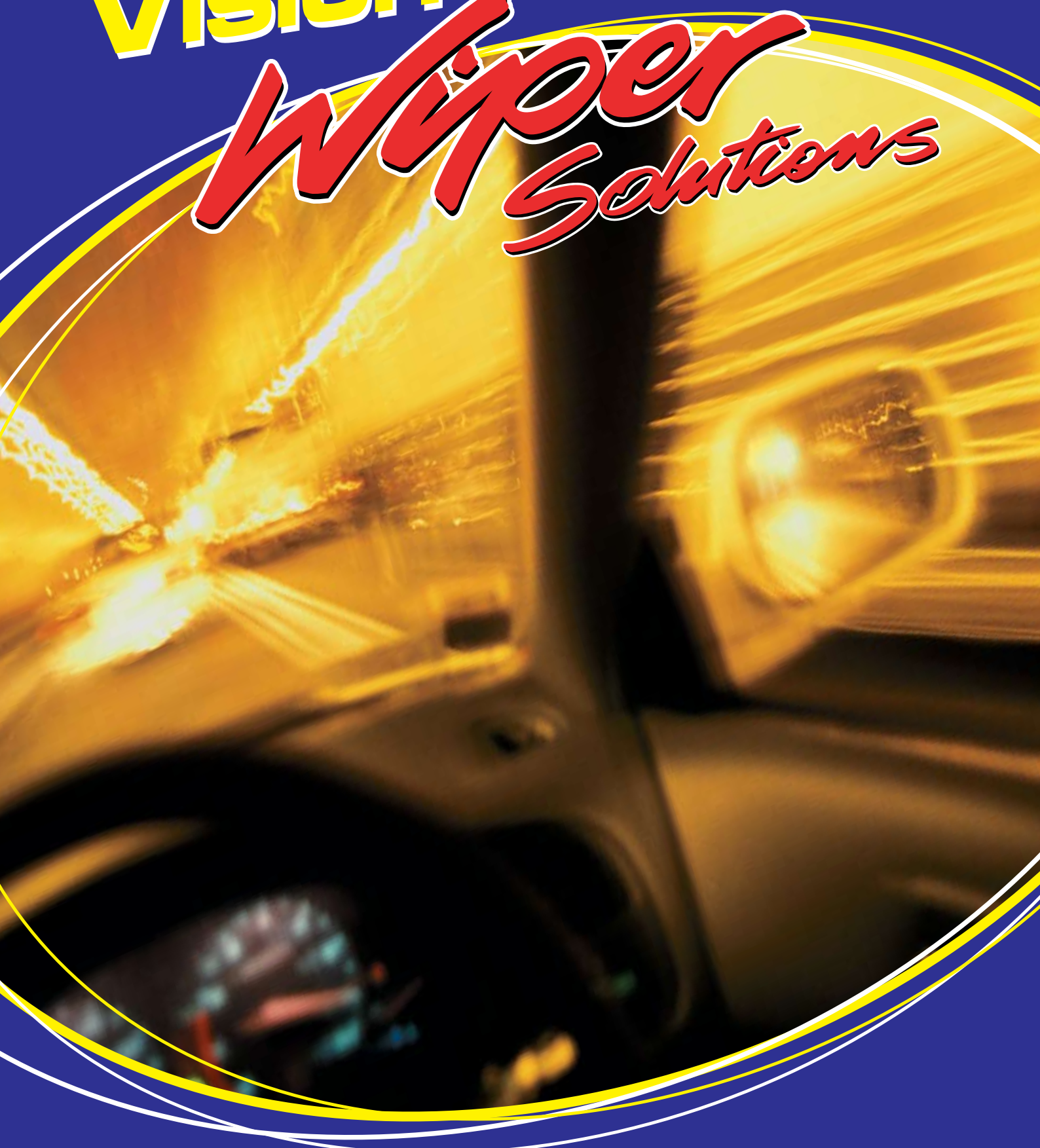


**TRU
Vision**

**Wiper
Solutions**



PREMIUM WIPER EQUIPMENT

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TRU VISION PTY LTD
 P.O. Box 1148
 Browns Plains, Qld 4118 Australia

 Ph: +61 (0) 7 3803 2299
 Fax: +61 (0) 7 3803 4255

Automotive Wiper Blades

**TRU
Vision**

Tru Vision

Premium

BLADES

The Tru-Vision Premium all metal wiper blade assemblies provide a precise wiping edge to ensure an effective wiping action with a minimum of noise. All blade assemblies are supplied with universal adaptors to suit most arm applications and include simple fitting instructions on the back of the pack.

Available in the following sizes:

| Part Number | Length |
|-------------|-----------|
| SWB400 | 400mm/16" |
| SWB450 | 450mm/18" |
| SWB500 | 500mm/20" |
| SWB560 | 560mm/22" |

Tru Vision

Sportz

BLADES

The Tru-Vision Sportz wiper blade assemblies are aerodynamically designed to reduce wind lift at high speeds. With an integrated spoiler and low profile twin rail refill, these blades give you a high performance wipe along with a sporty Carbon Fibre Finish look.

Available in the following sizes:

| Part Number | Length |
|-------------|-----------|
| CSB400 | 400mm/16" |
| CSB450 | 450mm/18" |
| CSB500 | 500mm/20" |
| CSB560 | 560mm/22" |



*Wiper
Solutions*

Automotive Refills & Merchandise Stand

**TRU
Vision**

Tru Vision

HOT

REFILLS

The Tru-Vision "HOT" range of universal refills incorporates a 6mm vertebrae. With a maximum length of 610mm/24" one refill will fit up to 95% of all passenger car applications. All refills have "long life" silicone rubber in six attractive colours including our new "Glow In The Dark" refill that outlasts ordinary refills.

Available in the following:

| Part Number | Length |
|------------------------------|-----------|
| WRR610 (Hot Red) | 610mm/24" |
| WRB610 (Hot Blue) | 610mm/24" |
| WRY610 (Hot Yellow) | 610mm/24" |
| WRG610 (Hot green) | 610mm/24" |
| WRBL610 (Jet Black) | 610mm/24" |
| WRGL610 (Glow In The Dark) | 610mm/24" |



Tru Vision MERCHANDISER

The Tru-Vision "Wiper Solutions Merchandiser" is specifically produced to give maximum impact in any retail store environment. With an attractive, eye-catching header card, individual product easily mounts to peg board or retail fixtures.

Merchandiser Part Number – TVM01

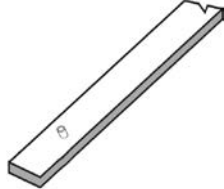




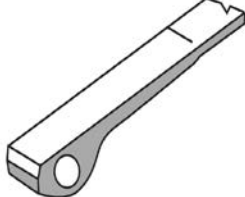


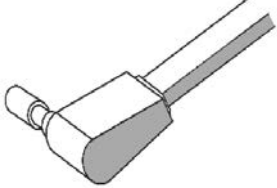

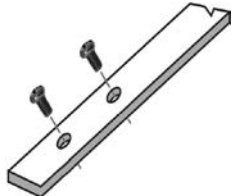
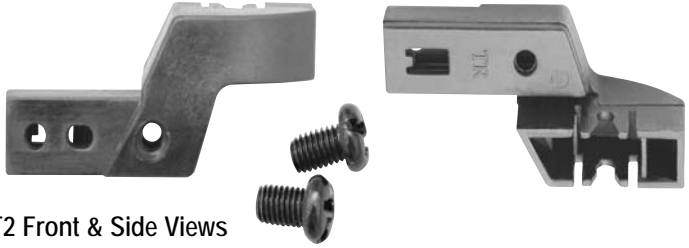
Merchandiser consists of the following:

| Part Number | Description | Quantity | Part Number | Description | Quantity |
|-------------|-------------------------------|----------|-------------|---|----------|
| CSB400 | Carbon Sportz Blade 400mm/16" | 4 | WRR610 | Hot Red Wiper Refill 610mm/24" | 6pr |
| CSB450 | Carbon Sportz Blade 450mm/18" | 4 | WRB610 | Hot Blue Wiper Refill 610mm/24" | 6pr |
| CSB500 | Carbon Sportz Blade 500mm/20" | 4 | WRY610 | Hot Yellow Wiper Refill 610mm/24" | 6pr |
| CSB560 | Carbon Sportz Blade 560mm/22" | 4 | WRG610 | Hot Green Wiper Refill 610mm/24" | 6pr |
| SWB400 | Premium Blade Assy 400mm/16" | 4 | WRBL610 | Jet Black Wiper Refill 610mm/24" | 6pr |
| SWB450 | Premium Blade Assy 450mm/18" | 4 | WRGL610 | Glow In The Dark Wiper Refill 610mm/24" | 6pr |
| SWB500 | Premium Blade Assy 500mm/20" | 4 | | | |
| SWB560 | Premium Blade Assy 560mm/22" | 4 | | | |

**Wiper
Solutions**

Easy Adaptor Guide

Step One: Identify the existing wiper arm (numbers 1 to 6)
 Step Two: Attach the necessary adaptors to the wiper arm

| Existing Wiper Arm Identification | | Adaptor Required | |
|---|---|--|--|
| <p>1.</p>  <p>STANDARD BAYONET</p> |  <p>A1</p> | | |
| <p>2.</p>  <p>HOOK TYPE</p> |  <p>A2-1 or B- 7x9mm</p> |  <p>6x8mm</p> | |
| <p>3.</p>  <p>PIN TYPE - SIDE MOUNT</p> |  <p>A2-1 & Pin 7x9mm</p> |  | |
| <p>4.</p>  <p>STANDARD - SIDE MOUNT</p> |  <p>A2-1 7x9mm</p> | | |
| <p>5.</p>  <p>SCREW BAYONET - SIDE MOUNT</p> |  <p>T2 Front & Side Views</p> | | |
| <p>6.</p> <p>PUSH-IN JAW TYPE</p> | <p>N/A</p> | | |

Heavy Duty Wiper Blades

**TRU
Vision**

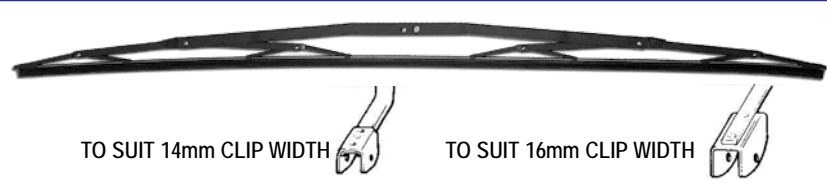
PART NUMBER & LENGTH

TC550A - 22" (55cm)
 TC600A - 24" (60cm)
 TC650A - 26" (65cm)
 TC700A - 28" (70cm)



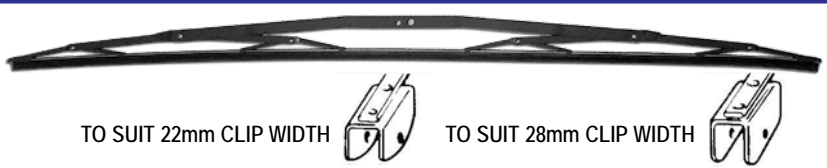
PART NUMBER & LENGTH

TC700 - 28" (70cm)



PART NUMBER & LENGTH

TC800 - 32" (80cm)
 TC900 - 36" (90cm)
 TC1000 - 40" (100cm)



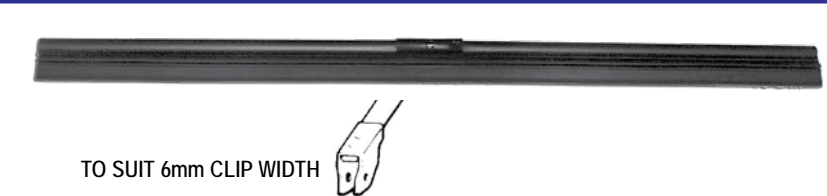
PART NUMBER & LENGTH

TCCS36 - 14" (36cm)
 TCCS41 - 16" (41cm)
 TCCS46 - 18" (46cm)
 TCCS51 - 20" (51cm)



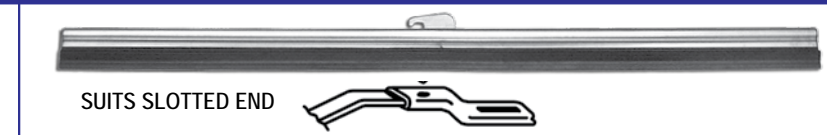
PART NUMBER & LENGTH

TCFS36 - 14" (36cm)
 TCFS41 - 16" (41cm)
 TCFS46 - 18" (46cm)
 TCFS51 - 20" (51cm)
 TCFS56 - 22" (56cm)
 TCFS61 - 24" (61cm)



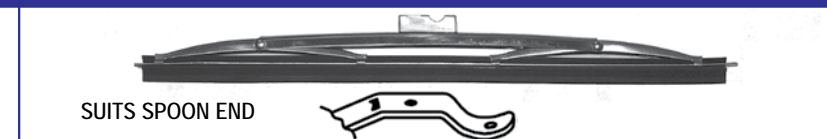
PART NUMBER & LENGTH

TE101 - 8" (220mm)
 TE101 - 12" (305mm)



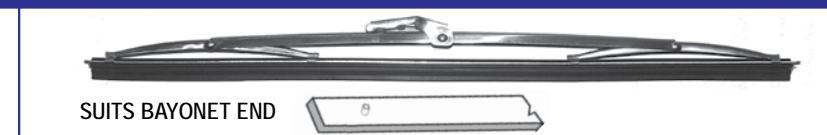
PART NUMBER & LENGTH

TE103 - 10" (250mm)
 TE103 - 12" (300mm)



PART NUMBER & LENGTH

TE260 - 10" (250mm)
 TE266 - 12" (305mm)
 TE266 - 14" (360mm)



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Tru Vision

WIPER BLADE REFILLS

The Tru-Vision range of Heavy Duty Wiper Blade Refills are designed to withstand the rigours of commercial and industrial usage, and come in the most common range of sizes from 22" (55cm) right through to the 40" (100cm) refill, and are manufactured to our exact specifications using 100% natural rubber.

