



Australian Government

Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 6/4C/340

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Marel Model PL2020 Weighing Instrument

submitted by Marel Iceland ehf
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NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated October 2015.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 6 approved – certificate issued	26/08/26

CONDITIONS OF APPROVAL

General

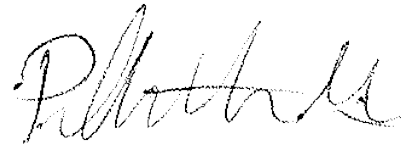
Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/340' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate of Approval No S1/0B.

This approval shall NOT be used in conjunction with General Certificate of Approval No 6B/0.

Signed by a person authorised by the Chief Metrologist
to exercise their powers under Regulation 60 of the
National Measurement Regulations 1999.



Phillip Mitchell

A/g Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No 6/4C/340

1. Description of Pattern

approved on 26/08/26

A Marel model PL2020 class  multiple range self-indicating non-automatic weighing instrument (Figure 1) which has a maximum capacity of 1.5 kg with a verification scale interval (e_1) of 0.0005 kg and a minimum capacity of 0.01 kg for the low range. For the high range, the instrument has a maximum capacity of 3 kg with a verification scale interval (e_2) of 0.001 kg and a minimum capacity of 0.02 kg.

Note: The indicator of the instrument is marked as Marel Type/Model M2400.

An arrow annunciator illuminates alongside the appropriate range information to indicate the range in use.

Instrument are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording) unless the maximum capacity of the instrument is greater than 100 kg (as may be the case for variant 4).

1.1 Basework

The basework (known as a model PL2020) has the load receptor fully supported by a single load cell.

The load receptor has maximum nominal dimensions of 250 × 300 mm and uses a stainless steel type construction as shown in Figure 1.

1.2 Load cell

A Flintec model PC30 load cell of 7 kg maximum capacity is used.

1.3 Indicator

A Marel model M2400 digital mass indicator (Figure 2) is used. The indicator is described in the documentation of approval NMI S798. The indicator has a stainless steel enclosure with an LCD display to display the weight value.

The indicator of the instrument may be wall mounted or attached to the base.

1.4 Zero

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument. The initial zero-setting device can be disabled.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

A zero-tracking device may be fitted.

1.5 Tare

A semi-automatic subtractive tare device of up to the maximum capacity of the greater weighing range of the instrument may be fitted.

A pre-set subtractive tare device of up to the maximum capacity of the greater weighing range of instrument may be fitted.

1.6 Display Check

A display check is initiated whenever power is applied.

1.7 Levelling

The instrument is provided with adjustable feet and a level indicator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.8 Power Supply

The instrument operates from AC mains power (110 - 240 V AC) or 12 - 24 V DC.

1.9 Additional Features

Instruments may be fitted with dual displays, and price computing. These functions are not approved for trade use.

1.10 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R 76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificate of Approval No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with

- 2 x RS232 serial data interfaces;
- 1 x Ethernet;
- 2 x USB interfaces;
- 4 x digital inputs/outputs; and
- 1 x CAN bus.

1.11 Data Storage Memory

Instruments may contain memory for the storage of weighing results.

For each weighing, weighing results together with identification including date and time are stored into the storage device.

The use of this feature for trade use is subject to the agreement of the applicable trade measurement authority. In any case, data from the storage device shall only be used for trade if the format of the output complies with General Supplementary Certificates of Approval S1/0B.

1.12 Verification Provision

Provision is made for the application of a verification mark.

1.13 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Marel (or JBT Marel)
Indication of accuracy class	
Pattern approval number for the instrument	NMI 6/4C/340
Maximum capacity	<i>Max</i> kg #1
Minimum capacity	<i>Min</i> kg #1
Verification scale interval	<i>e</i> = kg #1
Maximum subtractive tare	<i>T</i> = - kg #2
Serial number of the instrument	

#1 These markings are also shown in the electronic marking field near the display of the result.

#2 This marking is required if *T* is not equal to *Max*.

Note:

For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication (>) of the range to which they apply, e.g.

Max/Min/e=d= >/...../..... kg
...../...../..... kg

In addition, instruments shall carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording (see 1. *Description of Pattern* above).

1.14 Sealing Provision

The instrument may be sealed via physical and/or software means.

a) DIP switch S2-1 and S1 button sealing

Provision is made for the calibration to be sealed by means of setting the DIP switch S2-1 to the 'ON' position and then preventing access within the instrument housing. Note: If the DIP switch S2-1 is in the 'ON' position, the instrument will display 'S2: SEAL switch is ON' message during the initial power on display sequence as shown in Figure 7b.

