tank, the control system, the hydraulic motor and the piping system. The power unit type PEC is described in this publication and uses a closed loop hydraulic system to provide a highly dynamic drive system.

In most offerings, all items except the piping and hydraulic motor are housed in a sound insulated cabinet. The swash plate pump is driven by an electric motor running efficiently at fixed speed.

The oil flow from the pump is determined by the swash-plate angle, which is controlled by a signal from the control system. Starting in an unloaded, neutral condition, the system ramps the flow up to the required direction and rate and pressure is determined by the load up to the limit set at the compensator. If pressure reaches compensator setting the pump will destroke, stopping the drive, so eliminating heat build up but maintaining the set pressure and therefore torque at the drive. The pump will stay in this condition until the system is unloaded whereupon the pump will immediately ramp up to the

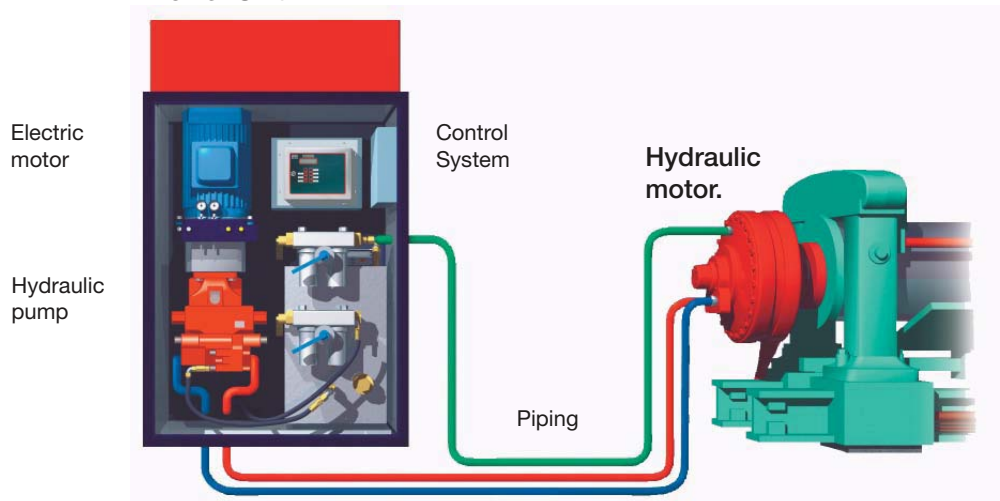
set flow rate or until the control is adjusted. The pump and the hydraulic motor are connected together by flexible hoses and piping if necessary.

At the motor the oil is distributed through the valve plate to the pistons in the cylinder block 50% of them with high pressure and 50% with charge pressure. The oil pressure forces the piston assemblies radially outwards against the cam-ring. This produces a balanced and smooth rotation with extremely high torque which drives the machine. The speed of the motor is controlled by the flow of oil from the pump. Drive motor speed is therefore proportional to the swash plate angle of the pump. If the swash plate is controlled over-centre, the flow is reversed and the motor direction is therefore reversed.

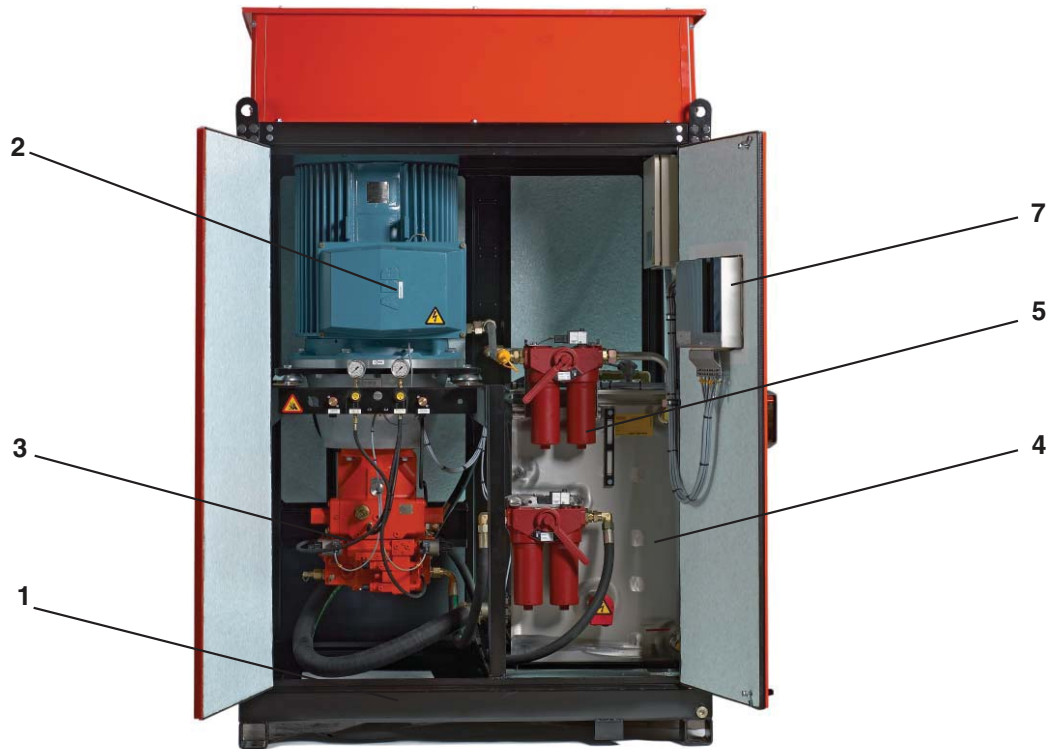
Both the hydraulic motor and the pump have a very low moment of inertia, which makes it possible to change speed and stop or reverse direction quickly.

