2803ZT

Compact Excavator

OPERATOR'S MANUAL

PART #918278

Revision B - 01/12

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Mustang 2803ZT Compact Excavator Operator Manual

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Models: 2803ZT

Machine: Compact Excavator

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- Chapter 2 - Safety
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Sample pages follow. Full manual: machinecatalogic.com

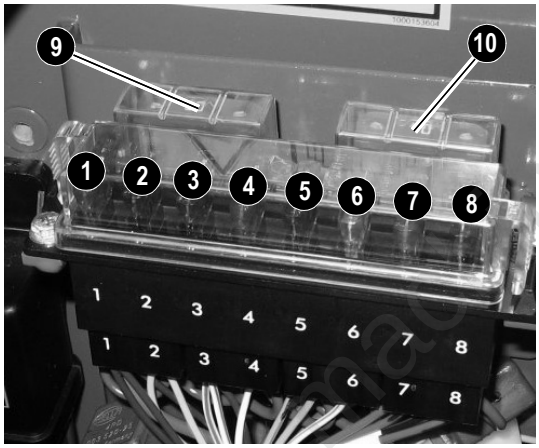
Undercarriage and Swing System

Travel Speed (Dual Speed)	
Low Speed	1.3 mph (2.1 km/hr)
High Speed	2.3 mph (3.8 km/hr)
Ground Clearance	10.9" (277 mm)
Swing (Slew) Speed	10.25 rpm
Gradability	30° = 58%
Rubber Track Width	11.8" (300 mm)
Top / Bottom Rollers (per side)	1 / 3
Sprocket Center	104" (2642 mm)
Average Ground Pressure	3.8 psi (26.2 kPa)
Maximum Drawbar Pull	5732 lbf (25.5 kN)

Electrical System

Alternator	12 V, 40 A
Starter	12 V, 1.1 kW
Battery	12 V, 44 Ah; 630 CCA
Socket	15 A max. - Accessory Socket

Fuses



Fuse No.	Rated Current	Protected Circuit
1	15 A	Accessory socket, cigarette lighter
2	10 A	Rotating beacon, radio
3	5 A	Proportional controls (unused)
4	15 A	Windshield wiper, interior light
5	10 A	Cab roof lights
6	15 A	Valves, horn
7	15 A	Boom light, heating
8	10 A	Indicators, cutoff solenoid, relays
9	40 A	Start, preheat, cutoff solenoid
10	50 A	Ignition lock

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Stay away from ditches and weak support surfaces. Be sure the surrounding ground has adequate strength to support the weight of the machine and the load.

If temperatures are changing, be cautious of dark and wet patches when working or traveling over frozen ground.

Stay away from ditches, overhangs and other weak support surfaces. Halt work and install support mats or blocking if work is required in an area of poor track support.

Overhangs are hazardous. Digging under an overhang is dangerous. Know the height and reach limits of the excavator and plan ahead while working. Avoid creating dangerous situations caused by moving around the work site while making excavations. Move to another digging area before large overhangs are formed. Working around deep pits or along high-walls or trenches may require support blocks, especially after heavy rainfalls or during spring thaws. Park the excavator away from overhangs.

Exposed hydraulic hoses could react with explosive force if struck by falling or overhead items. NEVER allow hoses to be hit, bent or interfered with during operation. Extra guards may be required. Replace any damaged hoses.

To avoid tipping, travel with the bucket or attachment as low as possible: 8-12 inches (200-300 mm) from the ground. In an emergency, lower the attachment immediately to the ground to aid stopping the machine.

Sloping terrain requires caution. Dig evenly around the work site whenever possible, trying to gradually level any existing slope. If it is not possible to level the area or avoid working on a slope, reduce the size and cycling rate of the load.

On sloping surfaces, use caution when positioning the excavator prior to starting a work cycle. Stay alert for instability situations. For example, always avoid working the bucket over the downhill crawler tracks when parked perpendicular to the slope. Slow all downhill swing movements and avoid full extensions of the bucket in a downhill direction. Lifting the bucket too high, too close to the machine, while the excavator is turned uphill can also be hazardous.

