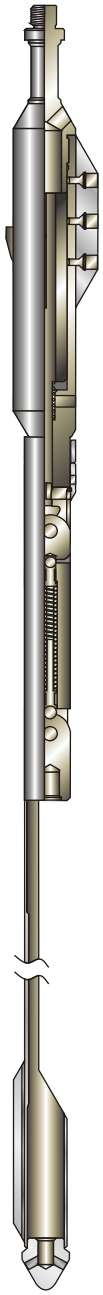
Weatherford®

Kickover Tools

KOT Series



Weatherford's McMurry-Macco® KOT series kickover tools are used to install and retrieve flow-control devices in side-pocket mandrels that have an integral orienting sleeve. KOT series tools are run into the well using standard wireline techniques. The orienting sleeve aligns the kickover tool above the side pocket, enabling precise installation or retrieval of flow-control devices for gas lift, chemical injection, and waterflood applications. KOT series tools are also used to install or retrieve dummy valves, corrosion-monitoring coupon carriers, and other devices.

KOT series tools do not require pinning between runs during running and pulling procedures. When the tool is retrieved through the top of the side-pocket mandrel, the arm assembly is pushed back into position. This quick re-cock feature greatly reduces wireline time by eliminating the need to remove the tool from the tool string for disassembly and re-pinning. It also allows the operator several attempts to either set or retrieve a control device without pulling out of the well.

Applications

- **KOT series** kickover tools are used for precise installation of flow devices for gas lift, chemical injection, waterflood, corrosion monitoring, and other applications.
- **KOT-1** tools are used to install 1-in. OD devices in 2 3/8-, 2 7/8-, 3 1/2-, and 4 1/2-in. tubing.
- **KOT-2** tools are used to install 1 1/2-in. OD devices in 3 1/2-, 4 1/2-, 5 1/2-, and 7-in. tubing. (An 11 1/4-in. spacer bar is required for pulling operations.)

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Features, Advantages and Benefits

- The quick re-cock design expedites valve installation and allows several attempts to remove or install the valve without having to pull out of the well.
- A valve catcher is available with the tools to catch a valve dropped during running and pulling procedures.
- Most KOT series tools can be adapted to accommodate a larger tubing size, thereby saving the cost of additional tools and related parts.

Specifications

Model	Valve OD (in.)	Valve OD *(mm)*	Assembly Number	Tubing OD (in.)
KOT-1	1.0	*25.4*	7012-xxx	2-3/8
				2-7/8
			7014-xxx	3-1/2
				4-1/2
KOT-2	1.5	*38.1*	7024-xxx	3-1/2
				4-1/2
			7028-xxx	5-1/2
			7029-xxx	7

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Running Procedure

1. Install the running tool with proper flow control device onto the kickover tool. Make up the kickover tool onto the bottom of the wireline tool string, and install the assembly in the lubricator.
2. Lower the unit into the tubing until the kickover tool is below the selected mandrel, the depth of which is known from well records.
3. Raise the tools slowly through the tubing until they stop, which indicates that the locating finger in the kickover tool has contacted the top of the orienting sleeve of the mandrel.
4. Pull tension on the wireline until the weight indicator of the wireline unit indicates enough weight to actuate the kickover tool to its kicked over position above the pocket in the mandrel.
5. Slowly lower the tools until a weight loss is registered on the weight indicator. Weight loss indicates that the kickover tool has kicked over and located the pocket of the mandrel. No weight loss indicates that the kickover tool did not release to the kicked over position; in this case, repeat Steps 3, 4, and 5.
6. Jar downward to drive the flow control device into the pocket of the mandrel and latch it into position.
7. Jar upward to release the running tool from the latch, thus leaving the flow control device in the mandrel pocket. Separation of the running tool from the latch gives a positive indication that the latch and flow device are firmly locked into the mandrel pocket.

   Caution: Some running tools are released by downward jarring only (i.e., bottom-latch devices).

   The tool string can now be removed from the well.
8. Pull the tool upward through the mandrel. The locating finger in the kickover tool will stop in the orienting sleeve of the mandrel. Jar or pull upward to release the locating finger and permit the kickover tool to pass through the mandrel.