A proportion of the return flow is used to provide oil conditioning by cooling and filtering. The oil in the motor and pump case which provides lubrication and local cooling is fed back to tank via an adequately sized drain line.

Power Unit.



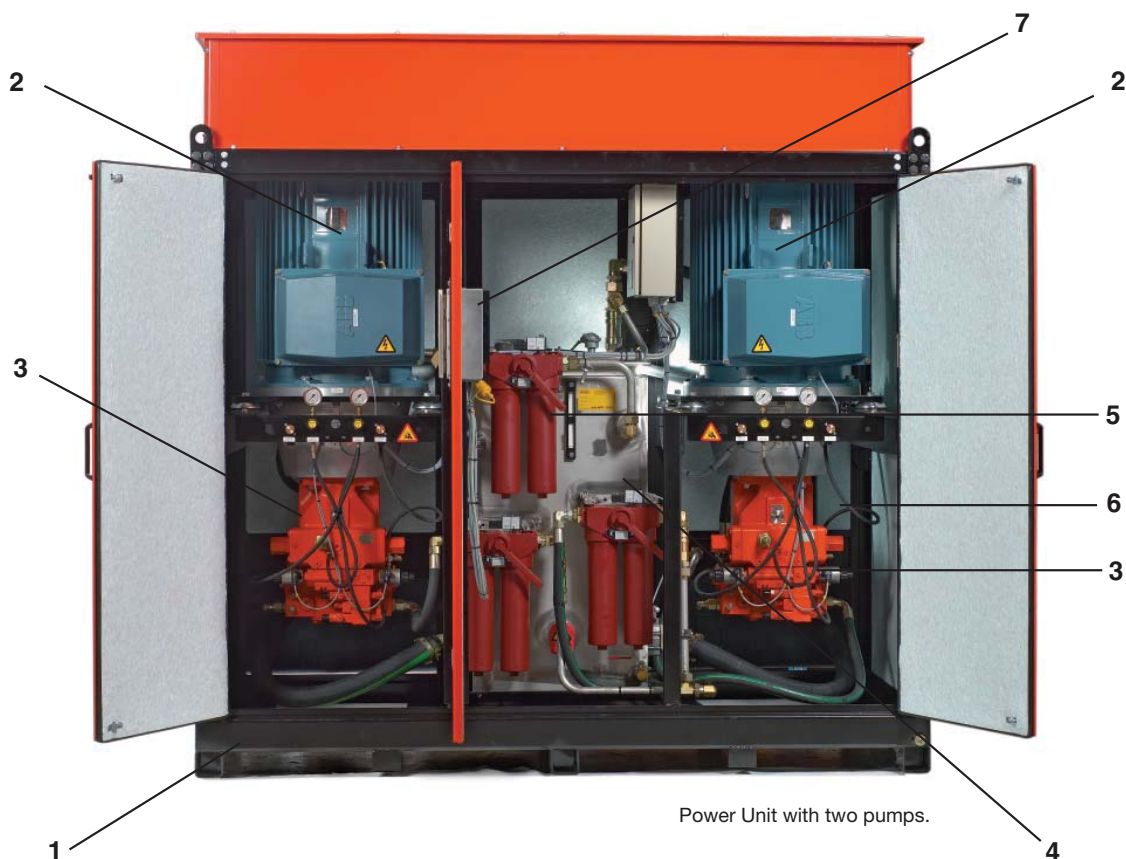
Main components



Power Unit with one pump.

1. The free standing cabinet is built of a robust steel framework with sound insulated doors, panels and cover. It is surface treated to prevent corrosion and ageing in tough process industry environments. The solution is an open one, which simplifies accessibility during maintenance and service.
2. The electric motors that we use have high efficiency and are also extremely reliable. They are started with no load and run optimally at fixed speed.
3. The hydraulic pumps are of the variable displacement axial piston type with very fast acting pressure compensator override. This virtually eliminates overloads and is a major factor in system reliability. All control valves are built in to keep pipe work to an absolute minimum. The electro-hydraulic stroker provides variable flow by smoothly controlling the swash plate and thereby pump displacement.
4. The tank is manufactured in stainless steel to prevent corrosion.

Main components



Power Unit with two pumps.