If the machine becomes unstable and starts to tip, keep the seat belt fastened, hold on firmly and brace yourself. Lean away from the point of impact and stay with the machine. If tipping occurs, DO NOT jump from the machine. The machine is equipped with rollover protection, which can only protect the operator while in the operator's seat. Trying to escape from a tipping machine can result in death or serious personal injury.

Stay alert for people moving through the work area. When loading a truck you should always know where the driver is.

Avoid loading over the cab of a truck, even if the driver is in a safe spot, because someone else could have gone inside.

Slow down the work cycle and use slower travel speeds in congested or populated areas. Use commonly understood signals so that other members of the work crew can warn the operator to slow or halt work in a potentially hazardous situation.

Use a signal person if you can't see the entire work area clearly.

Use a spotter and hand signals to keep away from power lines not clearly visible to the operator.

All personnel at the work site should be aware of assigned individual responsibilities. Communication and hand signals used should be understood by everyone.

Terrain and soil conditions at the job site, approaching traffic, weather-related hazards and any above-or below-ground obstacles or hazards should be observed and monitored by all work crew members.

Be aware that attachments affect the handling and balance of the machine. Adjust the operation of the machine as necessary when using attachments.

Before coupling or uncoupling the hydraulic lines for the attachment, stop the engine and release the pressure in the hydraulic system by moving the joysticks in all directions a couple of times.

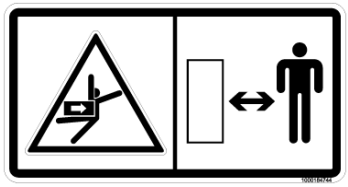
DO NOT raise or lower a loaded bucket suddenly. Abrupt movements under load can cause serious instability.

Make sure that no one comes inside the swing radius of the machine. Anyone standing near the track frames, swing frame or the attachment is at risk of being caught between moving parts of the machine.

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ISO-Style Safety Decal Locations (Later Machines) (Continued)

(11)



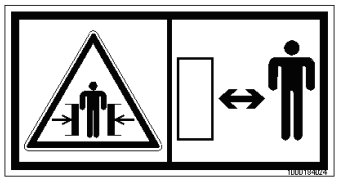
WARNING! Danger Zone Decal

AVOID INJURY OR DEATH!

Located on the back of the swing frame.

Keep bystanders away from the machine when it is in use.

(12)



WARNING! Danger Zone Decal

AVOID INJURY OR DEATH!

Located on both sides of the boom swivel bracket.

Swiveling boom can cause crushing. Keep bystanders away from the machine when it is in use.

(13)



WARNING! Mandatory Safety Shutdown Decal

AVOID INJURY OR DEATH!

Located on the door pillar inside the cab.

Before leaving the machine, or performing any service on the machine, perform the "Mandatory Safety Shutdown Procedure" on page 2-2.

1. Lower the working equipment to the ground and support it securely.

2. Run the engine at idle speed for a few minutes to allow systems to cool after operation at full speed.

3. Turn the key fully counter-clockwise to shut off the engine.

4. Lock out controls by raising left control console.

5. Remove the ignition key and take it with you.

(14)



WARNING! Hot Components Decal

AVOID SERIOUS INJURY!

Located near the hydraulic system vent valve inside the engine compartment.

Stop the engine and wait for all parts to stop and cool before. Hot surfaces and liquids can cause severe burns.

Read the operator's manual before performing any maintenance on the machine.

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Seat Belt

WARNING

ALWAYS fasten the seat belt securely and properly. Never operate the machine without the seat belt fastened around the operator.

Keep the seat belt clean because dirt can impair seat belt operation. Check seat belt condition regularly and have damaged or worn belts immediately repaired by an authorized workshop.

After an accident the seat belt strap is stretched and must be replaced with a new strap installed by an authorized workshop.