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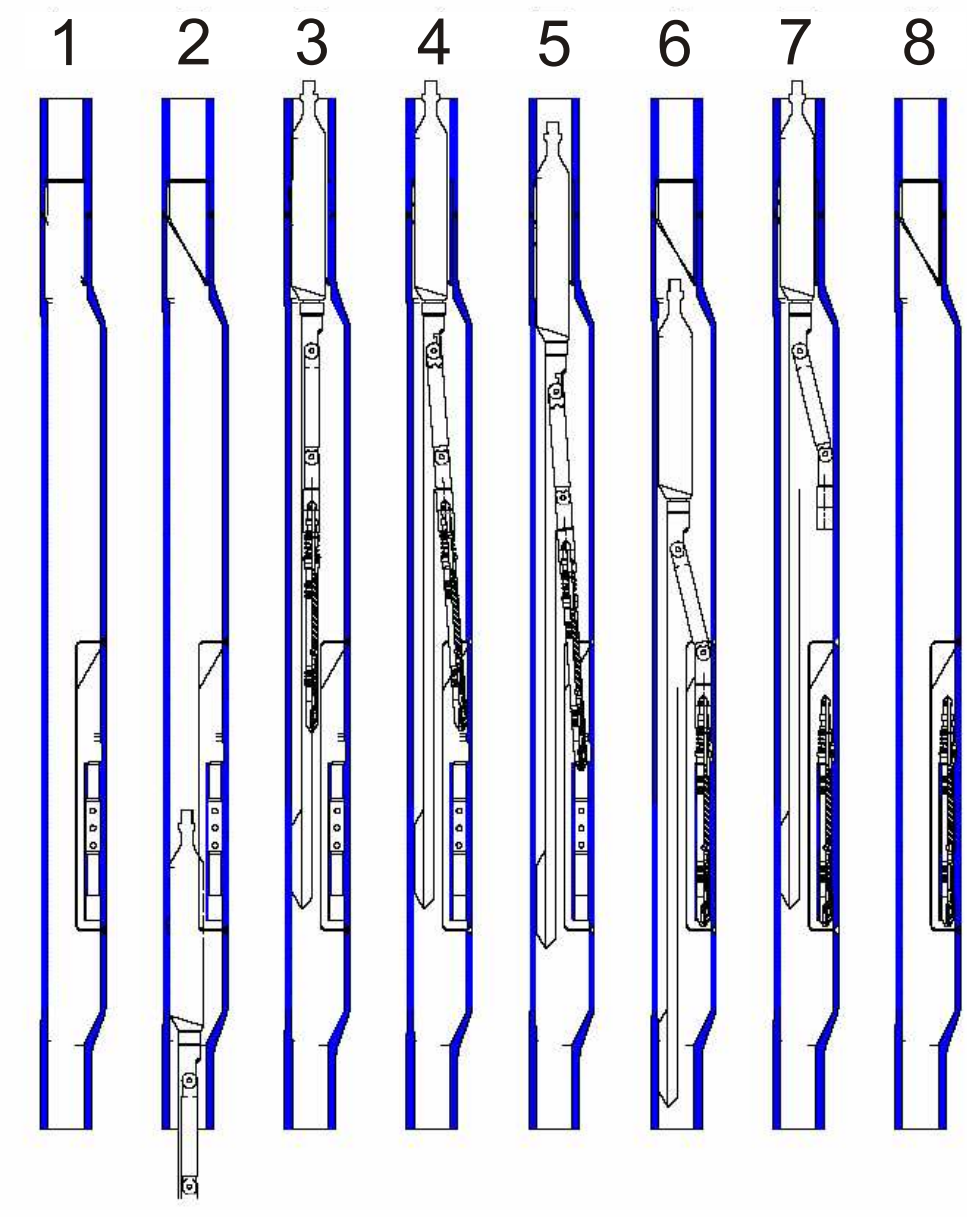

Running Sequence

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Pulling Procedure

1. Install the pulling tool onto the kickover tool. Make up the kickover tool onto the bottom of the wireline tool string, and install the assembly into the lubricator.

   Note: A spacer bar is necessary for KOT-2 pulling operations.

2. Lower the unit into the tubing until the kickover tool is below the selected mandrel, the depth of which is known from well records.
3. Raise the tools slowly through the tubing until they stop, which indicates that the locating finger in the kickover tool has contacted the top of the orienting sleeve of the mandrel.
4. Pull tension on the wireline until the weight indicator of the wireline unit indicates enough weight to actuate the kickover tool to its kicked over position above the pocket in the mandrel.
5. Slowly lower the tools until a weight loss is registered on the weight indicator. Weight loss indicates that the kickover tool has kicked over and located the pocket of the mandrel and the flow control device in it. No weight loss indicates that the kickover tool did not release to the kicked over position; in this case, repeat Steps 3, 4, and 5.
6. Jar downward to secure the pulling tool to the running head of the latch.
7. Jar upward to pull the flow control device from the pocket of the mandrel. If it is not possible to pull the valve, jar downward to release the pulling tool from the running head of the latch. The tool string can now be removed from the well. As the kickover tool is pulled upward through the mandrel, the locating finger in the kickover tool will stop in the orienting sleeve of the mandrel.
8. Jar or pull upward to release the locating finger and permit the kickover tool to pass through the mandrel.

