

## HEAT EXCHANGERS AIR/OIL TYPE LOC

# Air/Oil coolers LHC

- LOC cooling system with three-phase AC motor for use in the industrial sector.
- System supplied with an integrated circulation pump. Makes it possible to cool and treat the oil in a offline separate circuit.
- Maximum cooling capacity 45 kW

Clever design and the right choice of materials and components produce a long useful life, high availability and low service and maintenance costs.

Easy to maintain and easy to retrofit in many applications.

Integrated circulation pump produces an even flow with low pressure pulsations.



Quiet fan and fan motor.

Cooler matrix with low pressure drop and high cooling capacity.

Compact design and low weight.

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## Technical specification

- LOC is designed primarily for synthetic oils, vegetable oils and mineral oil type HL/HLP in accordance with DIN 51524. Maximum oil temperature 100 °C.
- Maximum negative pressure in the inlet line is 0.4 bar with an oil-filled pump. Maximum pressure on the pump's suction side is 0.5 bar.
- Maximum working pressure for the pump is 10 bar. For information about suction height, pressure, etc. see the QPM3 pump manual.

3-PHASE MOTOR	
3-phase asynchronous motors in accordance with IEC 60034-1	
Nominal voltage	*
Insulation class	F
Rise of temperature	B
Protection class	IP 55
Recommended ambient temperature	-20 °C – +40 °C

MATERIAL	
Pump housing	Aluminum
Cooler matrix	Aluminum
Fan blades/hub	Glass fibre reinforced polypropylene/Aluminum
Fan housing	Steel

Fan guard	Steel
Other parts	Steel
Surface treatment	Electrostatically powder-coated

### CONTACT US FOR ADVICE ON

- Oil temperatures > 100 °C
- Oil viscosity > 100 cSt
- Aggressive environments
- Ambient air rich in particles
- High-altitude locations

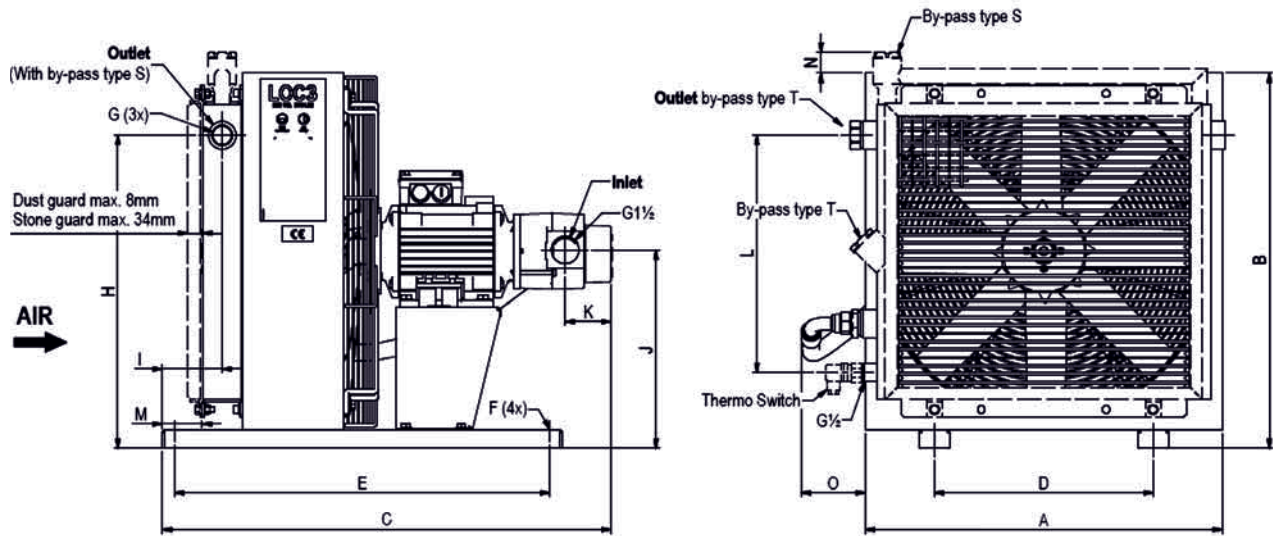
\* = See separate instructions for electric motor.