TRU VISION WIPER BLADE REFILLS

| BLADE PART No: | BLADE LENGTH | METAL REFILL No: | PLASTIC REFILL No: | BLADE PART No: | BLADE LENGTH | METAL REFILL No: | PLASTIC REFILL No: |
|----------------|--------------|------------------|--------------------|----------------|--------------|------------------|--------------------|
| TC550A | 22" (55cm) | WRMN610 | WRPN610 | TC700 | 28" (70cm) | TC60100 | TV1000 |
| TC600A | 24" (60cm) | WRMN610 | WRPN610 | TC800 | 32" (80cm) | TC60100 | TV1000 |
| TC650A | 26" (65cm) | WRMN710 | WRPN710 | TC900 | 36" (90cm) | TC60100 | TV1000 |
| TC700A | 28" (70cm) | WRMN710 | WRPN710 | TC1000 | 40" (100cm) | TC60100 | TV1000 |

6MM, 7MM, 8MM and 6-8MM MULTI-FIT PLASTIC REFILLS

Plastic Back Wiper Blade Refills in Twin Pack or Bulk 20 Pack to suit most 6, 7 and 8mm Wiper Blades. 6-8mm Multi-Fit also available.

- Part No: WRPN610-20 Narrow Back (Box of 20)
- Part No: WRPN610 Narrow Back (Pair Pack)
- Part No: WRP7610-20 (Box 20)
- Part No: WRP7610 (Pair Pack)
- Part No: WRPW610-20 Wide Back (Box of 20)
- Part No: WRPW610 Wide Back (Pair Pack)
- Part No: WRPMF610-20 Multi-Fit (Box of 20)
- Part No: WRPMF610 Multi-Fit (Pair Pack)

6MM or 8MM METAL REFILLS

Metal Back Wiper Blade Refills in Twin Pack or Bulk 20 Pack to suit most 6mm and 8mm Wiper Blades.

- Part No: WRMN610-20 Narrow Back (Box of 20)
- Part No: WRMN610 Narrow Back (Pair Pack)
- Part No: WRMW610-20 Wide Back (Box of 20)
- Part No: WRMW610 Wide Back (Pair Pack)



Wiper Blade Refills

TRU Vision

8-9.5MM PLASTIC MULTI-FIT REFILLS

Universal Multi-Fit Truck and Bus Wiper Blade Refills - 40" (1000mm) are designed to fit both 8mm and 9.5mm wide wiper blades.

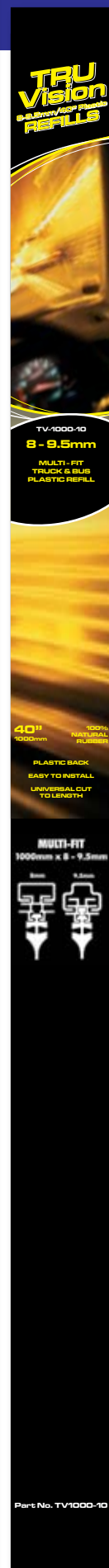
Part No: TV1000 (Pair Pack)
Part No: TV1000-10 (Box of 10)

8MM METAL AND PLASTIC REFILLS

Wiper Blade Refills in Twin Pack or Bulk 10 Pack to suit most 8mm Wiper Blades.

Available in either a Plastic or Metal Back.

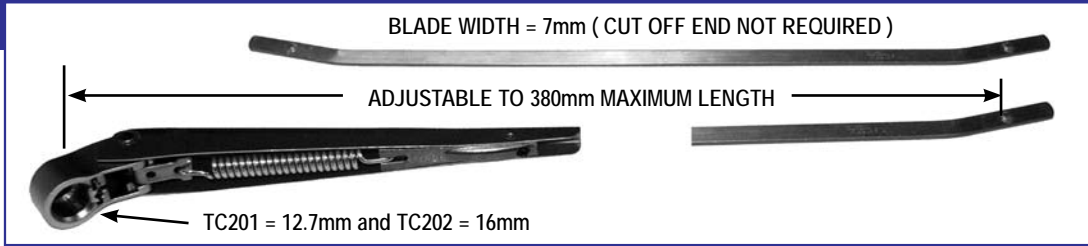
Part No: WRMN710 Metal Back (Pair Pack)
Part No: WRMN710-10 Metal Back (Box of 10)
Part No: WRPW710 Plastic Back (Pair Pack)
Part No: WRPW710-10 Plastic Back (Box of 10)



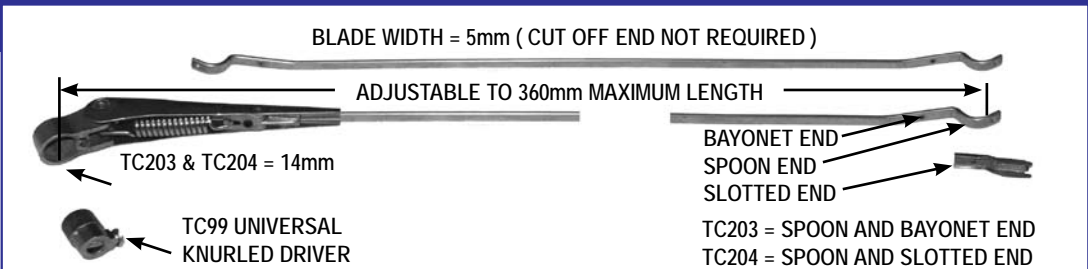
Wiper Solutions

Universal Adjustable Wiper Arms

PART No: TC201 and TC202



PART No: TC203 and TC204



PART No: TC035



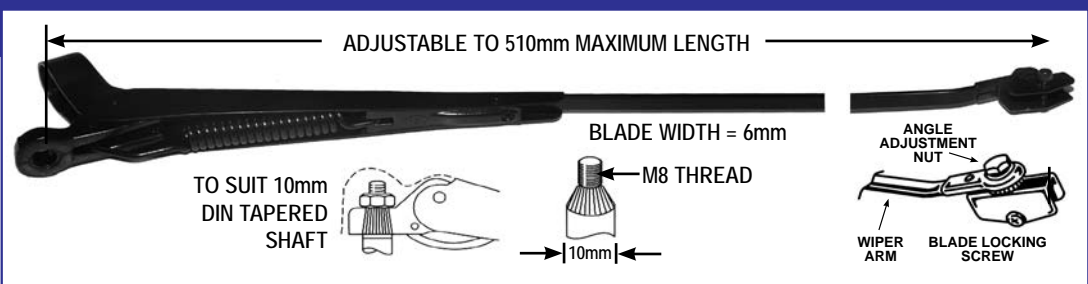
PART No: TC076



PART No: TC380



PART No: TC078

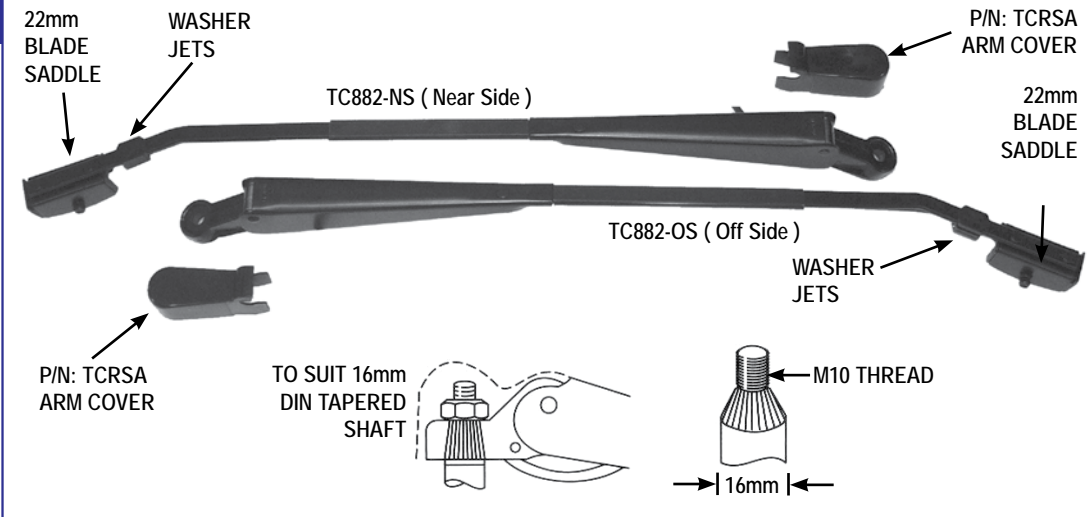


Heavy Duty Wiper Arms

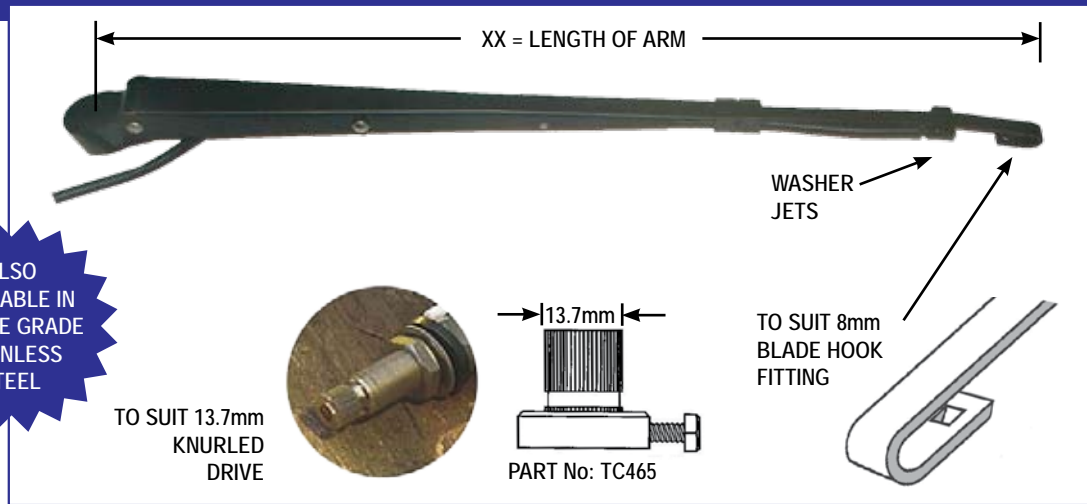
HEAVY DUTY WIPER ARMS

Quality Heavy Duty Single and Pantograph Wiper Arms, standard with washer jets for Bus and Industrial applications.

