

Model	515.07		515.11		515.20		515.30	
	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Operating Pressure 3000 psi 4000 psi	207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi	
Relief valve setting 3000 psi 4000 psi	220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi	
Flow Rates: 3000 psi 4000 psi	26.5 lpm / 7.0 gpm 19.9 lpm / 5.3 gpm	22.7 lpm / 6.0 gpm 19.9 lpm / 5.3 gpm	41.6 lpm / 11.0 gpm 31.2 lpm / 8.3 gpm	37.9 lpm / 10.0 gpm 31.2 lpm / 8.3 gpm	73.8 lpm / 19.5 gpm 56.8 lpm / 15.0 gpm	60.6 lpm / 16.0 gpm 56.8 lpm / 15.0 gpm	113.6 lpm / 30 gpm 85.2 lpm / 22.5 gpm	100.7 lpm / 26.6 gpm 85.2 lpm / 22.5 gpm
Reservoir Capacity, Maximum	223 liters / 59 gallons		223 liters / 59 gallons		352 liters / 93 gallons		352 liters / 93 gallons	
Reservoir Capacity, Minimum	106 liters / 28 gallons		106 liters / 28 gallons		227 liters / 60 gallons		227 liters / 60 gallons	
Usable Oil Volume	117 liters / 31 gallons		117 liters / 31 gallons		125 liters / 33 gallons		125 liters / 33 gallons	
Reservoir Level, Maximum to floor	70 cm / 27.5 inches		70 cm / 27.5 inches		74.7 cm / 29.4 inches		74.7 cm / 29.4 inches	
Reservoir Level, Minimum to floor	42 cm / 16.5 inches		42 cm / 16.5 inches		53.3 cm / 21.0 inches		53.3 cm / 21.0 inches	
Standard Filtration, Return Line	3 micron		3 micron		3 micron		3 micron	
Sound Level ² , 1m / 3 ft @ 3000 psi	58 db(A)		60 db(A)	60 db(A)	63 db(A)		63 db(A)	
Width	77.0 cm / 30.3 inches		77.0 cm / 30.3 inches		89.7 cm / 35.3 in		89.7 cm / 35.3 in	
Height	119.9 cm / 47.2 inches		119.9 cm / 47.2 inches		138.9 cm / 54.7 inches		138.9 cm / 54.7 inches	
Length	114.3 cm / 45 inches		114.3 cm / 45 inches		163.1 cm / 64.2 inches		163.1 cm / 64.2 inches	
Weight without oil	381 kg / 840 lb		404 kg / 890 lb		676 kg / 1490 lb		712 kg / 1570 lb	
Weight with minimum oil	476 kg / 1050 lb		499 kg / 1100 lb		866 kg / 1910 lb		903 kg / 1990 lb	
Weight with maximum oil	581 kg / 1280 lb		603 kg / 1330 lb		984 kg / 2170 lb		1021 kg / 2250 lb	
Reservoir Material	Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum	
Ambient Operating Temperature Range	5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)	
Ambient Operating Relative Humidity Range	0-85% non-condensing		0-85% non-condensing		0-85% non-condensing		0-85% non-condensing	
Atmospheric Heat Load, 70°F/21°C ambient ³	0.8 kw / 2800 Btu/hr		0.8 kw / 2800 Btu/hr		1 kw / 3500 Btu/hr		1 kw / 3500 Btu/hr	
Cooling water requirements:	Minimum Required Flow		Minimum Required Flow		Minimum Required Flow		Minimum Required Flow	
Water Inlet Temperature								
15.5°C / 60°F	4.9 lpm / 1.3 gpm		9.1 lpm / 2.4 gpm		23.7 lpm / 6.26 gpm		35.2 lpm / 9.3 gpm	
21.1°C / 70°F	6.0 lpm / 1.6 gpm		12.1 lpm / 3.2 gpm		30.5 lpm / 8.06 gpm		45.4 lpm / 12.0 gpm	
26.7°C / 80°F	8.3 lpm / 2.2 gpm		18.9 lpm / 5.0 gpm		42.8 lpm / 11.3 gpm		64.7 lpm / 17.1 gpm	
32.2°C / 90°F	15.9 lpm / 4.2 gpm		49.2 lpm / 13.0 gpm		60.6 lpm / 16.0 gpm		90.8 lpm / 24.0 gpm	
40% Propylene Glycol mix								
15.5°C / 60°F	7 lpm / 1.9 gpm		12.5 lpm / 3.3 gpm		34.1 lpm / 9.0 gpm		48.5 lpm / 12.8 gpm	
21.1°C / 70°F	8.9 lpm / 2.3 gpm		16.8 lpm / 4.4 gpm		45.0 lpm / 11.9 gpm		63.2 lpm / 16.7 gpm	
26.7°C / 80°F	11.5 lpm / 3.0 gpm		26.8 lpm / 7.1 gpm		59.4 lpm / 15.7 gpm		91.6 lpm / 24.2 gpm	
32.2°C / 90°F	22.3 lpm / 5.9 gpm		NA		85.2 lpm / 22.5 gpm		NA	
Heat Exchanger	Stainless steel plate style		Stainless steel plate style		Stainless steel plate style		Stainless steel plate style	
Maximum heat removal capacity	11.2 kw / 38200 Btu/hr		18.7 kw / 63700 Btu/hr		29.9 kw / 102000 Btu/hr		44.8 kw / 153000 Btu/hr	
Required water pressure differential (at HPU)	0.2-0.3 MPa / 35-45 psi		0.2-0.3 MPa / 35-45 psi		0.2-0.3 MPa / 35-45 psi		0.2-0.3 MPa / 35-45 psi	
Maximum inlet pressure	0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi	
Cooling water pipe/hose diameter ⁷	1.9 cm / 0.75 inches		1.9 cm / 0.75 inches		2.5 cm / 1.0 in		2.5 cm / 1.0 in	

