# PRACTITIONER'S MANUAL

## DAW Industries

# 50S0™ "Original"

### 5-Bar Stance Flexion & Custom-ICR™ Stability

Stock #: TK-50S0

**IMPORTANT:**
Adjusting alignment beyond recommended limits described within will adversely affect patient's gait, and could cause premature wear.


**HEADQUARTERS:**
6610 Nancy Ridge Road
San Diego, CA 92121-2252
Orders: (800) 252-2828 • (858) 622-4962
Fax: (800) 856-8563
www.daw-usa.com

**Technical Support**
**(800) 242-8669**

**CENTRAL/EASTERN**
**DISTRIBUTION CENTER:**
5579-B Chamblee Dunwoody Road
Suite 227
Atlanta, GA 30338-4154
Orders: (800) 824-7192
Fax: (800) 865-8563

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# 50S0™ "Original"

## 5-Bar Stance Flexion & Custom-ICR™ Stability

Stock #: TK-50S0

*Engineered for K2 individuals of fair capability*

### Benefits:

- ✔ Durable Aluminum Alloy construction
- ✔ 5-Bar Custom-ICR adjustable geometric stability
- ✔ Precise Stance Flexion adjustment (2° to 8°)
- ✔ Proven durability & reliability
- ✔ Trouble-free, zero maintenance
- ✔ Auto-readjusting swing phase friction setting
- ✔ Forever-smooth stainless ball bearing axes

***IMPORTANT:***
Read technical information thoroughly before using knee.

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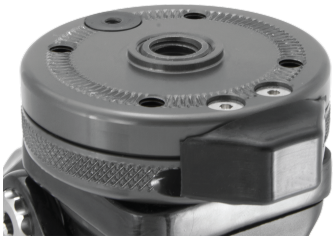
## Popular Proximal Options



**Lo-Pro Rotator™**
(#: TKR-01)
Provides Rotational Adjustment
Attach any 4-Hole connector

Suggested **L-Codes*:** L5984

**4-Hole Female Pyramid w/ Rotation, Titanium** (#: GUPT-F4HROT)
Provides Angular & Rotational Adjustment

**Browse our complete selection of Unique Components at**
daw-usa.com/all-connectors

## Recommended K2 Foot

**K2 Feather-Lite™ Foot**
Engineered for the K2 Individual Requiring mobility & safety

Provides 2 Flexible Keel Options &
Multi-Axial Ankle Motion with Rotation

Suggested **L-Codes*:** L5972 L5986

*Please refer to the complete reimbursement disclaimer at www.daw-usa.com

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## Specifications

**Patient profile:**

| | |
|---|---|
| Body weight | Under 220lb (100kg) |
| Functional level | K2 |
| Amputation level | Transfemoral, Bi-lateral or Hip Disarticulation |

**Knee Specifications:**

| | |
|---|---|
| Stock number | TK-50S0 |
| Max weight limit | 220lb (100kg) |
| Knee weight | 2.0lb (925g) |
| Swing controls | Auto-readjusting Constant Friction, Extension Assist & Adjustable Swing Phase Trigger |
| Stability controls | Custom-ICR™ Stability Adjustment, Stance Flexion Stability & Adjustable Extension Stop Bumper |
| Proximal connection | M6 threaded 4-hole or, Unthreaded single hole |
| Distal connection | 30mm tube clamp |
| Warranty | 2 years, upgrade for additional 3 years |






## Contents



## Recommended Order of Adjustments

1. Static Custom-ICR Stability adjustment
   -adjust to residual limb length
2. Stance Flexion Stability
3. Dynamic Custom-ICR Stability adjustment
   *-fine tune to Patient's capability*
4. Swing Phase Friction
5. Extension Assist
6. Extension Stop