Alternatively if the DIP switch S2-1 is in the 'OFF' position, the instrument can be sealed by setting the 'Access control' to 'Locked' and 'Access configurable (S1 button)' to 'NO' and then preventing access within the instrument housing. The status can be viewed by pressing the  key and then the  key. The audit logs screen is displayed as shown in Figure 7c.

Sealing to prevent access within the instrument housing may be achieved by the use of one or more destructible adhesive labels at edges of the instrument housing or by the use of 'lead & wire' type seals as shown in Figure 7d.

b) Software sealing

Alternatively, the instrument is sealed by recording the audit trail counters on verification.

Access to the calibration and metrological configuration must be protected by a passcode. The non-resettable event counters increment, each up to 999, each time any change to calibration 'CAL' or sealed configuration 'CON' parameters

occurs. The values of these event counters can be viewed by pressing the  key and then the  key. The audit logs screen is displayed as shown in Figure 7c.

The CAL xxx and CON yyy values shall be recorded on a destructible adhesive label attached to the instrument as shown in Figure 7d.

Any subsequent alteration to the calibration or configuration will be evident as the recorded value and the current counter value will differ.

1.15 Software

The software includes firmware version and weighing module version.

The firmware version number is designated 1.yy-zz, where “yy” represents minor part which not affecting the legal measurement functionality, and “zz” represents minimal change and bug fixes.

The weighing module version is identified by a number 100.

The software version is displayed by pressing the  key, then pressing the ‘0’ key.

2. Description of Variant 1

approved on 26/08/26

The Marel model PL2020 and Marel model PL2062 series instruments (shown in Figure 3), which are similar to the pattern but with different maximum capacities listed in Table 1. Some models are fitted with long way rollers (Figure 9) and identified by the mark R in the model name. The long way roller has maximum nominal dimensions of 255 mm x 305 mm.

The parameters of the approved baseworks are listed below in Table 1 (the pattern is shown in **bold**).

Table 1 PL2020 and PL2062 Series Multiple Range Instruments

Basework Model/Capacity (#)	Maximum Capacity (Max_1/Max_2) (kg)	Minimum capacity (Min_1/Min_2) (kg)	Verification scale interval (e_1/e_2) (g)	Platform Dimensions (mm × mm)	Flintec Load Cell Model and Maximum Capacity, E_{max}
PL2020-3 kg	1.5/3	0.01/0.02	0.5/1	250 × 300	7 kg, PC30, C3, Y=15000
PL2020-6 kg	3/6	0.02/0.04	1/2	250 × 300	10 kg, PC30, C3, Y=15000
PL2020-6 kg	3/6	0.02/0.04	1/2	250 × 300	15 kg, PC30, C3, Y=15000
PL2020-15 kg	6/15	0.04/0.1	2/5	250 × 300	20 kg, PC30, C3, Y=15000
PL2020-15 kg	6/15	0.04/0.1	2/5	250 × 300	30 kg, PC30, C3, Y=15000
PL2020R-6 kg	3/6	0.02/0.04	1/2	255 × 305	15 kg, PC30, C3, Y=15000
PL2020R-15 kg	6/15	0.04/0.1	2/5	255 × 305	30 kg, PC30, C3, Y=15000
PL2062-3 kg	1.5/3	0.01/0.02	0.5/1	250 × 300	7 kg, PC30, C3, Y=15000
PL2062-6 kg	3/6	0.02/0.04	1/2	250 × 300	10 kg, PC30, C3, Y=15000
PL2062-6 kg	3/6	0.02/0.04	1/2	250 × 300	15 kg, PC30, C3, Y=15000
PL2062-15 kg	6/15	0.04/0.1	2/5	250 × 300	20 kg, PC30, C3, Y=15000
PL2062-15 kg	6/15	0.04/0.1	2/5	250 × 300	30 kg, PC30, C3, Y=15000
PL2062R-6 kg	3/6	0.02/0.04	1/2	255 × 305	15 kg, PC30, C3, Y=15000
PL2062R-15 kg	6/15	0.04/0.1	2/5	255 × 305	30 kg, PC30, C3, Y=15000

(#) Models marked as R use rollers.

3. Description of Variant 2

approved on 26/08/26

The Marel model PL3020 series instruments, which are similar to the pattern but with different maximum capacities listed in Table 2. Some models are fitted with long

way, short way or multiple way rollers (Figure 9) and identified by the mark R in the model name. The long way roller has maximum nominal dimensions of 297 mm x 407 mm. The short way roller has maximum nominal dimensions of 318 mm x 401 mm. The multiple way roller has maximum nominal dimensions of 300 mm x 427 mm.

The load receptor has maximum nominal dimensions of 290 × 390 mm and uses a stainless steel type construction as shown in Figure 4.