1) FLA= Full Load Amps, SF = Service Factor

2) Sound pressure level (db(A)) applies only to 3000 psi models and is expressed as a free field value. Readings may vary with the acoustic environment.

3) Estimated values.

4) Locked rotor current.

5) Sum of all other motors running and the last motor starting - Locked rotor current.

6) Units supplied with NPT "female" pipe thread.

7) SAE ORB (O-Ring Boss) ports. Hose barb adapters included.

8) Models in parentheses correspond to values in parentheses where applicable. These are the specifications as delivered; considerations should be taken for the requirements when all modules are installed in the HPU.

9) For Crimp Lug Option, reference 100-324-505

10) This is NOT a specification for a facility circuit breaker; this is the circuit breaker internal to the HPU. MTS recommends a type/class "D" breaker for the facility breaker.

REVISIONS				
DESCRIPTION			LETTER	ECN NO
DRAWN	ENGR	DATE		
			B	500050892
ADDED 4000 PSI DATA ADDED TO NOTE 10, TYPE "D" BREAKER RECOMMENDED FOR FACILITY 515.007/11/20/30 "PEAK IN RUSH CURRENT" WAS NOTE 5 NOTE 7 WAS "HOSE BARBS INCLUDED" PJR PJR 9-20-16				
UPDATED NOTE 2, APPLIES ONLY TO 3000 PSI MODELS UPDATED FLOW RATE FOR 515.20, 3000 PSI CORRECTED USABLE OIL VOLUME LITERS FOR 515.120/150/180. ADDED SCCR FOR SOFT START (SS) 515.07/11/20/30 PJR PJR 9/7/17				
C 500062749				

SOURCE/REF -
DRAWING -
PROPRIETARY DATA
THE INFORMATION AND DESIGN(S) DISCLOSED HEREIN ARE CONFIDENTIAL AND THE PROPERTY OF MTS SYSTEMS CORPORATION AND MAY NOT BE USED, REPRODUCED OR DISCLOSED IN ANY FORM EXCEPT AS GRANTED IN WRITING BY MTS SYSTEMS CORPORATION. THIS RESTRICTION EXCLUDES INFORMATION THAT IS IN THE PUBLIC DOMAIN OR WAS LEGITIMATELY IN THE PRIOR POSSESSION OF THE RECIPIENT.