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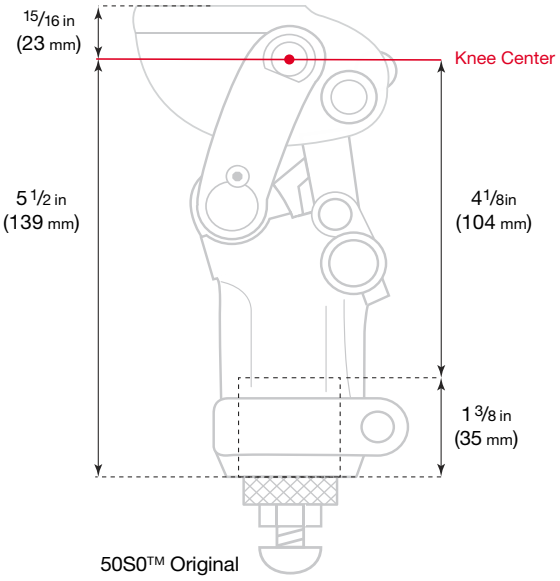
For Technical Support call (800)242-8669

# BUILD HEIGHT

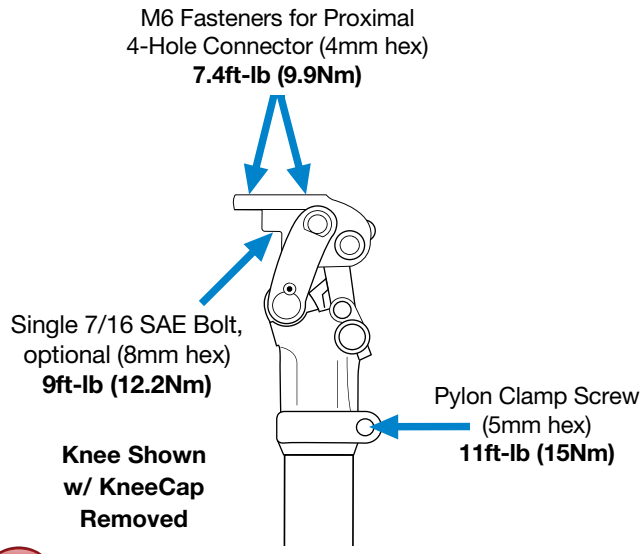



# TORQUE SETTINGS

## Important:

**Use blue Loctite™ 242 on all screws referenced here.**
It is not recommended to use Ottobock Titanium Pylon.
Do not use a spacer for height adjustment.
Ensure pylon is cut straight.

It is recommended these torques be checked within 30 days and then 6 months after your delivery of this prothesis.









## DAW Prosthetic Knee Limited Warranty

The knee comes with a Limited Warranty for 2-years. It covers manufacturer defects (excluding wear & tear). An additional 3 years of warranty coverage can be purchased for +15% of the original cost of the knee. See full warranty statement at: www.daw-usa.com/practitioner-resources/

**Weight limit of this knee is 220lb (100kg)**

Bumpers are not under warranty.

Tight screws and a straight cut of the tubing are a must. Not following recommended use of components, including weight limit and alignment, will void the warranty. Make sure to read all instructions enclosed with the knee unit.

All repairs on the knee module must be done by a factory-trained DAW technician. Any disassembly done on the knee during the warranty period(s) will void the warranty (excluding dissasembly of the extension spring housing).

## Service Under Warranty

For all component repairs call DAW Industries right away. We will ship a replacement knee the same day, which will become your patient's new knee. The replacement component is under warranty for the time remaining on the original component.

The overnight shipping charge will be credited upon receipt of the failed knee component.

## Service Outside of Warranty

Knees not under warranty may be repaired by DAW. While any unwarranted knee is being serviced, DAW will provide a rental knee subject to availability. The DAW rental fee is listed in the price list under each knee. The rental fee covers the period DAW takes to complete the repair with ten (10) days allowed for shipping in both directions. The same rental fee will be charged every 30 days passed the initial rental fee period.