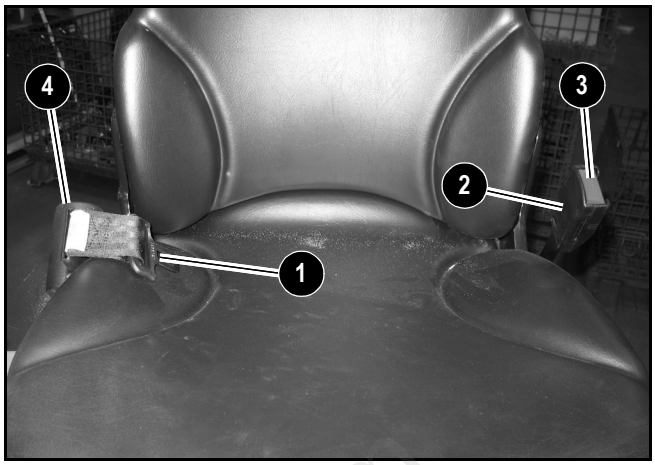


Figure 3-20 Seat Belt

Make sure the seat belt is not twisted when it is fastened, and that it is fastened over the hips and not the stomach.

Fasten the seat belt tightly and securely. Remove hard, edged or fragile objects from your pockets or clothes that might lie between the seat belt and your body.

Fastening/Unfastening the Seat Belt

Fasten the seat belt around your hips and waist and insert tab (1, Figure 3-20) into buckle (2) until it clicks securely in place. Slack in the seat belt should automatically retract into seat belt spool (4).

Unfasten the seat belt by pressing button (3).

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Proper Digging Technique

1. Lower the bucket into the ground (4, Figure 3-32).
2. Once the bucket penetrates the ground, adjust so the flat side of the cutting edge is parallel to the ground (5, Figure 3-32).
3. Pull the bucket towards the excavator by:
   a. Moving the dipper arm towards the excavator and
   b. Lowering the boom.
4. Once the bucket is sufficiently filled:
   a. Continue moving the dipper arm towards the excavator.
   b. Extend the dipper arm cylinder so the bucket is tilted upward (6, Figure 3-32) and
   c. Raise the boom.

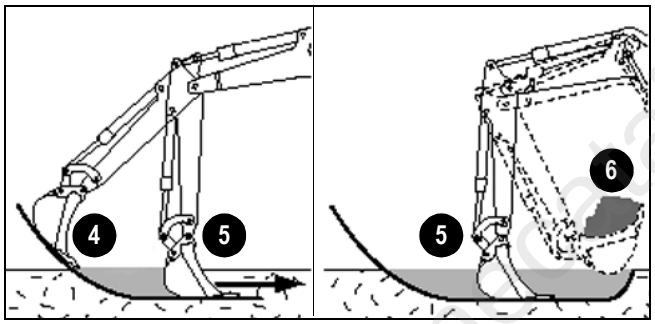


Figure 3-32 – Proper Digging Technique

Trench Excavation

Trench excavating is most efficient when the machine tracks are parallel to the limit line of the trench. See Figure 3-33. For large trenches, excavate both ends of the trench first and then the center.

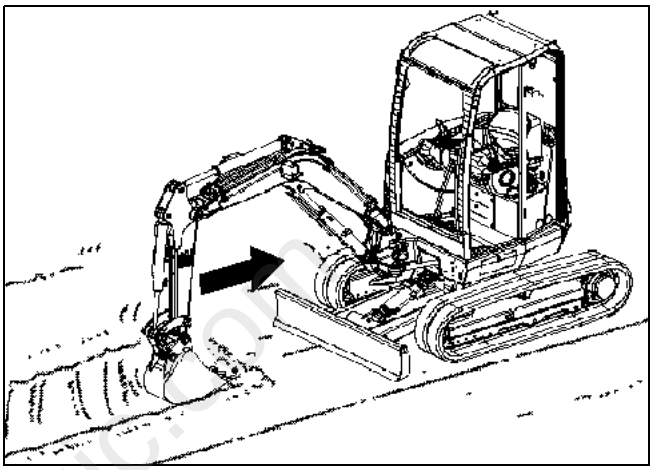


Figure 3-33 – Efficient Trench Excavating

When trench excavating is needed in confined areas, the excavating can be done by rotating the upper carriage and swiveling the boom. See Figure 3-34.

