WHAT IS CLAIMED IS:

1. A robotic arm assembly (100) comprising:

a robotic arm (104) comprising a link (118), a control rope (122) operable with the link (118), and an attachment section (116), the control rope (122) extending at least partially through the attachment section (116); and

an actuator pack (108) attached to, or positioned adjacent to, the attachment section (116) of the robotic arm (104), the actuator pack (108) including an actuator (124), the actuator (124) operable with the control rope (122) and including a motor (128) defining a pivot axis (132), the motor (128) configured to move about the pivot axis (132) to displace the control rope (122).

2. The robotic arm assembly (100) of claim 1, wherein the actuator (124) further includes an actuator arm (130) operable with the control rope (122), wherein the motor (128) is configured to rotate the actuator arm (130) about the pivot axis (132) such that the actuator arm (130) displaces the control rope (122).

3. The robotic arm assembly (100) of claim 2, wherein the actuator arm (130) of the actuator (124) includes an extension (136) and an interface member, wherein the extension (136) extends between a first end and a second end, wherein the first end of the extension (136) is coupled to the motor (128) and the second end of the extension (136) is coupled to the interface member, wherein the interface member is configured to contact the control rope (122).

4. The robotic arm assembly (100) of claim 2, wherein the actuator arm (130) of the actuator (124) is configured to move the control rope (122) from a baseline position to a displaced position, wherein the control rope (122) extends in a substantially linear direction when in the baseline position, and wherein the actuator arm (130) of the actuator (124) is configured to move at least a section of the control rope (122) in a direction perpendicular to the substantially linear direction when moving the control rope (122) to the displaced position.

5. The robotic arm assembly (100) of claim 2, wherein the robotic arm (104) further comprises a first stationary roller (140) and a second stationary roller (142) each operable with the control rope (122), and wherein the actuator arm (130) is operable to displace the control rope (122) at a location between the first stationary roller (140) and the second stationary roller (142).

6. The robotic arm assembly (100) of claim 1, wherein the robotic arm (104) further comprises a tension release (148), wherein the control rope (122) is attached to the tension release (148).

7. The robotic arm assembly (100) of claim 6, wherein the tension release (148) includes a trigger (158) operable to reduce a tension on the control rope (122) when the tension on the control rope (122) exceeds a predetermined threshold.

8. The robotic arm assembly (100) of claim 7, wherein the trigger (158) is configured as a magnetic connection (178), a mechanical fuse (176), or both.

9. The robotic arm assembly (100) of claim 6, wherein the tension release (148) includes a roller (138) and a biasing member (152) and defines a tension release axis (154), wherein the control rope (122) is attached to the roller (138), and wherein the biasing member (152) biases the roller (138) in a first circumferential direction (*C*'1) about the tension release axis (154).

10. The robotic arm assembly (100) of claim 9, wherein the displacement of the control rope (122) by the actuator (124) moves the roller (138) in a second circumferential direction (*C*'2) about the tension release axis (154), and wherein the second circumferential direction (*C*'2) is opposite the first circumferential direction (*C*'1).

11. The robotic arm assembly (100) of claim 10, wherein the roller (138) of the tension release (148) includes a feature (156), wherein the tension release (148) further comprises a trigger (158) configured to engage the feature (156) of the roller

~~(138) when the roller (138) is moved in the second circumferential direction (C'2), and wherein the feature (156) of the roller (138) is configured to overcome the trigger (158) when a tension on the control rope (122) the above a predetermined threshold.~~

~~12. The robotic arm assembly (100) of claim 1, wherein the link (118) of the robotic arm (104) is a first link (118A) of a plurality of links (118), wherein the control rope (122) of the robotic arm (104) is a first control rope (122A) of a plurality of control ropes (122) of the robotic arm (104), wherein each of the plurality of control ropes (122) extends at least partially through the attachment section (116) of the robotic arm (104) and is operable with at least one of the plurality of links (118) of the robotic arm (104), wherein the actuator (124) of the actuator pack (108) is a first actuator (124A) of a plurality of actuators (124), and wherein each actuator (124) of the plurality of actuators (124) includes a motor (128) configured to move about its respective pivot axis (132) to displace one of the plurality of control ropes (122).~~

1. A robotic arm assembly comprising:

a robotic arm comprising a link, a control rope operable with the link, and an attachment section, the control rope extending at least partially through the attachment section; and

an actuator pack attached to, or positioned adjacent to, the attachment section of the robotic arm,

wherein the actuator pack includes an actuator,

wherein the actuator is operable with the control rope,

wherein the actuator includes a motor,

wherein the control rope has a baseline position in which the control rope extends in a straight line between two stationary points or first and second stationary rollers,

wherein the motor is configured to move an extension to displace the control rope from the baseline position between the two stationary points or the first and second stationary rollers,

wherein the actuator further includes an actuator arm having the extension that is operable with the control rope, and

wherein the motor is configured to rotate the actuator arm about a pivot axis such that the actuator arm displaces the control rope.