Table 2 PL3020 Series Multiple Range Instruments

Basework Model/Capacity (#)	Maximum Capacity (Max_1/Max_2) (kg)	Minimum capacity (Min_1/Min_2) (kg)	Verification scale interval (e_1/e_2) (g)	Platform Dimensions (mm × mm)	Flintec Load Cell Model and Maximum Capacity, E_{max}
PL3020-15 kg	6/15	0.04/0.1	2/5	290 × 390	30 kg, PC30, C3, Y=15000
PL3020-30 kg	15/30	0.1/0.2	5/10	290 × 390	50 kg, PC30, C3, Y=15000
PL3020R-15 kg	6/15	0.04/0.1	2/5	-	30 kg, PC30, C3, Y=15000
PL3020R-30 kg	15/30	0.1/0.2	5/10	-	50 kg, PC30, C3, Y=15000

(#) Models marked as R use rollers.

(-) Depends on the type of roller implemented.

4. Description of Variant 3

approved on 26/08/26

The Marel model PL4020 and Marel model PL4062 series instruments, which are similar to the pattern but fitted with Flintec model PC7 load cell in different maximum capacities. The Marel model PL4026 series instruments which are similar to the pattern but fitted with Flintec model PC6 load cell in different maximum capacities.

The Marel PL4020 series and Marel PL4062 series load receptor has maximum nominal dimensions of 400 × 550 mm and uses a stainless steel type construction as shown in Figure 5. The Marel PL4026 series load receptor has maximum nominal dimensions of 400 mm × 600 mm and uses a stainless steel type construction as shown in Figure 5.

The Marel model PL4020R and Marel model PL4062R series are fitted with long way, short way or multiple way rollers (Figure 9) and identified by the mark R in the model name. The long way roller has maximum nominal dimensions of 400 mm x 581 mm. The short way roller has maximum nominal dimensions of 431 mm x 555 mm. The multiple way roller has maximum nominal dimensions of 406 mm x 556 mm.

The Marel model PL4026R series are fitted with long way, short way or multiple way rollers and identified by the mark R in the model name. The long way roller has maximum nominal dimensions of 410 mm x 604 mm. The short way roller has maximum nominal dimensions of 433 mm x 606 mm. The multiple way roller has maximum nominal dimensions of 456 mm x 607 mm.

The parameters of the approved baseworks are listed below in Table 3.

Table 3 PL4020, PL4062 and PL4026 Series Multiple Range Instruments

Basework Model/Capacity (#)	Maximum Capacity (Max_1/Max_2) (kg)	Minimum capacity (Min_1/Min_2) (kg)	Verification scale interval (e_1/e_2) (g)	Platform Dimensions (mm × mm)	Flintec Load Cell Model and Maximum Capacity, E_{max}
PL4020-60 kg	30/60	0.2/0.4	10/20	400 × 550	100 kg, PC7, C3, Y=15000
PL4020R-60 kg	30/60	0.2/0.4	10/20	-	100 kg, PC7, C3, Y=15000
PL4062-60 kg	30/60	0.2/0.4	10/20	400 × 550	100 kg, PC7, C3, Y=15000
PL4062R-60 kg	30/60	0.2/0.4	10/20	-	100 kg, PC7, C3, Y=15000
PL4026-30 kg	15/30	0.1/0.2	5/10	400 × 600	100 kg, PC6, C4, Y=25000
PL4026-30 kg	20/30	0.1/0.2	5/10	400 × 600	100 kg, PC6, C4, Y=25000
PL4026R-30 kg	15/30	0.1/0.2	5/10	-	100 kg, PC6, C4, Y=25000
PL4026R-30 kg	20/30	0.1/0.2	5/10	-	100 kg, PC6, C4, Y=25000

(#) Models marked as R use rollers.

(-) Depends on the type of roller implemented.

5. Description of Variant 4

approved on 26/08/26

The Marel model PL5020 series instruments, which are similar to the pattern but fitted with Flintec model PC7 load cell in different maximum capacities listed in Table 4. Some models are fitted with long way, short way or multiple way rollers (Figure 9) and identified by the mark R in the model name. The long way roller has maximum nominal dimensions of 504 mm x 630 mm. The short way roller has maximum nominal dimensions of 530 mm x 603 mm. The multiple way roller has maximum nominal dimensions of 559 mm x 611 mm.

The Marel PL5020 series load receptor has maximum nominal dimensions of 500 mm × 600 mm and uses a stainless steel type construction as shown in Figure 6.

