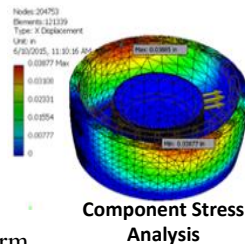
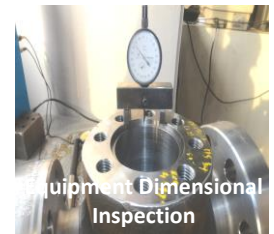
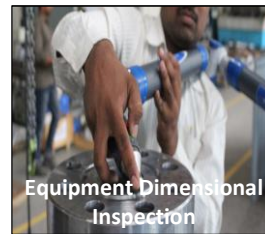


INTEGRATED GLOBAL OEM REPAIR AND RECERTIFICATION SERVICES

Pressure Control Equipment performance during Workover, Snubbing and Drilling operations is directly depended on the quality of the original equipment, on-going equipment inspection and maintenance and the quality of the repair and/or recertification in accordance to industry regulatory regulations and OEM specifications. Integrated Equipment has vast API OEM knowledge and experience to meet or exceed the requirements for Recertification for most industry standard Ram and Annular BOP, Choke and Kill Manifolds and Valves. Integrated Equipment processes employed for equipment recertification consistently follow the processes for our new API OEM product manufacturing. Integrated utilizes both API specifications for connects and through bore as well as OEM standards for all remaining components.

TEAR DOWN AND INSPECTION (TDI) - PHASE I

- **RECEIVE CLIENT BOP:**
 - Generate tracking documentation
- **BOP TRACEABILITY:**
 - Determine monogram status and review OEM Data Book, all repairs and recertification COCs, data books, weld maps & heat treatments
- **DISASSEMBLE BOP:**
 - Bonnets / Doors
 - Pressure Doors
 - Outlet Flanges
 - All tap end studs
 - Separate cylinder heads from cylinders and cylinder from the body bonnet
 - Disassemble ram shaft from the piston and tail rod
- **CLEAN AND PROCESS ALL PARTS:**
 - Steam clean to remove all crud and grease
 - Sugar blast body and non-coated parts
- **INSPECTION:**
 - Hardness test of body and all major parts.
 - PMI (Positive Material Identification): Metal Analysis or if not available, perform and /or perform Chemical and Mechanical test followed by Charpy impact test
 - Magnetic particle test of body to check for cracks
 - Dimensional & visual check of thread holes, all seal areas, internal parts, bonnets, doors, cylinder and cylinder head
- **RECERTIFICATION QUOTATION GENERATED:**
 - Submitted to client for approval to move to Phase II



REPAIR – REMANUFACTURE - PHASE II

- **BOP BODY:** Welding, Heat Treating and Machining maybe required
 - Bring ram cavity seal areas back to OEM specification
 - Bring pressure door seal areas back to OEM specification
 - Bring all tap in and studded bolt holes back to API specification
 - Bring all ring grooves back to API specification
 - Bring cut bores back to API and OEM specification
- **XYLAN COATING:** Applied to ram cavities for corrosion and operational control
- **MOVING AND SEALING PARTS:**
 - Pistons, ram shafts, tall rods, bonnet bodies and cylinder heads will be brought back to OEM specification
- **REASSEMBLE BOP:**
 - Install seal kits, ram assembly or packing elements and pressure test per Integrated procedures in accordance with API 16A
- **EXTERNAL PAINTING:**
 - As per client color requirements or Integrated Equipment Gray
- **REMANUFACTURE DOCUMENTATION:**
 - Generate a complete recertification Data Book in accordance with Integrated OEM API process. The recertification comes with a 1-year OEM warranty against manufacturer defects and normal operating conditions

RECERTIFICATION – REMANUFACTURED PROCESS COMPARISON TO NEW EQUIPMENT MANUFACTURING

