

**A W Bell Machinery Presents**

# **ACS50**

## **Automated cut-off Saw**



### **REVISION TABLE**

Rev	Date	Section	Change



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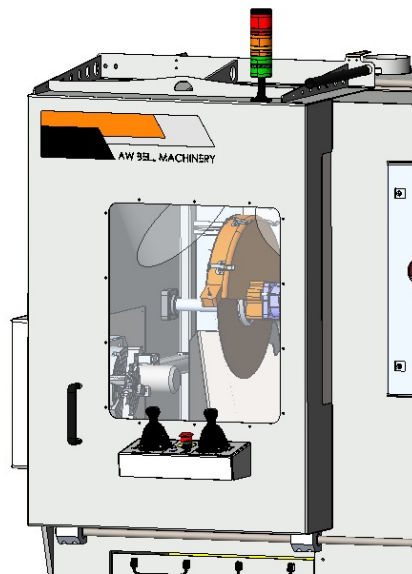
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## 1. ACS50 – DESIGN FEATURES

The ACS50 is a semi-automated cut-off saw that utilises hydraulic drive to deliver a high power rapid cutting system in a small footprint. The following section details the design features of the ACS50:

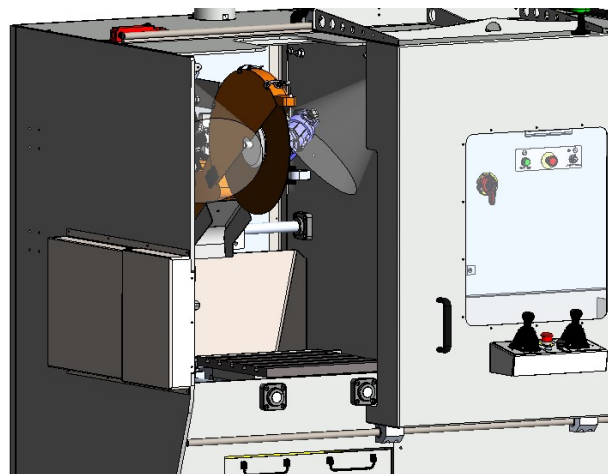
### 1.1. Fully Enclosed cutting cabinet

The cutting area is fully enclosed, providing a safe operator environment and reducing airborne noise and dust. The loading door provides clear and open access to loading and unloading away from the cutting wheel.



### 1.2. Sliding loading door

The loading door of the machine slides open to allow easy access to part loading.



### 1.3. Hydraulic drive

A 50 HP electric motor drives a closed loop hydraulic pump and motor system. This compact, yet high powered system delivers upwards of 40HP to the cutting wheel for unrestricted cutting capability. There are a number of advantages to this system:

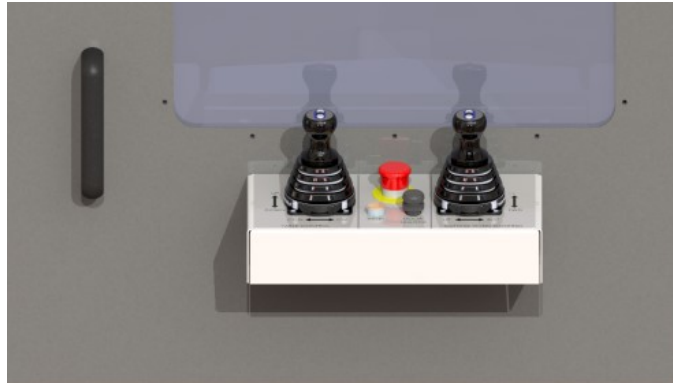
- Compact machine design and greatly reduced number of moving transmission parts for improved and simplified machine safety
- Fast start/stop of the cutting wheel allows the wheel to be idle during part loading and unloading for improved safety and lower power draw
- Cutting wheel size and speed ratings can be easily configured without complex machine re-design.
- The 'boost pump' of the closed loop system provides pressure for ancillary machine motions without the need for additional motor/pump combinations.