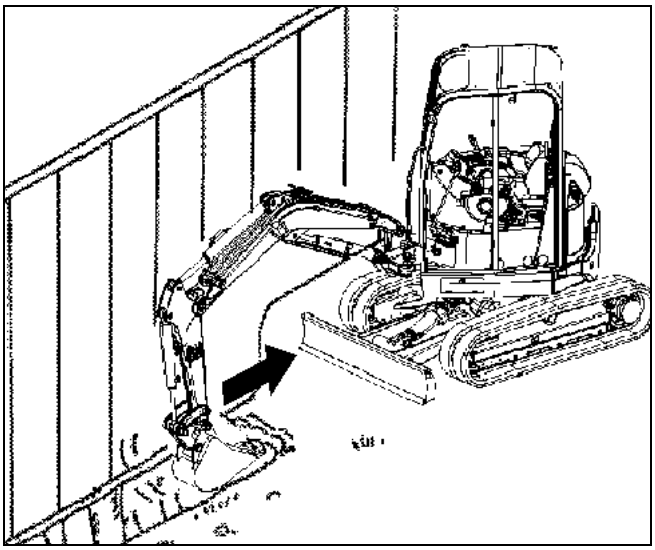


Figure 3-34 – Excavating Trenches Sideways

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Changing Engine Oil and Filter

1. Position the machine on a level surface.

IMPORTANT

The machine must be positioned on a level surface for the oil to drain completely.

2. The engine oil drain plug is accessed from underneath the machine. If necessary, rotate and position the cab/canopy so the engine oil drain access hole (9, Figure 4-3) is accessible.
3. Perform the "Mandatory Safety Shutdown Procedure" on page 2-2, but do not allow the engine to fully cool because warm oil will drain more completely.
4. Open the engine hood (see "Accessing the Engine Compartment" on page 3-6).
5. Access the oil pan drain plug from underneath the machine through hole (9, Figure 4-3) at the bottom of the engine compartment.

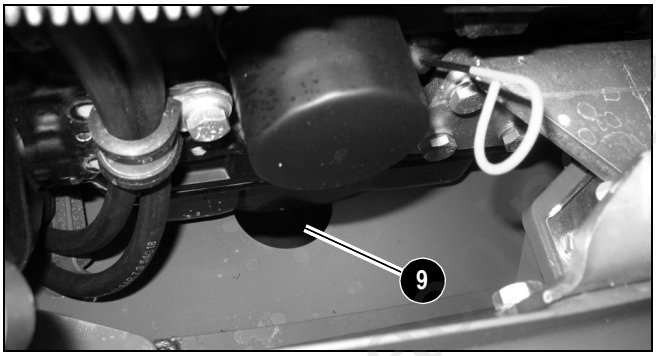


Figure 4-3 – Engine Oil Drain Access

6. Position a waste oil collection container underneath the access hole and engine oil drain plug.
7. Remove the drain plug from the oil pan and allow the oil to drain into the collection container.

IMPORTANT

Dispose of waste engine oil according to environmental laws or take to a recycling center for proper disposal. DO NOT pour waste engine oil onto the ground or down a drain.