PART No: TC882-NS (Near Side) and TC882-OS (Off Side)



PART No: TC444-XX (where XX = Length of arm required in cm) - ARMS HAVE 100mm OF LENGTH ADJUSTABILITY TO SUIT TC1233 and TC2233 WIPER MOTORS



ALSO AVAILABLE IN MARINE GRADE STAINLESS STEEL

PART No: TC555-XX (where XX = Length of arm required in cm) - ARMS HAVE 100mm OF LENGTH ADJUSTABILITY TO SUIT TC1233 and TC2233 WIPER MOTORS

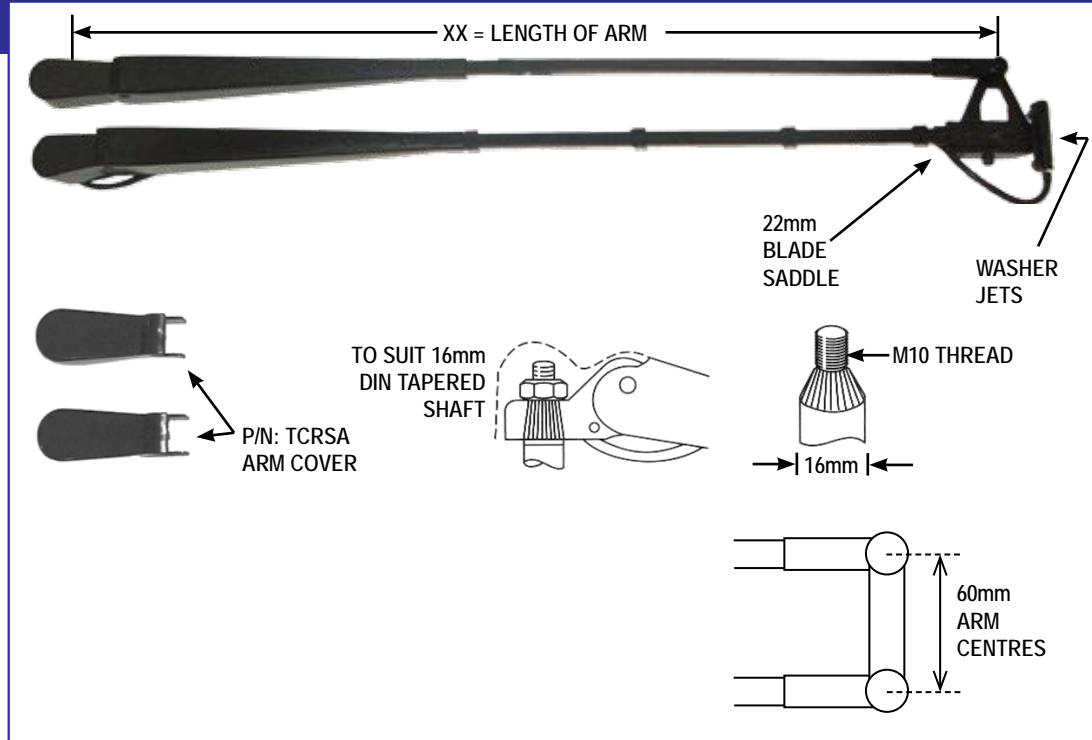


ALSO AVAILABLE IN MARINE GRADE STAINLESS STEEL

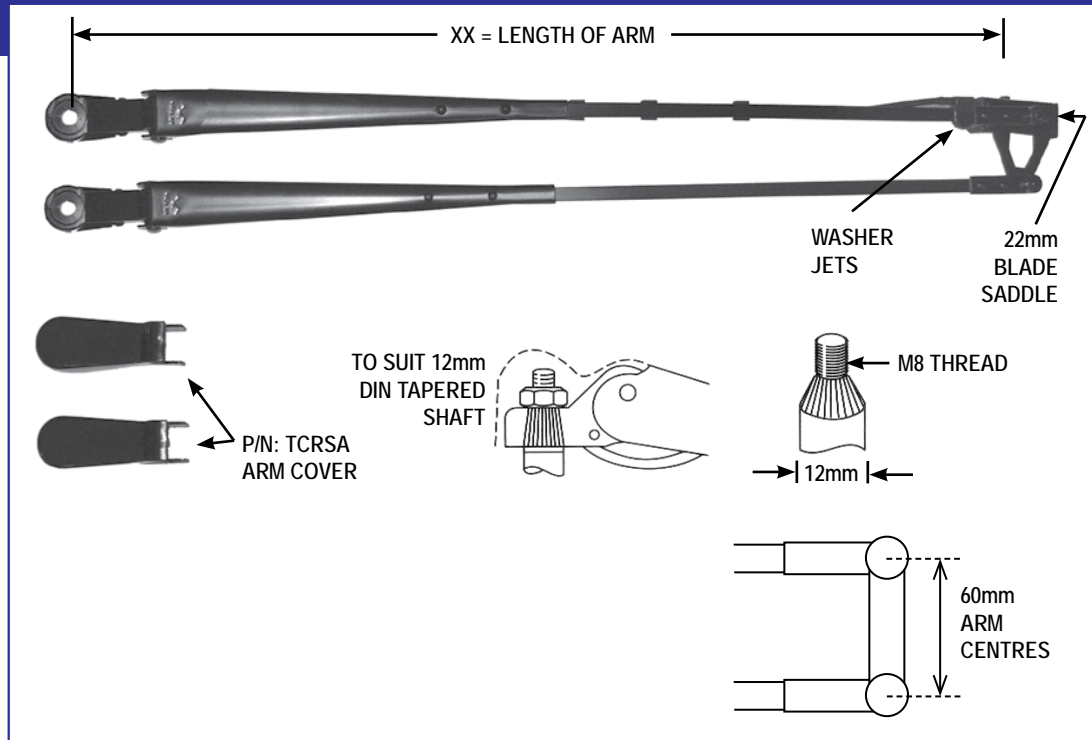


Heavy Duty Wiper Arms

PART No: TC881-XX (where XX = Length of arm required in cm)



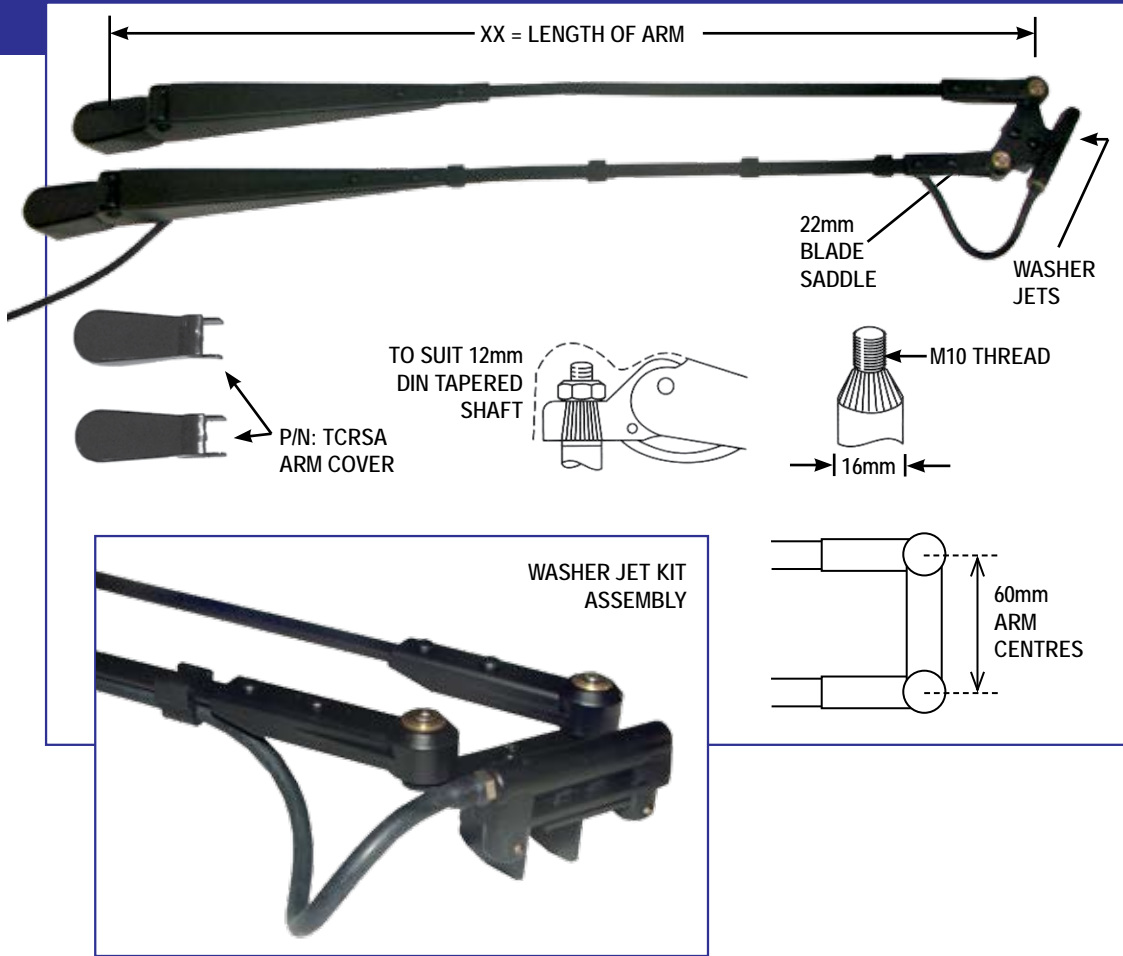
PART No: TC777-XX (where XX = Length of arm required in cm)



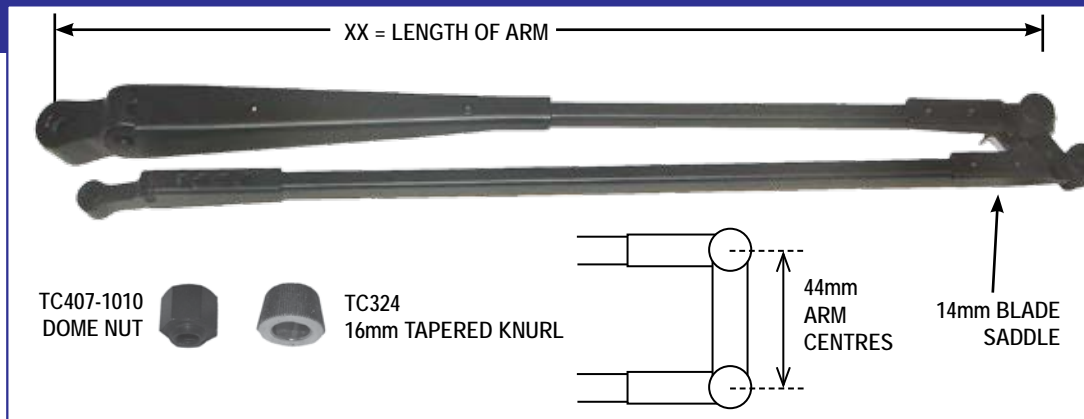
Heavy Duty Wiper Arms

**TRU
Vision**

PART No: TC666-XX (where XX = Length of arm required in cm)



PART No: 230 SERIES PANTOGRAPH WIPER ARMS - XX (where XX = Length of arm required in cm)



PART No: 230 SERIES RADIAL WIPER ARMS - XX (where XX = Length of arm required in cm)

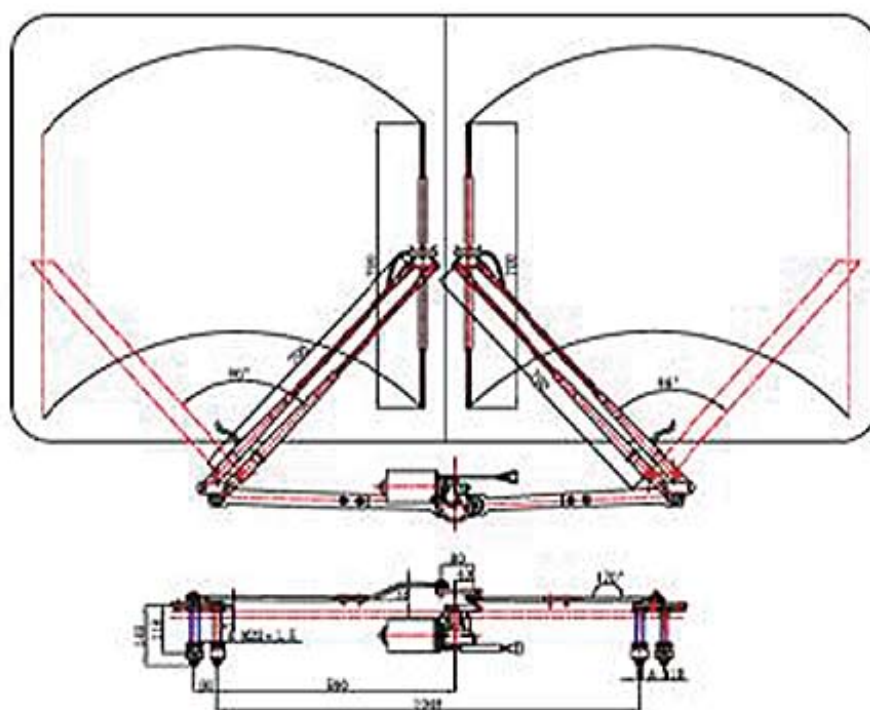


Wiper Solutions

Pantograph Wiper Systems

HEAVY DUTY PANTOGRAPH WIPER SYSTEMS

Quality Heavy Duty Pantograph Wiper Systems designed for long life use in the Bus and Industrial Vehicle market. These wiper systems come complete with heavy duty wiper motors, arms, adjustable tubular steel linkages, heavy duty anodised pivots and wet arm washer system.

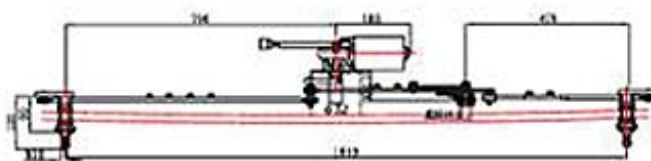
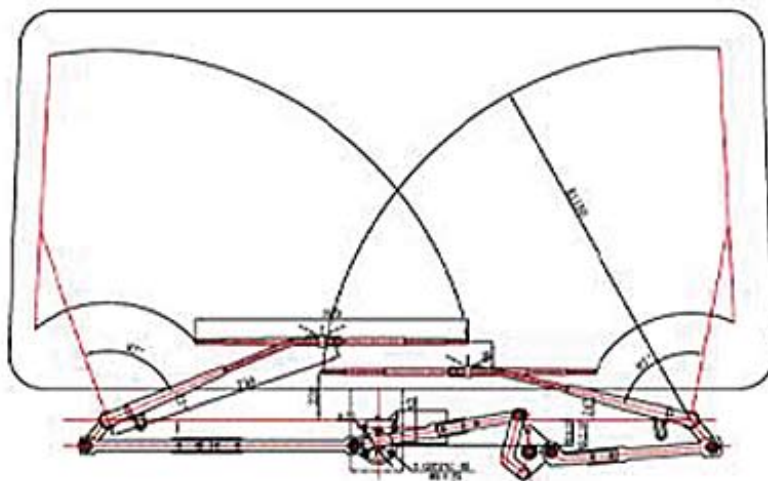


Opposing Wipe - Wiper Systems

TRU
Vision

HEAVY DUTY OPPOSING WIPE - WIPER SYSTEMS

Quality Heavy Duty 'Clap Hands' Wiper Systems designed for long life use in the Bus and Industrial Vehicle market. These wiper systems come complete with heavy duty wiper motors, arms, adjustable channel steel linkages, heavy duty anodised pivots and wet arm washer system.



