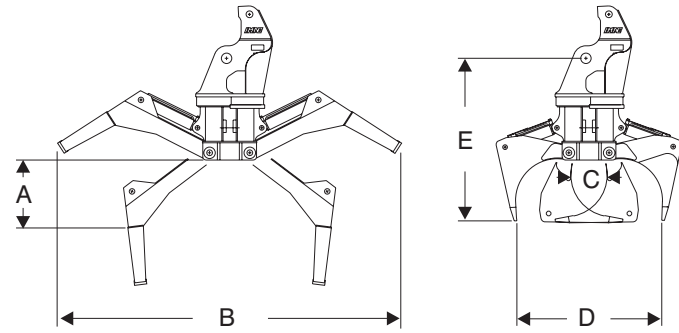


Make Your Machine More Machine



GRAPPLE CAPACITY

IMAC publishes the capacity of grapples in square feet so that the cubic content (chords) can be calculated when handling logs of varying lengths. Fill factors vary from 65 to 90%. 80% is typical.

Sample calculation:

$$\frac{5.6 \text{ FT}^2 \times 40 \text{ FT LOG X } .80 \text{ FILL FACTOR}}{128 \text{ FT}^3 \text{ PER CHORD}} = 1.4 \text{ CHORDS}$$

CLASS	MODEL	AREA sq.ft.	A in.	B in.	C in.	D in.	E in.	CYLINDERS		WEIGHT lbs.
								GRAPPLE	TOOL	
HX50/60	GBTM48	4.8	27.2	144	17.0	64	70	4.0" H.PRESS.	4.5" H. PRESS.	4050
	GBTM56	5.6	36.2	144	15.7	69	75	4.0" H.PRESS.	4.5" H. PRESS.	4100
	GBTM61	6.1	31.0	144	20.0	68	74	4.0" H.PRESS.	4.5" H. PRESS.	4150
HX70/80	GBTH61	6.1	31.0	146	20.0	70	79	4.0" H.PRESS.	5.5" H. PRESS.	5800
	GBTH72	7.2	31.0	146	22.0	76	81	4.0" H.PRESS.	5.5" H. PRESS.	5900

OPTIONAL TILT CYLINDER AND BRACKET adds weight to those published above.
"M" series add 400#, "H" series add 800#.

TESTED FOR OVER 4,000 HOURS

We've tested our new Twin VIS Motor drive system for over 4,000 hours on a machine in an abusive application that chronically destroyed the old drive system. The result - **NO FAILURES** - and when analyzed by the manufacturer, they were still within the tolerances for new motors!!

BRAKING TORQUE PROBLEM OVERCOME

Many new excavators come from the O.E.M. supplier with a Butt and Top Grapple valve system which is incapable of delivering hydraulic pressure to make set stopping torque above starting or driving torque. IMAC's optional new STOP BLOCK corrects this situation when necessary.

BEST OF OLD DESIGNS RETAINED AND UPDATED

Hydraulic Excavators have been growing in power while getting lighter necessitating lightweight attachments that will do heavyweight work. Continual improvement to vulnerable areas has extended the usefulness of IMAC's mid range GBTM series of grapples to operate in this demanding environment without the need to upgrade to larger and heavier grapples.

POWERCLAM GRAPPLES REPLACE GBTL BUTT AND TOPS

PowerClam Grapples are recommended in place of Butt and Top Grapples because of their lighter weight and less complex hydraulic system. These grapples retain the 360° continuous rotation of Butt and Tops but eliminate the costly outriggers and associated hydraulic control requirements.



**Butt and Top
TREE LENGTH GRAPPLE**

A CWS Company

www.imac.ca

Now with more torque than any other Butt and Top made!



*Old GBTM
10,000 Series
• Drive 146,678 • Stop 162,400 in/lbs.
Current GBTM with MCD Drive
and STOP BLOCK
• Drive 283,881 • Stop 340,658 in/lbs.
(at recommended pressures)*



ALL THE STANDARD IMAC FEATURES:

- Lightweight - Strong
- Ball Bearing Gear Driven 360° Rotation
- Twin VIS Drive Motors
- Sealed Hardened Pins - Jaws & Outriggers
- O.R.S. Connections
- Replaceable Bushings in Jaws
- High Pressure Cylinders
- High Available Starting & Stopping Torque
- Protected Cylinder Piping
- High Alloy Cast Grapple Tips

AND ALL THE ADVANTAGES OF VIS MOTORS

- No More Balance Seals
- Improved Ability to Withstand Spike Pressures
- Bearingless Design Output Shaft
- #12 Drain Line Connection
- Pinion Gear Supported Above and Below
- Greatly Improved Tolerance to Over Running Loads
- 94% More Rotation Torque
- Hardened Spline Drive Connection
- Greatly Increased Pinion Shaft Size
- Oil Flushed Spline

Available with "In-Head Valving" for simplified installation.