### 1.4. Joystick Operation

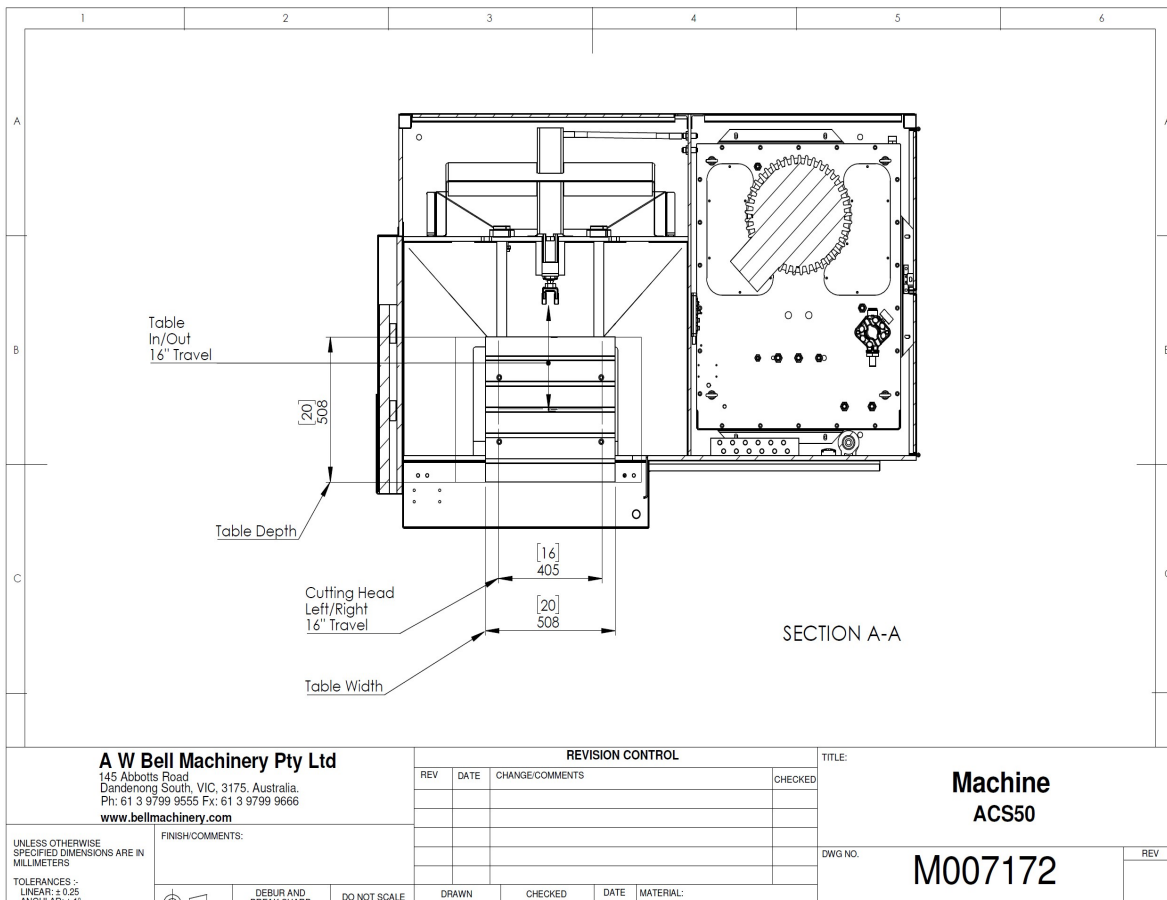
The machine can be run in manual mode via joystick control. Once the doors are closed and safety functions reset, all axes are enabled and ready for motion. While the cutting wheel is not rotating, wheel left/right position can be adjusted

Activation of the joystick button will enable the cutting wheel rotation. Disengaging the button will immediately stop the cutting wheel rotation. Once enabled, the cutting wheel left/right motion is disengaged to prevent accidental side loading of the cutting wheel. Clamp rotation and wheel feed can now be controlled via the joystick movement. All axes movements except for the cutting wheel up/down are at pre-set speeds via hydraulic flow control valves. Cutting wheel up/down is controlled via a proportional control valve for precise cutting speed adjustment.



