ASME Bolting Specialist Qualification Program
Equipment List

Brand names in this list are only recommendations. Equivalent equipment is accepted.

Safety/Personal Protection Equipment:	
	Hard-hat Gloves Safety glasses with side shields Hearing protection Metatarsal foot guards Safety shoes (Participant) Computer and Projector
Torque/Load Measurement:	
1	Analog load detecting device (such as Skidmore model P torque bolt tension calibrator with ⅜" - 10 grade 8 bolt 2" long and 2H (or grade 7) nut)
1	Torque calibration unit 500 ft-lbs transducer and fixture
4	50-250 ft-lb ½" drive click-type torque wrenches
2	Stud/nut/washer sets ⅜"-10 grade 8 bolt 2" long and 2H (or grade 7) nut
	Non-flammable brake cleaner/ degreaser and grease-based fastener lubricant (such as Molycote 1000 lubricant)
Gasket Identification/Analysis	
1	Prepared gasket sample kit with all gasket types individually packaged and labelled. NPS 2 x 150, ring and full-face
1	Analog load detecting device (such as Skidmore Model P, with 1.5" diameter carbon steel gasket sample compression plate)
1	⅜" x 16 x 2-½" SAE J429 Grade 8 bolt with grade 2H or 7 nut
1	⅜ ID x 1.5" OD x ⅛" creep demo gasket. Glass filled, skived PTFE (ex. Durlon 9000, Garlock 9405)
1	Tape measure
1	Vernier calipers or micrometers
1	10-100 ft-lb, ⅜" drive clicker torque wrench and $^{9}/_{16}$"socket
1	NPS 6 x 150 RFWN flange
1	NPS 6 x 150, ⅛" thick compressed, non-asbestos Ring Gasket
	Copies of gasket dimension tables from ASME B16.20 and B16.21
	VSP gasket failure mode PowerPoint presentation
Manual Torquing Demonstration	

2	WNRF 12 bolt flange with a torque value between 120 – 200 ft-lb (such as ASME 6” class 300 WNRF 12-bolt flanges with ¾”- 10 UNC studs and 2H nuts with hardened washers mounted in horizontal anchored fixtures)
24	Through hardened washers (12 for each of the two flanges) for ¾” studs under the back nuts
4	1-¼” Backup wrench or device (such as Locrite magnetic backup fixtures)
4	250 ft-lb ½” drive click type torque wrenches with 1-¼” sockets
4	6” x ⅛” compressed fiber sheet gaskets for raised face flanges
1	Vernier or electronic calipers
	Grease-based fastener lubricant (such as Molycote 1000 lubricant)
	Marker crayons or soapstone
Hydraulic Torquing	
2	Suggested torque value between 400-1200 ft-lb with stud diameter between 1”- 2” and quantity of fasteners between 12-24 (such as ASME 10” class 600 WNRF 16-bolt flanges with 1-¼”- 8 UN studs mounted in vertical anchored or moveable fixtures with hardened washers and friction washers)
4	Hydraulic square drive torque wrench (such as Hytorc Avanti-1 ¾” drive torque wrenches with pressure/torque charts)
4	¾” x 2” impact sockets with pin rings
1	Electric Hydraulic pump (115 VAC) with 4 sets of hoses
2	10” spiral wound gaskets without an inner ring
4	2” Backup wrench or device (such as Locrite magnetic backup fixtures)
2	1-¼” Alignment pins (SMP type) – 2 for each flange
1	Vernier calipers
	Grease-based fastener lubricant (such as Molycote 1000 lubricant)
	Yellow marker crayons
	Mobile lifting hoist (minimum 500# capacity)
Pneumatic Torquing – Can use same flange from Hydraulic Torquing section	
1	¾” drive pneumatic torque multiplier (such as Hytorc J-Gun-1)
2	¾” x 2” impact sockets with pin rings
	Compressed air supply with min. 100 psi and 50 cfm, ¾” hoses
	Air hoses must be secured with approved safety pins and cables
Tensioner Operation – Hydraulic & Mechanical – Can use same flange from Hydraulic Torquing section	
4	1-1/4 ” hydraulic tensioners with spacer, top nut and linking hoses
2	Manual or hydraulic tensioner pumps with hoses and pressure/tension charts
2	¼” x 8” metal rods (tommy bars) to adjust the nuts
	1-¼” Mechanical tensioning device (such as Hytorc clamp nuts or super bolts©)
1	Mechanical tensioning drivers
	Pressure/load charts for tools