- 5. The oil filters are dimensioned for oils with high viscosity and a high degree of contamination separation. Duplex filters can be supplied as an option, allowing you to replace filters during operation.
- 6. The oil cooler is dimensioned to maintain the oil temperature in the hydraulic system at the correct level. In this way good lubrication characteristics are ensured and the service life of the oil and of the complete drive system will be long.

- 7. The control system is configurable for different types of applications, providing consistent start and stop sequences. The operation can be controlled by external signals or from the front panel of the control system.
Various operational parameters can be displayed such as speed, pressure, electric motor power and self-diagnostics.

Data PEC Power unit

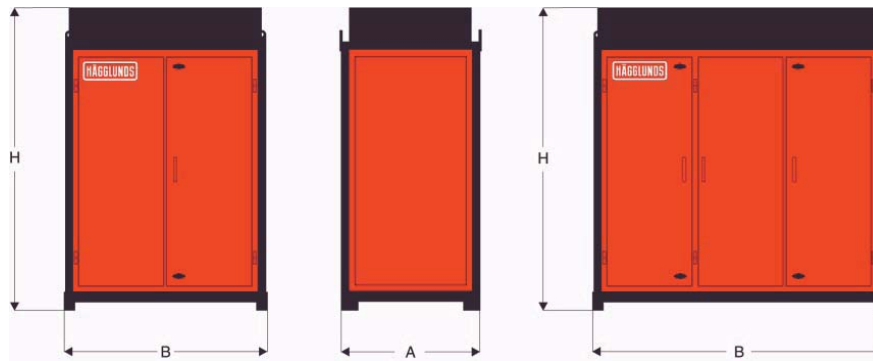
Data - PEC Power Unit				
Type	Max. installed power (kW)	Max. oil flow* (l/min)	Max. pressure (bar)	Weight (kg)
PEC 102	90	175	350	1500
PEC 202**	90	337	350	1500
PEC 103	90(2x90)	175	350	2300
PEC 203**	180(2x90)	350(2x175)	350	2500
PEC 302**	315	737	350	2900
PEC 402**	355	737	350	2900
PEC 602**	355	737	350	2900
PEC 303**	400(2x200)	674(2x337)	350	3600
PEC 403**	400(2x200)	674(2x337)	350	3700
PEC 603**	630(2x315)	1474(2x737)	350	5100
PEC 702	500	1103	350	4500
PEC 702**	500	1257	350	4500
PEC 803**	710(2x355)	1474(2x737)	350	5500
PEC 1003**	710(2x355)	1474(2x737)	350	5500
PEC 1203	1000(2x500)	2206(2x1103)	350	8600
PEC 1203**	1000(2x500)	2514(2x1257)	350	8600

*) 1470 rpm.
) Tandem.



PEC cabinet with tandem mounted pumps

Dimensions



Basic dimensions, PEC Power Unit									
Cabinet size	1	2	3	4	5	6	7	6	7
Type*	PEC 102	PEC 103	PEC 302	PEC 303	PEC 803	PEC 702	PEC 1203	PEC 702**	PEC 1203**
Dim. mm	PEC 202	PEC 203	PEC 402	PEC 403	PEC 1003				
			PEC 602	PEC 603					
H	2320	2320	2600/2700 ¹	2600/2700 ¹	2600/2700/2800 ¹	2800/2900	2800/2900 ¹	3100/3200 ¹	3100/3200 ¹
			2800/2900	2800/2900	2900/3000	3000/3100	3000/3100	3300/3400	3300/3400
B	1500	2290	1670	2590	3100	1920	3600	1920	3600
A	1000	1000	1250	1250	1250	1850	1850	1850	1850

*) Cabinet designations ending with a 2, represent a two-door cabinet.
Cabinet designations ending with a 3, represent a three-door cabinet.

**) Cabinets suited for tandem mounting of pump.

¹ Size varies with the height of the electric motor.



Features of the PEC Power Unit

Included as standards

- Totally enclosed IP55, squirrel cage, 4-pole electrical motor.
- Axial piston pump with electro-hydraulic control.
- Fast pressure compensator, charge pump and flushing valve.
- Motor/pump set mounted on anti-vibration pads.
- All internal pipe work and wiring included.
- Tandem pump mounting possibilities.
- Stainless steel oil tank with level gauge, breather, drain valve.
- 10 micron return and drain line filters with visual & electrical indication.
- Stainless steel water cooler and water solenoid valve.
- Temperature switch with two switches and temperature indicator.
- Suction line valve with switch.
- Charge pressure switch.
- Oil filling point with quick release connector.
- Electric junction box, IP65.
- Pressure gauges with push to read valve.