**1.5. Clamping table**  
A 20" X 20" T-slot table is provided for part work-holding.

**1.6. Machine travel limits**



### 1.6.1. Work table in/out

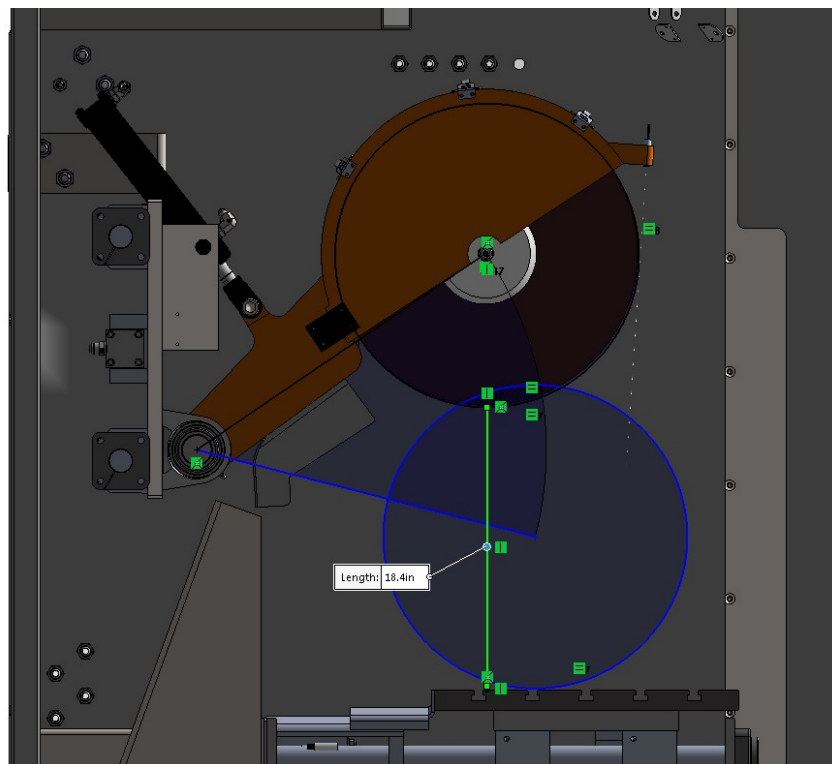
The clamping table has 16" of in/out movement, 8" fore/aft of the cutting wheel centreline

### 1.6.2. Cutting head left/right

The cutting head has 16" of left/right movement

### 1.6.3. Cutting head up/down

The cutting head moves on an arc up down, with a total travel limit along the arc of 18". The throat opening of a new wheel is 18" above the table.



### 1.7. Cutting wheel diameter

A 20" diameter cutting wheel provides a good balance between depth of cut and thickness of wheel, allowing small and larger gates to be easily cut. The machine is designed to accommodate the following wheel specification:

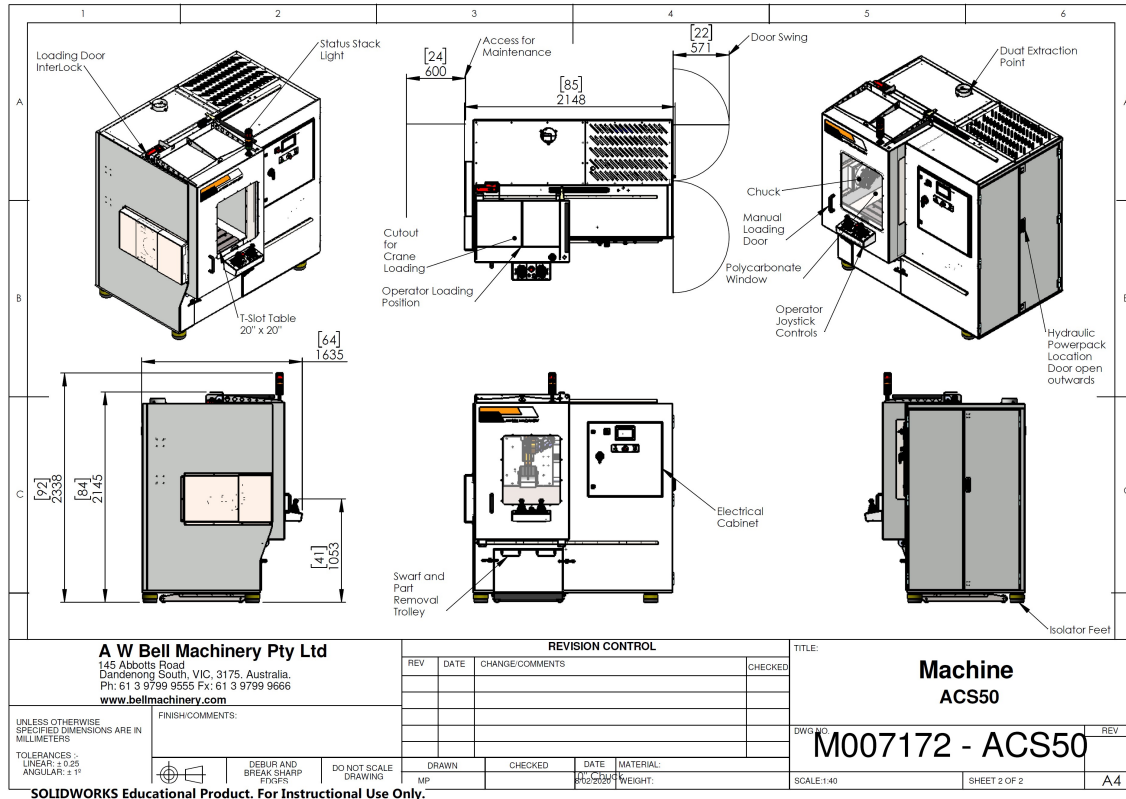
Supplier: Saint-Gobain Abrasives

Supplier Part Number: 69078650376

Diameter = 20"; Thickness = 5/32"; Hole Size = 1.0"; Grit = 24; Aluminum Oxide; Grade = Z; Bond = B97B; Maximum Operating Speed = 2710 RPM

### 1.8. Machine footprint

The ACS50 maintains a small footprint to maximise facility floor space.



### 1.9. Dust Extraction Requirements

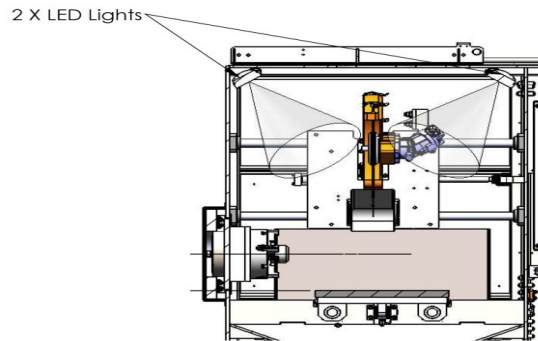
The ACS50 is supplied with a 6" diameter dust extraction point, located at the rear of the machine. A minimum 400 CFM is required to remove airborne dust and fumes.

### 1.10. Electricity Requirements

The ACS50 uses 480V three phase supply. Customer line shall be suitable for soft start of a 50Hp TEFC motor, with a full load ampacity of 65A.

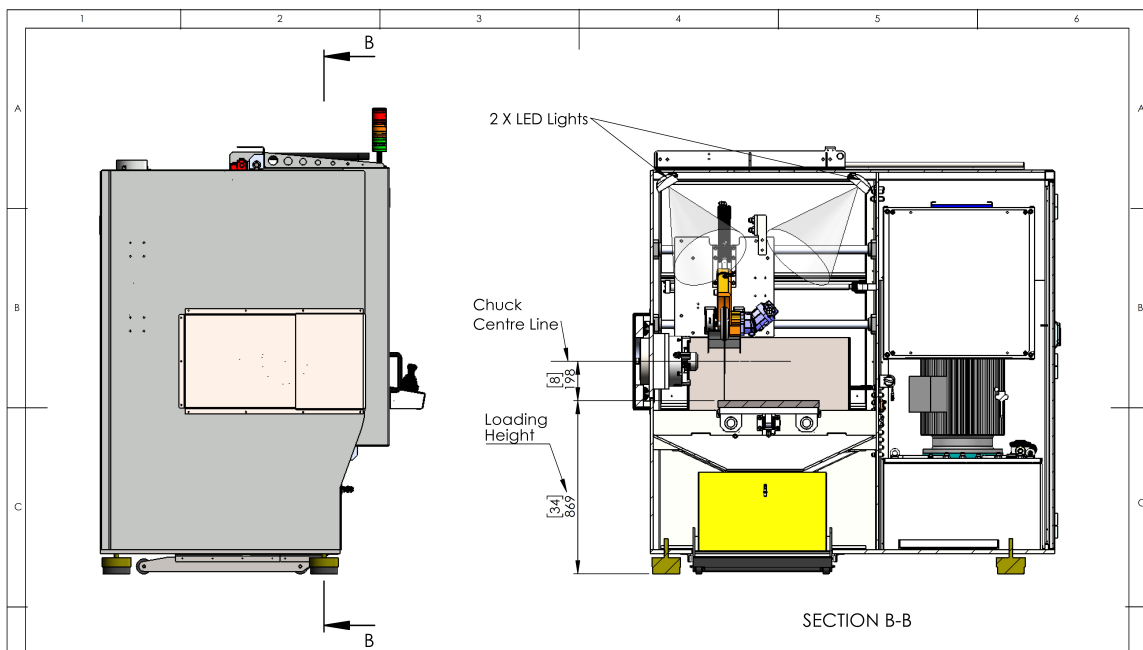
### 1.11. Cabinet Lights

Two LED sealed spotlights illuminate the cutting area as per the below drawing:



### 1.12. Rotary clamping chuck

A rotary chuck option provides additional clamping options on the ACS50 machine. The chuck is positioned at a fixed location on the LH side wall approx. 8" above the clamp table, allowing a 16" diameter part to be held. The 10" manual four jaw chuck is hydraulically rotated during a cut via the control joystick.

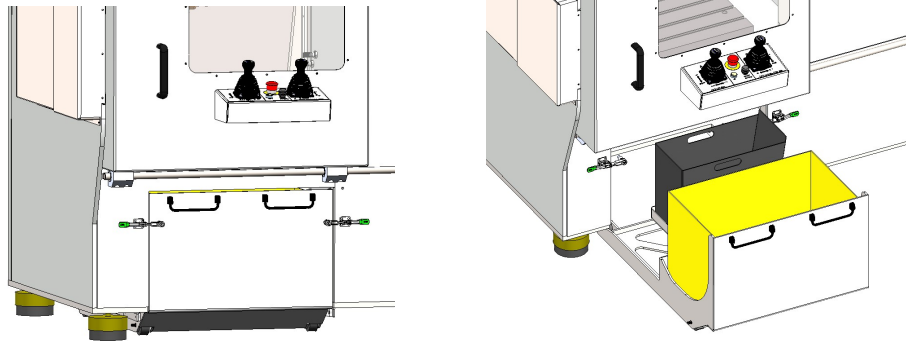


<b>A W Bell Machinery Pty Ltd</b> 145 Abbots Road Dandenong South, VIC, 3175, Australia. Ph: 61 3 9799 9555 Fax: 61 3 9799 9666 www.bellmachinery.com		<b>REVISION CONTROL</b> <table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>CHANGE/COMMENTS</th> <th>CHECKED</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		REV	DATE	CHANGE/COMMENTS	CHECKED																	TITLE: <b>Machine ACS50</b> DWG NO: <b>M007172 - ACS50</b> SCALE: 1:20 SHEET 3 OF 3	
REV	DATE	CHANGE/COMMENTS	CHECKED																						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES - LINEAR: ± 0.25 ANGULAR: ± 1°		FINISH COMMENTS: DEBUR AND BREAK SHARP EDGES DO NOT SCALE DRAWING		DRAWN: MP CHECKED: [blank] DATE: 8/02/2020 MATERIAL: [blank] WEIGHT: [blank]																					
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### 1.13. Swarf and part removal trolley

Depending on the parts to be cut, some will fall onto the clamping table, while others may fall outside of the clamping table envelope. These parts are directed into a catchment basket for collection via a front loading trolley. The sparks from the cutting wheel are directed into a bin located on this same trolley.



### 1.14. OPTION - Status light stack

A status light stack (red, green, orange) displays operation status of the machine, including cycle running, fatal alarms and operator warnings.



### 1.15. Cabinet Soundproofing

Noiseshield 848F noise insulation panels will be fitted to cabinet sheetmetal components.

NoiseShield® has a unique material construction which results in high sound absorption coupled with resilience and compression loading capability. It effectively treats the often combined phenomena of vibrations, sound transmission and sound reverberation encountered with most noise problems in the 100 - 5000 Frequency (Hz) range. It is an extremely robust aluminium faced insulation with an indefinite life that is unaffected by oil, water, hydrolysis and vibration; it does not shed fibres nor will it delaminate.

Shell and tube heat exchanger will be used as an alternative to the standard air blast cooler for oil cooling. A heat load of approx 5 HP is required to be dissipated. Oil flow through the chiller will be 5-10 l/minute, adjustable via manual adjustment valve during initial machine installation.