TYPE	Nom. oil flow l/min	Cooling capacity in kW at EDT 40 °C	Cooling capacity kW/°C	Acoustic pressure level LpA dB(A) 1m*	No. of poles/ Capacity kW	Weight kg (approx)
LOC3 004 - 4 - D - A	20	2.7	0.07	57	4-0.75	23
LOC3 007 - 4 - D - A	20	5.6	0.14	64	4-0.75	30
LOC3 007 - 4 - D - B	40	7.2	0.18	64	4-0.75	30
LOC3 007 - 4 - D - C	60	8.0	0.20	65	4-1.50	36
LOC3 007 - 4 - D - D	80	8.4	0.21	65	4-1.50	36
LOC3 011 - 4 - D - A	20	9.2	0.23	70	4-0.75	34
LOC3 011 - 4 - D - B	40	10.4	0.26	70	4-0.75	34
LOC3 011 - 6 - D - C	40	7.6	0.19	61	6-1.10	40
LOC3 011 - 6 - D - D	55	8.8	0.22	61	6-1.10	40
LOC3 011 - 4 - D - C	60	12.0	0.30	70	4-1.50	40
LOC3 011 - 4 - D - D	80	13.2	0.33	70	4-1.50	40
LOC3 016 - 4 - D - A	20	11.2	0.28	74	4-1.50	45
LOC3 016 - 4 - D - B	40	15.6	0.39	74	4-1.50	45
LOC3 016 - 6 - D - C	40	12.4	0.31	64	6-1.10	45
LOC3 016 - 6 - D - D	55	14.0	0.35	64	6-1.10	45
LOC3 016 - 4 - D - C	60	18.0	0.45	74	4-1.50	45
LOC3 016 - 4 - D - D	80	19.6	0.49	74	4-1.50	45
LOC3 023 - 4 - D - B	40	21.2	0.53	77	4-1.50	53
LOC3 023 - 6 - D - C	40	16.8	0.42	67	6-1.10	53
LOC3 023 - 6 - D - D	55	18.4	0.46	67	6-1.50	53
LOC3 023 - 4 - D - C	60	24.4	0.61	77	4-2.20	62
LOC3 023 - 4 - D - D	80	26.8	0.67	77	4-2.20	62
LOC3 033 - 6 - A - D	55	26.0	0.65	74	6-2.20	92
LOC3 033 - 4 - A - C	60	32.0	0.80	85	4-3.00	76
LOC3 033 - 4 - A - D	80	34.8	0.87	85	4-3.00	76
LOC3 044 - 6 - A - D	55	34.0	0.85	77	6-2.20	98
LOC3 044 - 4 - A - C	60	40.0	1.00	86	4-3.00	85
LOC3 044 - 4 - A - D	80	44.8	1.12	86	4-3.00	85

\* = Electric motors specified are calculated for max. working pressure 6 bar at 125 cSt and 50 Hz, 4 bar at 125 cSt and 60 Hz. If you require higher pressure, please contact us for a choice of motors with a higher output.

\*\* = Noise level tolerance ± 3 dB(A).

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All dimensions are reference.  
The design specification take presence at all time.

