

**HYUNDAI**

# Service Training



# HLF / HDF -5, -7

**HYUNDAI**



**HYUNDAI HEAVY INDUSTRIES EUROPE N.V.**

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# Overview + model specifications.

## Diesel forklifts:

- **HDF 15/18-5**
- **HDF 20/25/30-5**
- **Folex 35/40/45DS-7**
- **HDF 50/70-7s**



## LPG forklifts:

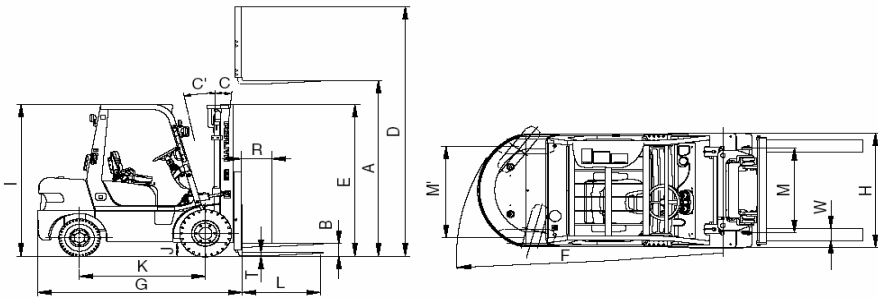
- **HLF 15/18(C)-5**
- **HLF 20/25/30(C)-5**



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# Models specifications HDF 15/18-5

## 1) HDF15/18-5



D155SP01

Model		Unit	HDF 15-5	HDF 18-5	
Capacity		kg	1500	1750	
Load center		mm	500	←	
Weight(Unloaded)		kg	2818	2998	
Fork	Lifting height	A	mm	3300	←
	Free lift	B	mm	145	←
	Lifting speed(Unload/Load)		mm/sec	650/590	650/580
	Lowering speed(Unload/Load)		mm/sec	450/500	←
	L × W × T	L,W,T	mm	900 × 100 × 35	←
Mast	Tilt angle (forward/backward)	C/C'	degree	6/10	←
	Max height	D	mm	4332	←
	Min height	E	mm	2155	←
Body	Travel speed		km/h	20.0	←
	Gradeability		degree	18.2	16.4
	Min turning radius(Outside)	F	mm	1940	1970
ETC	Max hydraulic pressure		kgf/cm <sup>2</sup>	185	←
	Hydraulic oil tank		l	30	←
	Fuel tank		l	38	←
Overall length	G	mm	2170	2200	
Overall width	H	mm	1090	←	
Overhead guard height	I	mm	2110	←	
Ground clearance	J	mm	120	←	
Wheel base	K	mm	1360	←	
Wheel tread front/rear	M, M'	mm	912/912	←	

## 1) HDF15/18-5

### (1) ENGINE

ITEM	UNIT	SPECIFICATION
Model	-	KUBOTA V2203-M
Type	-	4-cycle, in-line overhead valve
Cooling Method	-	Water cooling
Number of cylinders and arrangement	-	4 cylinders, in line
Firing order	-	1-3-4-2
Combustion chamber type	-	In direct injection
Cylinder bore X stroke	mm(in)	87 × 92.4(3.4 × 3.6)
Piston displacement	cc(cu in)	2197(134.1)
Compression ratio	-	22.6
Rated gross horse power	ps/rpm	43.1/2400
Maximum gross torque at rpm	kgf · m/rpm	14.4/1600
Engine oil quantity	l (U.S.gal)	9.5(2.5)
Dry weight	kg(lb)	211(465)
High idling speed	rpm	2600 ± 50
Low idling speed	rpm	850 ± 50
Rated fuel consumption	g/ps.hr	180
Starting motor	V-kW	DENSO12V, 2.0kW
Alternator	V-A	DENSO 12V, 40A
Battery	V-AH	12V, 75AH
Fan belt deflection	mm(in)	7~9(0.28~0.35)

### (2) MAIN PUMP

ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	22
Maximum operating pressure	bar	210
Rated speed (Max/Min)	rpm	2650/500