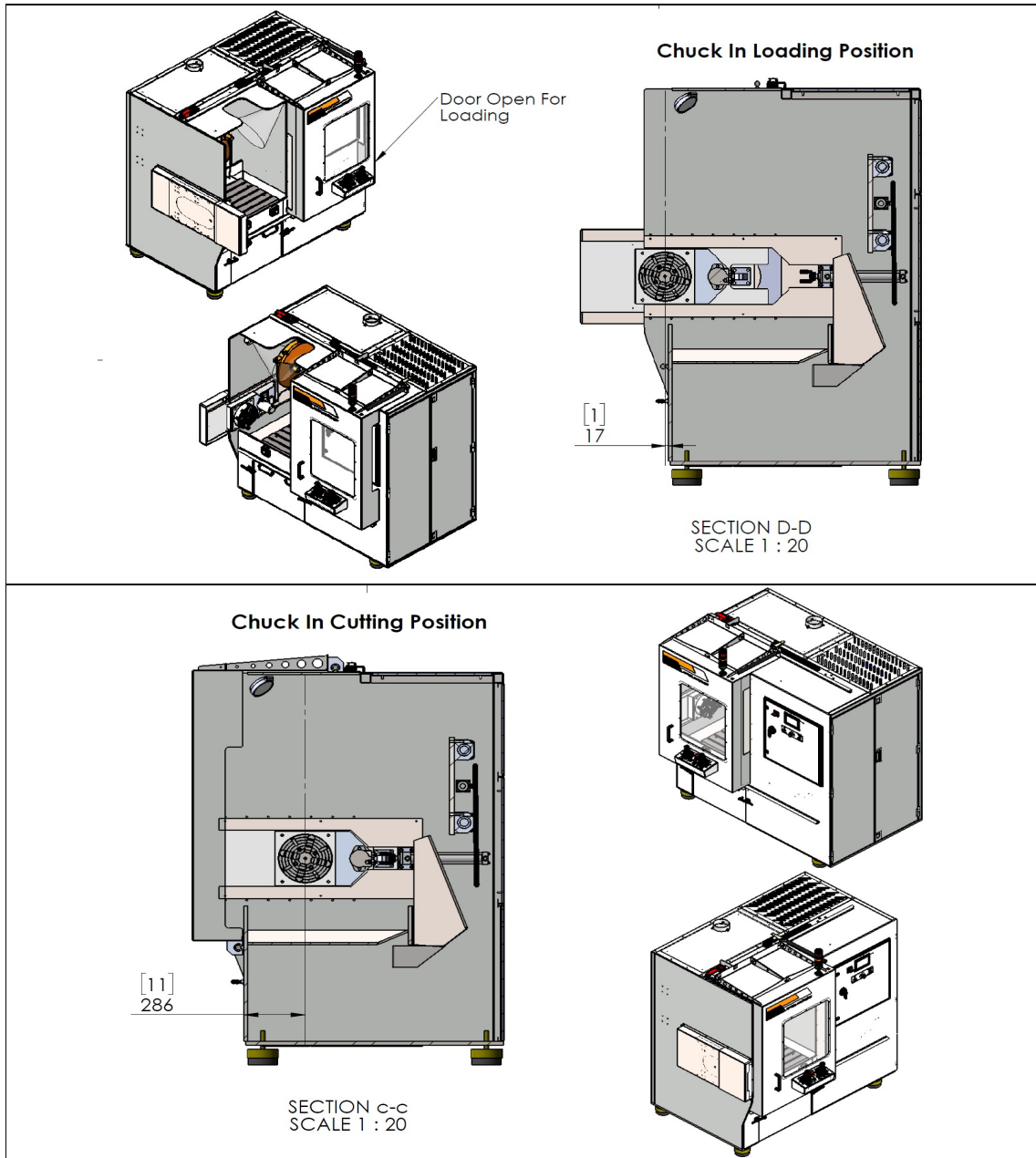
For a chilled water system delivering 54 deg F incoming water, a minimum system flow rate of 20 l/m is required with a maximum system flow rate of 80l/m and maximum system pressure of 10 Bar.



#### **1.16. Chuck loading position adjustment**

Linear bearing slide and hydraulic cylinder will be added to the chuck to allow it to slide out of the machine for ease of loading and unloading. A manually operated hydraulic valve allows the operator to decide how far out the chuck moves. The chuck must be returned to home position to allow the door to close and run a cycle.

As per below drawing, this option moves the chuck a total of 11" closer to the operator for loading/unloading.



**FURTHER INFORMATION**

For any further information on the ACS50 or any of our equipment lines, please do not hesitate to contact me,

Best Regards,  
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