Optional extras

- Thermistor protection for electric motor.
- Anti-condensation heaters for electric motors.
- Different pump control.
- Control system Spider.
- Pressure transmitters.
- High pressure switch.
- Cabinet feet, anti vibrating mount.
- Duplex oil filters.
- Oil heater.
- Air blast oil cooler.
- Extra temperature switches and or PT100 temp transmitter.
- Accumulator for shock loadings.
- Prepared for flushing of hydraulic motor case.
- Piping on main lines & isolation valves.
- Prepared for dusty environments.
- Heavy duty epoxy paint system.
- Stainless steel panels and doors
- Low noise option.
- Optional electric motors; high voltage, EX-proof
- Auxiliary hydraulic circuits (e.g. for brakes or cylinders)

Technical data SP pump

The SP pump is designed specifically to Hägglunds specifications to provide a neatly packaged pump with integral boost pump, electro-hydraulic displacement stroker and fast compensator to reduce pressure spikes on tough drives. Maximum volume adjustment screws and a displacement indicator are included. A double shaft seal arrangement is provided to eliminate leakage. The SP has low noise characteristics and is designed to give long trouble free life in line with Hägglunds drives systems generally.



The SP provides a very wide range of pump displacements including the ability to use tandem pumps which on 250 size and above give a very compact solution using an internal gear pump for boost and servo pressures. 180 size and below are also available in tandem but using an external boost and servo pump. Tandem pumps enable one electric motor to load share two drives which can save space, improve efficiency and economy. In some applications however care with emergency stop must be taken when two completely separate drives are being considered. The SP therefore enables very good possibilities to optimize to the most efficient and appropriate drive selection.

Size				40	71	125	180	250	355	500	750
Displacement	Variable pump	V_{gmax}	cm ³	40	71	125	180	250	355	500	750
	Auxiliary pump	V_{gH}	cm ³	20	25	38	45	63	80	98	143
Max. speed		n_{max}	rpm	3700	3200	2600	2400	2200	2000	1800	1600
Max. flow	(at n_{max})	Q_{max}	l/min	148	227	325	432	550	710	900	1200
	(at $n_E=1500$ rpm)		l/min	60	106,5	187,5	270	375	533	750	1125
Max. power $\Delta p=350$ bar	(at n_{max})	$P_{o max}$	kW	70	124	190	252	321	414	525	700
	(at $n_E=1500$ rpm)		kW	35	62	109	158	219	311	438	656
Max. torque $\Delta p=350$ bar	(at V_{gmax})	T_{max}	Nm	223	395	696	1002	1391	1976	2783	4174
Torque $\Delta p=100$ bar	(at V_{gmax})	T	Nm	64	113	199	286	398	564	795	1193
Moment of inertia about drive axis		T	kgm ²	0,0049	0,0121	0,03	0,055	0,0959	0,19	0,3325	0,66
Filling volume		J	L	2	2,5	5	4	10	8	14	19
Approximate weight		m	kg	77	94	135	150	214	237	350	500
Max. pressure cont.			bar	350	350	350	350	350	350	350	350
Max. pressure peak			bar	400	400	400	400	400	400	400	400

Technical data Gold CUP

The Gold Cup pump is designed specifically to Hagglands specifications to provide a neatly packaged pump with integral boost pump, electro-hydraulic displacement stoker and extremely fast compensator to reduce pressure spikes on tough drives. Maximum volume adjustment screws and a displacement indicator are included. A double shaft seal arrangement is provided to eliminate leakage and is designed to give long trouble free life in line with Hagglands drives systems generally.



The Gold Cup has been employed successfully for many years by Hagglands providing a more limited range of displacements than the SP but provides some useful steps between the SP displacements.

It is a most compact pump with low inertia, excellent servo control and extremely fast acting compensator which is very useful in some applications. It is also user friendly with light weight common controls and valve blocks. Because an external boost pump is always mounted it is relatively easy to add auxiliary circuits to the Gold Cup.

Size				P6S	P7S	P11S	P14S	P24S	P30S
Displacement	Variable pump	V_{gmax}	cm ³	98	119	180	229	403	501
	Auxiliary pump	V_{gH}	cm ³	17,5 + 20,7	17,5 + 20,7	17,5 + 38,2	17,5 + 38,2	17,2 + 79,2	17,2 + 79,2
Max. speed		n_{max}	rpm	3000	3000	2400	2400	2100	1800
Max. flow	(at n_{max})	Q_{max}	l/min	294	357	432	550	846	902
	(at $n_E=1500$ rpm)		l/min	147	178,5	270	343	604	751
Max. power $\Delta p=345$ bar	(at n_{max})	$P_{o max}$	kW	169	205	248	316	486	519
	(at $n_E=1500$ rpm)		kW	85	103	155	197	347	432
Max. torque $\Delta p=345$ bar	(at V_{gmax})	T_{max}	Nm	538	653	988	1257	2213	2751
Torque $\Delta p=100$ bar	(at V_{gmax})	T	Nm	156	189	286	364	641	797
Moment of inertia about drive axis		T	kgm ²	0,027	0,027	0,085	0,085	0,240	0,286
Filling volume		J	L	3,78	3,78	6,6	6,6	11,4	11,4
Approximate weight		m	kg	152	152	220	220	342	357
Max. pressure cont.			bar	345	345	345	345	345	345
Max. pressure peak			bar	420	420	420	420	420	420