UNLESS OTHERWISE SPECIFIED									
MATERIAL DESCRIPTION		.XXX HOLE SIZE TOLERANCE		DRAWN	CHECK	ENGR	MFG		
-----		0.000 TO .750	OVER .750 TO 1.500	PJR	-	PJR	-		
MATERIAL SIZE		+0.010/-0.002	+0.015/-0.003	DATE	DATE	DATE	DATE		
-----				11/24/15	-	11/24/15	-		
FINISH		MASK		ANGLE ±2°		TITLE			
-----		▶		X/Y ±1/4		HPU SPECIFICATION-515			
• THREAD DEPTHS ARE TO MIN FULL THDS		SCALE NONE		.XX ±.03		NEXT LEVEL		SIZE	NUMBER
• DRILL DEPTHS ARE TO FULL DIA		MACHINED SURFACES 180°		.XXX ±.010		-----		D	700-007-695
• REMOVE BURRS AND SHARP EDGES									C
• DO NOT SCALE PRINT									3
MTS MTS SYSTEMS CORPORATION EDEN PRAIRIE, MINNESOTA U.S.A.				THIRD ANGLE PROJ		PRODUCT CODE 515		SHEET 1 OF 3	

Model ⁸	515.90S-1MDL (515.180S-1MDL) ⁸		515.60 (515.180S-2MDL) ⁸		515.90 (515.180S-3MDL) ⁸		515.120		515.150		515.180		REVISIONS							
	60 Hz		50 Hz		60 Hz		50 Hz		60 Hz		50 Hz		60 Hz		50 Hz		DESCRIPTION			
	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	DRAWN	ENGR	DATE	LETTER
Operating Pressure 3000 psi 4000 psi	207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi		207 bar / 3,000 psi 276 bar / 4,000 psi							
Relief valve setting 3000 psi 4000 psi	220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi		220 bar / 3,191 psi 300 bar / 4,352 psi							
Flow Rates: 3000 psi 4000 psi	113.6 lpm / 30.0 gpm 85.2 lpm / 22.5 gpm	100.7 lpm / 26.6 gpm 85.2 lpm / 22.5 gpm	227.1 lpm / 60.0 gpm 170.3 lpm / 45.0 gpm	201.4 lpm / 53.2 gpm 170.3 lpm / 45.0 gpm	340.7 lpm / 90.0 gpm 255.5 lpm / 67.5 gpm	302.1 lpm / 79.8 gpm 255.5 lpm / 67.5 gpm	454.2 lpm / 120.0 gpm 340.7 lpm / 90.0 gpm	402.8 lpm / 106.4 gpm 340.7 lpm / 90.0 gpm	567.8 lpm / 150.0 gpm 425.9 lpm / 112.5 gpm	503.5 lpm / 133.0 gpm 425.9 lpm / 112.5 gpm	681.4 lpm / 180gpm 511.0 lpm / 135gpm	604.2 lpm / 159.6 gpm 511.0 lpm / 135gpm								
Reservoir Capacity, Maximum ⁸	1211 liters / 320 gallons (see 515.180)		1211 liters / 320 gallons (see 515.180)		1211 liters / 320 gallons (see 515.180)		2188 liters / 578 gallons		2188 liters / 578 gallons		2188 liters / 578 gallons									
Reservoir Capacity, Minimum ⁸	606 liters / 160 gallons (see 515.180)		606 liters / 160 gallons (see 515.180)		606 liters / 160 gallons (see 515.180)		1102 liters / 291 gallons		1102 liters / 291 gallons		1102 liters / 291 gallons									
Usable Oil Volume	605 liters / 160 gallons (see 515.180)		605 liters / 160 gallons (see 515.180)		605 liters / 160 gallons (see 515.180)		1086 liters / 287 gallons		1086 liters / 287 gallons		1086 liters / 287 gallons									
Reservoir Level, Maximum to floor	95 cm / 37.3 inches		95 cm / 37.3 inches		95 cm / 37.3 inches		95 cm / 37.3 inches		95 cm / 37.3 inches		95 cm / 37.3 inches									
Reservoir Level, Minimum to floor	57 cm / 22.3 inches		57 cm / 22.3 inches		57 cm / 22.3 inches		57 cm / 22.3 inches		57 cm / 22.3 inches		57 cm / 22.3 inches									
Standard Filtration, Return Line	3 micron		3 micron		3 micron		3 micron		3 micron		3 micron									
Sound Level ² , 1m / 3 ft @ 3000 psi	68 db(A)		68 db(A)		68 db(A)		70 db(A)		71 db(A)		72 db(A)									
Width ⁸	104.4 cm / 41.1 inches (see 515.180)		104.4 cm / 41.1 inches (see 515.180)		104.4 cm / 41.1 inches (see 515.180)		104.4 cm / 41.1 inches		104.4 cm / 41.1 inches		104.4 cm / 41.1 inches									
Height ⁸	199.4 cm / 78.5 inches (see 515.180)		199.4 cm / 78.5 inches (see 515.180)		199.4 cm / 78.5 inches (see 515.180)		199.4 cm / 78.5 inches		199.4 cm / 78.5 inches		199.4 cm / 78.5 inches									
Length ⁸ ± 1.8 cm / 0.7 inches	287.3 cm / 113.1 inches (see 515.180)		287.3 cm / 113.1 inches (see 515.180)		287.3 cm / 113.1 inches (see 515.180)		431.3 cm / 169.8 inches		431.3 cm / 169.8 inches		431.3 cm / 169.8 inches									
