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The following guidelines have been developed to determine adequate tug assistance for docking and undocking in the Port of Houston. Similar docks have been grouped and coupled with vessel size and draft information. Assist tugs are then designated by the circumstances of the docking or undocking maneuver. Tugs are categorized by “bollard pull” as provided by area operators. Bollard pull is used rather than horsepower to rate tugs effectiveness. Additionally, the tug’s design type, tractor or conventional has a definite bearing on effectiveness and desirability.

**Tug Class Ratings:
Minimum Bollard Pull (in pounds)**

Class	ahead	astern
S (Small; compact)	35,000	20,000
M (Medium; diamond class)	60,000	45,000
L (Large; twin-screws)	90,000	60,000
T (Tractor)	100,000	90,000
C (Mini ZTECH) 2460 series	125,000	112,500
Z (Big ZTECH) 3075 series	160,000	150,000

Big ZTECH can substitute for any class except small

Mini ZTECH can substitute for T, L, M, S

T can substitute for S, M or L

L can substitute for S or M

M can substitute for S except arrivals less than 30'

A widebody is defined as any vessel with a beam of 120' or greater.

All vessels requiring tug escort will be of tractor tug design (T, C, or Z). With the exception of Tug/Barges which can use a Twin Screw (L).

Assignment of Escort Tugs

Any vessel that is required to have an escort tug due to draft or deadweight tonnage, will be assigned an escort tug according to the following table:

<u>Ship Size</u>	<u>Draft</u>	<u>DWT</u>	<u>Assigned Tug</u>
550-750	> 40-0	65k-80k MT	T
751-850	> 40-0	80k-100k MT	Z/C
≥ 851	> 35-0(with cargo)	100k-130k MT	Z

Note: A partially loaded Suez Max with a draft of 35-0 has an approximate dwt of 109,000 MT's, which is more weight than a fully loaded widebody.

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BOW THRUSTER SUBSTITUTIONS

Bow thruster substitutes for smallest tug

Thrusters must meet the following minimum requirement of available horsepower to substitute for a tug. (1 KW equals 1.35 HP)

Vessel LOA	Thruster Horsepower
More than 900'	2,500
More than 900' <i>(Bayport and Barbours Cut Only)</i>	2,400
751' – 900'	2,000
551' – 750'	980
501' – 550'	730
451' – 550'	565
350' – 450'	400
Less than 350'	200

As always any vessel specific concerns should be discussed with the Houston Pilots because the ultimate decision falls to the pilot. Ships and the waters in which they operate represent a dynamic, ever-changing environment. Firm rules addressing every possible scenario are not possible. The individual pilot on board is best situated to evaluate the specific docking and/or undocking evolution contemplated by the vessel and the prevailing weather, current, and traffic situation affecting the vessel. These guidelines are recommendations only. It is recognized that the on-scene discretion of the pilot and master should not be hindered. The following guidelines regarding tug assistance for docking and undocking are in no way intended to limit, hinder, or override the on-scene discretion of the pilot. We realize that there will be situations where actions that conflict with these recommendations may be necessary to address specific situations or special circumstances that confront a specific vessel. Further, it is recognized that the vessel, tug design, and terminal configuration may change requiring a departure from the current tug assistance for docking and undocking guidelines.

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Bayport- Odfjell

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	LS	LS	
<500'	<30'	LS	LS	
<500'	≥30'	LS	LS	
<550'	<30'	-	L	*head out sailing
501'-650'	<30'	LL	LS	
501'-650'	≥30'	LL	LM	
>650'	<30'	LL	LL	
>650'	≥30'	LL	LL	

LBC 1,2,3,4,5

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	LS	LS	
<500'	<30'	LS	LS	
<500'	≥30'	LS	LS	
501'-650'	<30'	LS	LS	
501'-650'	≥30'	LL	LM	
>650' Non Widebody	<30'	LL	LL	
>650' Non Widebody	≥30'	TL	TL	*No thruster substitute
Widebody	<34	ZT	ZT	*No thruster substitute
Widebody	≥34	ZZT	ZZT	*No thruster substitute

Barbours Cut / Bayport Container Terminal, ETMP

Vessel size	Draft	Arrival	Departure	Notes
>550' and <650'	Any	LL	LL	*ETMP – LPG only
>650'	Any	TT	TT	*ETMP – LPG only
<600'	Any	LL	MM	
601'-749'	<30'	LL	LL	
601'-749'	Any	LL	LL	
750'-999'	<30'	ZC	CC	
750'-999'	≥30'	ZC	ZC	
<900' (widebody)	Any	TT	TT	*ETMP = EM 7 + 8
900' – 999' (widebody)	Any	ZZ/ZTT	ZZ/ZTT	*no thruster substitute
≥1000'	Any	ZZZ	ZZ	*no thruster substitute
≥1100'	Any	ZZZZ	ZZZ	

NOTICE: Thruster substitution exception for Barbours Cut/ Bayport Container Terminal: Container vessels with 35' draft or more and more than 120' beam must have at least two tugs. Container vessels of 750' LOA or more must have at least two tugs if turning.