Possible pump combinations

Pumps series SP

Cabinet size		1		2		3			4			5		6		7	
Power Unit PEC		102	202	103	203	302	402	602	303	403	603	803	1003	702	1203		
Electric motor rated power kW. (50 Hz)	500													1	2		
	400													1	2		
	355						1	1				2	2	1	2		
	315					1	1	1			2	2	2	1	2		
	250					1	1	1			2	2	2	1	2		
	200					1	1	1	2	2	2	2	2	1	2		
	160					1	1	1	2	2	2	2	2	1	2		
	132					1	1	1	2	2	2	2	2	1	2		
	110					1	1	1	2	2	2	2	2	1	2		
	90		1		2	1	1	1	2	2	2	2	2				
	75		1		2	1	1	1	2	2	2	2	2				
	55	1	1	2	2	1	1	1	2	2	2	2	2				
	45	1	1	2	2	1	1	1	2	2	2	2	2				
	37	1	1	2	2				2	2	2						
	30	1	1	2	2				2	2	2						
	22,5	1	1	2	2				2	2	2						
	18,5	1	1	2	2				2	2	2						
15	1	1	2	2				2	2	2							
11	1	1	2	2													

Pump size	El. motor Power kW min-max	Speed rpm	Oil flow**		1		2		3			4			5		6		7		
			l/min	gpm	102	202	103	203	302	402	602	303	403	603	803	1003	702	1203			
SP 40	11-30	1470	59	16	1	1	2*	2													
		1760	70	19	1	1	2*	2													
SP 71	15-55	1470	104	28	1	1	2*	2													
		1760	125	33	1	1	2*	2													
SP 125	30-90	1470	184	49		1		2*				2	2	2							
		1760	220	58		1		2*				2	2	2							
SP 180	37-90	1470	265	70		1		2*				2	2	2							
		1760	317	84		1		2*				2	2	2							
	55-132	1470	265	70					1	1	1	2	2	2							
		1760	317	84					1	1	1	2	2	2							
SP 250	55-200	1470	368	97					1	1	1			2	2	2					
		1760	440	116					1	1	1			2	2	2					
	160-200	1470	368	97																2	
		1760	440	116																	2
SP 355	75-250	1470	522	138					1	1	1			2	2	2					
		1760	625	165					1	1	1			2	2	2					
	160-250	1470	522	138																	2
		1760	625	165																	
SP 500	110-315	1470	735	194						1	1			2	2						
		1760	880	232						1	1			2	2						
	160-355	1470	735	194																	1
		1760	880	232																	

* Only one set of electric motor/pump is permitted to operate, the other set serves as stand by.

** Actual flow = theoretical flow · volumetric efficiency.

Pumps series SP

Pump size	El. motor Power kW min-max	Speed rpm	Oil flow**		1		2		3			4			5		6		7	
			l/min	gpm	102	202	103	203	302	402	602	303	403	603	803	1003	702	1203		
SP 750	160-500	1470	1103	291														1	2	
		1760	1320	349														1	2	
SP 40 + SP 40	15-55	1470	118	31		1		2*				2	2	2						
		1760	141	37		1		2*				2	2	2						
SP 71 + SP 40	30-90	1470	163	43		1		2*				2	2	2						
		1760	195	52		1		2*				2	2							
SP 71 + SP 71	30-90	1470	209	55		1		2*				2	2	2						
		1760	250	66		1		2*				2	2							
	75-110	1470	209	55					1	1	1	2	2	2						
		1760	250	66					1	1	1		2	2						
SP 125 + SP 40	37-90	1470	243	64		1		2*	1	1	1		2	2						
		1760	290	77		1		2*	1	1	1		2	2						
	75-132	1470	243	64					1	1	1		2	2						
		1760	290	77					1	1	1		2	2						
SP 125 + SP 71	45-90	1470	288	76		1		2*	1	1	1		2	2						
		1760	345	91		1		2*	1	1	1		2							
	75-132	1470	288	76					1	1	1		2	2						
		1760	345	91					1	1	1		2							
SP 125 + SP 125	55-200	1470	368	97					1	1	1			2	2	2				
		1760	440	116					1	1	1			2	2	2				
SP 180 + SP 40	45-160	1470	323	85					1	1	1		2	2	2	2				
		1760	387	102					1	1	1		2	2	2	2				
SP 180 + SP 71	55-200	1470	369	97					1	1	1			2	2	2				
		1760	442	117					1	1	1			2	2	2				
SP 180 + SP 125	75-200	1470	448	118					1	1	1			2	2	2				
		1760	537	142					1	1	1			2	2	2				
SP 180 + SP 180	75-250	1470	529	140					1	1	1			2	2	2				
		1760	634	167					1	1	1			2	2					
SP 250 + SP 40	75-200	1470	426	113					1	1	1			2	2	2				
		1760	510	135					1	1	1			2	2	2				
SP 250 + SP 71	75-250	1470	472	125					1	1	1			2	2	2				
		1760	565	149					1	1	1			2	2	2				
SP 250 + SP 125	75-250	1470	551	146					1	1	1			2	2	2				
		1760	660	174						1	1			2	2					
SP 250 + SP 180	90-315	1470	632	167					1	1	1			2	2	2				
		1760	757	200						1	1			2	2					
SP 250 + SP 250	110-315	1470	735	194						1	1				2					
		1760	880	232							1				2					
	110-355	1470	735	194													1	2		
		1760	880	232													1	2		
SP 355 + SP 40	90-315	1470	581	153					1	1	1			2	2	2				
		1760	695	184						1	1			2	2					
SP 355 + SP 71	90-315	1470	626	165						1	1			2	2					
		1760	750	198						1	1			2	2					
SP 355 + SP 125	110-355	1470	706	186						1	1			2	2	1	2			
		1760	845	223						1	1			2	2	1	2			

* Only one set of electric motor/pump is permitted to operate, the other set serves as stand by.

