

1. Title	Install high pressure and low flow water pumps or the same type of pumps
2. Code	EMPEIN202A
3. Range	Carry out routine installation work for high pressure and low flow (hydraulic pressure above 30bar and flow rate below 5m ³ /hr) water pumps or the same type of pumps (such as oil pumps and chemical pumps) in general industrial plants, power plants or other places.
4. Level	2
5. Credits	3
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge and requirements for installing high pressure and low flow water pumps or the same type of pumps</p> <ul style="list-style-type: none"> ◆ Understand installation requirements of installation drawings of the same type of high pressure and low flow pumps : <ul style="list-style-type: none"> • Base requirements • Coupling requirements • Pump in/out system requirements ◆ Understand the construction and basic working principle of high pressure and low flow pumps including: Principles and installation methods for auto protection devices of pumps ◆ Understand how to use and install with the installation tools ◆ Understand the noting points for installing pumps <p>6.2 Methods and procedures of installing high pressure and low flow water pumps or the same type of pumps</p> <ul style="list-style-type: none"> ◆ Use equipment alignment and levelling instruments to measure high pressure and low flow pumps and their engine bases, including: <ul style="list-style-type: none"> • equipment alignment and levelling methods and adjusted value calculation; • equipment centering methods and adjusted value calculation ◆ Use all kinds of leveling and alignment methods such as level gauge, dial gauge, drawn steel wire, etc. to measure the leveling of bases, including: <ul style="list-style-type: none"> • horizontal alignment of bases • perpendicularity of anchor bolts ◆ Draw the sizing block configuration plan according to equipment base dimensions ◆ Know about radial swaying, and measurement and adjustment of end offsetting of couplings ◆ Fasten anchor bolts systematically to force gauge

	<p>6.3 Professionalism in installing high pressure and low flow water pumps or the same type of pumps</p> <ul style="list-style-type: none"> ◆ Inspect and measure the rotating parts of high pressure and low flow pumps after fastening <ul style="list-style-type: none"> • measure and adjust vertical high pressure and low flow pump impeller runout • measure and adjust axis traverse ◆ Follow the requirements of drawing to carry out high pressure and low flow pump installation ◆ Understand safety requirements for work, requirements of the codes of practice and manufacturers' installation guidelines in order to perform high pressure and low flow pump installation ◆ Use installation tools and instruments properly
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> (i) Capable to follow the drawings and work requirements to carry out high pressure and low flow pump installation work under instruction; (ii) Capable to perform high pressure and low flow pump installation work under instruction; (iii) Capable to complete construction test under instruction, including correctly performing the procedures of leveling, alignment and installation, recording data and calibrating the equipment to the standards as required; and (iv) Capable to complete the installation report for high pressure and low flow pumps.
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses the competency of EMPEIN101A“Assist in installing various types of water pumps or the same type of pumps”.</p>