

**Field      Engineering and Technology****Review of *Mechanical Engineering* unit standards**

<b>Subfield</b>	<b>Domain</b>	<b>ID</b>
Mechanical Engineering	Fluid Power - Hydraulics	2725, 2727, 2729, 2731, 2733, 17345, 20597, 20599, 20611, 20613
	Fluid Power - Pneumatics	2728, 2732, 17344, 20598, 20600-20603, 20605, 20606, 20612, 20614

Competenz has completed the review of the unit standards listed above.

**Date new versions published**

**March 2011**

**Planned review date**

**December 2015**

**Summary**

Competenz completed a review of the unit standards above in consultation with the assessors, moderators and providers of the standards. Consultation was through an online survey and email. Comments retained in the Competenz database were also integrated. The review was to ensure the unit standards still meet industry requirements and continue to be fit for purpose.

Standards where the assessment was “under supervision” were removed as the higher level equivalents not requiring supervision essentially covered the same skills, and this doubled up on assessment.

The series of standards covering design of hydraulic and pneumatic equipment was also removed. They had little or no use, and are now considered to be more appropriate for people qualified at diploma level.

The remaining standards, covering the sequence of knowledge, safety, maintenance, servicing of components, and fault diagnosis in both domains are still fit for purpose and required little change. Minor improvements were made to clarify interpretation and standardise layout with other domains in the Mechanical Engineering subfield.

**Main changes**

- The design unit standards 2725, 2729, and 20600–20603 were designated expiring and will not be replaced; they have had very little, or no, use.
- Standards 2727, 2728, and 20605 (which also had very little use) were designated expiring as their outcomes include “under supervision”; they are no longer needed and will not be replaced.
- Standards 17344 and 17345 were designated expiring as their outcomes are effectively covered by standards 20612 and 20611 respectively.
- Titles of standards 20597, 20598, 20613 and 20614 were amended to better reflect the significant outcomes recognised by the standards.

- The level and credits of standards 20613 and 20614 were both increased from Level 2 to 3 and from 5 credits to 7, to better reflect the learning effort and semi-skilled nature of these activities, and time taken to complete assessment.
- The credit of standard 20606 was increased to 20 to better reflect the learning time and to better align with standard 2733.
- The style and formatting of explanatory notes were standardised for consistency with standards in other domains in the Mechanical Engineering subfield.
- References were checked and updated where required.
- Outcome statements and evidence requirements were clarified to improve assessment.

### Category D unit standards will expire at the end of December 2015.

#### Impact on existing accreditations

Current Accreditation for			Accreditation extended to		
Nature of accreditation	Classification	Level	Nature of accreditation	ID	Level
Subfield	Mechanical Engineering	2	Standard	20613, 20614	3
Domain	Fluid Power - Hydraulics	2	Standard	20613	3
Domain	Fluid Power - Pneumatics	2	Standard	20614	3

#### Impact on Accreditation and Moderation Action Plan (AMAP)

None.

#### Impact on registered qualifications

Key to type of impact	
<b>Affected</b>	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
<b>Not materially affected</b>	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following Competenz qualification is affected by the outcome of this Review. It will be reviewed in 2011.

Ref	Qualification Title	Classification or ID
0662	National Certificate in Lifts and Escalators (Level 4) with strands in Installation, and Servicing	2727

The following table identifies qualifications developed by other SSBs that are impacted by the outcome of this Review. The SSBs have been advised that the qualifications require revision. The standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	Classification or ID	SSB Name
1413	National Certificate in Motor Industry (Automotive Body) (Level 4) with strands in Coachbuilding, Collision Repair, and Refinishing	<b>17344</b>	NZ Motor Industry Training Organisation (Incorporated)
1414	National Certificate in Motor Industry (Automotive Body) (Level 4) with strands in Coachbuilding, Collision Repair, and Refinishing	20597, <b>20613</b>	
1235	National Certificate in Engineering and Technology (Pharmaceutical and Allied Products) (Level 2)	20597, 20598, <b>20613, 20614</b>	Plastics and Materials Processing
1407	National Certificate in Engineering and Technology (Plastics Engineering) (Level 4) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, and Rotational Moulding	<b>17344, 17345, 20597, 20598, 20613, 20614</b>	Industry Training Organisation Incorporated
1148	National Certificate in Seafood Vessel Operations (Marine Engineering) (Level 4)	<b>2727, 20597, 20613</b>	Seafood ITO

### Detailed list of unit standards – classification, title, level, and credits

All changes are in **bold**. Recommended alternative unit standards are in *italics*.

Key to review category	
<b>A</b>	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
<b>B</b>	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
<b>C</b>	Major changes that necessitate the registration of a replacement standard with a new ID
<b>D</b>	Standard will expire and not be replaced

### Engineering and Technology > Mechanical Engineering > Fluid Power - Hydraulics

ID	Title	Level	Credit	Review Category
2725	Design a hydraulic power system under supervision	3	15	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	
2727	Service hydraulic power system components under supervision	3	20	D
2731	<i>Service hydraulic power system components</i>	4	20	
2729	Design a hydraulic power system	4	15	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	

ID	Title	Level	Credit	Review Category
2731	Service hydraulic power system components	4	20	B
2733	Diagnose hydraulic power system faults	4	20	B
17345	Draw a diagram, and explain the operating principles, of a simple hydraulic power system	2	3	D
20611	<i>Demonstrate knowledge of hydraulics and hydraulic power systems</i>	2	5	
20597	Make a hydraulic power system safe <b>Shut down for maintenance, and start up, a hydraulic power system</b>	2	4	B
20599	Clean a hydraulic power system for service	2	4	B
20611	Demonstrate knowledge of hydraulics and hydraulic power systems	2	5	B
20613	Maintain a hydraulic power system under supervision <b>Maintain a hydraulic power system</b>	2 3	5 7	B

## Engineering and Technology &gt; Mechanical Engineering &gt; Fluid Power - Pneumatics

ID	Title	Level	Credit	Review Category
2728	Service pneumatic power system components under supervision	3	15	D
2732	<i>Service pneumatic power system components</i>	4	20	
2732	Service pneumatic power system components	4	15 <b>20</b>	B
17344	Draw a diagram, and explain the operating principles, of a simple pneumatic power system	2	3	D
20612	<i>Demonstrate knowledge of pneumatics and pneumatic power systems</i>	2	5	
20598	Make a pneumatic power system safe <b>Shut down for maintenance, and start up, a pneumatic power system</b>	2	4	B
20600	Design a basic pneumatic power system under supervision	3	15	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	
20601	Design a basic pneumatic power system	4	15	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	
20602	Design a pneumatic power air distribution system	4	10	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	
20603	Design a pneumatic sequential power control system	4	10	D
11385	<i>Demonstrate and apply knowledge of fluid mechanics in mechanical engineering</i>	6	15	
20605	Diagnose pneumatic power system faults under supervision	3	10	D
20606	<i>Diagnose pneumatic power system faults</i>	4	20	
20606	Diagnose pneumatic power system faults	4	10 <b>20</b>	B

ID	Title	Level	Credit	Review Category
20612	Demonstrate knowledge of pneumatics and pneumatic power systems	2	5	B
20614	Maintain a pneumatic power system under supervision	2	5	B
	<b>Maintain a pneumatic power system</b>	<b>3</b>	<b>7</b>	