** Actual flow = theoretical flow · volumetric efficiency.

Pumps series SP

Pump size	El. motor Power kW min-max	Speed rpm	Oil flow**			1		2		3			4			5		6		7	
			l/min		gpm	102	202	103	203	302	402	602	303	403	603	803	1003	702	1203		
SP 355 + SP 180	110-400	1470	786	208														1	2		
		1760	942	249														1	2		
SP 355 + SP 250	132-400	1470	889	235														1	2		
		1760	1065	281														1	2		
SP 355 + SP 355	132-400	1470	1044	276														1	2		
		1760	1250	330														1	2		
SP 500 + SP 40	110-400	1470	794	210														1	2		
		1760	950	251														1	2		
SP 500 + SP 71	132-400	1470	839	222														1	2		
		1760	1005	265														1	2		
SP 500 + SP 125	132-500	1470	919	243														1	2		
		1760	1100	291														1	2		
SP 500 + SP 180	160-500	1470	1000	264														1	2		
		1760	1197	316														1	2		
SP 500 + SP 250	160-500	1470	1103	291														1	2		
		1760	1320	349														1	2		
SP 500 + SP 355	160-500	1470	1257	332														1	2		
		1760	1505	398														1	2		
SP 500 + SP 500	200-500	1470	1470	388														***	***		
		1760	1760	465														***	***		
SP 750 + SP 40	160-500	1470	1161	307														1	2		
		1760	1390	367														1	2		
SP 750 + SP 71	160-500	1470	1207	319														1	2		
		1760	1445	382														1	2		
SP 750 + SP 125	200-500	1470	1286	340														***	***		
		1760	1540	407														***	***		
SP 750 + SP 180	200-500	1470	1367	361														***	***		
		1760	1637	432														***	***		
SP 750 + SP 250	200-500	1470	1470	388														***	***		
		1760	1760	465														***	***		
SP 750 + SP 355	250-500	1470	1624	429														***	***		
		1760	1945	514														***	***		
SP 750 + SP 500	250-500	1470	1838	485														***	***		
		1760	2200	581														***	***		
SP 750 + SP 750	315-500	1470	2205	582														***	***		
		1760	2640	697														***	***		

Note: Standard design cooling power 25% of installed main electric motor power.

1 = One electric motor/pump.

2= Two electric motors/pumps same or different size can be selected.

* Only one set of electric motor/pump is permitted to operate, the other set serves as stand by

** Actual flow = theoretical flow · volumetric efficiency.

*** Not in PEC, because of height and tank flow.

Possible pump combinations

Pumps series Gold CUP

Cabinet size	1		2		3			4			5		6	7
Power unit PEC	102	202	103	203	302	402	602	303	403	603	803	1003	702	1203
Electric motor related power (kw) (50 Hz)	315				1	1	1			2	2	2		
	250				1	1	1			2	2	2		
	200				1	1	1	2	2	2	2	2		
	160				1	1	1	2	2	2	2	2		
	132				1	1	1	2	2	2	2	2		
	110				1	1	1	2	2	2	2	2		
	90	1	1	2	2	1	1	1	2	2	2	2	2	
	75	1	1	2	2	1	1	1	2	2	2	2	2	
	55	1	1	2	2	1	1	1	2	2	2			
	45	1	1	2	2	1	1	1	2	2	2			
	37	1	1	2	2	1	1	1	2	2	2			
	30	1	1	2	2				2	2	2			
	22	1	1	2	2				2	2	2			
	18,5	1	1	2	2				2	2	2			
	15	1	1	2	2				2	2	2			
11	1	1	2	2				2	2	2				

Pump size	Emotor power (kW) min/max	Speed (rpm)	Oil flow** (l/min) (gpm)	102	202	103	203	302	402	602	303	403	603	803	1003	702	1203	
P6S-98	11-90	1470	144(38,0)	1	1	2*	2				2	2	2					
		1770	172(45,4)		1		2*				2	2	2					
P7S-119	18,5-90	1470	175(46,2)		1	2*	2				2	2	2					
		1770	209(55,2)		1		2*				2	2	2					
P11S-180	37-90	1470	264(69,7)		1		2*				2	2	2					
		1770	316(83,4)		1		2*				2	2						
	55-160	1470	264(69,7)					1	1	1	2	2	2	2	2			
		1770	316(83,4)					1	1	1		2	2	2	2			
P14S-229	37-90	1470	337(88,9)		1		2*				2	2	2					
		1770	403(106,4)		1		2*				2	2						
	55-200	1470	337(88,9)					1	1	1	2	2	2	2	2			
		1770	403(106,4)					1	1	1		2	2	2	2			
P24S-403	75-315	1470	592(156,3)					1	1	1			2	2	2			
		1770	663(167,1)					1	1	1			2	2	2			
P30S-501	75-315	1470	737(194,6)					1	1	1			2	2	2			
		1770	881(232,6)					1	1	1			2	2	2			