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
LOC3 004-4-D-A	267	284	542	134	420	Ø9	G1	206	88	159	62	90	55	67	123
LOC3 007-4-D-A	365	395	602	203	510	Ø9	G1	292	83	214	62	80	50	45	105
LOC3 007-4-D-B	365	395	615	203	510	Ø9	G1	292	83	214	74	80	50	45	105
LOC3 007-4-D-C	365	395	667	203	510	Ø9	G1	292	83	214	87	80	50	45	105
LOC3 007-4-D-D	365	395	680	203	510	Ø9	G1	292	83	214	100	80	50	45	105
LOC3 011-4-D-A	440	470	626	203	510	Ø9	G1	366	83	252	62	175	50	41	103
LOC3 011-4-D-B	440	470	639	203	510	Ø9	G1	366	83	252	74	175	50	41	103
LOC3 011-4-D-C	440	470	691	203	510	Ø9	G1	366	83	252	87	175	50	41	103
LOC3 011-4-D-D	440	470	704	203	510	Ø9	G1	366	83	252	100	175	50	41	103
LOC3 011-6-D-C	440	470	717	203	510	Ø9	G1	366	83	252	87	175	50	41	103
LOC3 011-6-D-D	440	470	730	203	510	Ø9	G1	366	83	252	100	175	50	41	103
LOC3 016-4-D-A	496	526	687	203	510	Ø9	G1	427	83	280	62	300	50	46	107
LOC3 016-4-D-B	496	526	699	203	510	Ø9	G1	427	83	280	74	300	50	46	107
LOC3 016-4-D-C	496	526	712	203	510	Ø9	G1	427	83	280	87	300	50	46	107
LOC3 016-4-D-D	496	526	725	203	510	Ø9	G1	427	83	280	100	300	50	46	107
LOC3 016-6-D-C	496	526	738	203	510	Ø9	G1	427	83	280	87	300	50	46	107
LOC3 016-6-D-D	496	526	725	203	510	Ø9	G1	427	83	280	100	300	50	46	107
LOC3 023-4-D-B	580	610	729	356	610	Ø14	G1	509	98	322	74	385	65	44	104
LOC3 023-4-D-C	580	610	770	356	610	Ø14	G1	509	98	322	87	385	65	44	104
LOC3 023-4-D-D	580	610	783	356	610	Ø14	G1	509	98	322	100	385	65	44	104
LOC3 023-6-D-C	580	610	770	356	610	Ø14	G1	509	98	322	87	385	65	44	104
LOC3 023-6-D-D	580	610	783	356	610	Ø14	G1	509	98	322	100	385	65	44	104
LOC3 033-4-A-C	692	722	798	356	610	Ø14	G1 1/4	619	103	378	87	326	70	38	99
LOC3 033-4-A-D	692	722	810	356	610	Ø14	G1 1/4	619	103	378	100	326	70	38	99
LOC3 033-6-A-D	692	722	825	356	610	Ø14	G1 1/4	619	103	378	100	326	70	38	99
LOC3 044-4-A-C	629	866	823	356	610	Ø14	G1 1/4	780	103	450	87	504	70	59	99
LOC3 044-4-A-D	629	866	835	356	610	Ø14	G1 1/4	780	103	450	100	504	70	59	99
LOC3 044-6-A-D	629	866	850	356	610	Ø14	G1 1/4	780	103	450	100	504	70	59	99

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## Key for LOC3 cooling systems

All positions must be filled in when ordering

EXAMPLE: LOC3 - 011 - 6 - A - C - L - 50 - S20 - D - 00 - 0  
 1 2 3 4 5 6 7 8 9 10/11 12

1. TYPE OF COOLING SYSTEM  
= LOC3

### 2. COOLER SIZE

004, 007, 011, 016, 023, 033, 044

### 3. NUMBER OF POLES, MOTOR

4 - pole = 4  
6 - pole = 6

### 4. VOLTAGE AND FREQUENCY

230/400V 50Hz<sup>1)</sup> = A  
460 alt 480V 60Hz<sup>1)</sup> = B  
230/400V 50Hz alt  
480V 60Hz<sup>2)</sup> = D  
500V 50Hz (not standard) = E  
400/690V 50Hz, 460 alt  
480V 60Hz = F  
525V 50Hz, 575V 60Hz = G

Motor for special voltage  
(stated in plain language)<sup>3)</sup> = X

<sup>1)</sup> = for LOC3 033 to LOC3 044.