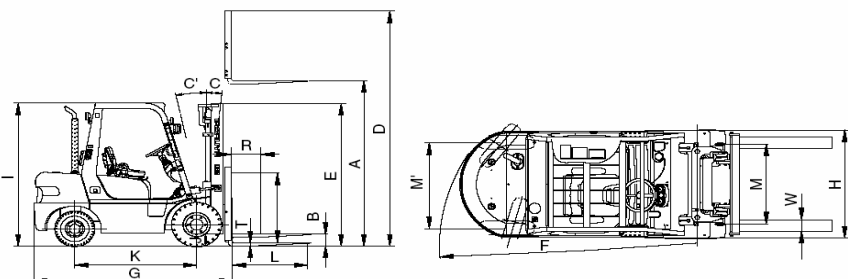
### (3) MAIN CONTROL VALVE

ITEM	UNIT	SPECIFICATION
Type	-	Sectional
Operating method	-	Mechanical
Main relief valve pressure	bar	185/150
Flow capacity	lpm	70

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# Models specifications HDF20>30-5

## 2) HDF20/25/30-5



D255SP01

Model		Unit	HDF 20-5	HDF 25-5	HDF 30-5	
Capacity		kg	2000	2500	3000	
Load center		mm	500	←	←	
Weight(Unloaded)		kg	3695	3995	4460	
Fork	Lifting height	A	mm	←	←	
	Free lift	B	mm	←	←	
	Lifting speed(Unload/Load)		mm/sec	690/670	←	580/530
	Lowering speed(Unload/Load)		mm/sec	450/500	←	←
	L × W × T	L,W,T	mm	1050 × 100 × 45	←	1050 × 125 × 45
Mast	Tilt angle (forward/backward)	C/C'	degree	6/10	←	←
	Max height	D	mm	4485	←	←
	Min height	E	mm	2175	←	2190
Body	Travel speed		km/h	19.4	←	20.2
	Gradeability		degree	19.2	16.9	13.6
	Min turning radius(Outside)	F	mm	2273	2325	2380
ETC	Max hydraulic pressure		kgf/cm <sup>2</sup>	200	←	←
	Hydraulic oil tank		ℓ	50	←	←
	Fuel tank		ℓ	64	←	←
Overall length	G	mm	2550	2605	2675	
Overall width	H	mm	1160	←	1235	
Overhead guard height	I	mm	2180	←	2195	
Ground clearance	J	mm	130	←	145	
Wheel base	K	mm	1650	←	←	
Wheel tread front/rear	M, M'	mm	965/1000	←	1005/1000	

## 2) HDF20/25/30-5

### (1) ENGINE

ITEM	UNIT	SPECIFICATION
Model	-	YANMAR 4TNE98-HYF(IDI)
Type	-	4-cycle, in-line overhead valve
Cooling Method	-	Water cooling
Number of cylinders and arrangement	-	4 cylinders, in-line
Firing order	-	1-3-4-2
Combustion chamber type	-	In-direct injection
Cylinder bore X stroke	mm(in)	98 × 110(3.9 × 4.3)
Piston displacement	cc(cu in)	3319(202.5)
Compression ratio	-	18.6 : 1
Rated gross horse power	ps/rpm	62/2300
Maximum gross torque at rpm	kgf · m/rpm	20.3 ± 0.5/1700
Engine oil quantity	ℓ (U.S.gal)	7.5(1.9)
Dry weight	kg(lb)	225(496)
High idling speed	rpm	2575
Low idling speed	rpm	750
Rated fuel consumption	g/ps.hr	195
Starting motor	V-kW	HITACHI 12V, 2.3kW
Alternator	V-A	DENSO 12V, 40A
Battery	V-AH	12V, 90AH
Fan belt deflection	mm(in)	8~12(0.31~0.47)