Wiper
Solutions

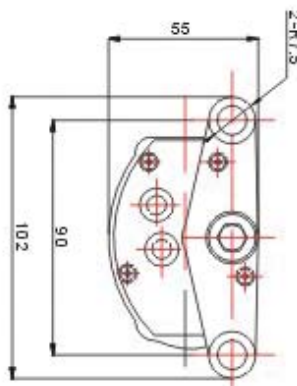
Small Screen Wiper Systems

SMALL SCREEN WIPER SYSTEMS

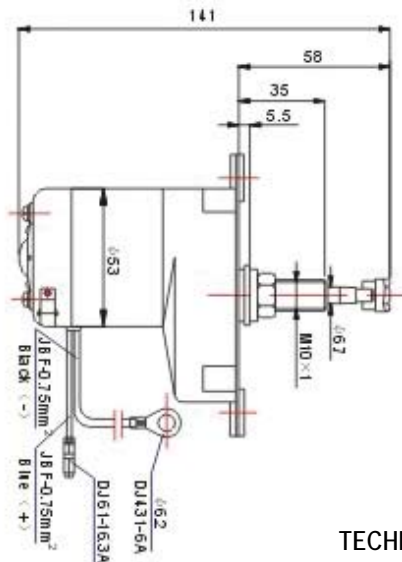
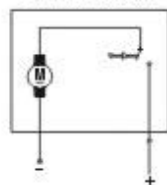
Quality Light Duty Wiper Systems designed for long life use in the Industrial and Marine market. These wiper systems come complete with wiper motors, arms, and blades. Also available in full Marine Grade Stainless Steel.

PART No: ZD1132 - 12 volt

PART No: ZD2132 - 24 volt



Circuit Diagram



TECHNICAL SPECIFICATIONS

| | |
|----------------------|-------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 3Nm |
| WORKING TORQUE | 0.6Nm |
| NOISE | < 40dB(A) |
| NO-LOAD SPEED | 30 ± 3 RPM |
| NO-LOAD CURRENT | < 4A (12V) < 22A (24V) |
| WORKING SPEED | 27 ± 3 RPM |
| WORKING CURRENT | < 5A (12V) < 2.5A (24V) |
| WIPER SPECIFICATIONS | BLADE 300mm ARM 350mm |
| WIPER ANGLE | 75 - 110° |

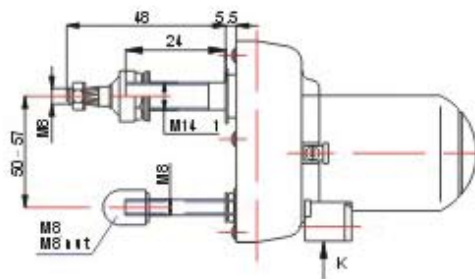
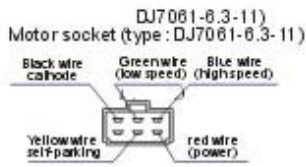
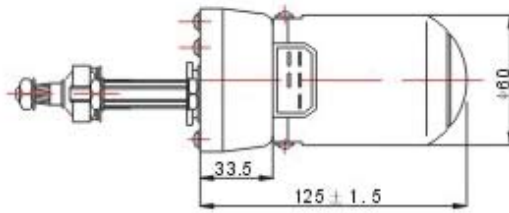
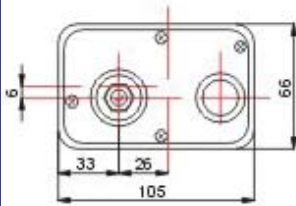
NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

Small Screen Wiper Systems

TRU
Vision

PART No: ZD1230 - 12 volt

PART No: ZD2230 - 24 volt



TECHNICAL SPECIFICATIONS

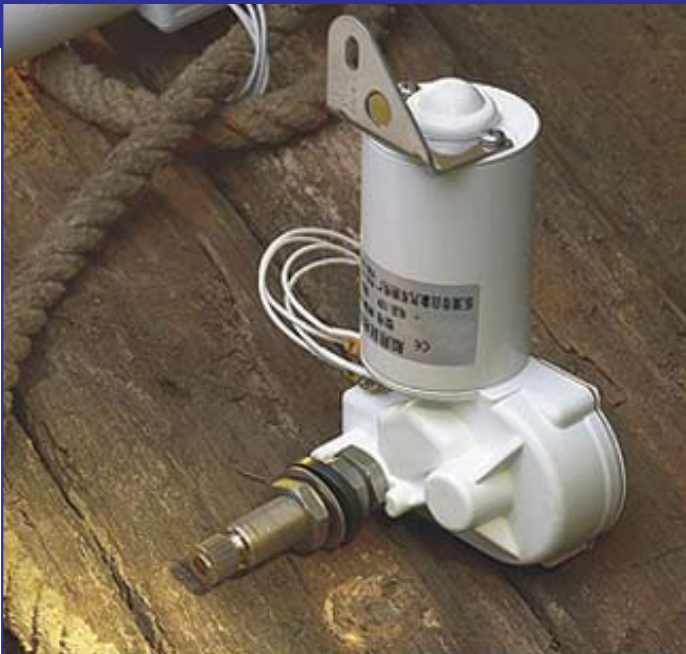
| | |
|--------------------------|---------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 9Nm |
| WORKING TORQUE | 1.5Nm |
| NOISE | < 50dB(A) |
| NO-LOAD SPEED (LOW) | 40 ± 5 RPM |
| NO-LOAD SPEED (HIGH) | 55 ± 7 RPM |
| NO-LOAD CURRENT (LOW) | < 1.2A (12V) < 0.6A (24V) |
| NO-LOAD CURRENT (HIGH) | < 2A (12V) < 1A (24V) |
| WORKING SPEED (LOW) | 35 ± 4 RPM |
| WORKING SPEED (HIGH) | 50 ± 5 RPM |
| WORKING CURRENT (LOW) | < 2.4A (12V) < 1.2A (24V) |
| WORKING CURRENT (HIGH) | < 3.6A (12V) < 1.8A (24V) |
| WIPER SPECIFICATIONS | BLADE 500mm ARM 500mm |
| WIPER ANGLE | 45 - 110° |

NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

Wiper
Solutions

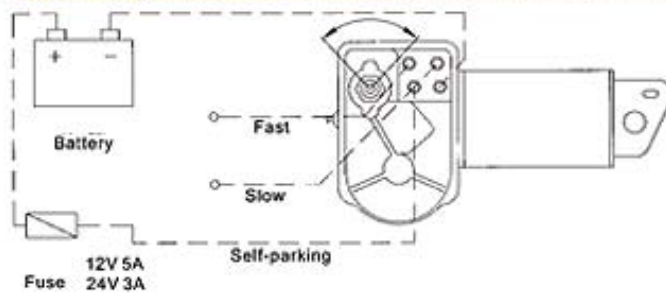
Small Screen Wiper Systems

PART No: TC1233 - 12 volt PART No: TC2233 - 24 volt



TO CHANGE WIPING ANGLE AND SELF PARKING POSITION THE MOTOR IS PRESET TO 110 ° WIPING ANGLE AND RIGHT SELF PARKING POSITION

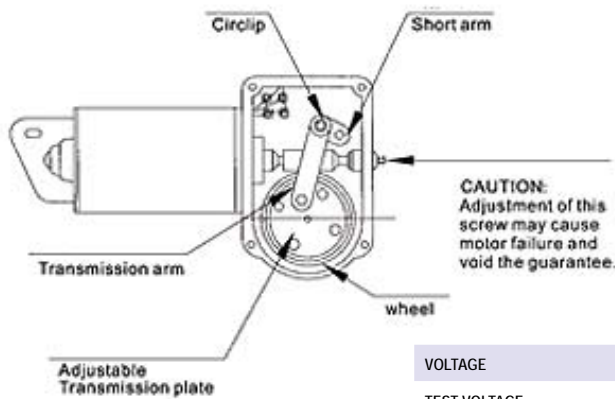
1. Remove cover plate.
2. Remove the circlip that connects shaft and transmission arm.
3. Lift off the transmission arm.
4. Unscrew the two screws that fasten the transmission plate.
5. Replace the transmission plate with the hole for the desired angle positioned directly over the grooves.



TO CHANGE TO RIGHT SELF PARKING POSITION OR LEFT PARKING POSITION

Change to left or right self parking position by positioning the transmission plate with the holes directly over the groove.

6. Reposition transmission arm and replace circlip back to the transmission plate. If lack of lubrication grease, add more.



TECHNICAL SPECIFICATIONS

| | |
|--------------------------|-------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 18Nm |
| WORKING TORQUE | 3.43Nm |
| NOISE | < 53dB(A) |
| NO-LOAD SPEED (LOW) | 35 ± 5 RPM |
| NO-LOAD SPEED (HIGH) | 45 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 2A (12V) < 1A (24V) |
| NO-LOAD CURRENT (HIGH) | < 3A (12V) < 1.5A (24V) |
| WORKING SPEED (LOW) | 30 ± 4 RPM |
| WORKING SPEED (HIGH) | 40 ± 4 RPM |
| WORKING CURRENT (LOW) | < 5A (12V) < 2.5A (24V) |
| WORKING CURRENT (HIGH) | < 7A (12V) < 3.5A (24V) |
| WIPER SPECIFICATIONS | BLADE 500mm ARM 500mm |
| WIPER ANGLE | 45 - 110° |

Large Screen Wiper Systems

TRU
Vision

LARGE SCREEN WIPER SYSTEMS

Quality Heavy Duty Pantograph Wiper Systems designed for long life use in the Bus and Industrial Vehicle market. These wiper systems come complete with heavy duty wiper motors, arms, steel linkages, heavy duty anodised pivots and wet arm washer system.

PART No: ZD1530 - 12 volt PART No: ZD1530 - 24 volt



| | |
|---|------------------------------|
| MOTOR MODEL | ZD1530B-TM/2530B-TM |
| NORMAL VOLTAGE / WATT | 12 VOLT / 24 VOLT 50 Watt |
| WATTAGE / TORQUE | 50W / 36Nm |
| WIPER SPECIFICATION (BLADE) X (ARM) | 500-600 X 600-700mm |
| ANGLE OF WIPING | 50 - 90 DEGREES |
| FREQUENCY OF WIPING | 35 - 45 TIMES / PER MINUTE |
| OPTIONAL WASHER KIT | XD 105/205 12 VOLT / 24 VOLT |

NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

Wiper
Solutions

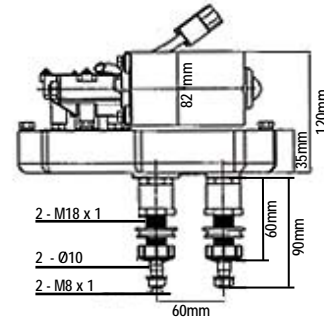
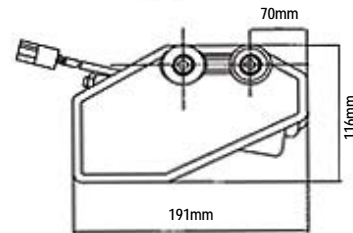
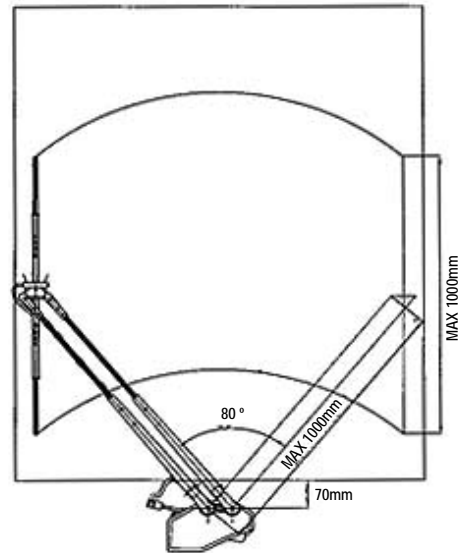
Marine Large Screen Wiper Systems

MARINE LARGE SCREEN WIPER SYSTEMS

Quality Heavy Duty Pantograph Wiper Systems designed for long life use in the Marine and Heavy Industrial Vehicle market. These wiper systems come complete with heavy duty wiper motors, arms, Stainless Steel Linkages, heavy duty Stainless Steel Pivots and wet arm washer system.