Table 4 PL5020 Series Multiple Range Instruments

Basework Model/Capacity (#)	Maximum Capacity (Max_1/Max_2) (kg)	Minimum capacity (Min_1/Min_2) (kg)	Verification scale interval (e_1/e_2) (g)	Platform Dimensions (mm × mm)	Flintec Load Cell Model and Maximum Capacity, E_{max}
PL5020-60 kg	30/60	0.2/0.4	10/20	500 x 600	100 kg, PC7, C3, Y=15000
PL5020-150 kg	60/150	0.4/1	20/50	500 x 600	250 kg, PC7, C3, Y=15000
PL5020-300 kg	150/300	1/2	50/100	500 x 600	500 kg, PC7, C3, Y=15000
PL5020R-60 kg	30/60	0.2/0.4	10/20	-	100 kg, PC7, C3, Y=15000
PL5020R-150 kg	60/150	0.4/1	20/50	-	250 kg, PC7, C3, Y=15000
PL5020R-300 kg	150/300	1/2	50/100	-	500 kg, PC7, C3, Y=15000

(#) Models marked as R use rollers.

(-) Depends on the type of roller implemented.

6. Description of Variant 5

approved on 26/08/26

The pattern and variants 1 to 4 may be fitted with a Marel model MU1 indicator (Figure 8) as multiple range instruments in certain capacities as listed in Tables 1 to 4. The indicator is also described in the documentation of approval NMI S699.

6.1 Sealing Provision

Provision is made for the calibration adjustments to be sealed as described in the approval documentation of the indicator.

6.2 Software

The legally relevant software version and number are described in the approval documentation of the indicator.

7. Description of Variant 6

approved on 26/08/26

Single load cell baseworks of this approval used with a compatible approved indicator (Supplementary approval with reference to document **NMI R 76 dated October 2015 or later**) provided the conditions set out below are met. In this case instruments may be known according to the basework model number (e.g., model PL2020). Any devices and features described in the approval for the indicator shall apply to this instrument.

Note: Only submitter-authorized manufacture or conversion is permitted under this variant.

The basework is connected to the indicator directly without lengthening the load cell cable.

The minimum temperature limit of the instrument is equal to the greater of the lower temperature limit of the basework or indicator. The maximum temperature limit is equal to the lesser of the upper temperature limit of the basework or indicator. The temperature range of the instrument shall be a minimum of 30 °C (e.g., 0 °C to 40 °C or 5 °C to 35 °C).

Note: Where no special temperature limits are given in the **Descriptive Markings and Notices**, then the temperature limits are –10 °C to 40 °C. If the temperature limits of the instrument are other than –10 °C to +40 °C, additional marking of special temperature limits must be added to the existing descriptive markings.

In addition to the markings specified in clause **1.13 Descriptive Markings and Notices**, instruments are marked with the NMI approval number for the indicator used, together in the same location. Where the resulting instrument is a multiple range instrument, appropriate markings regarding the ranges and scale intervals shall be provided in accordance with the Supplementary Certificate for the indicator.

The approved single load cell baseworks and their limiting characteristics are given in Tables 5a to 5c and Tables 6a to 6c and Table 7.

The conditions to be met are given below, and include calculations using the following terms:

Ex = Excitation voltage from indicator (V)

LC_Sens = Load cell sensitivity (mV/V)

E_{max} = Load cell maximum capacity (kg)

IZSR = Initial zero setting range for the indicator (kg) (positive range only)

DL = Dead load of load receptor (kg)

T⁺ = Additive tare capacity (kg)

U_{min} = Minimum input voltage for the indicator (mV)

Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (μV)

e = verification scale interval of the instrument (kg). ***In the case of multiple range or multi-interval instruments, any reference to 'e' refers to the smallest verification scale interval (i.e. e_1).***

$e_1, e_2, \dots$ = verification scale interval of each range for multiple range instruments (or partial weighing ranges for multi-interval instruments), e_1 refers to the smallest verification interval.

Max = the maximum capacity of the instrument. This refers to the maximum capacity of the highest range (i.e. Max_r for multiple range instruments).

Max_r = the maximum capacity of the instrument for a multiple range instrument, i.e. the maximum capacity of the highest range.

Max₁ Max₂ ... = the maximum capacity of the various ranges for a multiple range instrument. Max_1 refers to the maximum capacity of the smallest range.

n_{LC} = the maximum number of verification intervals for which the load cell or basework is approved (e.g. 3000 for a 'class C3' load cell).

DR = dead load output return value for the load cell. Note: Many load cells do not have a specified DR value.