### (2) MAIN PUMP

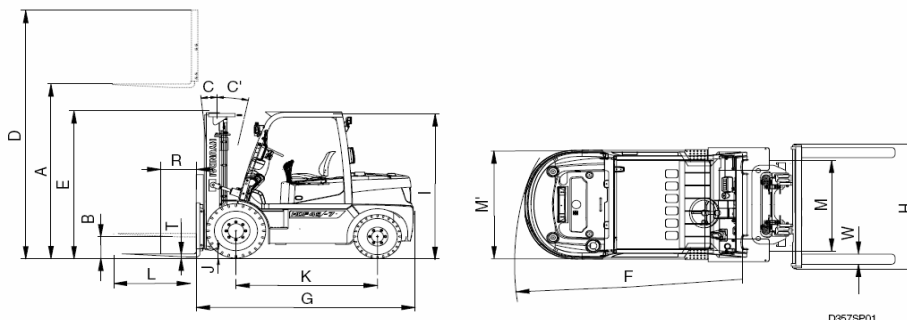
ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	27
Maximum operating pressure	bar	230
Rated speed (Max/Min)	rpm	3000/500

### (3) MAIN CONTROL VALVE

ITEM	UNIT	SPECIFICATION
Type	-	Sectional
Operating method	-	Mechanical
Main relief valve pressure	bar	200/150
Flow capacity	lpm	90

## Models specifications 35/45DS-7

### 1) 35DS/40DS/45DS-7 (MHI ENGINE)



D6S7SP01

Model		Unit	35DS-7	40DS-7	45DS-7
Capacity		kg	3500	4000	4500
Load center	R	mm	600	←	←
Weight(Unloaded)		kg	5915	6460	6875
Fork	Lifting height	A	mm	←	←
	Free lift	B	mm	←	←
	Lifting speed(Unload/Load)	mm/sec	600/570	600/560	600/550
	Lowering speed(Unload/Load)	mm/sec	450/500	←	←
L × W × T	L,W,T	mm	1070 × 122 × 50	1070 × 150 × 50	1220 × 150 × 50
Mast	Tilt angle (forward/backward)	C/C'	degree	8/10	←
	Max height	D	mm	4236	←
	Min height	E	mm	2235	←
Body	Travel speed	km/h	26.4	25.4	←
	Gradeability	degree	23.3	21.3	19.6
	Min turning radius(Outside)	F	mm	2770	2830
ETC	Max hydraulic pressure	kgf/cm <sup>2</sup>	250	←	←
	Hydraulic oil tank	l	66	←	←
	Fuel tank	l	100	←	←
Overall length	G	mm	3070	3125	3185
Overall width	H	mm	1400	1776	←
Overhead guard height	I	mm	2240	←	←
Ground clearance	J	mm	170	155	←
Wheel base	K	mm	2000	←	←
Wheel tread front/rear	M, M'	mm	1162/1140	1312/1140	←

### 1) ENGINE

ITEM	UNIT	35DS/40DS/45DS-7
Model	-	MITSUBISHI S6S-DT
Type	-	4-cycle, in-line, Vertical OHV
Cooling Method	-	Water cooling
Number of cylinders and arrangement	-	6 cylinders, in line
Firing order	-	1-5-3-6-2-4
Combustion chamber type	-	Direct injection
Cylinder bore X stroke	mm(in)	94 × 120(3.7 × 4.7)
Piston displacement	cc(cu in)	4996(305)
Compression ratio	-	19.5
Rated gross horse power	ps/rpm	88/2200
Maximum gross torque at rpm	kgf · m/rpm	34.8/1400
Engine oil quantity	l (U.S.gal)	17.5(4.6)
Dry weight	kg(lb)	350(772)
High idling speed	rpm	2400 ± 50
Low idling speed	rpm	875 ± 50
Rated fuel consumption	g/ps.hr	180
Starting motor	V-kW	24-5.0
Alternator	V-A	24-50
Battery	V-AH	12-80 × 2
Fan belt deflection	mm(in)	10-12(0.4-0.5)

### 2) MAIN PUMP

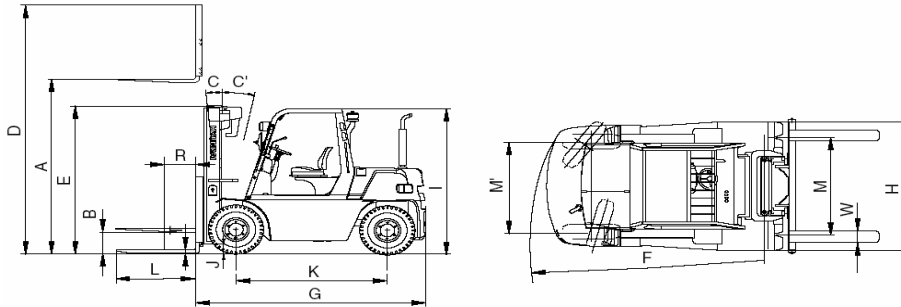
ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	72 ± 9
Maximum operating pressure	bar	250
Rated speed (Max/Min)	rpm	3000/600