PART No: WEM1930-TM-60MM - 12 volt

PART No: WEM2930-TM-60MM - 24 volt



TECHNICAL SPECIFICATIONS

| | |
|--------------------------|---------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 65Nm |
| WORKING TORQUE | 12Nm |
| NOISE | < 62dB(A) |
| NO-LOAD SPEED (LOW) | 35 ± 5 RPM |
| NO-LOAD SPEED (HIGH) | 45 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 2A (12V) < 1A (24V) |
| NO-LOAD CURRENT (HIGH) | < 3A (12V) < 1.5A (24V) |
| WORKING SPEED (LOW) | 30 ± 5 RPM |
| WORKING SPEED (HIGH) | 45 ± 5 RPM |
| WORKING CURRENT (LOW) | < 10A (12V) < 5A (24V) |
| WORKING CURRENT (HIGH) | < 13 A (12V) < 6.5A (24V) |
| WIPER SPECIFICATIONS | BLADE 1000mm ARM 1000mm |
| WIPER ANGLE | 45 - 110° |

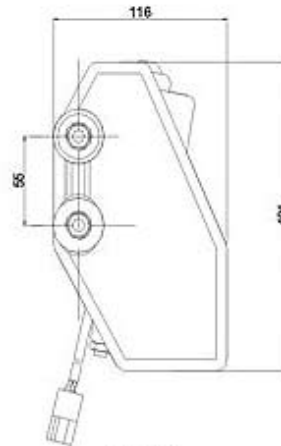
NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

Marine Large Screen Wiper Systems

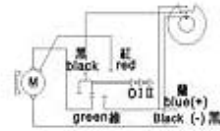
TRU
Vision

PART No: WEM1032 -TM-55MM - 12 volt

PART No: WEM2032-TM-55MM - 24 volt

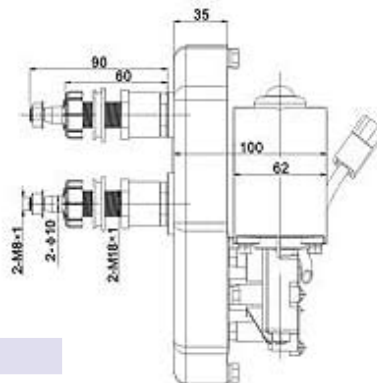
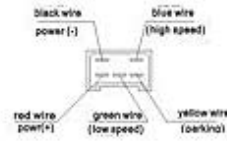


Circuit Diagram



Note: 0 is parking
I is low speed
II is high speed

Motor socket



TECHNICAL SPECIFICATIONS

| | |
|--------------------------|------------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 24Nm |
| WORKING TORQUE | 4Nm |
| NOISE | < 55dB(A) |
| NO-LOAD SPEED (LOW) | 33 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 54 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 1.5A (12V) < A0.75 (24V) |
| NO-LOAD CURRENT (HIGH) | < 2.5 A (12V) < 1.75A (24V) |
| WORKING SPEED (LOW) | 32 ± 3 RPM |
| WORKING SPEED (HIGH) | 48 ± 5 RPM |
| WORKING CURRENT (LOW) | < 4A (12V) < 2A (24V) |
| WORKING CURRENT (HIGH) | < 5 A (12V) < 2.5A (24V) |
| WIPER SPECIFICATIONS | BLADE 550mm DOUBLE ARM 600mm |
| WIPER ANGLE | 45 - 90° |

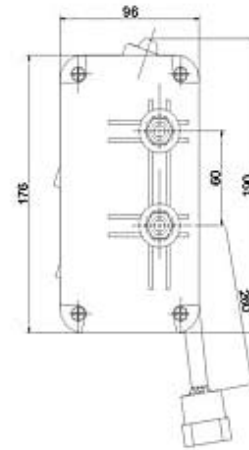
NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

Wiper
Solutions

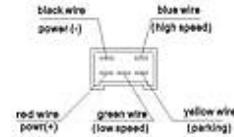
Marine Large Screen Wiper Systems

PART No: WEM1530-TM-60MM - 12 volt

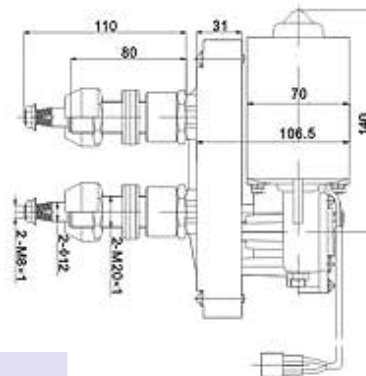
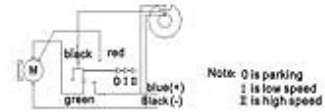
PART No: WEM2530-TM-60MM - 24 volt



Motor socket



Circuit Diagram



TECHNICAL SPECIFICATIONS

| | |
|--------------------------|------------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 30Nm |
| WORKING TORQUE | 5Nm |
| NOISE | < 53dB(A) |
| NO-LOAD SPEED (LOW) | 37 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 50 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 3A (12V) < A1.5 (24V) |
| NO-LOAD CURRENT (HIGH) | < 4 A (12V) < 2A (24V) |
| WORKING SPEED (LOW) | 33 ± 3 RPM |
| WORKING SPEED (HIGH) | 48 ± 5 RPM |
| WORKING CURRENT (LOW) | < 7A (12V) < 3.5A (24V) |
| WORKING CURRENT (HIGH) | < 9 A (12V) < 4.5A (24V) |
| WIPER SPECIFICATIONS | BLADE 550mm DOUBLE ARM 600mm |
| WIPER ANGLE | 45 - 90° |

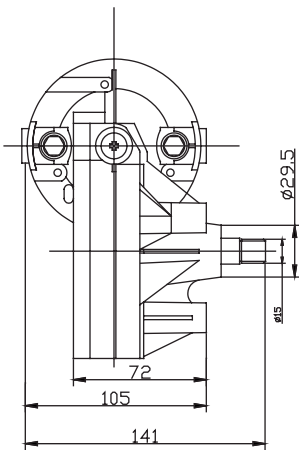
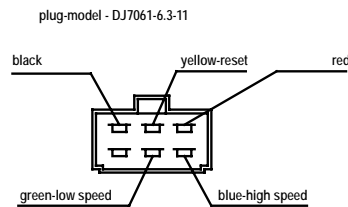
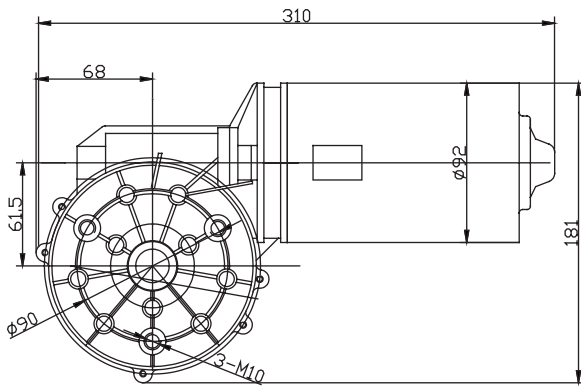
NOTE: Wiper specification, angle, output specification can be designed to suit customer request.

DC Electric Wiper Motors

TRU
Vision

PART No: TC180 - 12 volt

PART No: TC180 - 24 volt



TECHNICAL SPECIFICATIONS

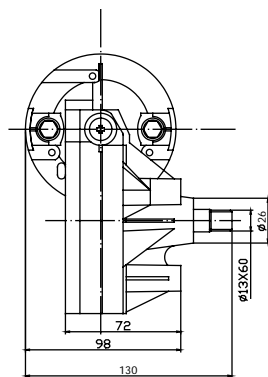
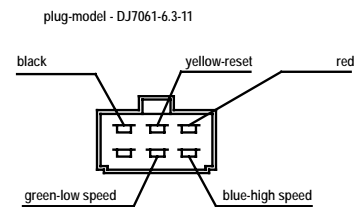
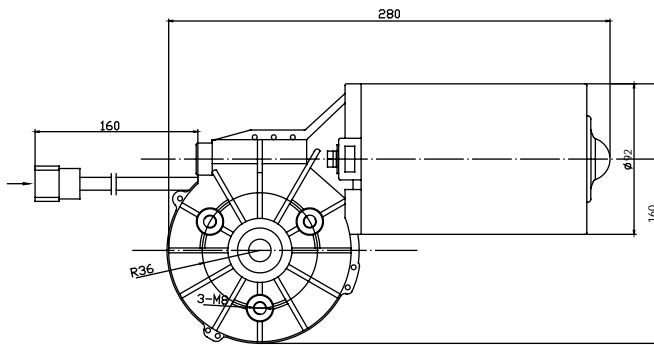
| | |
|--------------------------|--------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 102Nm |
| WORKING TORQUE | 17Nm |
| NOISE | < 53dB(A) |
| NO-LOAD SPEED (LOW) | 30 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 50 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 5A (12V) < A2.5 (24V) |
| NO-LOAD CURRENT (HIGH) | < 10 A (12V) < 5A (24V) |
| WORKING SPEED (LOW) | 28 ± 3 RPM |
| WORKING SPEED (HIGH) | 45 ± 5 RPM |
| WORKING CURRENT (LOW) | < 15A (12V) < 7.5A (24V) |
| WORKING CURRENT (HIGH) | < 19A (12V) < 9.5A (24V) |

Wiper
Solutions

DC Electric Wiper Motors

PART No: TC150 - 12 volt

PART No: TC150 - 24 volt



TECHNICAL SPECIFICATIONS

| | |
|--------------------------|------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 85Nm |
| WORKING TORQUE | 17Nm |
| NOISE | < 53dB(A) |
| NO-LOAD SPEED (LOW) | 30 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 50 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 4A (12V) < 2A (24V) |
| NO-LOAD CURRENT (HIGH) | < 8A (12V) < 4A (24V) |
| WORKING SPEED (LOW) | 28 ± 3 RPM |
| WORKING SPEED (HIGH) | 45 ± 5 RPM |
| WORKING CURRENT (LOW) | < 14A (12V) < 7A (24V) |
| WORKING CURRENT (HIGH) | < 18A (12V) < 9A (24V) |

DC Electric Wiper Motors

**TRU
Vision**

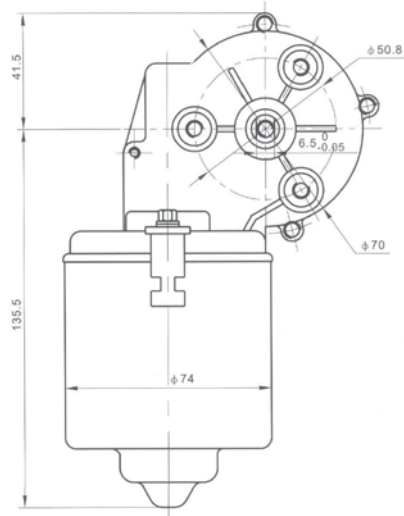
PART No: 230J652 - 12 volt

PART No: 230J661 - 24 volt

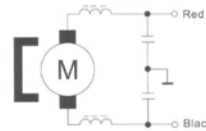


TECHNICAL SPECIFICATIONS

| | |
|--------------------------|------------------------|
| VOLTAGE | 12 VOLT / 24 VOLT |
| TEST VOLTAGE | 13.5 VOLT / 27 VOLT |
| BRAKE TORQUE | 30Nm |
| WORKING TORQUE | 8Nm |
| NOISE | 55dB(A) |
| NO-LOAD SPEED (LOW) | 30 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 50 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 3A (12V) < 2A (24V) |
| NO-LOAD CURRENT (HIGH) | < 6A (12V) < 4A (24V) |
| WORKING SPEED (LOW) | 28 ± 3 RPM |
| WORKING SPEED (HIGH) | 45 ± 5 RPM |
| WORKING CURRENT (LOW) | < 6A (12V) < 4A (24V) |
| WORKING CURRENT (HIGH) | < 10A (12V) < 6A (24V) |



Circuit Diagram

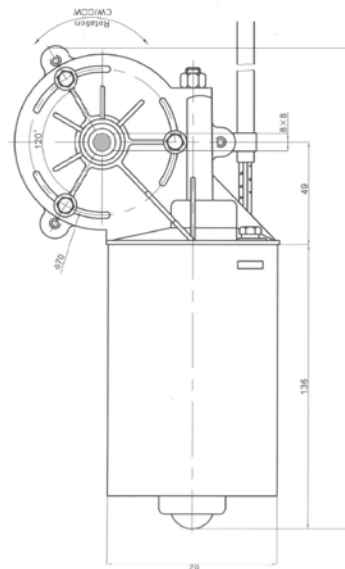


PART No: TC325 - 24 volt - REPLACEMENT FOR TRICO Part No: 75325

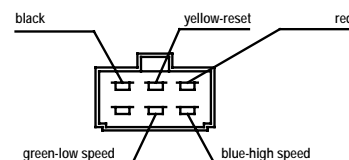


TECHNICAL SPECIFICATIONS

| | |
|--------------------------|------------|
| VOLTAGE | 24 VOLT |
| TEST VOLTAGE | 27 VOLT |
| BRAKE TORQUE | 65Nm |
| WORKING TORQUE | 12Nm |
| NOISE | 55dB(A) |
| NO-LOAD SPEED (LOW) | 30 ± 3 RPM |
| NO-LOAD SPEED (HIGH) | 50 ± 5 RPM |
| NO-LOAD CURRENT (LOW) | < 2A (24V) |
| NO-LOAD CURRENT (HIGH) | < 4A (24V) |
| WORKING SPEED (LOW) | 28 ± 3 RPM |
| WORKING SPEED (HIGH) | 45 ± 5 RPM |
| WORKING CURRENT (LOW) | < 7A (24V) |
| WORKING CURRENT (HIGH) | < 9A (24V) |