Weight without oil ⁸	1769 kg / 3900 lb (1905 kg / 4200 lb)		2041 kg / 4500 lb (2200 kg / 4850 lb)		2336 kg / 5150 lb (2495 kg / 5500 lb)		2790 kg / 6150 lb		3084 kg / 6800 lb		3447 kg / 7600 lb									
Weight with minimum oil ⁸	2291 kg / 5050 lb (2880 kg / 6350 lb)		2585 kg / 5700 lb (3175 kg / 7000 lb)		2880 kg / 6350 lb (3470 kg / 7650 lb)		3765 kg / 8300 lb		4060 kg / 8950 lb		4423 kg / 9750 lb									
Weight with maximum oil ⁸	2812 kg / 6200 lb (3833 kg / 8450 lb)		3107 kg / 6850 lb (4128 kg / 9100 lb)		3402 kg / 7500 lb (4423 kg / 9750 lb)		4717 kg / 10400 lb		5012 kg / 11050 lb		5375 kg / 11850 lb									
Reservoir Material ⁸	Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum		Stainless Steel or Aluminum									
Ambient Operating Temperature Range	5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)		5-40 °C (40-104 °F)									
Ambient Operating Relative Humidity Range	0-85% non-condensing		0-85% non-condensing		0-85% non-condensing		0-85% non-condensing		0-85% non-condensing		0-85% non-condensing									
Atmospheric Heat Load ³ 70°F/21°C ambient	3.5 kw / 12,000 Btu/hr		3.5 kw / 12,000 Btu/hr		3.5 kw / 12,000 Btu/hr		4.7 kw / 16,000 Btu/hr		4.7 kw / 16,000 Btu/hr		4.7 kw / 16,000 Btu/hr									
Cooling water requirements:																				
Water Inlet Temperature	Minimum Required Flow		Minimum Required Flow		Minimum Required Flow		Minimum Required Flow		Minimum Required Flow		Minimum Required Flow									
15.5°C / 60°F	35.2 lpm / 9.3 gpm		41.6 lpm / 11 gpm		64.3 lpm / 17 gpm		83.2 lpm / 22 gpm		103 lpm / 27 gpm		128.7 lpm / 34 gpm									
21.1°C / 70°F	45.4 lpm / 12 gpm		56.8 lpm / 15 gpm		83.3 lpm / 22 gpm		113.6 lpm / 30 gpm		135 lpm / 36 gpm		166.5 lpm / 44 gpm									
26.7°C / 80°F	64.7 lpm / 17.1 gpm		83.3 lpm / 22 gpm		128.7 lpm / 34 gpm		166.6 lpm / 44 gpm		210 lpm / 55 gpm		257.4 lpm / 68 gpm									
32.2°C / 90°F	90.8 lpm / 24 gpm		177.9 lpm / 47 gpm		268.7 lpm / 71 gpm		355.8 lpm / 94 gpm		440 lpm / 116 gpm		537.5 lpm / 142 gpm									
40% Propylene Glycol mix																				
15.5°C / 60°F	48.5 lpm / 12.8 gpm		48.5 lpm / 12.8 gpm		74.8 lpm / 19.8 gpm		99 lpm / 26.2 gpm		122.4 lpm / 32.3 gpm		152.6 lpm / 40.3 gpm									
21.1°C / 70°F	63.2 lpm / 16.7 gpm		67.5 lpm / 17.8 gpm		99.1 lpm / 26.2 gpm		138.1 lpm / 36.5 gpm		167 lpm / 44.1 gpm		202.7 lpm / 53.6 gpm									
26.7°C / 80°F	91.6 lpm / 24.2 gpm		102.4 lpm / 27.1 gpm		158.2 lpm / 41.8 gpm		210.3 lpm / 55.6 gpm		261.4 lpm / 69.1 gpm		324.8 lpm / 85.8 gpm									
32.2°C / 90°F	NA		226.9 lpm / 59.9 gpm		NA		467.8 lpm / 123.6 gpm		570.3 lpm / 150.7 gpm		NA									
Heat Exchanger	Stainless steel plate style		Stainless steel plate style		Stainless steel plate style		Stainless steel plate style		Stainless steel plate style		Stainless steel plate style									
Maximum heat removal capacity	44.8 kw / 153000 Btu/hr		89.7 kw / 306000 Btu/hr		134.5 kw / 459000 Btu/hr		179.4 kw / 612000 Btu/hr		224.2 kw / 765000 Btu/hr		269.0 kw / 918000 Btu/hr									
Required water pressure differential (at HPU)	0.2-0.3 MPa / 35-45 psi		0.2 - 0.3 Mpa / 35-45 psi		0.2 - 0.3 Mpa / 35-45 psi		0.2 - 0.3 Mpa / 35-45 psi		0.2 - 0.3 Mpa / 35-45 psi		0.2 - 0.3 Mpa / 35-45 psi									
Maximum inlet pressure	0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi		0.8 MPa / 120 psi									
Cooling water pipe/hose diameter ⁶	3.8 cm / 1.5 in NPT pipe (see 515.180)		3.8 cm / 1.5 in NPT pipe (see 515.180)		3.8 cm / 1.5 in NPT pipe (see 515.180)		5.1 cm / 2.0 in NPT pipe		5.1 cm / 2.0 in NPT pipe		5.1 cm / 2.0 in NPT pipe									

