

Specification for Hydraulic Simulator Boards

These simulator boards are used to teach the students of the basic fundamentals of hydraulic systems used on the heavy duty trucks and equipment within the Departments Fleet.

1. *Pump* - Axial piston-type, variable volume, pressure-compensated; 3.78 Lpm (1.0 GPM); 69 bar (1000 PSI); adjustable pressure compensator; adjustable flow
2. *Electric motor* - Single-phase; 115V; TEFC; 1750 RPM; C-face; thermal overload protection
3. *Electric motor on/off switch* - Lockout/tag out mechanism; thermal overload protection with manual reset
4. *Hydraulic reservoir -capacity* 17liter (4.5gallon)
5. *Filtration* - 10 micron, spin on/off element w/by- pass gauge
6. *Directional control valves* - six (6) total;
One (1) 003-type; tandem-center; 3-position; 4-way; spring-centered; solenoid-controlled; 24V coils. Also includes sandwich-mounted, knob-adjustable pump port flow control valve
Two (2) 003-type; closed-center; 3-position; 4-way; spring-centered; solenoid-controlled; 24V coils. Also includes sandwich-mounted, dual, knob-adjustable flow control valves
One (1) 003-type; float-center; 3-position; 4-way; spring-centered; solenoid-controlled; 24V coils. Also includes sandwich-mounted, knob-adjustable pump port flow control valve
One (1) Monoblock type valve; cylinder spool; 3-position; 4-way; spring-centered; hand-lever operated w/pressure relief valve
One (1) Monoblock type valve; motor spool; 3-position; 4-way; spring-centered; hand-lever operated w/pressure relief valve
7. *Pilot-operated pressure relief valve w/knob adjustment*
8. *Direct-operated pressure relief valve w/knob adjustment*
9. *Sequence valve w/knob adjustment*
10. *Pressure reducing valve w/knob adjustment*
11. *Counterbalance valve with internal reverse flow check w/knob adjustment*
12. *Needle valve w/knob adjustment*

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13. *Flow control valve w/knob adjustment*
14. *Pressure-compensated flow control valve* restrictor-type; reverse flow bypass; w/knob adjustment
15. *Check valve*
16. *Pilot-operated check valve w/manual over ride*
17. *Cylinder* - single-rod; double-acting; 36 cm (14") stroke
18. *Cylinder* - double-rod; double-acting; 36 cm (14") stroke; w/load engage/disengage mechanism
19. *Motor* - bi-directional; gear-type; w/ininitely variable torque capability
20. *Flow meters* - two (2); 7.56 Lpm (0-2.0 GPM)
21. *Tachometer* digital-type; panel-mount; hydraulic motor shaft speed
22. *Ammeter* - analog-type, panel-mount
23. *Dual scale temperature gauge* - digital-type; panel-mount; upper: oil temperature; lower: ambient temperature
24. *Stopwatch* - digital, self-retractable
25. *Pressure gauges* - three (3); 103 bar (0-1500 PSI); PSI and bar scales; 6.35 cm (2.5"); glycerin-filled; Bourdon tube type; w/flat-face type quick-connect/disconnect type valves
26. *Load* - 45 Kg (100 lb.); Engage/disengage with mechanical latch. Entire weight is contained within a transparent safety enclosure.
27. *Hose storage caddy* - stow-away/swing-out
28. *Hoses* (per side) -
 - Four (4) - 152 cm (60")
 - Eight (8) - 107 cm (42")
 - Six (6) - 71 cm (28")
 - SAE 100-R1; w/flat-face type quick-connect/ disconnect type valves
 - Hose extenders; Two (2) (per side)
 - W/flat-face type quick-connect/disconnect type valves
29. *T's* - eight (8) (per side)
W/flat-face type quick-connect/disconnect type valves