For any repair you must first contact our Technical Services at 1(800)242-8669. This will allow DAW to best understand the issue. Our Technical Support will immediately asses if the repair qualifies as a "minor" or "substantial" repair. A "minor" repair will be completed, as a courtesy, free of charge (you will just pay for return shipping). A "substantial" repair will be billed at a flat rate according to knee model. Upon return of your repaired knee, you will be invoiced for the repair charge, if any. When DAW receives the rental knee, your account will be credited for the value of the returned knee
(Gold Preferred+ = FREE rental; Preferred = 33% off).

In the event your knee is unrepairable, you will be notified immediately. The rental must then be returned to DAW, 2nd day, within five (5) working days. The rental fee may be applied toward the purchase of a new DAW knee.

## Adjusting the Extension Stop Bumper
**(Stability & Swing Phase Trigger Point)**

Adjusting the Extension Stop Bumper will affect both the Knee's Stability and "Trigger Point" of Swing Phase. The maximum adjustment is 2°.
**NOTE:** This adjustment will affect socket flexion slightly.

**Adjusting the Extension Stop Bumper Screw:**

A. Flex the knee and remove the Kneecap Screw (3mm hex), and remove the Kneecap.

B. Loosen the Set Screw (2mm hex)

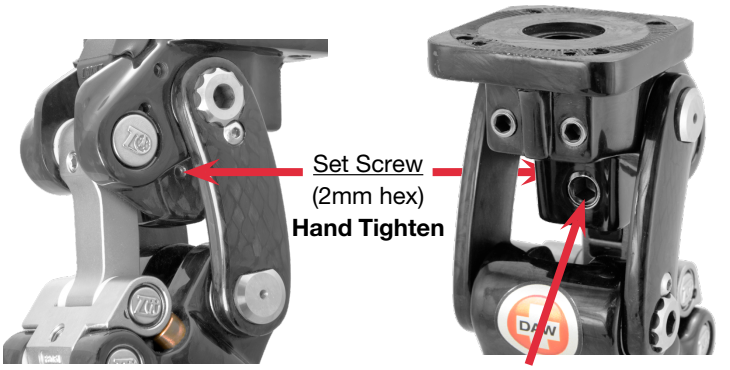
C. Turn the Extension Stop Bumper Screw (6mm hex)