- 1) FLA= Full Load Amps, SF = Service Factor
- 2) Sound pressure level (db(A)) applies only to 3000 psi models and is expressed as a free field value. Readings may vary with the acoustic environment.
- 3) Estimated values.
- 4) Locked rotor current.
- 5) Sum of all other motors running and the last motor starting - Locked rotor current.
- 6) Units supplied with NPT "female" pipe thread.
- 7) SAE ORB (O-Ring Boss) ports. Hose barb adapters included.
- 8) Models in parentheses correspond to values in parentheses where applicable. These are the specifications as delivered; considerations should be taken for the requirements when all modules are installed in the HPU.
- 9) For Crimp Lug Option, reference 100-324-505
- 10) This is NOT a specification for a facility circuit breaker; this is the circuit breaker internal to the HPU. MTS recommends a type/class "D" breaker for the facility breaker.

SOURCE/REF -
DRAWING -
PROPRIETARY DATA
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UNLESS OTHERWISE SPECIFIED									
MATERIAL DESCRIPTION	.XXX HOLE SIZE TOLERANCE		DRAWN	CHECK	ENGR	MFG			
-----	0.000 TO .750	OVER .750 TO 1.500	PJR	-	PJR	-			
MATERIAL SIZE	+ .010 / - .002	+ .015 / - .003	DATE	DATE	DATE	DATE			
-----	11/24/15	-	11/24/15	-	-	-			
FINISH	MASK	ANGLE ±2°	TITLE						
-----	X/Y	±1/4	HPU SPECIFICATION-515						
• THREAD DEPTHS ARE TO MIN FULL THDS	SCALE	NONE	GENERAL TOLERANCES	SCALE	±1	NEXT LEVEL	SIZE	NUMBER	REV
• DRILL DEPTHS ARE TO FULL DIA	.XX	±.03	180°	.XXX	±.010	-----	D	700-007-695	C
• REMOVE BURRS AND SHARP EDGES									
• DO NOT SCALE PRINT									
MTS MTS SYSTEMS CORPORATION	EDEN PRAIRIE, MINNESOTA U.S.A. ○		THIRD ANGLE PROJ	PRODUCT CODE		515		SHEET 2 OF 3	