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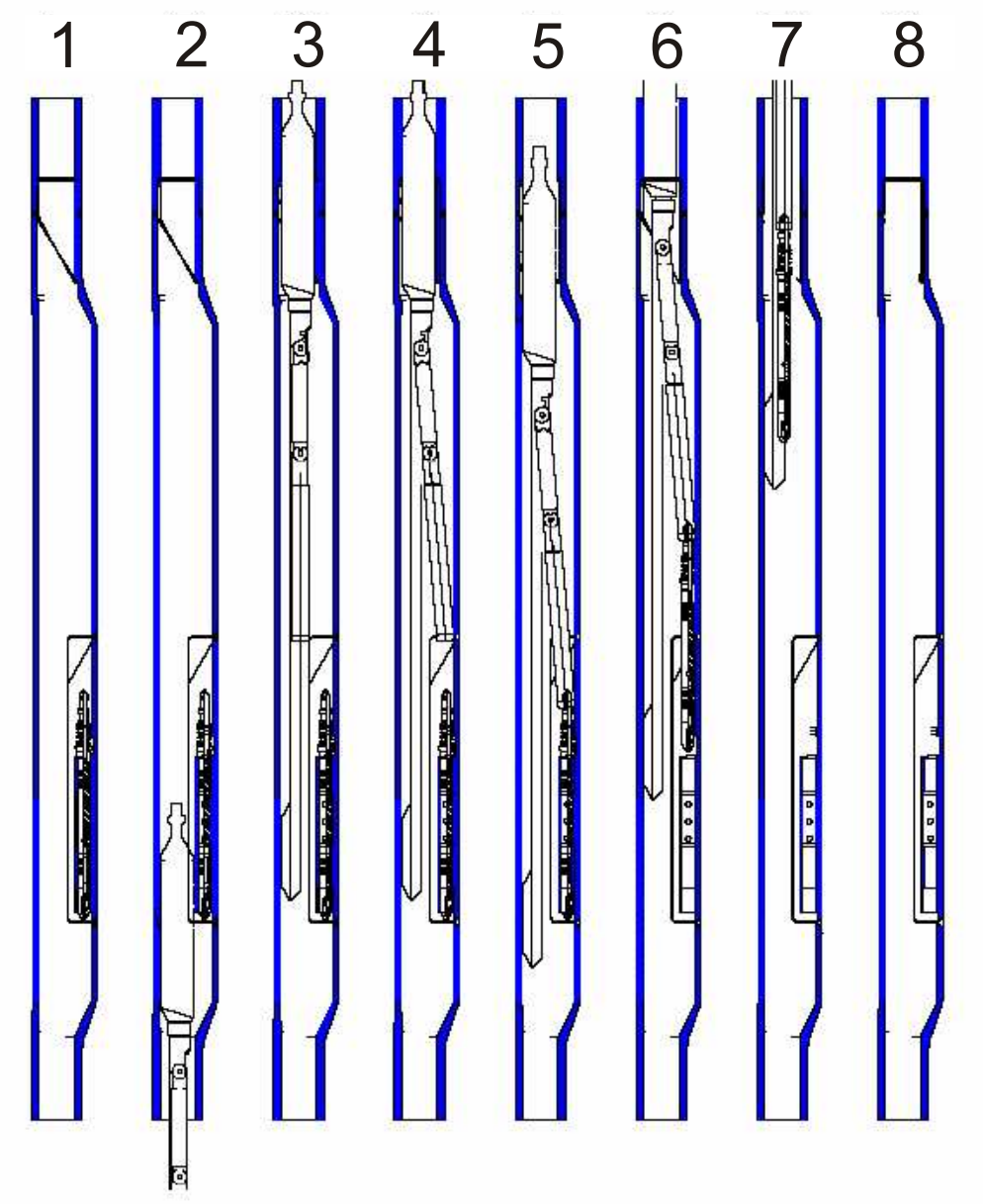

Pulling Sequence

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