The conditions are:

- The excitation voltage used is within the range approved for the baseworks.
- The load cell input impedance is within the impedance range approved for the indicator.
- The maximum load applied to the load cell (live load plus any dead load) does not exceed the load cell maximum capacity, i.e.

$$Max + DL + IZSR + T^+ \leq E_{max}$$

- The verification scale interval is not less than the minimum value specified. ***In the case of multiple range or multi-interval instruments, the verification scale interval refers to the smallest verification scale interval (i.e. e_1).***
- The number of verification scale intervals of the instrument is less than or equal to the *maximum number of verification intervals* specified for the load cell and also for the approved indicator. ***In the case of multiple range or multi-interval instruments, the number of verification scale intervals refers to the largest number in any weighing range or partial weighing range (i.e. the largest of $Max_1/e_1, Max_2/e_2$ etc).***
- The signal voltage per verification scale interval is not less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval documentation for the indicator), i.e.

$$\text{Indicator Sensitivity} \leq 1000 \times Ex \times LC_Sens \times e / E_{max}$$

In the case of multiple range or multi-interval instruments, e is replaced by e_1 .

- The input voltage for the indicator (when the basework is unloaded) is not less than the minimum input voltage for the indicator (as specified in the approval documentation for the indicator), i.e.

$$U_{\min} \leq E_x \times LC_Sens \times DL / E_{\max}$$

Where $U_{\min}$ is not given in the Supplementary Certificate of Approval for the indicator, $U_{\min} = 0$ mV.

Additional requirement for multiple range operation:

In the case of indicators which are configured to form a multiple range weighing instrument the instrument shall comply with the following conditions:

- (i) The smallest verification scale interval (e_1) shall satisfy the following:**

$$e_1 \geq DR \times Max_r / E_{\max}$$

Of course (i) cannot apply where a value of 'Dead load output return' DR is not given. In this case the smallest verification scale interval (e_1) shall satisfy the following:

$$e_1 \geq 0.4 \times Max_r / n_{LC}$$

Additional requirement for multi-interval operation:

In the case of indicators which are configured to form a multi-interval weighing instrument the instrument shall comply with the following conditions:

- (i) The smallest verification scale interval (e_1) shall satisfy the following:**

$$e_1 \geq 2 \times DR \times Max / E_{\max}$$

Of course (i) cannot apply where a value of 'Dead load output return' DR is not given. In this case the smallest verification scale interval (e_1) shall satisfy the following:

$$e_1 \geq Max / n_{LC}$$

- (ii) The instrument shall also satisfy the following condition with the exception of the last partial weighing range:**

$$Max_i / e_{i+1} \geq 500 \text{ (e.g. } Max_1/e_2 \geq 500 \text{ and } Max_2/e_3 \geq 500 \text{)}$$

TEST PROCEDURE No 6/4C/340

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

For multi-interval and multiple range instruments with verification scale intervals of $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

Table 5a – PL2020 series Single or Multiple Range Basework with Flintec Load Cell

Basework Model	PL2020-3kg	PL2020-3kg	PL2020-6kg	PL2020-6kg	PL2020-6kg	PL2020-6kg	PL2020-15kg	PL2020-15kg	PL2020-15kg	PL2020-15kg	PL2020R-6kg	PL2020R-6kg	PL2020R-15kg	PL2020R-15kg
Platform Size	250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		255 mm x 305 mm		255 mm x 305 mm	
Basework Maximum Capacity (kg)	3	1.5/3 #MR	6	3/6 #MR	6	3/6 #MR	15	6/15 #MR	15	6/15 #MR	6	3/6 #MR	15	6/15 #MR
Typical Verification Scale Interval (kg)	0.001	0.0005/0.001	0.002	0.001/0.002	0.002	0.001/0.002	0.005	0.002/0.005	0.005	0.002/0.005	0.002	0.001/0.002	0.005	0.002/0.005
Maximum No. of VSI (n_{max})	3000		3000		3000		3000		3000		3000		3000	
Dead Load of Platform (kg)	2.4		2.4		2.4		2.4		2.4		4.8		4.8	
Load Cell Used	PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3	
Load Cell Maximum Capacity E_{max} (kg)	7		10		15		20		30		15		30	
Maximum Load Cell Scale Interval n_{LC}	3000		3000		3000		3000		3000		3000		3000	
Minimum Value of VSI for Basework (kg)	0.000467		0.000667		0.001		0.0013		0.002		0.001		0.002	
Minimum Dead Load Output Return DR (g)	0.814		1.163		1.744		2.326		3.488		1.744		3.488	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V	
Input Impedance (Ω)	385		385		385		385		385		385		385	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m		2.8 m		2.8 m		2.8 m		2.8 m		2.8 m	
No. of Leads (plus shield)	6		6		6		6		6		6		6	

#MR represents a Multiple Range instrument

Table 5b – PL2062 series Single or Multiple Range Basework with Flintec Load Cell