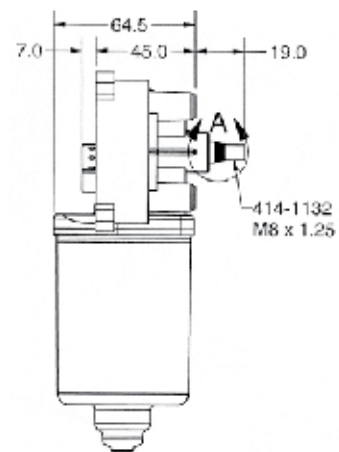
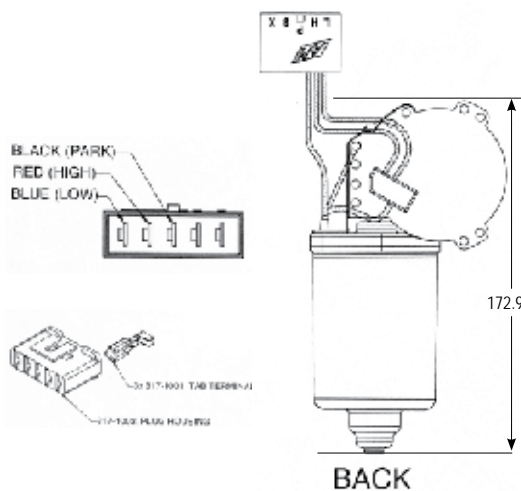
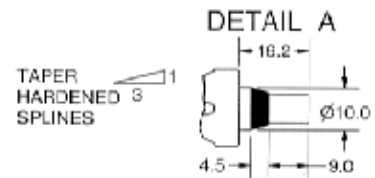
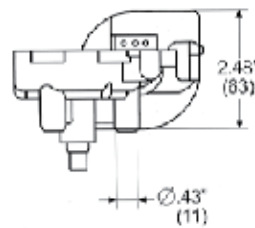
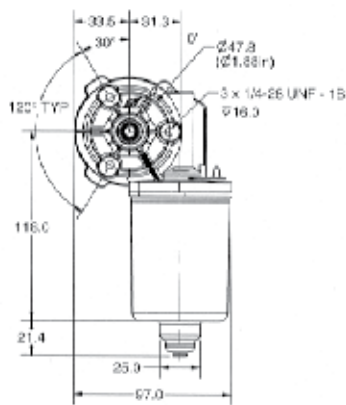
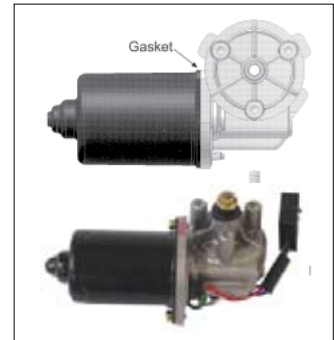
plug-model - DJ7061-6.3-11



**Wiper
Solutions**

WIPER MOTOR

Product Type: Wiper Motor left hand
Part numbers: 230-J652 12 V, coast to park
 230-J661 24V, coast to park.
Make: Tru Vision
Application: Automotive and Industrial
Product Description: 30Nm
 12v or 24v DC
 Coast to park (Dynamic Park - Special Order)
 Can be converted to above earth
 Low or high side switched
 Water-resistant motor and plug connectors
 Compact size will retrofit into existing space
 RFI suppression standard
 SAE durability tested



BACK

230 Series Wiper Systems

**TRU
Vision**

UNITIZED ASSEMBLY

Product Type: Right Hand 230 Series Unitized Assembly

Kit No?s:

12 Volt - 230 2013

24 Volt - 230 2012

Included in Kit -

Motor + M8 Output Shaft Nut

3 x Motor Bolts

LH Motor Bracket P/n 230J662

Link P/n 3071022

Drive Arm 26.8mm P/n 308-1057

2 Clips + washer

Make: Tru Vision

Application: Automotive and Industrial

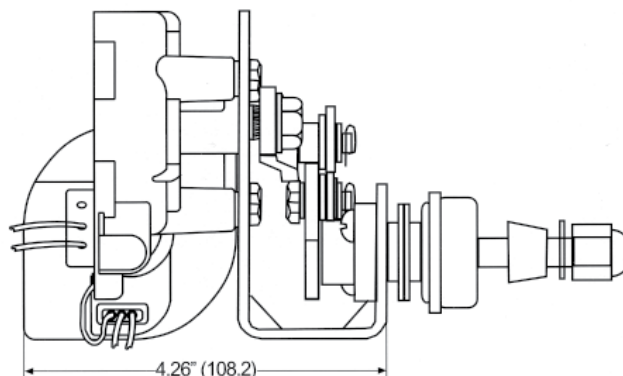
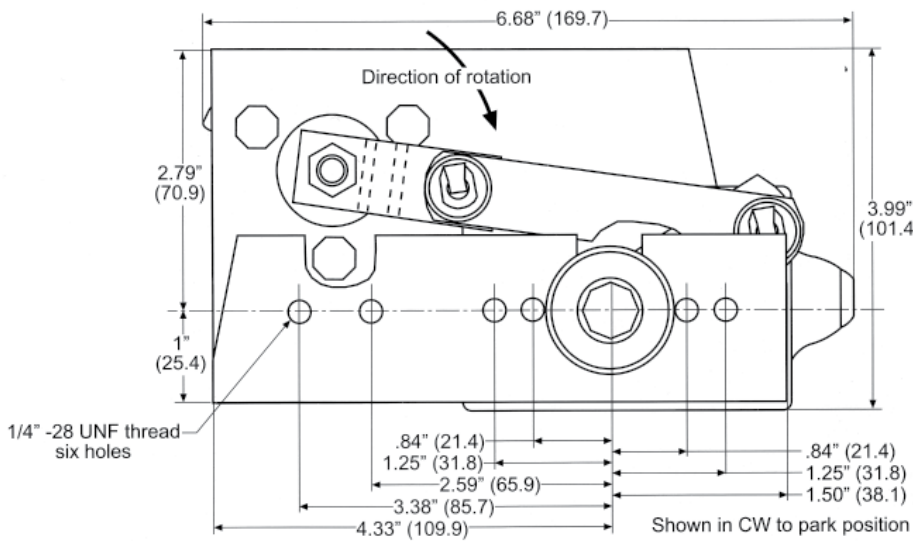
Product Description: Wipe angles from 36 to 127 degrees

For arms and blades up to 28" (700mm)

Can be configured in radial or pantograph arms

12 and 24 volt systems available

Coast to park (dynamic parking special order)



**Wiper
Solutions**

230 Series Wiper Systems

UNITIZED MOTOR ASSEMBLY - LINK AND DRIVE ARM

Product Type: 230 series unitized motor assembly, left hand and right hand

Make: Tru Vision

Application: Automotive and Industrial

Product Description: Pivot shafts to suit 230 Series

Heavy duty stainless steel exterior hardware and inner pivot shaft

3/4" diameter

304-1201 A = 5/8" (16)

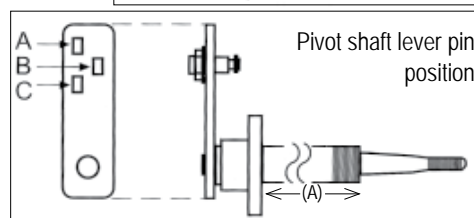
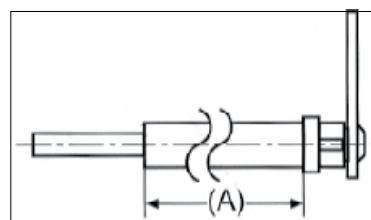
304-1202 A = 1" (25)

304-1203 A = 1 1/4" (32)

304-1204 A = 2" (51)

304-1205 A = 2 1/2" (64)

304-1206 A = 3" (76)



Pantograph

| Wipe Angle Range* | Shaft Lever Pin Position | Connecting Link** | Drive Arm*** |
|-------------------|--------------------------|-------------------|--------------|
| below 60 | B | 307-1005 | 308-1005 |
| 60-62 | A | 307-1072 | 308-1053 |
| 62-65 | A | 307-1022 | 308-1053 |
| 68-72 | A | 307-1022 | 308-1051 |
| 70-74 | B | 307-1037 | 308-1054 |
| 75-79 | B | 307-1072 | 308-1053 |
| 80-85 | A | 307-1022 | 308-1048 |
| 85-91 | B | 307-1022 | 308-1051 |
| 93-99 | A | 307-1022 | 308-1050 |
| 97-103 | A | 307-1022 | 308-1052 |
| 100-105 | A | 307-1072 | 308-1055 |

Radial

| Wipe Angle Range* | Shaft Lever Pin Position | Connecting Link** | Drive Arm*** |
|-------------------|--------------------------|-------------------|--------------|
| 90-94 | A | 307-1022 | 308-1050 |
| 95-99 | A | 307-1022 | 308-1052 |
| 101-104 | A | 307-1072 | 308-1055 |
| 112-118 | C | 307-1022 | 308-1051 |
| 119-125 | B | 307-1022 | 308-1049 |
| 130-136 | B | 307-1022 | 308-1052 |

* Wipe angle varies with arm and blade combination and low or high speed.

(Pantograph range determined with 22" arm/ 20" blade, 26" arm/ 24" blade, and 28" arm/ 28" blade combinations) (Radial range determined with 18" arm/ 18" blade, 22" arm/ 20" blade, and 26" arm/ 24" blade combinations)

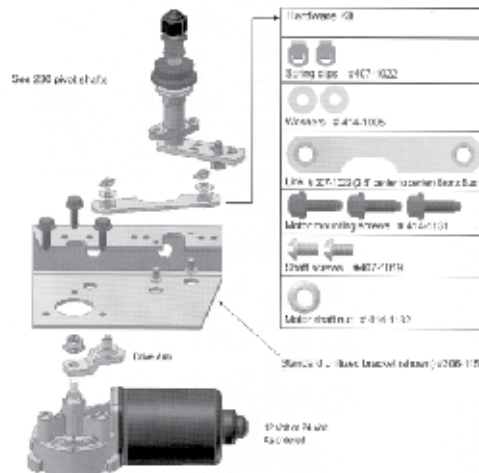
230 Series Wiper Systems

**TRU
Vision**

HARDWARE AND PIVOT SHAFT

Product Type: 230 Series Hardware
Make: Tru Vision
Application: Automotive and Industrial

Product Description: All shown hardware is available individually or in bulk quantities
 Also see 230 components pages for additional hardware components
Break down of Kits
Part no. 230 2012 24 V
Part no. 230 2013 12 V

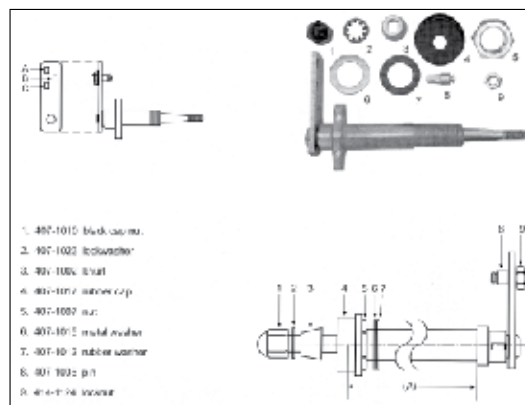


Product Type: 230 Series Pin Type Pivot Shafts
Category: Tru Vision
Application: Automotive and Industrial

- Product Description:**
- 11/16" (.68", 17.3mm) shaft body diameters fit into 3/4" bulkhead hole
 - Length determined by "A" reference dimension of shaft body
 - Three pin slots for different sweep angles (A, B, and C)
 - All hardware numbered below included in a shaft assembly order and available individually
 - Stainless steel shaft and components for corrosive environments

Complete shaft assemblies:

- 304-1200 5/8" (16)
- 304-1201 1" (25)
- 304-1202 1 1/4" (32)
- 304-1203 2" (51)
- 304-1204 2 1/2" (64)
- 304-1205 3" (76)



To identify a shaft, measure the pivot body from the base of the mounting flange to the end that protrudes to the wiper arm attachment (A).
 When considering a new application, this section must pass through the bulkhead and allow mounting with item #5 nut. Items #8 and #9 can be mounted as shown or inverted for different applications.