<sup>2)</sup> = for LOC3 007 to LOC3 023.

<sup>3)</sup> For other options contact Parker Hannifin for assistance. All motors apply to IEC 60034, IEC 60072 and EN 50347.

### 5. PUMP SIZE

Displacement 15 cm<sup>3</sup>/r = A  
Displacement 30 cm<sup>3</sup>/r = B  
Displacement 45 cm<sup>3</sup>/r = C  
Displacement 60 cm<sup>3</sup>/r = D  
Special = X

### 6. BYPASS VALVE, PUMP

No bypass valve = O  
Built-in bypass valve,  
5 bar internal = L  
Built-in bypass valve,  
10 bar internal = H  
Built-in bypass valve,  
5 bar external = K  
Built-in bypass valve,  
10 bar external = M

### 7. THERMO CONTACT

For temperature alarm, not for direct control of electric motor.

No thermo contact = 00  
40 °C = 40  
50 °C = 50  
60 °C = 60  
70 °C = 70  
80 °C = 80  
90 °C = 90

### 8. COOLER MATRIX

Standard = 000  
Two-pass = T00  
Built-in, pressure-controlled  
bypass, single-pass  
2 bar = S20  
5 bar = S50  
8 bar = S80  
Built-in, pressure-controlled  
bypass, two-pass\*  
2 bar = T20  
5 bar = T50  
8 bar = T80

Built-in temperature and  
pressure-controlled bypass,  
single-pass

50 °C, 2.2 bar = S25  
60 °C, 2.2 bar = S26  
70 °C, 2.2 bar = S27  
90 °C, 2.2 bar = S29

Built-in temperature and  
pressure-controlled bypass,  
two-pass\*

50 °C, 2.2 bar = T25  
60 °C, 2.2 bar = T26  
70 °C, 2.2 bar = T27  
90 °C, 2.2 bar = T29

\* = not valid for LOC 004

### 9. MATRIX GUARD

No guard = 0  
Stone guard = S  
Dust guard = D  
Dust and stone guard = P

### 10. FILTER UNIT

No filter unit = 0  
Filter unit = X

Please contact us for guidance and information regarding filter units.

### 11. PRESSURE DROP INDICATOR

No pressure drop  
indicator. = 0  
Pressure drop indicator = X

### 12. STANDARD/SPECIAL

Standard = 0  
Special = Z

The information in this brochure is subject to change without prior notice.

## Take the Next Step

- choose the right accessories

Supplementing a hydraulic system with a cooler, cooler accessories and an accumulator gives you increased availability and a longer useful life, as well

as lower service and repair costs. All applications and operating environments are unique. A well-planned choice of the following accessories can thus further

improve your hydraulic system. Please contact Parker Hannifin for guidance and information.



### Pressure-controlled bypass valve Integrated

Allows the oil to bypass the cooler matrix if the pressure drop is too high. Reduces the risk of the cooler bursting, e.g. in connection with cold starts and temporary peaks in pressure or flow. Available for single-pass or two-pass matrix design.



### Thermo contact

Sensor with fixed set point, for temperature warnings. Can be used for more cost-efficient operation and better environmental consideration through the automatic control of the fan motor, either on or off.



### Temperature-controlled bypass valve Integrated

Allows the oil to bypass the cooler matrix if the pressure drop is higher than 2,2 bar or less than the chosen temperature. The bypass closes when the oil temperature increases. Different closing temperatures available. Available for single-pass or two-pass matrix design.



### Lifting eyes

For simple installation and relocation.



### Temperature-controlled 3-way valve External

Same function as the temperature-controlled bypass valve, but positioned externally.

*Note: must be ordered separately.*



### Stone guard/Dust guard

Protects components and systems from tough conditions.