ExxonMobil Baytown Berth 1 & 2

Vessel size	Draft	Arrival	Departure	Notes
<500'	<30'	SS	S	* no thruster substitute
<500'	≥30'	MS	M	* no thruster substitute
501'-650'	<30'	LM	MS	* no thruster substitute
501'-650'	≥30'	LL	LM	* no thruster substitute
>650'	<30'	LL	LM	* no thruster substitute
>650'	≥30'	LL	LL	* no thruster substitute

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ExxonMobil Baytown Berth 3,4,5,6

Vessel size	Draft	Arrival	Departure	Note
<500'	<30'	SS	SS	* no thruster substitute
<500'	≥30'	MM	MS	* no thruster substitute
501'-650'	<30'	LM	MS	* no thruster substitute
501'-650'	≥30'	LL	LM	* no thruster substitute
>650'	<30'	LL	LM	* no thruster substitute
>650'	≥30'	TLL	LL	* no thruster substitute
Widebody (Berth 6)	<34'	TLL/LLL	LL	* no thruster substitute
Widebody (Berth 6)	≥34'	TLL/LLLM	LL	* no thruster substitute
Widebody (Berth 4 & 5)	<34'	ZZT	LL	* no thruster substitute
Widebody (Berth 4 & 5)	≥34'	ZZT	TL/LL	* no thruster substitute

Bostco

Vessel size	Draft	Arrival	Departure	Notes
<500'	<30'	LS	LS	
<500'	≥30'	LS	LS	
501'-650'	<30'	LL	LL	
501'-650'	≥30'	LL	LL	
>650'	<30'	TL	LL	
>650'	≥30'	ZT	LL	
>650'	≥34'	ZC	ZC	
Widebody	<34'	ZC	ZC	*aft tug 2460 series
Widebody	≥34'	ZCC	ZCC	*aft tug 2460 series

Cemex, Cargil, Houston Ammonia, Georgia Gulf Agrifos

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	SS	SS	
<500'	≥30'	SS	SS	
501'-650'	<30'	LL	LS	
501'-650'	≥30'	LL	LM	
>650'	<30'	LL	LL	
>650'	≥30'	LL	LL	

Vopak, Deer Park

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	SS	SS	
<500'	≥30'	MS	SS	
501'-650'	<30'	LL	LS	
501'-650'	≥30'	LL	LM	
>650'	<30'	LL	LM	
>650'	≥30'	LL	LL	
Widebody	<34'	TT	LL	
Widebody	≥34'	CC	LL	

NOTICE: Vopak docks have a one tug minimum.

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ITC

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<400' (Berth 3)	Any	SS	SS	
<400' (Berth 7 & 8)	Any	SS	SS	* boat men safety
<500'	<30'	SS	SS	
<500'	≥30'	MS	SS	
<550' (Berth 1 & 2)	<30'	-	S	*head out sailing
501'-650'	<30'	LL	MS	
501'-650'	≥30'	TL	LL	
>650'	<30'	TL	LL	
>650'	≥30'	TT	LL	
Widebody	<34'	CT	LL	
Widebody	≥34'	CC	TL	

*ITC berth 3 restricted to (S) compact tugs per tow company

ITC Pasadena

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	SS	SS	
<500'	≥30'	LS	SS	
<550'	<30'	-	S	* head out sailing
501'-650'	<30'	LL	LS	
501'-650'	≥30'	LL	LL	
>650'	<30'	TL	TL	
>650'	≥30'	CT	CT	

Houston Fuel Oil Terminal

Vessel size	Draft	Arrival	Departure	Notes
<500'	<30'	LS	SS	
<500'	≥30'	LM	SS	
501'-650'	<30'	LL	LM	
501'-650'	≥30'	LL	LL	
>650'	<30'	LL	LL	
>650'	≥30'	TL	LL	
Widebody	<34'	TT	TL	
Widebody	≥34'	CC	TL	
Widebody	≥40'	ZZ/ZC	ZC	
Widebody (Dock 2)	Any	CT	CT	

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Shell Oil, Enterprise HSC, Stolthaven

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	* no thruster substitute (Shell)
<500'	<30'	SS	SS	
<500'	≥30'	MS	SS	
<550'	<30'	-	S	* head out sailing * no thruster substitute (Shell)
501'-650'	<30'	LM	LM	
501'-650'	≥30'	LL	LM	
>650'	<30'	LL	LM	
>650'	≥30'	LL	LM	
Widebody	<34'	TT	TL	* no thruster substitute (Shell)
Widebody	≥34'	TT	TL	* no thruster substitute (Shell)
Widebody	≥40'	ZZ/ZCC	ZT	* no thruster substitute (Shell)

*Vessels going to/from ET1 or ET4-8 must have two tugs minimum. No thruster substitution for tug arrangements of two or less.