Basework Model	PL2062-3kg	PL2062-3kg	PL2062-6kg	PL2062-6kg	PL2062-6kg	PL2062-6kg	PL2062-15kg	PL2062-15kg	PL2062-15kg	PL2062-15kg	PL2062R-6kg	PL2062R-6kg	PL2062R-15kg	PL2062R-15kg
Platform Size	250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		250 mm x 300 mm		255 mm x 305 mm		255 mm x 305 mm	
Basework Maximum Capacity (kg)	3	1.5/3 #MR	6	3/6 #MR	6	3/6 #MR	15	6/15 #MR	15	6/15 #MR	6	3/6 #MR	15	6/15 #MR
Typical Verification Scale Interval (kg)	0.001	0.0005/0.001	0.002	0.001/0.002	0.002	0.001/0.002	0.005	0.002/0.005	0.005	0.002/0.005	0.002	0.001/0.002	0.005	0.002/0.005
Maximum No. of VSI (n_{max})	3000		3000		3000		3000		3000		3000		3000	
Dead Load of Platform (kg)	2.4		2.4		2.4		2.4		2.4		4.8		4.8	
Load Cell Used	PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3		PC30 C3	
Load Cell Maximum Capacity E_{max} (kg)	7		10		15		20		30		15		30	
Maximum Load Cell Scale Interval n_{LC}	3000		3000		3000		3000		3000		3000		3000	
Minimum Value of VSI for Basework (kg)	0.000467		0.000667		0.001		0.0013		0.002		0.001		0.002	
Minimum Dead Load Output Return DR (g)	0.814		1.163		1.744		2.326		3.488		1.744		3.488	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V	
Input Impedance (Ω)	385		385		385		385		385		385		385	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m		2.8 m		2.8 m		2.8 m		2.8 m		2.8 m	
No. of Leads (plus shield)	6		6		6		6		6		6		6	

#MR represents a Multiple Range instrument

Table 5c – PL3020 Basework with Flintec Load Cell

Basework Model	PL3020 -15kg	PL3020 -15kg	PL3020 -30kg	PL3020 -30kg	PL3020R -15kg	PL3020R -15kg	PL3020R -30kg	PL3020R -30kg
Platform Size	290 mm x 390 mm		290 mm x 390 mm		-		-	
Basework Maximum Capacity (kg)	15	6/15 #MR	30	15/30 #MR	15	6/15 #MR	30	15/30 #MR
Typical Verification Scale Interval (kg)	0.005	0.002/0.005	0.01	0.005/0.01	0.005	0.002/0.005	0.01	0.005/0.01
Maximum No. of VSI (n_{max})	3000		3000		3000		3000	
Dead Load of Platform (kg)	5		5		11.5		11.5	
Load Cell Used	PC30 C3		PC30 C3		PC30 C3		PC30 C3	
Load Cell Maximum Capacity E_{max} (kg)	30		50		30		50	
Maximum Load Cell Scale Interval n_{LC}	3000		3000		3000		3000	
Minimum Value of VSI for Basework (kg)	0.002		0.00333		0.002		0.00333	
Minimum Dead Load Output Return DR (g)	3.488		5.814		3.488		5.814	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V		2 mV/V		2 mV/V	
Input Impedance (Ω)	385		385		385		385	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m		2.8 m		2.8 m	
No. of Leads (plus shield)	6		6		6		6	

#MR represents a Multiple Range instrument

(-) Depends on the type of roller implemented.

Table 6a – PL4020 Basework with Flintec Load Cell

Basework Model	PL4020 -60kg	PL4020 -60kg	PL4020R -60kg	PL4020R -60kg
Platform Size	400mm × 550mm		-	
Basework Maximum Capacity (kg)	60	30/60 #MR	60	30/60 #MR
Typical Verification Scale Interval (kg)	0.02	0.01/0.02	0.02	0.01/0.02
Maximum No. of VSI (n_{max})	3000		3000	
Dead Load of Platform (kg)	11.5		19.5	
Load Cell Used	PC7 C3		PC7 C3	
Load Cell Maximum Capacity E_{max} (kg)	100		100	
Maximum Load Cell Scale Interval n_{LC}	3000		3000	
Minimum Value of VSI for Basework (kg)	0.00667		0.00667	
Minimum Dead Load Output Return DR (g)	6.394		6.394	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V	
Input Impedance (Ω)	380		380	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m	
No. of Leads (plus shield)	6		6	

#MR represents a Multiple Range instrument

(-) Depends on the type of roller implemented.