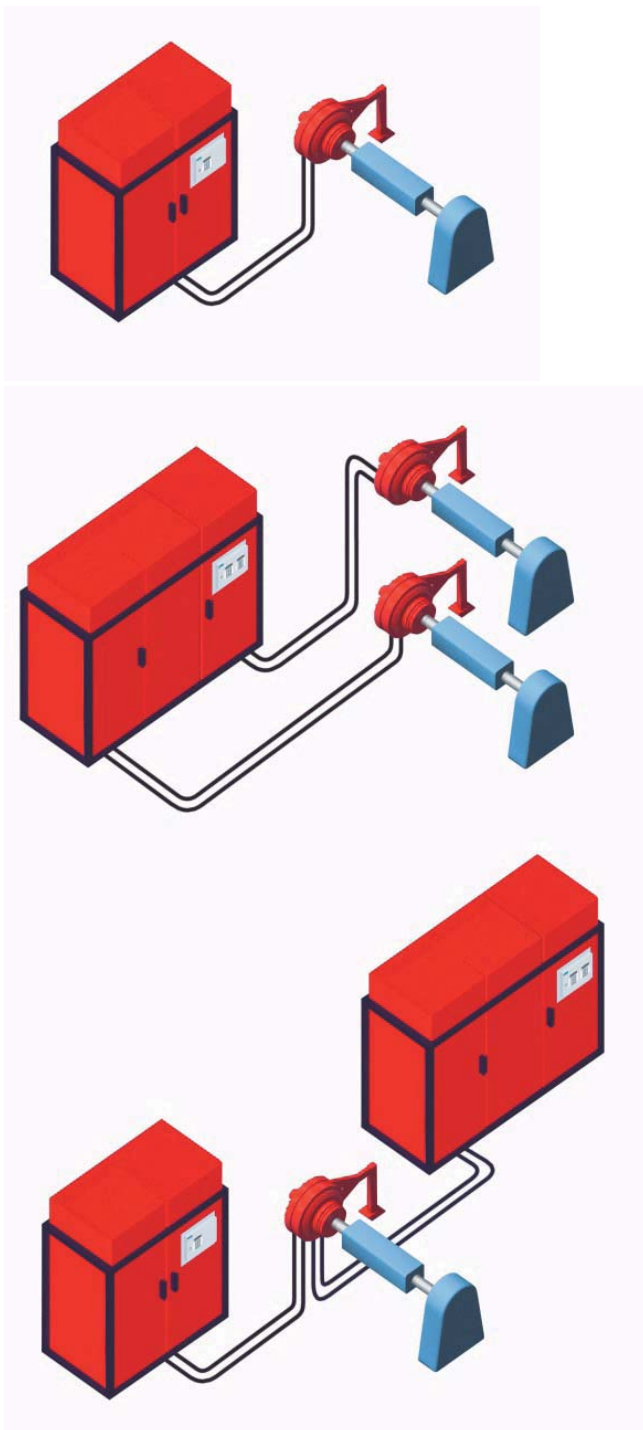
1) = One electric motor/pump.

2)= Two electric motors/pumps same or different size can be selected.

*) Only one set of electric motor/pump is permitted to operate, the other set serves as stand by

**) Actual flow = theoretical flow · volumetric efficiency.

Choose the best solution for your application



- A system of few components, but many combinations and configurations, to provide any solution for the Häggglunds Drives performance range. The perfect load sharing characteristics enables multi-pump and/or multi-motor combinations to suit the application.

User friendly - pressure and flow and therefore torque, speed and hence power can be adjusted. It is easy to upgrade to suit changing production demands. This versatility can transform a machine into an intelligent high production unit. Features such as extremely fast pump compensators to give fast response and reduce stresses and strains on the machine, load sensing and power limiting enable functionality unavailable from other systems.

The ability to split the drive from the power unit enables freedom of application, the power unit can be positioned away from the machine without foundation requirements.

Our drive controller Spider provides all the necessary start/stop logic, system health monitoring and machine control techniques. Usually it is mounted, wired and fully programmed inside the PEC unit prior to delivery.

The unit is easy to install, it is fully function tested before delivery and takes a short time to commission. Installation can be undertaken usually during a normal shutdown period so no production losses are experienced.

Customisation is normal e.g. Standby pump sets for critical areas, auxiliary circuits for cylinders and brakes. Provision for working in hostile environments such as dusty mining sites, on ship decks, explosive zone chemical plants and climates with wide temperature variations.