### 3) MAIN CONTROL VALVE

ITEM	UNIT	SPECIFICATION
Type	-	Semi - mono block
Operating method	-	Mechanical
Main relief valve pressure	bar	210/150
Flow capacity	lpm	125

## Models specifications 50/70-7s

### 3) HDF50/70-7S



D507SP01

Model		Unit	HDF 50-7S	HDF 70-7S	
Capacity		kg	5000	7000	
Load center		mm	600	←	
Weight(Unloaded)		kg	8347	9680	
Fork	Lifting height	A	mm	3000	←
	Free lift	B	mm	140	←
	Lifting speed(Unload/Load)		mm/sec	500/470	500/450
	Lowering speed(Unload/Load)		mm/sec	450/500	←
	L×W×T	L,W,T	mm	1200×150×60	1200×180×60
Mast	Tilt angle (forward/backward)	C/C'	degree	15/10	←
	Max height	D	mm	4275	←
	Min height	E	mm	2515	←
Body	Travel speed		km/h	33.1	32.6
	Gradeability		degree(%)	27.9(53)	22.2(40.9)
	Min turning radius(Outside)	F	mm	3290	3370
ETC	Max hydraulic pressure		kgf/cm <sup>2</sup>	185	←
	Hydraulic oil tank		l	105	←
	Fuel tank		l	150	←
Overall length	G	mm	3540	3620	
Overall width	H	mm	2087	←	
Overhead guard height	I	mm	2523	←	
Ground clearance	J	mm	195	←	
Wheel base	K	mm	23000	←	
Wheel tread front/rear	M, M'	mm	1580/1604	←	

### 3) HDF50/70-7S

#### (1) ENGINE

ITEM	UNIT	SPECIFICATION
Model	-	MITSUBISHI S6S-DT
Type	-	4-cycle, in-line, Vertical OHV
Cooling Method	-	Water cooling
Number of cylinders and arrangement	-	6 cylinders, in line
Firing order	-	1-5-3-6-2-4
Combustion chamber type	-	In direct injection
Cylinder bore X stroke	mm(in)	94 × 120(3.7 × 4.7)
Piston displacement	cc(cu in)	4996(305)
Compression ratio	-	19.5
Rated gross horse power	ps/rpm	88/2200
Maximum gross torque at rpm	kgf · m/rpm	34.8/1400
Engine oil quantity	l (U.S.gal)	17.5(4.6)
Dry weight	kg(lb)	350(772)
High idling speed	rpm	2400 ± 50
Low idling speed	rpm	875 ± 50
Rated fuel consumption	g/ps.hr	180
Starting motor	V-kW	24-5.0
Alternator	V-A	24-50
Battery	V-AH	12-80 × 2
Fan belt deflection	mm(in)	10~12(0.4~0.5)

#### (2) MAIN PUMP

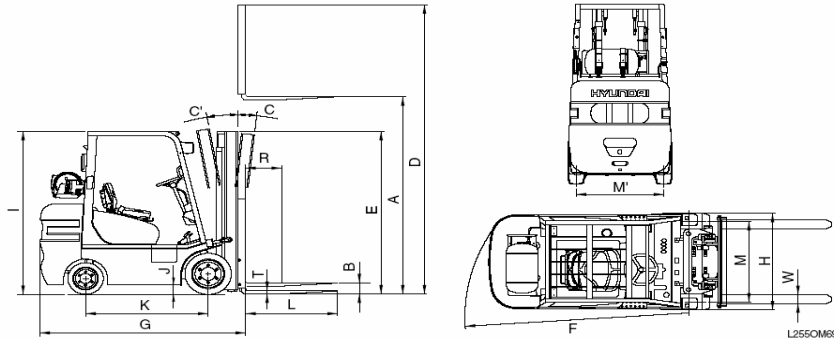
ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	72 ± 9
Maximum operating pressure	bar	250
Rated speed (Max/Min)	rpm	3000/600