Table 6b – PL4062 Basework with Flintec Load Cell

Basework Model	PL4062 -60kg	PL4062 -60kg	PL4062R -60kg	PL4062R -60kg
Platform Size	400mm × 550mm		-	
Basework Maximum Capacity (kg)	60	30/60 #MR	60	30/60 #MR
Typical Verification Scale Interval (kg)	0.02	0.01/0.02	0.02	0.01/0.02
Maximum No. of VSI (n_{max})	3000		3000	
Dead Load of Platform (kg)	11.5		19.5	
Load Cell Used	PC7 C3		PC7 C3	
Load Cell Maximum Capacity E_{max} (kg)	100		100	
Maximum Load Cell Scale Interval n_{LC}	3000		3000	
Minimum Value of VSI for Basework (kg)	0.00667		0.00667	
Minimum Dead Load Output Return DR (g)	6.394		6.394	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V	
Input Impedance (Ω)	380		380	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m	
No. of Leads (plus shield)	6		6	

#MR represents a Multiple Range instrument

(-) Depends on the type of roller implemented.

Table 6c – PL5020 Basework with Flintec Load Cell

Basework Model	PL5020 -60kg	PL5020 -60kg	PL5020 -150kg	PL5020 -150kg	PL5020 -300kg	PL5020 -300kg	PL5020R -60kg	PL5020R -60kg	PL5020R -150kg	PL5020R -150kg	PL5020R -300kg	PL5020R -300kg
Platform Size	500mm x 600mm		500mm x 600mm		500mm x 600mm		-		-		-	
Basework Maximum Capacity (kg)	60	30/60 #MR	150	60/150 #MR	300	150/300 #MR	60	30/60 #MR	150	60/150 #MR	300	150/300 #MR
Typical Verification Scale Interval (kg)	0.02	0.01/0.02	0.05	0.02/0.05	0.1	0.05/0.1	0.02	0.01/0.02	0.05	0.02/0.05	0.1	0.05/0.1
Maximum No. of VSI (n_{max})	3000		3000		3000		3000		3000		3000	
Dead Load of Platform (kg)	18.4		18.4		18.4		27.4		27.4		27.4	
Load Cell Used	PC7 C3		PC7 C3		PC7 C3		PC7 C3		PC7 C3		PC7 C3	
Load Cell Maximum Capacity F_{max} (kg)	100		250		500		100		250		500	
Maximum Load Cell Scale Interval n_{LC}	3000		3000		3000		3000		3000		3000	
Minimum Value of VSI for Basework (kg)	0.00667		0.01667		0.0333		0.00667		0.01667		0.0333	
Minimum Dead Load Output Return DR (g)	6.394		15.985		31.969		6.394		15.985		31.969	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V		2 mV/V	
Input Impedance (Ω)	380		380		380		380		380		380	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m		2.8 m		2.8 m		2.8 m		2.8 m	
No. of Leads (plus shield)	6		6		6		6		6		6	

#MR represents a Multiple Range instrument

(-) Depends on the type of roller implemented.

Table 7 – PL4026 Basework with Flintec Load Cell

Basework Model	PL4026 -30kg	PL4026 -30kg	PL4026 -30kg	PL4026 -30kg	PL4026R -30kg	PL4026R -30kg	PL4026R -30kg	PL4026R -30kg
Platform Size	400 mm x 600 mm		400 mm x 600 mm		-		-	
Basework Maximum Capacity (kg)	30	15/30 #MR	30	20/30 #MR	30	15/30 #MR	30	20/30 #MR
Typical Verification Scale Interval (kg)	0.01	0.005/0.01	0.01	0.005/0.01	0.01	0.005/0.01	0.01	0.005/0.01
Maximum No. of VSI (n_{max})	3000		4000		3000		4000	
Dead Load of Platform (kg)	11.5		11.5		19.5		19.5	
Load Cell Used	PC6 C4		PC6 C4		PC6 C4		PC6 C4	
Load Cell Maximum Capacity E_{max} (kg)	100		100		100		100	
Maximum Load Cell Scale Interval n_{LC}	4000		4000		4000		4000	
Minimum Value of VSI for Basework (kg)	0.004		0.004		0.004		0.004	
Minimum Dead Load Output Return DR (g)	12.5		12.5		12.5		12.5	
Operating Temperature Range	-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C		-10 °C to +40 °C	
Load cell sensitivity	2 mV/V		2 mV/V		2 mV/V		2 mV/V	
Input Impedance (Ω)	1100		1100		1100		1100	
Maximum Excitation Voltage	15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)		15 V (AC / DC)	
Cable Length	2.8 m		2.8 m		2.8 m		2.8 m	
No. of Leads (plus shield)	6		6		6		6	

#MR represents a Multiple Range instrument
(-) Depends on the type of roller implemented.