Improving the work environment

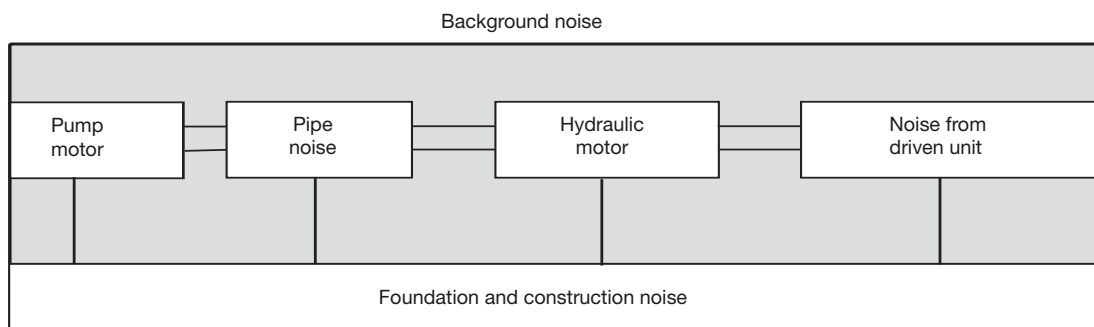
In a good work environment the sound levels are important. Environments where the sound levels are kept down, make a difference for operator health and well being. Hägglunds low speed hydraulic motors generate very low sound levels due to the low speed. The dominating sound sources in a hydraulic drive system are the power unit and the piping systems. Hägglunds offers three options with regard to the power unit sound levels.

The sound can be of three basic kinds. Structured borne sound (from for instance a pump), air borne

sound (for example from a cooling fan), and fluid borne sound (emitted by the pump or the motor as pulsation in the oil flow). Each of these has to be treated separately to manage the overall sound level and to specify the level, the combined effect must be considered.

The sound power being radiated by a machine is often of more concern than the sound pressure measured at a given distance from the machine. Sound values below are the average LPA surface sound pressure levels according to ISO standards 3746 and doesn't include piping.

Noise from a complete installation



Five Power Unit options to choose between

OPEN UNIT, 90-95 dBA

Standard frame but no panels. Air cooled electric motors. Sound level around 90-95 dBA. For installation in pump rooms or where there are no specific demands regarding sound level or protection

CLOSED UNIT, 75-85 dBA

Standard frame, panels and doors. Air cooled electric motors. Typical sound level 75-85 dBA. For installation with moderate sound level demand and/or with reasons to have protect.

CLOSED UNIT, 72-80 dBA

Standard frame, panels and doors. Pump set mountings and cabinet feet in rubber. Sound dampened air and hose outlet in cabinet. Air cooled electric motors.

Typical sound levels 72-80 dBA For installations with high sound level demand.

CLOSED UNIT, 70-75 dBA

Vibration dampened frame. Standard panels and doors. Pump set mountings and cabinet feet in rubber. Typical sound levels 70-75 dBA. For installations with very high sound level demand and/or with reasons to protect involved components from environmental conditions.

OPEN UNIT IN A TOTALLY ENCLOSED COVER 60-65 dBA

Standard frame. Pump set mountings and cabinet feet in rubber. Water cooled electric motors. Sound levels around 60-65 dBA For installations with extremely high sound level demands.

Examples of installation



Pulp & Paper. Wash presses, Finland.



Recycling, Shredder, United Kingdom.



Marine & Offshore, ROV Handling Winch, United Kingdom.



Bulk Materials Handling, Bucket Wheel Reclaimer, China





Sugar. Sugar Mill, Brazil.



Mining & Bulk Materials Handling. Apron Feeder, Australia.

Declaration of Conformity

The Declaration of Conformity, is available on request for deliveries from Hägglunds Drives AB. Translations into other languages are also available.

Declaration by the Manufacturer Machinery Directive 98/37/EC, Art 4.2 and Annex II, sub B		
Manufacturer's name:	Hägglunds Drives AB	
Manufacturer's address:	S-890 42 Mellansel Sweden	
Contact Name:	Per-Olof Nilsson	
Product Description:	Power Unit, series <ul style="list-style-type: none">▪ PEC▪ HPU▪ LPU▪ PU	
We herewith declare that the products specified above, considered as components,		
- by design comply with the essential requirements of the Machinery Directive 98/37/EC, provided that the installation be correctly realised by the manufacturer of the machinery (for example: in compliance with our Installation and Maintenance Manual for each product).		
- is intended be incorporated into machinery or to be assembled with other machinery to constitute machinery covered by Machinery Directive 98/37/EG.		
- must not be put into service until the machinery into which they have been incorporated, have been declared in conformity with the Machinery Directive		
and that		
- the harmonized standards SS-EN 982, SS-EN ISO 12100-1, SS-EN ISO 12100-2 and SS-EN 60204-1 have been applied.		
Signed:		
Name and title:	Per-Olof Nilsson	Director Engineering
Date:	2006-02-16	

Example of the Declaration of Conformity given by Hägglunds Drives AB