*Tug/Tow vessels going to/from ET1 or ET4-8 require one large (L) tug.

**Bulk Plant, Vulcan, Kinder-Morgan #3, #4
Houston Cement West, Valero**

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	* no thruster substitute
<500'	<30'	LS	SS	
<500'	≥30'	LM	MM	
501'-650'	<30'	LL	LM	
501'-650'	≥30'	TL	TL	
>650'	<30'	TL	LL	
>650'	≥30'	TT	TL	* no thruster substitute

Jacintoport 4, 5, Texas Terminal, Greensport, Kinder Morgan North, Kerley, Kinder Morgan Deepwater, Chevron Phillips, Industrial Terminals, South Central Cement, Kavanagh

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	SS	SS	
<500'	≥30'	SS	SS	
<550'	<30'	-	S	* head out sailing
501'-650'	<30'	LL	LS	
501'-650'	≥30'	LL	LM	
>650'	<30'	LL	LM	
>650'	≥30'	TL	LL	

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Magellan 2, Targa, KinderMorgan Pasadena, Pasadena Refinery, KinderMorgan 1,2, Galena Park, Vopak Galena Park, Lyondell, Texas Petro Chemical, KinderMorgan Export Terminal

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	* no thruster substitute (Targa)
<500'	<30'	LS	LS	
<500'	≥30'	LL	LM	
<550'	<30'	-	S	* head out sailing (Ex. Targa)
501'-650'	<30'	LL	LS	* no thruster substitute (Targa)
501'-650'	≥30'	LL	LL	* no thruster substitute (Targa)
>650'	<30'	LL	LL	* no thruster substitute (Targa)
>650'	≥30'	TT	TL	* no thruster substitute (Targa)

Woodhouse, Manchester

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	SS	SS	
<500'	≥30'	MS	SS	
501'-650'	<30'	LL	MS	
501'-650'	≥30'	LL	MM	
>650'	<30'	LL	LM	
>650'	≥30'	LL	LL	
Any (Berths D, E, F)	Any	S	S	* mandatory thruster + tug

*Woodhouse Slip 3 & Sims Bayou restricted to (S) compact tugs. Per tow company. CAN USE C TUG IF: OVER BOW, OVER STERN, LASHED ALONGSIDE

*Woodhouse Slip 2 restricted to (S) compact tugs or (L) twin screw tugs depending on vessel size. Per tow company. CAN USE C TUG IF: OVER BOW, OVER STERN, LASHED ALONGSIDE

Inbessa, Jacintoport 1-3

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
401'-650'	<30'	TL	TL	
401'-650'	≥30'	TT	TL	
>650'	Any	TT	TT	*no thruster substitute

Magellan 1 + 3

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	* no thruster substitute
401'-699'	<30'	CC	CT	* no thruster substitute
401'-699'	≥30'	CC	CT	* no thruster substitute
≥700'	Any	CC	CC	* no thruster substitute

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City Docks, Old Manchester & all others above 610 Bridge

Vessel size	Draft	Arrival	Departure	Notes
<400'	Any	S	S	
<500'	<30'	LS	SS	
<500'	≥30'	LS	SS	
<550'	<30'	-	S	* head out sailing
501'-650'	<30'	LM	MS	
501'-650'	≥30'	LL	MM	
>650'	<30'	LL	LM	
>650'	≥30'	TL	LL	

New Terminals

Vessel size	Draft	Arrival	Departure	Notes
<500'	<30'	LS	SS	
<500'	≥30'	LM	LS	
>500'	<30'	LL	LS	
>550'	≥30'	LL	LM	

Car Carriers, City Dock 24 to City Dock 32

Vessel size	Draft	Arrival	Departure	Notes
All Car Carriers	Any	TL	TL	*with thruster
All Car Carriers	Any	TT	TT	*without thruster
Bahri Ships	Any	TL	TL	

Oceangoing tug barge units

Vessel size	Draft	Arrival	Departure	Notes
<600'	<20'	L	L	
<600'	≥20'	L	L	
>600'	<20'	L	L	
>600'	≥20'	L	L	