2. The robotic arm assembly of claim 1,

wherein the actuator arm of the actuator includes an interface member,

wherein the extension extends between a first end and a second end,

wherein the first end of the extension is coupled to the motor and the second end of the extension is coupled to the interface member,

wherein the interface member is configured to contact the control rope.

3. The robotic arm assembly of claim 1,

wherein the actuator arm of the actuator is configured to move the control rope from the baseline position to a displaced position,

wherein the control rope extends in a substantially linear direction when in the baseline position, and

wherein the actuator arm of the actuator is configured to move at least a section of the control rope in a direction perpendicular to the substantially linear direction when moving the control rope to the displaced position.

4. The robotic arm assembly of claim 1,

wherein the robotic arm further comprises a tension release,

wherein the control rope is attached to the tension release.

5. The robotic arm assembly of claim 4, wherein the tension release includes a trigger operable to reduce a tension on the control rope when the tension on the control rope exceeds a predetermined threshold.

6. The robotic arm assembly of claim 5, wherein the trigger is configured as a magnetic connection, a mechanical fuse, or both.

7. The robotic arm assembly of claim 4,

wherein the tension release includes a roller and a biasing member and defines a tension release axis,

wherein the control rope is attached to the roller, and

wherein the biasing member biases the roller in a first circumferential direction about the tension release axis.

8. The robotic arm assembly of claim 7,

wherein the displacement of the control rope by the actuator moves the roller in a second circumferential direction about the tension release axis, and

wherein the second circumferential direction is opposite the first circumferential direction.

9. The robotic arm assembly of claim 8,

wherein the roller of the tension release includes a feature,

wherein the tension release further comprises a trigger configured to engage the feature of the roller when the roller is moved in the second circumferential direction, and

wherein the feature of the roller is configured to overcome the trigger when a tension on the control rope the above a predetermined threshold.

10. The robotic arm assembly of claim 1,

wherein the link of the robotic arm is a first link of a plurality of links,

wherein the control rope of the robotic arm is a first control rope of a plurality of control ropes of the robotic arm,

wherein each of the plurality of control ropes extends at least partially through the attachment section of the robotic arm and is operable with at least one of the plurality of links of the robotic arm,

wherein the actuator of the actuator pack is a first actuator of a plurality of actuators, and

wherein each actuator of the plurality of actuators includes a motor configured to move an extension to displace one of the plurality of control ropes.

11. A robotic arm for a robotic arm assembly comprising:

a plurality of links sequentially arranged;

a plurality of control ropes operable with the plurality of links, the plurality of control ropes including a first control rope; and

an attachment section including a tension release,

wherein the first control rope extends at least partially through the attachment section and is coupled to the tension release,

wherein the tension release includes a trigger operable to reduce a tension on the first control rope when the tension on the first control rope exceeds a predetermined threshold.

12. The robotic arm of claim 11,

wherein the tension release includes a roller and a biasing member and defines a tension release axis,

wherein the control rope is attached to the roller, and

wherein the biasing member biases the roller in a first circumferential direction about the tension release axis.

13. The robotic arm of claim 12,

wherein a displacement of the control rope moves the roller in a second circumferential direction about the tension release axis,

wherein the second circumferential direction is opposite the first circumferential direction,

wherein the roller of the tension release includes a feature, and

wherein the tension release further comprises a trigger configured to engage the feature of the roller when the roller is moved in the second circumferential direction.

14. The robotic arm of claim 13, wherein the feature of the roller is configured to overcome the trigger when a tension on the control rope is above a predetermined threshold.

15. The robotic arm of claim 11, wherein the trigger is configured as a magnetic connection, a mechanical fuse, or both.

16. An actuator pack for a robotic arm assembly, the robotic arm assembly comprising a robotic arm having a plurality of links sequentially arranged, a plurality of control ropes operable with the plurality of links, and an attachment section with the plurality of control ropes extending therethrough, the actuator pack comprising:

a plurality of actuators,

wherein the plurality of actuators includes a first actuator operable with one of the control ropes when the actuator pack is coupled to, or positioned adjacent to, the attachment section of the robotic arm assembly,

wherein the first actuator includes a motor,

wherein the one of the control ropes has a baseline position in which the one of the control ropes extends in a straight line between two stationary points or first and second stationary rollers,

wherein the motor is configured to move an extension to displace the one of the plurality of control ropes from the baseline position between the two stationary points or the first and second stationary rollers,

wherein the robotic arm further comprises a tension release,

wherein the one of the control ropes is attached to the tension release, and

wherein the tension release includes a trigger operable to reduce a tension on the one of the control ropes when the tension on the control rope exceeds a predetermined threshold.

17. The actuator pack of claim 16,

wherein the first actuator includes an actuator arm moveable by the motor about a pivot axis of the motor,

wherein the actuator arm of the first actuator includes the extension and an interface member,

wherein the extension extends between a first end and a second end,

wherein the first end of the extension is coupled to the motor and the second end of the extension is coupled to the interface member,

wherein the interface member is configured to contact the one of the control ropes.

18. The actuator pack of claim 16, wherein the motor is a rotary motor.