

Model 5085 Automated Scanner

The Model 5085 is a remotely controlled automated scanner. It is designed to permit the deployment of a variety of sensing elements including ultrasonic transducers and eddy current probes and is compatible with all AMDATA data acquisition systems. Magnetic wheels are used for mounting to a variety of scanning tracks providing fast installation on a wide range of flat or curved surfaces.



5085 scanner in a standard configuration, shown without cabling attached. Shown with manual skewing collar and spring loaded gimbaling.

The scanner uses DC servo motors to power each of the two axes. Position feedback is provided by optical encoders that are housed in a sealed body.

The Model 5085 differs from the standard 5080 in how the Y-axis arm mounts to the scanner. The scanner allows for the Y-arm to be mounted in a variety of orientations.

The arm can be oriented straight out from the X-axis truck body at within an angle of $+90^\circ$. This is useful when scanning vertical surfaces. Alternatively, it can be oriented transverse to the X-axis truck body in a "snowplow" mode. This is useful when scanning large areas that include the surface where the scanner wheels are mounted.

The X axis consists of a gear driven tractor arrangement with magnetic rollers. The Y axis uses a precision lead screw to actuate a slide carriage that supports a transducer. The Y-axis arm has a standard stroke length of 16". Y-axis arms with up to 28" stroke are available. A 5085 scanner can use the same Y arms used on 5080e, 5080 and 5090 scanners.

Variations in the height of the inspection surface are absorbed by the end effector assembly. The 5080 scanner

is equipped with a spring loaded end effector that affords 2.5 inches of stroke and 2.5 inches of fixed height adjustment.

For applications that require greater end effector stroke, the 5080 can alternatively be equipped with a pneumatic thruster system.



5085 scanner in a $+45^\circ$ and $+90^\circ$ orientation



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Physical Characteristics

- Scanner height: 6.0 inches (excluding thruster)
- Scanner width: 10.38 inches (including idler encoder)
- Scanner length: 7.75 inches*
- Scanner weight: 12 lbs.*
- Min. pipe diameter: 6.625 inches**
 - * Without Y-arm.
 - ** Without collar style track, 4" with collar style track.

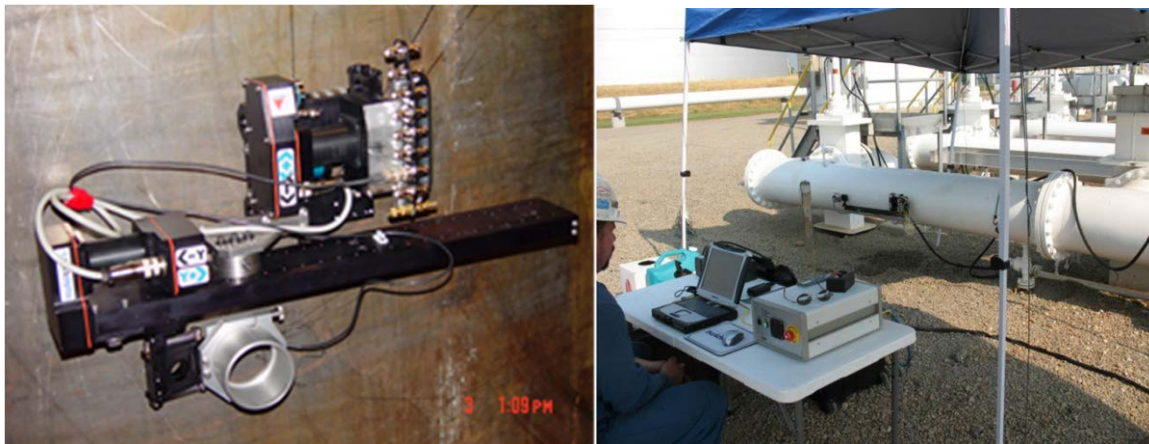
X Axis

- Max. scan speed: 10 inch/sec
- Encoder resolution: 1310 pulses/inch
- Positional accuracy: ± 0.100 inch per 3 feet
- Min. scan increment: 0.008 inches
- Payload capacity: 30 lbs. vertical, 15 lbs. on 6" pipe
- Drive description: Servo motor, belt drive gear head, gear drive, magnetic roller

Y Axis

- Max. scan speed: 30 inches/sec
- Encoder resolution: 12,444 counts/inch
- Positional accuracy: ± 0.020 inch per 10 in.
- Min. scan increment: 0.001 inch
- Payload capacity: 8 lbs.
- Drive description: Servo motor, timing belt, lead screw, travel block
- Available arm lengths: 4 to 28 inches. Optional 36 inch high speed arm also available.
- Adjustable Y-arm position: $\pm 90^\circ$, infinitely adjustable
- Y-arm Plow mounting

Minimum required equipment to operate a Model 5085 Scanner - IntraSpect™ imaging system with IMC or MCS 1002 scan control subsystem, 2-axis joystick, cabling, and track.



5085 scanner in a snowplow orientation