#### (3) MAIN CONTROL VALVE

ITEM	UNIT	SPECIFICATION
Type	-	Sectional
Operating method	-	Mechanical
Main relief valve pressure	bar	185/150
Flow capacity	lpm	163

## Models specifications HLF15/18-5

1) HLF15/18-5, HLF15/18C-5



Model		Unit	HLF 15-5	HLF 18-5	HLF 15C-5	HLF18C-5
Capacity		kg	1500	1750	1500	1750
Load center		R mm	500	←	←	←
Weight(Unloaded)		kg	2760	2940	2750	2950
Fork	Lifting height	A mm	3300	←	3325	←
	Free lift	B mm	145	←	115	←
	Lifting speed(Unload/Load)	mm/sec	650/590	650/580	630/560	630/550
	Lowering speed(Unload/Load)	mm/sec	450/500	←	←	←
L × W × T		L,W,T mm	900 × 100 × 35	←	1050 × 100 × 35	←
Mast	Tilt angle (forward/backward)	C/C' degree	6/10	←	6/8	←
	Max height	D mm	4332	←	←	←
	Min height	E mm	2155	←	2125	←
Body	Travel speed	km/h	20.6	←	19.5	←
	Gradeability	degree	31.0	27.8	32.5	29
	Min turning radius(Outside)	F mm	1940	1970	1900	1930
ETC	Max hydraulic pressure	kgf/cm <sup>2</sup>	190	←	←	←
	Hydraulic oil tank	l	35	←	←	←
	Fuel tank	l	39	←	←	←
Overall length	G mm	2170	2200	2100	2130	
Overall width	H mm	1090	←	960	←	
Overhead guard height	I mm	2110	←	2170	←	
Ground clearance(Load)	J mm	120	←	90	←	
Wheel base	K mm	1360	←	1250	←	
Wheel tread front/rear	M, M' mm	912/912	←	808/815	←	

1) HLF15/18-5, HLF15/18C-5

(1) ENGINE

ITEM	UNIT	SPECIFICATION
Model	-	MITSUBISHI 4G63-32HL
Type	-	4-cycle, Overhead camshaft
Cooling Method	-	Water cooled
Number of cylinders and arrangement	-	4 cylinders, Hemisphere
Firing order	-	1-3-4-2
Cylinder bore X stroke	mm(in)	85 × 88(3.3 × 3.5)
Piston displacement	cc(cu in)	1997(121.9)
Compression ratio	-	8.5
Rated gross horse power	ps/rpm	39/2300
Maximum gross torque at rpm	kgf · m/rpm	13.7/1500
Engine oil quantity	l (U.S.gal)	4(1.06)
Dry weight	kg(lb)	145(320)
High idling speed	rpm	2700 ± 50
Low idling speed	rpm	800 ± 50
Rated fuel consumption	g/ps.hr	195
Starting motor	V-kW	HITACHI 12V, 1.2kW
Alternator	V-A	DENSO 12V, 50A
Battery	V-AH	12V, 75AH
Fan belt deflection	mm(in)	8-12(0.31-0.47)

(2) MAIN PUMP

ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	26
Maximum operating pressure	bar	210
Rated speed (Max/Min)	rpm	3000/500

(3) MAIN CONTROL VALVE

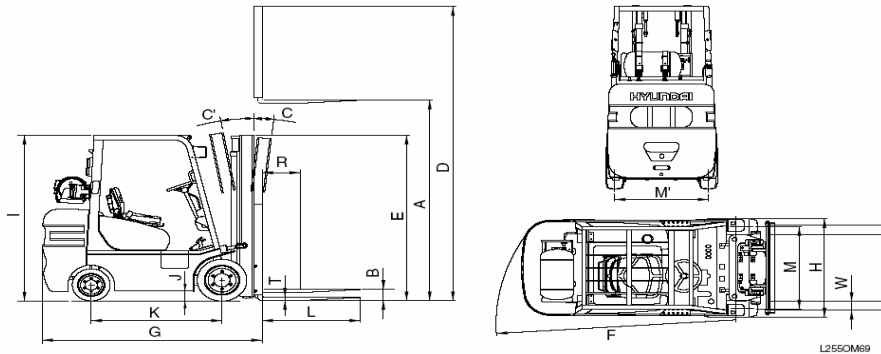
ITEM	UNIT	SPECIFICATION
Type	-	Sectional
Operating method	-	Mechanical
Relief valve pressure(Main/Aux)	bar	185/150
Flow capacity	lpm	70