8. Remove the oil filter (1, Figure 4-4), using a filter wrench as needed.

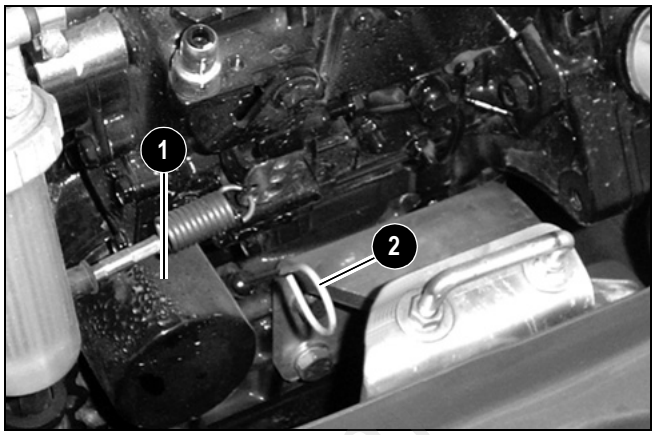


Figure 4-4 – Oil Filter Location

9. Clean the filter gasket surface on the engine block. Put a film of clean oil on the filter gasket.
10. Install the new filter and gasket and hand-tighten. Once hand-tightened, tighten the filter another 1/4 to 1/2 rotation.
11. Reinstall the drain plug.
12. Clean the area around the oil filler cap (2, Figure 4-2).
13. Remove the oil filler cap and raise the oil dipstick (2, Figure 4-4) slightly to allow any trapped air to escape.
14. Add oil to the engine through the oil filler. Crankcase capacity with filter is 3.5 qts. (3.3 L). Do NOT fill crankcase above the MAX mark on the dipstick.
15. Reinstall the oil filler cap.
16. Wait about three minutes to allow the oil to settle and check the oil level according to "Checking Engine Oil Level" on page 4-9.
17. Start the engine and let it run for several minutes. Watch the engine oil light on the control panel. The light should turn off after several seconds. If it does not, shut off the engine, determine the cause and fix the problem before restarting the engine.
18. Stop the engine and check for leaks at the oil filter and oil drain plug. If no leaks are found, close the engine hood and confirm it is latched securely.

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Checking & Adjusting V-belt Tension

1. Perform the "Mandatory Safety Shutdown Procedure" on page 2-2. Wait for the engine to cool.
2. Open the engine hood (see "Accessing the Engine Compartment" on page 3-6).
3. Inspect the V-belt (1, Figure 4-17) for damage. If the V-belt is damaged, have it replaced by your dealer.
4. Press on the V-belt to check deflection. The belt should deflect no more than 5/16" (8 mm).
5. If deflection is more than 5/16" (8 mm):
   a. Loosen the adjustment bolt (2, Figure 4-17) and rotate the alternator (3) as necessary until V-belt tension is correct.
   b. Tighten bolt (2) and re-check V-belt tension.

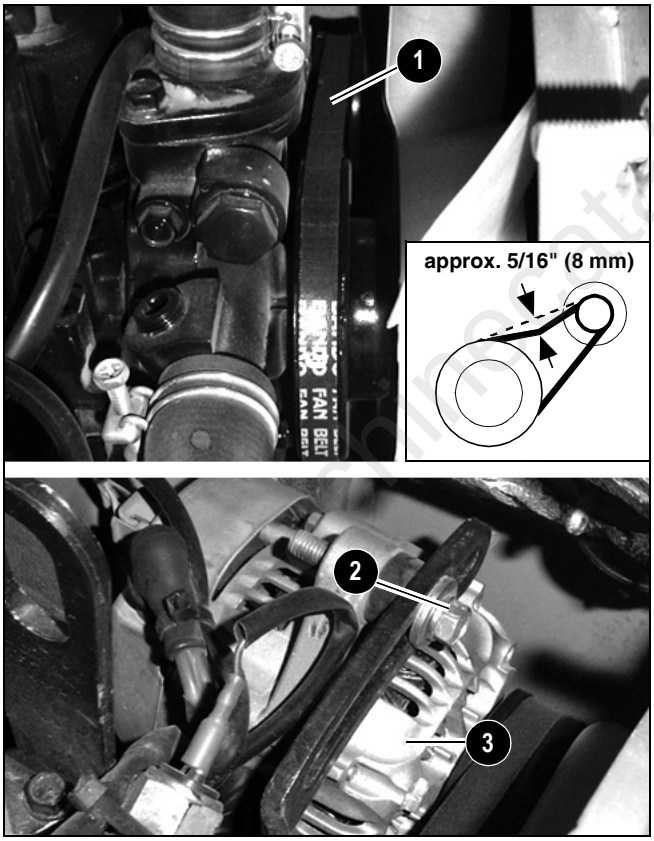


Figure 4-17 – V-belt Tension

Windshield Washer Fluid

1. Perform the "Mandatory Safety Shutdown Procedure" on page 2-2.
2. Open the engine hood (see "Accessing the Engine Compartment" on page 3-6).
3. Open the windshield washer reservoir cover (1, Figure 4-18) and fill the tank with windshield washer fluid.
4. Close the windshield washer tank cover securely.
5. Close the engine hood and confirm it is latched securely.