**Wiper
Solutions**

PIN LINKS AND DRIVE ARMS

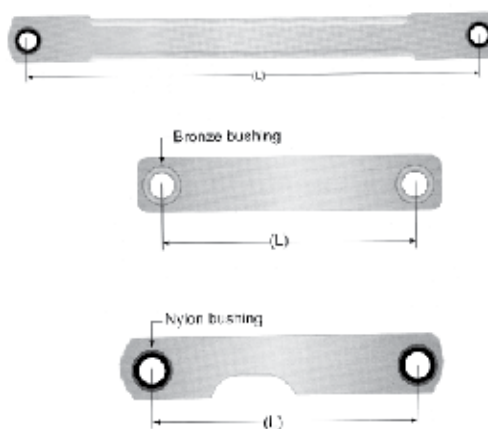
Product Type: 230 SERIES PIN TYPE LINKS

Make: Tru Vision

Application: Automotive and Industrial

- Product Description:**
- Standard for unitized and multiple pivot wiper systems
 - Standard nylon bushings
 - Bronze bushings for heavy duty applications
 - Standard and custom lengths available
 - All bushings .31" (7.9) inside diameter
 - Typical styles shown below for identification when ordering, please list the (L) reference dimension

| Center to center length | Tru Vision part # |
|-------------------------|-------------------|
| 3.09" (78.5) | 307-1072 |
| 3.38" (85.9) | 307-1022 |
| 5.75" (146.1) | 307-1080 |
| 8.85" (224.8) | 307-1074 |
| 12.8" (325.1) | 307-1076 |
| 14.64" (371.9) | 307-1073 |
| 19" (482.6) | 307-1079 |
| 19.89" (505.2) | 307-1075 |
| 21" (533.4) | 307-1078 |
| 22.5" (571.5) | 307-1082 |
| 27.5" (698.5) | 307-1081 |
| 32.25" (819.2) | 307-1077 |



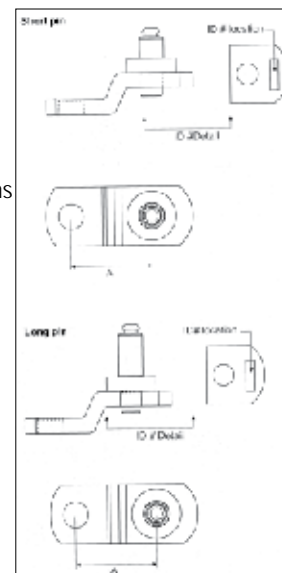
Product Type: 230 SERIES PIN TYPE DRIVE ARMS

Make: Tru Vision

Application: Automotive and Industrial

- Product Description:** Available in a variety of sizes for several wipe angles
Short pin for single link systems, long pin for double link systems

| Part # | Dimension A | ID # (mm) | Part # | Dimension A | ID # (mm) |
|----------|-------------|-----------|----------|-------------|-----------|
| 308-1048 | 1.185" | 30.1 | 308-1056 | 1.312" | 33.3 |
| 308-1049 | 1.303" | 33.1 | 308-1057 | 1.230" | 31.2 |
| 308-1050 | 1.335" | 33.9 | 308-1058 | 1.135" | 28.8 |
| 308-1051 | 1.057" | 26.8 | 308-1059 | 1.185" | 30.1 |
| 308-1052 | 1.380" | 35.1 | 308-1060 | 1.303" | 33.1 |
| 308-1053 | .950" | 24.2 | 308-1061 | 1.335" | 33.9 |
| 308-1054 | .875" | 22.2 | 308-1062 | 1.057" | 26.8 |
| 308-1055 | 1.460" | 37.1 | 308-1063 | 1.380" | 35.1 |
| | | | 308-1064 | .950" | 24.2 |
| | | | 308-1065 | .875" | 22.2 |
| | | | 308-1066 | 1.460" | 37.1 |



230 Series Wiper Systems

TRU
Vision

DRIVE ARMS

Product Type: 230 series adjustable drive arm kit - Available sweep patterns of 35 to 70 degrees
Make: Tru Vision
Application: Automotive and Industrial

Installation Instructions:

1. Assemble the wiper motor and pivot shaft assemblies onto the unitized wiper motor bracket; check to be sure the pin in the pivot shaft is in the "B" position. (See illustration)

2. Using a 12 volt power supply, apply power to the motor terminals to operate low (L), high (H), and park (P).

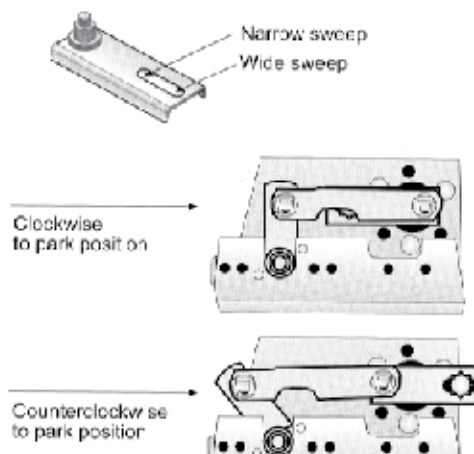
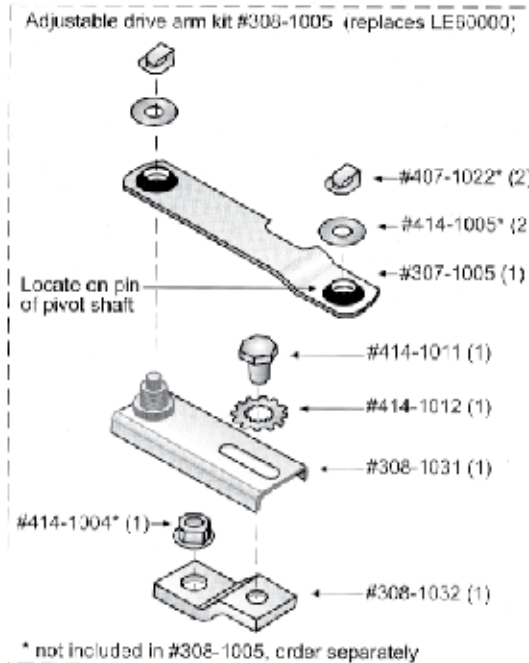
3. After parking the motor, install drive arm item # 308-1032 onto the motor shaft, align the park position (clockwise or counterclockwise to park) as shown in illustration. Preliminarily set # 308-1031 and # 307-1005 on # 308-1032 to help alignment. Retain # 308-1032 with a 12" adjustable wrench and tighten # 414-1004 nut to 305 inch pounds (25 ft. pounds).

4. Install the slide # 308-1031 onto the drive arm with # 414-1011 lockwasher and # 414-1012 bolt. Tighten the bolt at an arbitrary position on the slide. The final adjustment of the slide will be made later.

5. Grease the pins on the slide and pivot shaft with standard automotive grease. Place # 307-1005 link over the pins and install # 414-1005 washer and # 407-1022 spring clip on both pins to secure the link.

6. Install the wiper motor assembly onto the vehicle, attaching the wiper arm and blade to the pivot shaft. Tighten the wiper arm nut (not shown) to 7 ft. pounds.

7. Operate the wiper motor in low and high speeds. Using a garden hose, spray water on the windshield to simulate wet conditions. Make sure the wiper blade does not come into contact with windshield moulding. Adjust the sweep of the wiper arm by loosening # 414-1011 and sliding # 308-1031 (See illustration). An adjustment of the wiper arm may also be necessary. Retighten the bolt and run the system again, repeat step until desired pattern is achieved.



Wiper
Solutions

230 Series Wiper Systems

PANTOGRAPH ADAPTORS

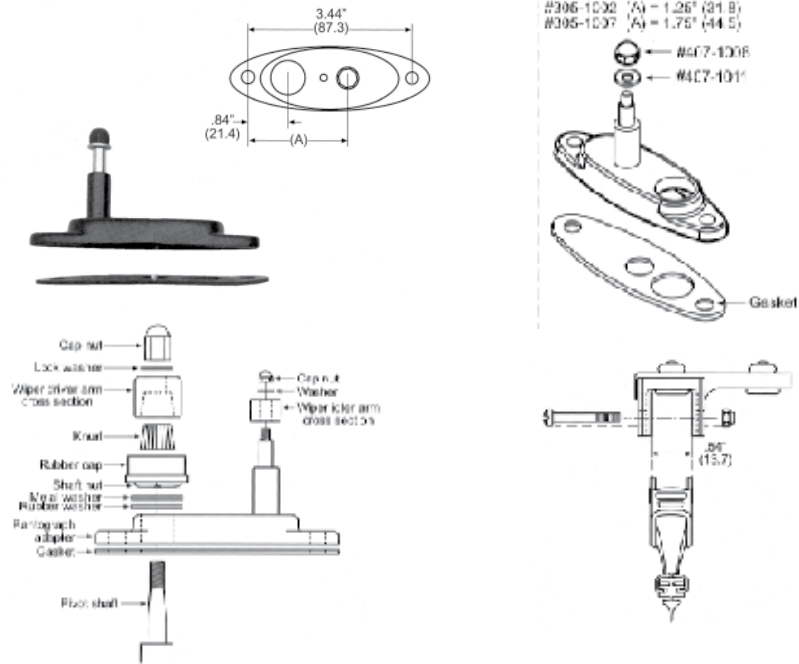
Product Type: PANTOGRAPH ADAPTORS

Make: Tru Vision

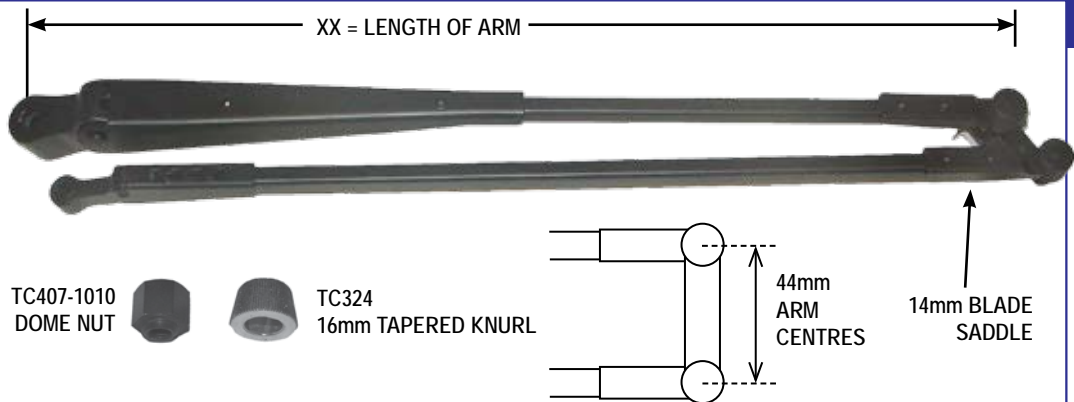
Application: Automotive and Industrial

Allow use of a pantograph wiper arm (double arm) on the 230 series unitized assembly

Fits 11/16" diameter pivot shafts



PART No: 230 SERIES PANTOGRAPH WIPER ARMS - XX (where XX = Length of arm required in cm)



PART No: 230 SERIES RADIAL WIPER ARMS - XX (where XX = Length of arm required in cm)



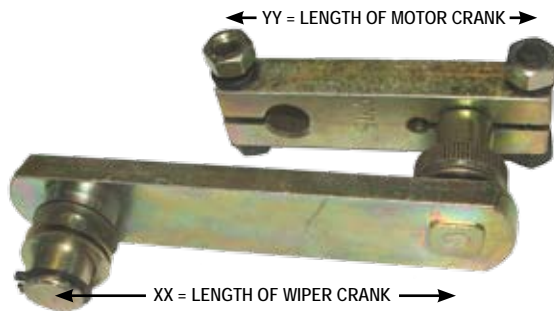
Pivots and Linkages

PART No: TC458-XX Adjustable Linkage Series (where XX = Length of linkage required in cm)

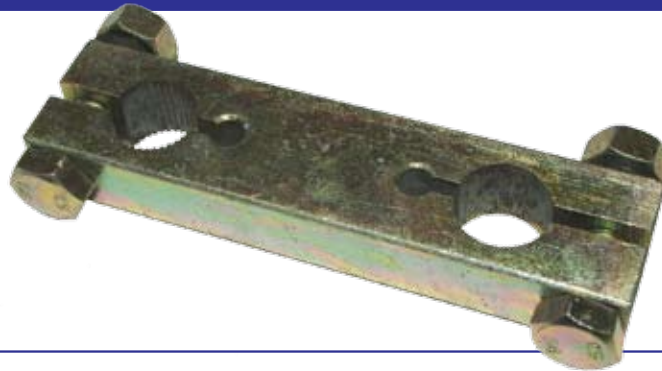


Adjustable annodised tubular construction with bronze end bushes.