***Clockwise*** for earlier swing-phase initiation (& less stance-phase stability)

***Counter-clockwise*** for later swing-phase initiation (& more stance-phase stability)

D. Retighten the Set Screw (**Hand Tighten**).

E. Replace the Kneecap when your Swing Phase Trigger Point setting is satisfactory (**Hand Tighten**).

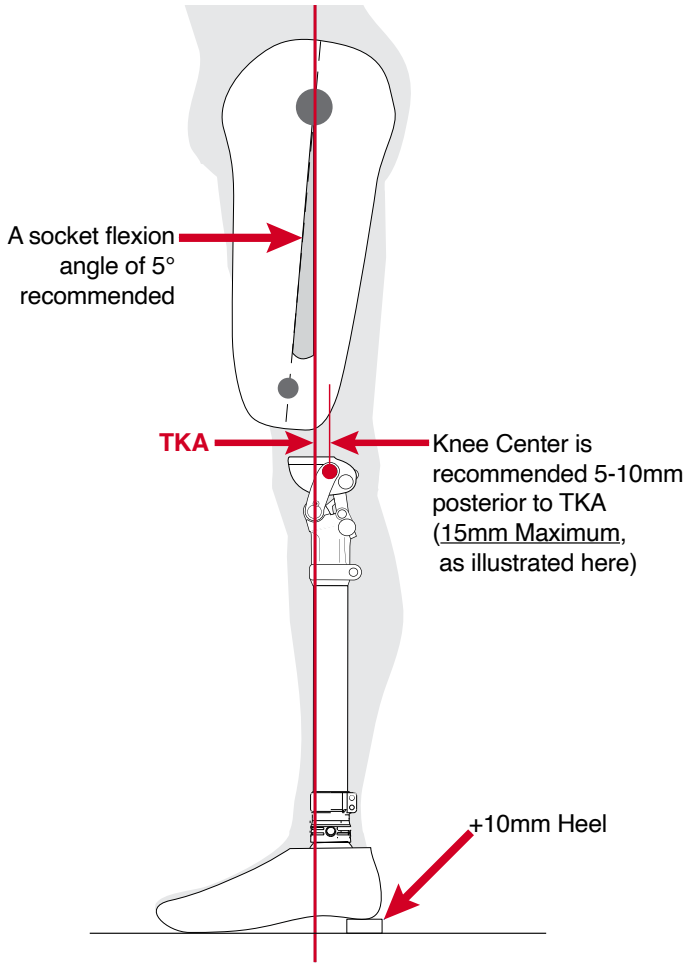






# RECOMMENDED BENCH & STATIC ALIGNMENT

Standard alignment procedure must be observed to obtain the maximum benefits offered by this knee. All alignment references should be taken from the center of the anterior superior knee axis (commonly referred to as the Knee Center).



## Why is Custom-ICR™ Better?

### Improve Stability without Altering Alignment

Without affecting your alignment, the Custom-ICR™ Stability Adjustment optimizes the location of this knee's ICR to improve stability and minimize energy consumption (see next page to optimize your Patient's Custom-ICR setting).

Watch the "Custom-ICR Setting" video at daw-usa.com/videos

**What is a 4-Bar Knee's ICR? And why is its location important?**

A Polycentric knee's Instantaneous Center of Rotation or ICR is a theoretical point located at the intersection of 2 lines which pass through the axes and continue proximally (see fig. below).

The ICR location of different polycentric knees determine 2 important aspects of your patient's gait:

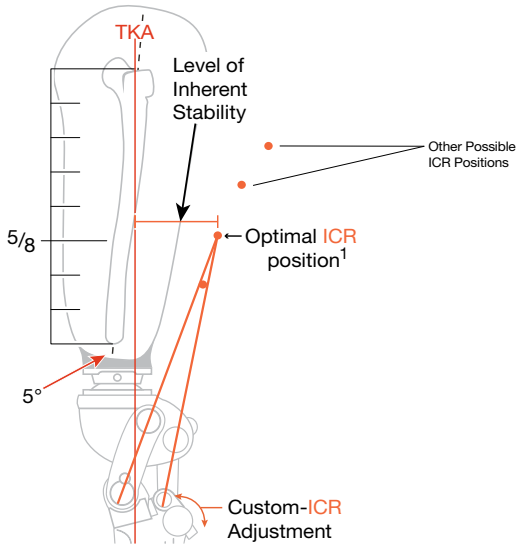
A. The Level of Inherent Stability the knee provides (measured by the ICR's distance from TKA or Force Vector)

B. Your Patient's energy consumption.

**Why is an Adjustable ICR Position advantageous?**

A traditional 4-Bar knee's ICR location is not adjustable. If it is located too far posterior for your Patient's individual biomechanics, your Patient will consume excessive energy.

DAW 5-Bar Knee's let you optimize Inherent Stability to your patient's needs while also minimizing their energy consumption.




[1] The optimal location of the ICR is the area where the Amputee applies force to their socket wall during stance phase. It is most commonly, 5/8 down the length of the femur.






## Replacing or Trimming the Extension Assist Spring

**To replace the Extension Assist Spring:**

A. Loosen the Pylon Clamp Screw (5mm hex).

B. Remove the pylon.

C. Completely remove the Extension Assist Control Screw ① (5mm hex).

D. Feed a 2.5mm hex key through the holes of the Spring Housing ②. Using the torque provided by the hex key, unscrew the housing.

E. Pull the white Piston ③ out of the housing. The Spring ④ is pressed on the Piston's distal end.

F. Unclip the Piston and Force Plate ⑤ from the Spring, transfer them to your new Spring. Return the Spring Assembly, Force Plate end down, to the housing.

G. Re-screw the Housing into the knee, hand tighten.

H. Re-screw the Extension Assist Control Screw back in until you feel it make contact with the Force Plate (this is your new minimum setting).