CWS Industries (Mfg) Corp.
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Fax: 604-888-9008 Email: sales@cwsindustries.com

www.cwsindustries.com
www.imac.ca

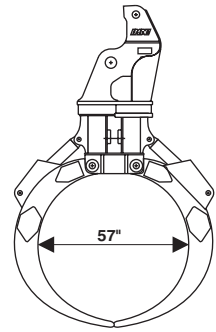
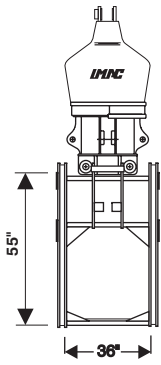
IMAC Design Group Ltd.
7622 18th Street, Edmonton, AB Canada T6P1Y6
PH: 780-469-9185 Toll Free 888-848-8288
Fax: 780-469-9256 Email: sales@imac.ca

IMAC - Industrial Machinery Attachment Company

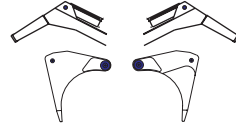
Features and Options make IMAC Butt and Top Grapples the most reliable and versatile grapple in the forest today!

Optional Shortwood Arms

Additional versatility for an industry workhorse



Remove the jaws and outriggers



and replace with special arms to make an instant **SHORTWOOD GRAPPLE** OUT OF ANY BUTT AND TOP GRAPPLE

TYPICAL CAPACITY
1 CHORD IN 100" WOOD
(VARIES WITH LOG LENGTH)
FOR
GBTM56/61 & XG125/500 GRAPPLES

Hybrid Grapple

Mix and Match

Shortwood Arms and Outriggers on one grapple frame



MCD Drive System

Standard in IMAC

Butt and Tops and PowerClams



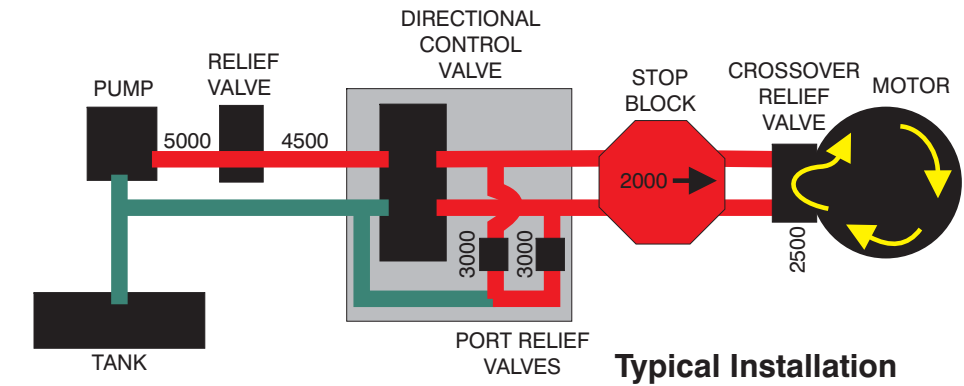
STOP BLOCK

Optional Rotation Stop Control

Increase Rotation Stopping Torque

on Butt and Top and PowerClam Grapples

Can be added to any machine not equipped for setting separate driving and stopping pressures



Some machines use port reliefs to set the pressure for a hydraulic function below the main relief pressure. The result is that driving pressure and stopping pressure to the motor are one in the same. Just as a car has more stopping power than driving power, so should rotating grapples.

STOP BLOCK corrects the inherent flaw in such circuits by providing a means to set braking pressure above driving pressure.

STOP BLOCK uses it's own PRESSURE REDUCING and FLOW CONTROL valves to control oil to the MOTOR in both directions. Consequently the Control Valve's Port Reliefs can now be set higher than the Cross Over Reliefs on the face of the motor forcing them to control stopping pressure. Normally Cross Over Relief Stopping Pressure is set 500 psi higher than Driving Pressure.

An Example of the Result

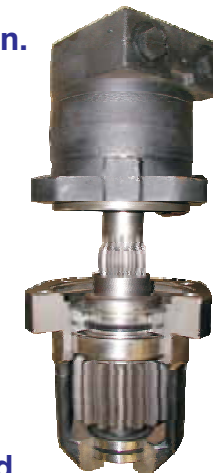
An IMAC Butt and Top Grapple with VIS Drive typically has driving pressure set at 2500 psi to deliver 283,881 inch/lbs. of torque for both driving and stopping. With Stop Block in place, stopping pressure can be set higher and 3,000 psi delivers 340,658 inch/lbs of stopping torque, for a **20% increase**.



Features:

- Bolt in "Modular Drive System"
- Interchangeable motor and pinion combinations for optimum torque output (90 - 318,000 in/lbs.)
- Motor drive shaft mates directly to pinion.
- 75% increase in drive cross section.
- Fully supported pinion with
 - Dual shaft seal
 - Oil flushed spline
 - Greaseable bearings

Modular Component Drive



Benefits:

- Easily serviced
- Bench top repair.
- Minimal downtime
- Rotation torque to suite the machine and application for optimal load control.
- Eliminates extra drive shaft and associated complications.
- Larger component sizes give greater life and reliability.
- Pinion and gear mounted and serviced for ultimate component life.