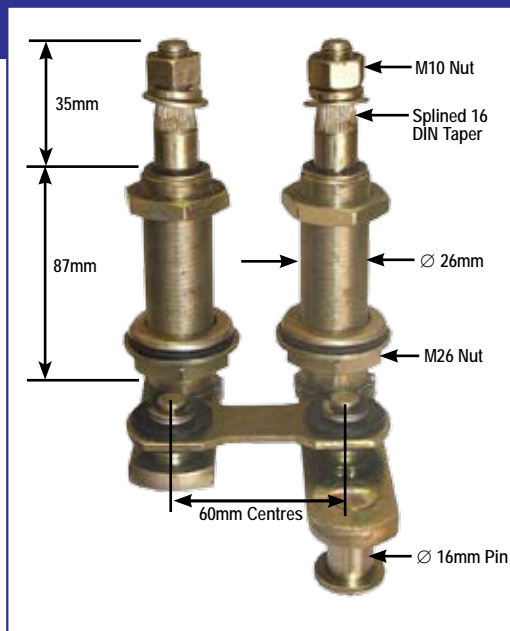
PART No: TC459-XX-YY Crank Assembly series
(where XX = Length of wiper crank required in cm and YY = Length of motor crank required in cm)



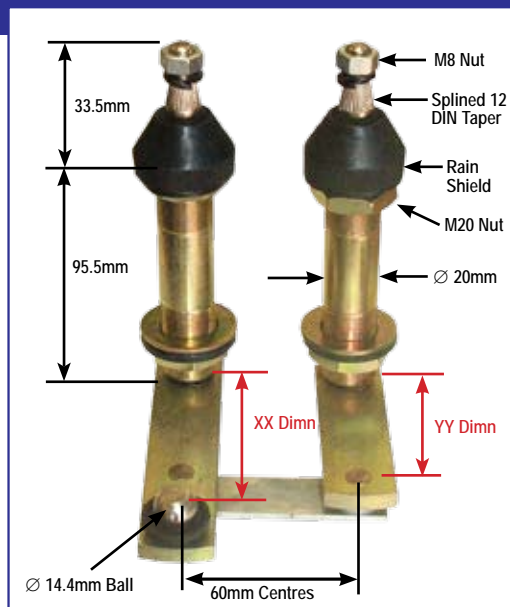
PART No: TC599 Crank Series Custom Made



PART No: TC456 and TC455 Single and Double Pivots



PART No: TC456-XX-YY Pivot
REPLACEMENT FOR TRICO Part No: 75353-XX-YY



Pivots available with various length shafts in either 12 or 16 DIN tapered shafts

Washer Bottles and Switches

WASHER BOTTLES

Quality Heavy Duty Plastic Washer Bottles are available with either a 12 volt or 24 volt built in washer motor. All bottles come complete with anodised fitting brackets.

PART No: TCXD-2-12volt

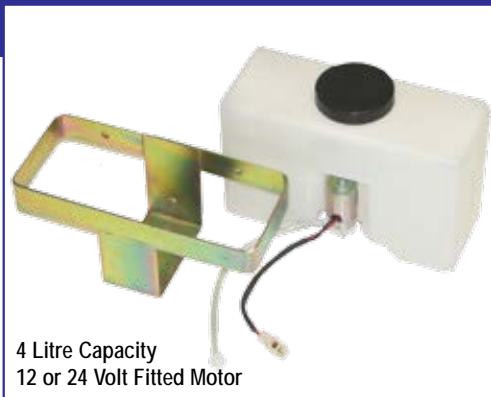
PART No: TCXD-2-24volt



2 Litre Capacity
12 or 24 Volt Fitted Motor

PART No: TCXD-4-12volt

PART No: TCXD-4-24volt



4 Litre Capacity
12 or 24 Volt Fitted Motor

PART No: TCXD-15-12volt

PART No: TCXD-15-24volt

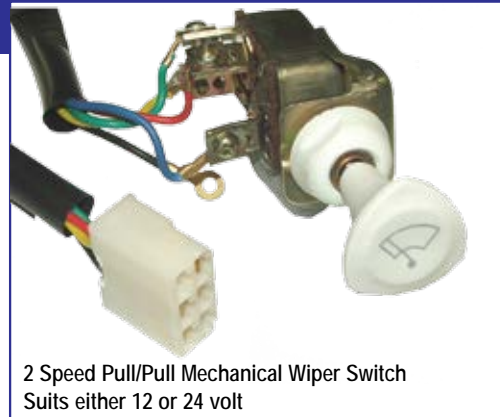


15 Litre Capacity
12 or 24 Volt Fitted Motor

WIPER MOTOR SWITCHES

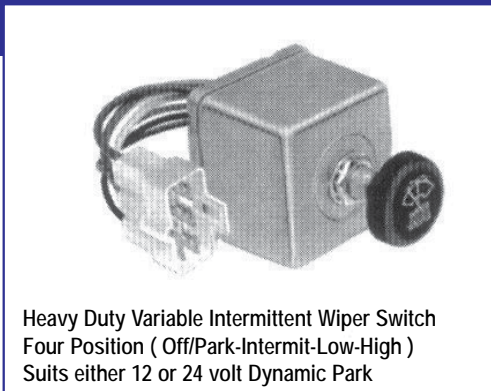
Available to suit most windscreen systems with or without dynamic park.

PART No: TCSW750



2 Speed Pull/Pull Mechanical Wiper Switch
Suits either 12 or 24 volt

PART No: TC75600-02



Heavy Duty Variable Intermittent Wiper Switch
Four Position (Off/Park-Intermit-Low-High)
Suits either 12 or 24 volt Dynamic Park

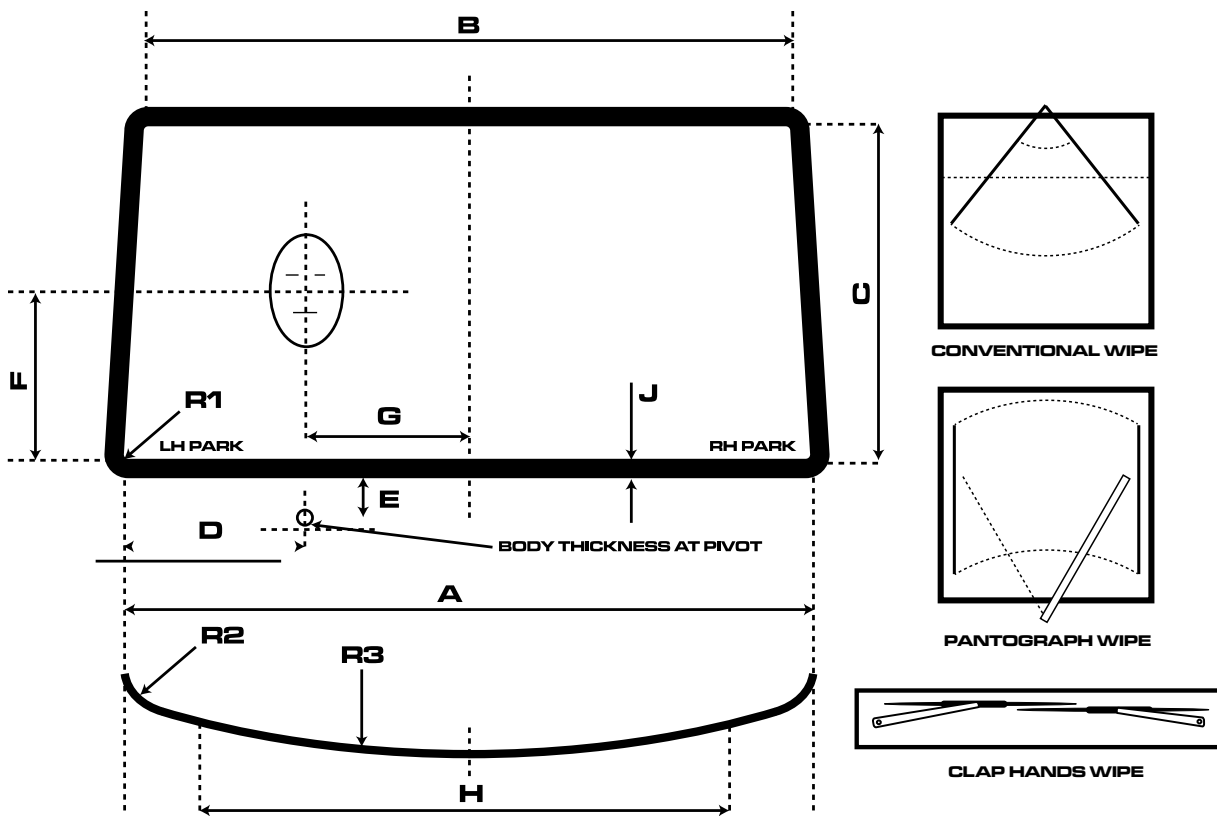
PART No: TC-75228-03



Heavy Duty Wiper Switch - 2 Speed Push To Wash
Suits either 12 or 24 volt

Wiper Specification Request

TRU
Vision



LOOKING FROM THE FRONT OF THE VEHICLE

SPECIFICATION DETAILS

PLEASE CHOOSE MEASUREMENT DETAILS: CM MM

1. "A" Glass Width - BOTTOM: _____
2. "B" Glass Width - TOP: _____
3. "C" Glass Height: _____
4. "D" Shaft Position: _____
5. "E" Distance From Glass: _____
6. "F" Eye Level: _____
7. "G" Driver Position: _____
8. "H" Windscreen Curve: _____
9. "J" Rubber Surround Size: _____
10. "R1" Windscreen Radius: _____
11. "R2" Windscreen Radius: _____
12. "R3" Windscreen Radius: _____
13. VOLTAGE: 12 Volt 24 Volt
14. MOTOR LOCATION: TOP BOTTOM
15. BODY THICKNESS: _____
16. WIPE PATTERN: CONVENTIONAL PANTOGRAPH CLAP HANDS
17. PARK POSITION: (see diagram) LEFT HAND RIGHT HAND
18. IS SCREEN CURVED OR FLAT CURVED FLAT
19. IS WASHER KIT REQUIRED: YES NO
20. OTHER DETAILS: Vehicle Type, Slopped screen etc. If two blades are driven by one motor, please give relative screen position and motor location.

COMPANY DETAILS

COMPANY NAME: _____ DATE: _____
 ADDRESS: _____
 CONTACT NAME: _____ PHONE: _____ FAX: _____
 EMAIL: _____

Wiper
Solutions

TRU VISION PTY LTD
 ABN: 59 065 925 126

GENERAL WARRANTY STATEMENT

Tru Vision Pty. Ltd. (hereinafter called Tru Vision) warrants that the windscreen wiper products supplied by Tru Vision conform and perform with the published technical specifications and any accompanying written materials, and shall be free of defects in materials and workmanship, for the period of time herein indicated, such warranty period commencing upon receipt of the product.

This warranty is limited to the repair and/or replacement, at Tru Vision's discretion, of defective or non conforming product, and Tru Vision shall not be responsible for the failure of the product to perform specified functions, or any other non conformance caused by or attributable to:

- a) Any misapplication or misuse of the product.
- b) Failure of the customer to adhere to any of Tru Vision's specifications or instructions.
- c) Neglect of, abuse of, or accident to, the product.
- d) Any associated or complimentary equipment not furnished by Tru Vision.

Limited warranty service may be obtained by delivering the defective product to Tru Vision or the Distributor it was purchased through and providing proof of purchase.

Customer agrees to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges to Tru Vision or it's distributor.

LIMITATION OF LIABILITY

Except as expressly provided herein, Tru Vision makes no warranty of any kind, expressed or implied, with respect to any equipment, parts or services provided pursuant to this agreement, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Neither Tru Vision nor it's distributor shall be liable for any other damages, including but not limited to direct, indirect, incidental, special or consequential damages, whether in an action or tort (including negligence and strict liability), such as, but not limited, loss of anticipated profits or benefits resulting from, or arising out of, or in connection with the use of furnishing of equipment, parts or services hereunder or the performance, use or inability to use the same, even if Tru Vision or it's distributor has been advised of the possibility of such damages, in no event will Tru Vision or it's distributor total liability exceed the price paid for the product.

PRODUCT WARRANTY DETAIL

WARRANTY PERIOD:

Tru Vision warrants all of its windscreen wiper products for one (1) year.
 A extended warranty period of two (2) years can be made available under certain terms and conditions. (See Tru Vision Head Office)

WARRANTY PROCEDURE:

Upon return of the product, Tru Vision will, at its option, repair or replace the product at no additional charge, freight prepaid, except as set forth below. Repair parts and replacement product will be furnished on an exchange basis and will either be reconditioned or new. All replaced parts or product become the property of Tru Vision.

If Tru Vision determines that the product or part is not covered by warranty, it will at the customer's option, repair the product or part using Tru Vision's standard rates for parts and labour and return the product or parts at no charge in or out of warranty.

WARRANTY EXCLUSIVE: DAMAGES CASUED BY:

- Accidents, falls, objects striking the Tru Vision products.
- Operating the products in environments that exceed normal temperature and humidity specifications.
- Power fluctuation, high voltage discharges.
- Improper grounding, incorrect cabeling.
- Misuse, negligence by the customer or any other third party.
- Failure to install or operate the product(s) in accordance with Tru Vision manuals.
- Failure caused by improper or inadequate maintenance by the customer or any other third party.
- Floods, lightning, earthquakes.
- Water spills. (electric motors)
- Replacement of parts due to normal wear and tear.
- Product has been altered in any way.
- Product that has been exposed to repair attempts by a third party without Tru Vision's written consent.

DISCLAIMER

Whilst all care has been taken in the preparation of the product catalogue, Tru Vision will not be responsible for any errors or omissions contained within.

Products and specifications may be changed at any time without prior notice.

Notes

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Vision**



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Notes

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Distributed by:

**TRU
Vision**

PREMIUM WIPER EQUIPMENT

TRU VISION PTY LTD

P.O. Box 1148

Browns Plains, Qld 4118 Australia

Ph: +61 (0)7 3806 7822 Fax: +61 (0) 7 3806 9822