**To trim the Extension Assist Spring?**

Follow steps A. through E. above, then,

Unclip the Force Plate ⑤ & Piston ③ from the Spring.

Using a grinding wheel, trim one or two coils (maximum) off one end of the spring. Smooth the trimmed end. Press the Force Plate into the mouth of the housing. Press the Piston onto the uncut end of the Spring. Return the Spring & Piston to the housing, **trimmed end down**, pushing the Force Plate down into the housing.

Continue with steps G. and H. above.

## Adjusting Extension Assist

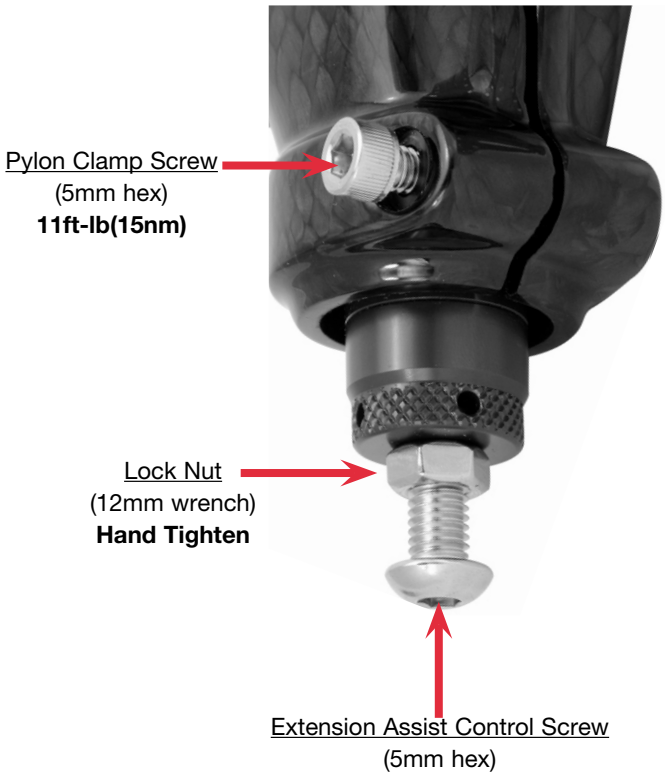
**To Adjust Extension Assist:**

A. Loosen the Pylon Clamp Screw (5mm hex) and remove the Pylon

B. Loosen the Lock Nut (12mm wrench)

C. Turn the Extension Assist Control Screw (5mm hex):
***Clockwise*** to increase extension assist
***Counter-clockwise*** to decrease extension assist

D. Re-tighten the Lock Nut, **Hand Tighten** (12mm wrench). After returning the pylon, re-tighten Pylon Clamp Screw to **11ft-lb (15Nm).**









## Adjusting Custom-ICR™ Stability

**Your Patient's optimal Custom-ICR Stability setting considers 2 important biomechanical traits:**

1. Femoral length and
2. Hip extensors strength

**During Bench or Static Alignment:**
Adjust the setting to your patient's residual femoral length.

A. Loosen the Set Screw (2mm)

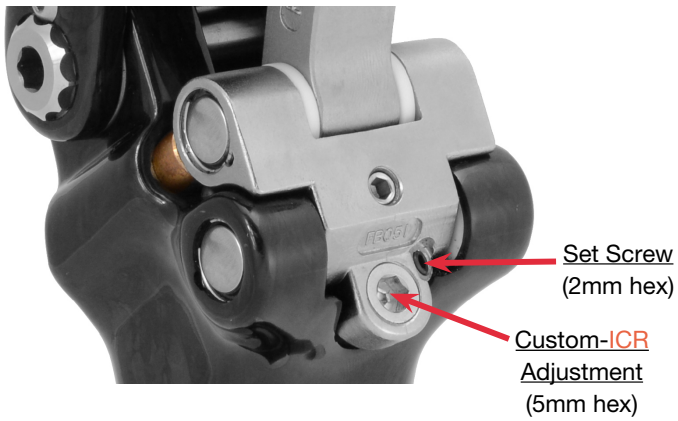
B. Turn the Custom-ICR Adjustment (5mm hex):

¼ turn ***clockwise*** for every inch of femur shorter than 8.
or…
¼ turn ***counter-clockwise*** for every inch of femur longer than 8.