FIGURE 6/4C/340 – 1



Marel Model PL2020 Basework (Pattern)

FIGURE 6/4C/340 – 2



Marel Model M2400 Digital Indicator (Pattern)

FIGURE 6/4C/340 – 3



a) Marel Model PL2020 Series Basework (Variant 1)



b) Marel Model PL2062 Series Basework (Variant 1)

FIGURE 6/4C/340 – 4



Marel Model PL3020 Series Basework (Variant 2)

FIGURE 6/4C/340 – 5



a) Marel Model PL4020 Series Basework (Variant 3)



b) Marel Model PL4062 Series Basework (Variant 3)



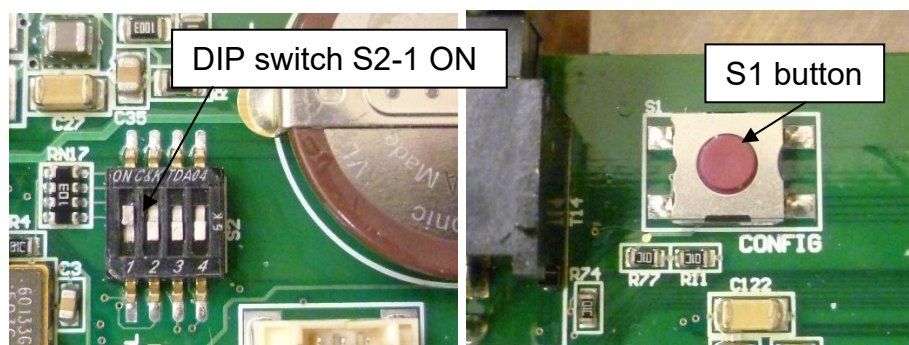
c) Marel Model PL4026 Series Basework (Variant 3)

FIGURE 6/4C/340 – 6

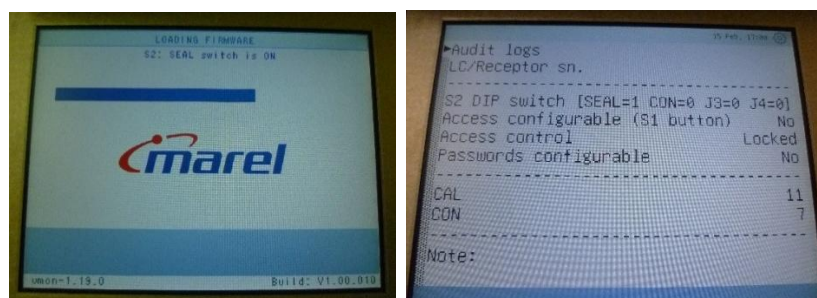


Marel Model PL5020 Series Basework (Variant 4)

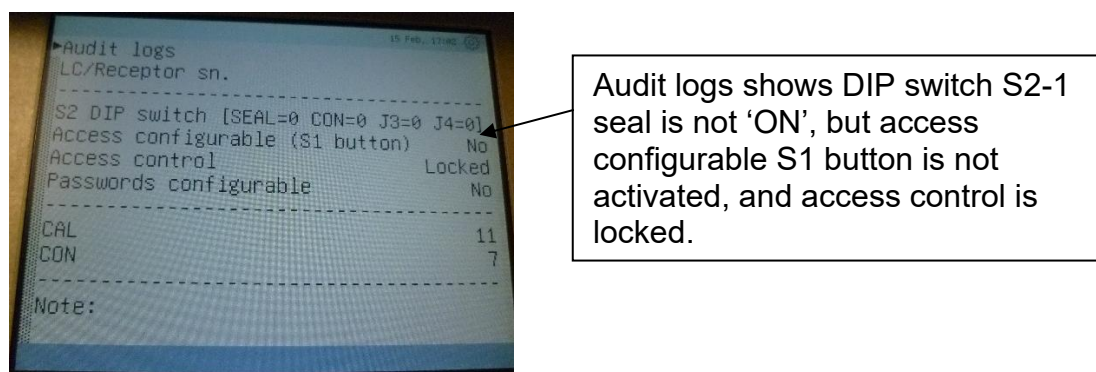
FIGURE 6/4C/340 – 7



(a) Location of DIP Switch S2-1 and S1 Button



(b) DIP Switch S2-1 Seal Status



(c) Audit Logs With DIP Switch S2-1 in 'OFF' Position



(d) Event Counters Label and Seal Label

Typical Sealing Methods

FIGURE 6/4C/340 – 8



Marel Model MU1 Indicator (Variant 5)

FIGURE 6/4C/340 – 9



Long Way, Short Way and Multiple Way Rollers

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