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## Models specifications HLF20>30-5

2) HLF20/25/30-5



Model		Unit	HLF20-5	HLF25-5	HLF30-5
Capacity		kg	2000	2500	3000
Load center	R	mm	500	←	←
Weight(Unloaded)		kg	3560	3860	4325
Fork	Lifting height	A	3300	←	←
	Free lift	B	155	←	←
	Lifting speed(Unload/Load)	mm/sec	640/570(650/580*)	640/560(650/570*)	550/470(600/500*)
	Lowering speed(Unload/Load)	mm/sec	450/500	←	←
	L × W × T	L,W,T	mm	1050 × 100 × 45	←
Mast	Tilt angle (forward/backward)	C/C'	degree	8/10	←
	Max height	D	mm	4485	←
	Min height	E	mm	2175	←
Body	Travel speed	km/h	20.5(21.1*)	←	21.4(22.0*)
	Gradeability	degree	29.3(26.7*)	25.5(23.3*)	20.3(18.6*)
	Min turning radius(Outside)	F	mm	2275	2325
ETC	Max hydraulic pressure	kg/cm <sup>2</sup>	190	←	←
	Hydraulic oil tank	l	50	←	←
	Fuel tank	l	64	←	←
Overall length	G	mm	2550	2605	2675
Overall width	H	mm	1160	←	1235
Overhead guard height	I	mm	2180	←	2195
Ground clearance(Load)	J	mm	130	←	145
Wheel base	K	mm	1650	←	←
Wheel tread front/rear	M, M'	mm	965/1000	←	1005/1000

★Non-Emission engine

2) HLF20/25/30-5

(1) ENGINE

ITEM	UNIT	SPECIFICATION
Model	-	MITSUBISHI 4G64-33HL(4G64-32HL*)
Type	-	4-cycle, Overhead camshaft
Cooling Method	-	Water cooled
Number of cylinders and arrangement	-	4 cylinders, Hemisphere
Firing order	-	1-3-4-2
Cylinder bore X stroke	mm(in)	86.5 × 100(3.4 × 3.9)
Piston displacement	cc(cu in)	2350(143.6)
Compression ratio	-	8.6
Rated gross horse power	ps/rpm	50/2500
Maximum gross torque at rpm	kgf · m/rpm	17/1600(16.3/1500*)
Engine oil quantity	l (U.S.gal)	4.0(1.06)
Dry weight	kg	150(152*)
High idling speed	rpm	2700 ± 50(2900 ± 50*)
Low idling speed	rpm	800 ± 50(750 ± 50*)
Rated fuel consumption	g/ps.hr	195(210*)
Starting motor	V-kW	HITACHI 12V, 1.2kW
Alternator	V-A	DENSO 12V, 50A
Battery	V-AH	12V, 90AH
Fan belt deflection	mm	8-12(13.0-15.5*)

★Non-Emission engine

(2) MAIN PUMP

ITEM	UNIT	SPECIFICATION
Type	-	Fixed displacement gear pump
Capacity	cc/rev	31.8
Maximum operating pressure	bar	230
Rated speed (Max/Min)	rpm	3000/500

(3) MAIN CONTROL VALVE

ITEM	UNIT	SPECIFICATION
Type	-	Sectional
Operating method	-	Mechanical
Relief valve pressure(Main/Aux)	bar	200/165
Flow capacity	lpm	95

## Training overview -5, -7

### Overview training

**A. Transmission**

**B. Motor**

**C. Brakes**

**D. Electric**

**E. Hydraulic**

**F. General info**