*The factory Custom-ICR setting is set for an Amputee with an 8-inch residual femur.

Watch the "Custom-ICR Setting" video at daw-usa.com/videos

C. Re-tighten the Set Screw before dynamic alignment.




**During Dynamic Alignment:**
Adjust the setting to your Patient's weak or strong hip extensor strength.

*Turn **clockwise** to provide more stability to compensate for weaker hip extensors*

or… If patient is hanging up in swing phase,

*Turn **counter-clockwise** to provide more efficiency to a Patient with stronger hip extensors.*

**Return to Factory Setting:**
Adjust the Custom-ICR Adjustment Screw (5mm Hex)

## Adjusting Stance Flexion

DAW 5-Bar Stance Flexion Design is engineered to not only smooth the transition from heel strike to mid stance but increase stability at this phase of gait as well[1]. Stability increases as more Stance Flexion angle is provided (up to 8°).

**NOTE:** It is recommended you make this adjustment after making your Custom-ICR™ Stability adjustment.

**Adjusting Stance Flexion Cushion and Stability**

Equally turn the Stance Flexion Adjustment Screws:

***Counter-Clockwise*** *for less resistance, a higher max angle and increased stability at heel strike.*

***Clockwise*** *for more resistance and a lower max angle.*

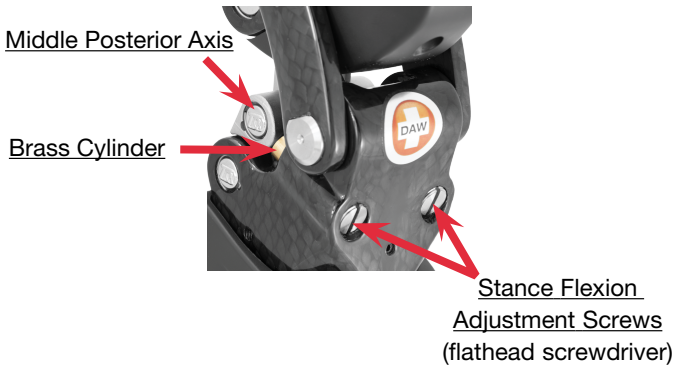
**To Provide Maximum Stance Flexion:**

One at a time, turn the Stance Flexion Adjustment Screws

A. ***Counter-clockwise*** until the Red Tabs pull out easily.

B. Now turn each ***clockwise*** ¾ of a turn. Adjust equally.

C. Verify each Brass Cylinder remains in full contact with the Middle Posterior Axis and the Stance Flexion Adjustment Screws are adjusted equally.




**NOTE:** After setting Stance Flexion, any change to your previous Custom-ICR setting requires re-adjusting Stance Flexion setting.

[1] During stance flexion load at heel strike, the Instantaneous Center of Rotation (ICR) shifts further posterior in relation to the Ground Reaction Force Vector. This posterior shift of the ICR produces an increase in geometric stability through heel strike and midstance.






## Adjusting Swing Phase Friction

This Knee's Friction Adjustment with Forever-Setting™ eliminates the need to re-adjust your original friction setting in the future.

Two Friction Adjustment Screws apply pressure to a special friction plate against the knee's anterior superior axis.

**To Adjust the Friction Setting:**

A. Flex the knee & remove the Kneecap Screw (3mm hex).

B. Turn the Friction Adjustment Screws (4mm hex):

***Clockwise*** *to increase friction*

***Counter-clockwise*** *to decrease friction*

**NOTE:** Adjust both screws equally.

Replace the Kneecap when your friction and swing phase "trigger point" settings are satisfactory.