Figure 4-18 – Fluid Reservoir

TORQUE SPECIFICATIONS

Note: Use these torque values when tightening hardware (excluding: locknuts and self-tapping, thread forming and sheet metal screws) unless specified otherwise.

Hydraulic fittings with various seals (light application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M10X1.0	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (10 mm)
M12X1.5	15 (20)	18 (25)	18 (25)	18 (25)	0.5 in. (12 mm)
M14X1.5	26 (35)	33 (45)	26 (35)	26 (35)	0.6 in. (14 mm)
M16X1.5	33 (45)	41 (55)	30 (40)	37 (50)	0.6 in. (16 mm)
M18X1.5	41 (55)	52 (70)	33 (45)	52 (70)	0.7 in. (18 mm)
M22X1.5	48 (65)	92 (125)	44 (60)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	74 (100)	107 (145)	1.0 in. (27 mm)
M33X2.0	111 (150)	229 (310)	118 (160)	155 (210)	1.3 in. (33 mm)
M42X2.0	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (42 mm)
M48X2.0	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (48 mm)
G1/8A	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (9.73 mm)
G1/4A	26 (35)	26 (35)	22 (30)	26 (35)	0.5 in. (13.16 mm)
G3/8A	33 (45)	52 (70)	33 (45)	37 (50)	0.7 in. (16.66 mm)
G1/2A	48 (65)	66 (90)	41 (55)	48 (65)	0.8 in. (20.96 mm)
G3/4A	66 (90)	133 (180)	74 (100)	103 (140)	1.0 in. (26.44 mm)
G1A	111 (150)	229 (310)	118 (160)	140 (190)	1.3 in. (33.25 mm)
G1 1/4A	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (41.91 mm)
G1 1/2A	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (47.80 mm)

Hydraulic fittings with various seals (heavy application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M12X1.5	15 (20)	26 (35)	26 (35)	26 (35)	0.5 in. (12 mm)
M14X1.5	26 (35)	41 (55)	33 (45)	33 (45)	0.6 in. (14 mm)
M16X1.5	33 (45)	52 (70)	41 (55)	41 (55)	0.6 in. (16 mm)
M18X1.5	41 (55)	66 (90)	52 (70)	52 (70)	0.7 in. (18 mm)
M20X1.5	41 (55)	92 (125)	59 (80)	74 (100)	0.8 in. (20 mm)
M22X1.5	48 (65)	100 (135)	74 (100)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	125 (170)	100 (135)	1.0 in. (27 mm)
M33X2.0	111 (150)	229 (310)	229 (310)	155 (210)	1.3 in. (33 mm)
M42X2.0	177 (240)	332 (450)	243 (330)	266 (360)	1.7 in. (42 mm)
M48X2.0	214 (290)	398 (540)	310 (420)	398 (540)	1.9 in. (48 mm)
G1/8A	26 (35)	41 (55)	33 (45)	33 (45)	0.5 in. (13.16 mm)
G1/4A	33 (45)	59 (80)	44 (60)	44 (60)	0.7 in. (16.66 mm)
G3/8A	48 (65)	85 (115)	55 (75)	74 (100)	0.8 in. (20.96 mm)
G1/2A	66 (90)	133 (180)	125 (170)	107 (145)	1.0 in. (26.44 mm)
G3/4A	111 (150)	229 (310)	229 (310)	192 (260)	1.3 in. (33.25 mm)
G1A	177 (240)	332 (450)	243 (330)	266 (360)	1.7 in. (41.91 mm)
G1 1/4A	214 (290)	398 (540)	310 (420)	398 (540)	1.9 in. (47.80 mm)

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